VAX
Software Source Book

First Edition
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Introduction: How to Use this Book

DIGITAL's VAX family consists of high-performance 32-bit micro- and minicomputers and superminicomputers — all having a completely compatible architecture. The VAX computers vary considerably, from the MicroVAX I, a microcomputer with superminicomputer capabilities, through the VAX-11/725, VAX-11/730, VAX-11/750, VAX-11/780, VAX-11/782, and the VAX-11/785 VAXcluster system. VAX computers run under the popular VMS operating system software, as well as ULTRIX-32, ULTRIX-32m, and other UNIX™ look-alike operating systems.

The members of the VAX family make the power of VAX systems available to a wide range of users, applications, and budgets. Almost every computer owner is familiar with the problem of finding the right software package. We are proud to help solve this problem by bringing you the first edition of the VAX Software Source Book. It describes more than 1,200 VAX software products — not software under development but software that is available and working in businesses and organizations like yours. All application software described in this book will run on any member of the VAX family (depending on hardware configuration, memory size, and storage devices), from the MicroVAX I to the VAX-11/785, without the need for costly data conversion.

Those software programs span a wide range of application areas, from handling orders and accounts receivable for wholesalers of food and health and beauty aids to material requirements planning for large-scale manufacturing operations. Some software packages might be just what you need; others might be useful to you in the future; still others might suggest uses you had not considered before. Whatever your situation, this book has been designed to provide you with VAX solutions.

We expect future editions of the VAX Software Source Book to contain many more applications. The book and its future editions can keep you up to date on the growing body of VAX software.

UNIX™ is a trademark of AT&T Bell Laboratories.
Introduction: How to Use this Book

Roadmaps into the Book

• The Contents lists the industries and generic disciplines, such as “Accounting” or “Manufacturing,” covered in the book.
• The Keyword Cross-Reference Guide classifies software packages by keyword, such as “Banking” or “Simulation.”
• The Program Title List is an alphabetical list of all the software packages in the book.
• The Index provides an alphabetical list of industries/disciplines, each of which is further defined by keywords.

Those four roadmaps into the book can help you find specific programs or topics in the book. For example, if you do not find a program after consulting the Keyword Cross-Reference Guide, try the Index. If you know the name of a program, check the Program Title List. Also, you can simply browse through the book.

Format of an Entry

The listings in this book were supplied by software producers and their distributors. A typical entry follows:

1. **WORDAID (Word Processor for Scientific Research)**

2. **Operating System:** ULTRIX, VMS

3. **Keywords:**
   • Research
   • Scientific
   • Text editing/formatting
   • Word processing

4. WORDAID, a word processing program specifically designed for scientific research, generates a table of contents, performs footnoting and indexing, and can produce a scientific bibliography. The program allows users to easily update research material.

A version of this product is available for the PDP-11 computer.

5. **Price:** $1,000 – $2,000

6. **Product Support Available:** Yes

7. **Contact:** Joseph C. Zycoff, Technical Sales Manager

   (212) 123–4567

   ZYGOTE SYSTEMS, INC.

   789 West 43rd Street

   New York, NY 00123

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1. **Software Title:** A typical program name is an acronym followed by the full title in parentheses.

2. **Operating System:** If you are planning to purchase a VAX, you need to consider what operating system you want to purchase. Considerations include your need for full commercial language support, real-time support, extensive communications capabili-
ties, and so forth. A sales representative from your local DIGITAL sales office can help answer your questions. By choosing the right operating system, you may be assured of being able to run and develop the programs that are right for you.

3 **Keywords:** Those words define a software package. They give you an idea of the package’s function and application without having to read the entire description.

4 **Description:** That portion of the entry describes the features and capabilities of the software.

5 **Price:** Unless otherwise indicated, the cost is expressed in U.S. currency. The price is frequently given as a range. The price you pay may depend on such factors as maintenance costs, level of support and degree of customization required, size and number of computers on which you intend to run the package, and in the case of multimodule programs, which modules you require.

6 **Product Support Available:** For simplicity, we indicate either yes or no. Product support may vary from vendor to vendor, but it often includes such services as correcting software errors, supplying updates, helping the customer with installation or problems in use, and in some cases providing installation.

7 **Contact:** Call or write to the contact person or company for more information on the software. The telephone number, company name, and address are listed.

**Other Useful Information**

Software packages differ in their hardware configuration requirements. Additionally, some software packages require other software to work. Ask the software supplier to specify precisely what hardware and related software, if any, are required for the package to work properly in your installation.

**DIGITAL Products:** Some of the programs described in this book are sold by DIGITAL, and many of those are DIGITAL-supported. A DIGITAL-supported product is warranted as described for the period specified in the Software Product Description (SPD).

To purchase a DIGITAL software or hardware product, contact your local sales office. For the location of your nearest DIGITAL sales office, dial 1–800–DIGITAL.

**DECUS Products:** Some products are available through DECUS (Digital Equipment Computer Users Society), an independent association. DIGITAL does not support DECUS programs. Virtually all DECUS programs cost between $5 and $225, the price range shown on each DECUS entry. Non-U.S. residents must be DECUS members
to obtain DECUS programs. For information on how to join DECUS or to obtain a DECUS catalog, write to:

DECUS Membership
249 Northboro Road
BPO2
Marlboro, MA 01752

EAS Library: Programs in the EAS (External Application Software) Library are written by independent vendors and tested by DIGITAL. DIGITAL verifies that those programs can be installed in the manner described and that they perform in accordance with their documentation. Unless otherwise indicated, those programs are sold "as is." They may be ordered from DIGITAL or the vendor.

Related Publications: Several publications may be of use to VAX users:

- *VAX Architecture Handbook* (order number EB–19580–20)
- *VAX Hardware Handbook* (order number EB–21710–20)
- *VAX Information Management Handbook* (order number EB–25780–44)
- *VAX Software Handbook* (order number EB–21812–20)
- *VAX Systems & Options Catalog* (order number ED–30055–46)

To order any of those books, call the Installed Base Group toll free at 1–800–258–1710.

Custom Software: Many vendors listed in this book are willing to tailor their software packages to fit your needs or to develop an entire program on a contract basis. Thus, although programs listed here may not match your needs exactly, this book may lead you to vendors who will provide suitable custom software. DIGITAL undertakes such projects, and you may want to discuss your software needs with a DIGITAL Software Services representative. For the location of your nearest DIGITAL sales office, dial 1–800–DIGITAL.

How to Order Additional Books

To order additional copies of this book or to receive a free copy of other DIGITAL Software Source Books, send in one of the mailing list cards at the back of the book. If the cards are missing, write to:

Attn.: G. Deforge
Printing and Circulation Services
Digital Equipment Corporation
444 Whitney Street
Northboro, MA 01532

and ask for the following:

VAX Software Source Book (order number EB–26154–46)
How to Be Placed on Our Mailing List

If you wish to receive a free copy of this or other DIGITAL Software Source Books, send in one of the mailing list cards at the back of this book. If the cards are missing, write to:

    Editor, Software Source Books
    MLO5–5/E45
    Digital Equipment Corporation
    146 Main Street
    Maynard, MA 01754

or phone: (617) 493–3200.

How to Have Your Software Product Listed

If you wish to include your software product(s) in one or more of DIGITAL's Software Source Books, read the instructions on page 1029 and complete the entry form.
Part I
Applications Software
Accounting
ABLE® Client Writeup System

Operating System: VMS
Keywords: • Data base management • Financial analysis
         • Payroll

ABLE is an interactive reporting system designed to provide accountants with the means to create any management report and/or analysis and any financial report and/or analysis a client may consider necessary in gauging business performance. ABLE also contains a feature permitting entry of employee payroll information and the automatic preparation of quarterly returns and year-end W-2 forms.

ABLE’s nonrestrictive account-numbering scheme means that each client can have its own unique Chart of Accounts and that each entity of a multcorporate client could have its own account-numbering scheme. Data can be entered in random order, and provision is made for entering adjustments to prior accounting periods. Data entry under ABLE is carefully controlled by audit reports and edit lists, including the Transaction Edit List, the General Journal, the Payroll Journal, and the detailed General Ledger.

After data entry, no further human involvement is necessary. ABLE’s powerful report writer and generator takes charge, preparing the reports and analyses it instructs itself to prepare and enabling the computer to automatically make and post such entries as standard adjusting entries, accrual entries, depreciation entries, depletion entries, and the like. Virtually any report and/or analysis that a qualified accountant might otherwise prepare with the aid of paper, pencil, and calculator is prepared automatically. The system prorates, calculates, allocates, and figures percentages (using any number of 100% figures) — all without “people” intervention.

Price: $15,000
Product Support Available: Yes
Contact: Terry K. Holder or Nathan I. Lieberman
         (812) 479–6951
         EVANSVILLE DATA PROCESSING CORP.
         1010 S. Weinbach Avenue
         P.O. Box 2469
         Evansville, IN 47714

ABLE® Receivables and Billing System

Operating System: VMS
Keywords: • Accounts receivable • Billing
         • Data base management • General ledger

This menu-driven, operator-oriented system with interactive entry/edit is parameterized by “site standards” and provides:
• Registers for cash receipts and credit/discount
• Automated invoice preparation and invoice register
Cash receipt distribution across corporate lines
Aging reports, customer statements, and journal register
Customer lists — alphabetical, numeric, long form, short form
Collection and sales histories
Automatic "standard bill" items
On-line master file maintenance
Mailing labels with multiple reprints
Reruns without disk changes
Optional check digit control
Automatic selective calculation and entering of late charges
Automatic posting to general ledger
Input sequence number control
Unlimited chart of accounts
Imprint headers for multiple users
Report on average collection days
Limited aging report for credit department
Delete control over active accounts
Easy clearing of spooled files after successful print
"View or que"
Input batch control
Customer open items/or balance forward selectively
Customer inquiry

Price: $5,000
Product Support Available: Yes
Contact: Terry K. Holder or Nathan I. Lieberman
(812) 479–6951
EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
P.O. Box 2469
Evansville, IN 47714

ABLEpayables

Operating System: VMS
Keywords: • Accounts payable • Financial analysis
ABLEpayables is a flexible on-line interactive system that may be
implemented as a stand-alone accounts payable system or interfaced
with other systems. The system has many user-controlled options
and does not require a programmer for adaptation to a time-share
environment. Those options include top- or bottom-stub checks, sav-
ing vendor/invoice history, general ledger interfacing, vendor check-
digit numbering, preprinted (customized) check forms, and entry of
purchase order numbers.

Use of the cash requirements report gives management full control
over check issuance and, therefore, cash flow. Checks may be printed
selectively, based on the availability of funds. ABLEpayables sup-
ports the use of partial payment, hold payment, manual checks,
voided checks, and changes in due dates. Screen-formatted entry encourages user acceptance, decreases operator training time, and ensures data integrity.

**Price:** $5,000

**Product Support Available:** Yes

**Contact:** Terry K. Holder or Nathan I. Lieberman
(812) 479–6951
EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
P.O. Box 2469
Evansville, IN 47714

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### Access Fund Accounting System

**Operating System:** VMS

**Keywords:** • Arts • Education • Environmental • Health care

The system, providing on-line interactive accounting for nonprofit organizations, includes multiple funding sources, interdepartmental billing, project cost allocation, integrated electronic spreadsheet, color graphics, and the following subsystems: Personnel, Payroll, Accounts Payable, Cash Disbursements, Accounts Receivable, Cash Receipts, General Ledger, Project Management, Fixed Asset, Budgeting, and Revenue Forecasting.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Charles Longfield
(617) 367–3690
ACCESS INTERNATIONAL, INC.
208 Union Wharf
Boston, MA 02109

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### Accountant II Accounts Payable System

**Operating System:** VMS

**Keywords:** • Accounts payable • Cost accounting • Financial analysis • Report writer

The Accountant II Accounts Payable System has been designed for ease of use and versatility and functions in concert with the Accountant II General Ledger and Project/Job Cost systems. The Accounts Payable System features the following:

- Inquiry capabilities — You can request a display of all open invoices due a vendor or display all the disbursements made for the month by simply pressing a few buttons.
- Cash requirements — A Cash Requirement Report is automatically produced by the system. Based on the payment-due dates and the
current date, the report displays the cash requirements by week for the current week and for the next four weeks.

- Check writing — Checks are automatically printed upon either a computed pay date or on an override basis. Manually written checks are also processed by the system.

- Job cost and expensing — Information on expense distribution and job cost allocations are entered with the invoices. The system can produce expense distribution reports for general ledger purposes and post expense to projects.

- Reports — The system provides the following reports: Accounts Payable Expense Distribution, Check Registers, Cash Requirements, Aged Trial Balance, and Checks.

A version of this product is available for the PDP-11 computer.

Price: $2,000 – $3,000

Product Support Available: Yes

Contact: Richard Northrup, Sales Director
(212) 221–2517
COMPUTRON BUSINESS SOLUTIONS, INC.
701 Seventh Avenue, Suite 9W
New York, NY 10036

Accountant II Accounts Receivable System

Operating System: VMS

Keywords: • Accounts receivable • Report writer • Retail
• Wholesale

The Accountant II Accounts Receivable System has been designed for use as a stand-alone system or with the Accountant II Order Entry, General Ledger, and Project/Job Cost systems. The Accounts Receivable System has the following capabilities:

- Inquiry — Immediate inquiry capabilities are provided. You can request a display of all unpaid invoices for a customer by simply pressing a few buttons.

- On-line cash application — Cash is applied directly to a customer’s open invoices, which are displayed for that purpose. A single keystroke is used to apply cash to an invoice. A cash application journal balances to the month’s deposits.

- Statements — Statements can be run at any time during the month. Both midmonth and end-of-month statements can be produced. Statements can be selected for printing on request.

- Invoicing — Invoicing can be performed as a by-product of the Order Entry System or directly by the Accounts Receivable System. In either case, invoices are posted to the Open A/R File.

- Reports — The system provides the following reports: Daily and Monthly Invoice Registers, Invoices, Statements, Aged Trial Balance, Cash Journals, and Salesman Commission reports.

A version of this product is available for the PDP-11 computer.
Accountant II General Ledger System

Operating System: VMS
Keywords: Financial analysis General ledger Report writer

The Accountant II General Ledger System has been designed for ease of use and versatility and functions with the Accountant II Accounts Payable and Accounts Receivable systems. The General Ledger System has the following features:

- Your chart of accounts — The system utilizes your chart of accounts. You do not need to modify your account numbers, as is required by other systems.
- Unlimited consolidations — You can produce consolidated financial statements by pressing a button. You can even consolidate individual statements from companies with dissimilar charts of accounts.
- User-defined formats — You can alter the sequence and form of your financial statements without any programming changes. You can print both a detail statement and a summary statement automatically.
- Automatic entries — The system accepts entries automatically from the Accountant II Payables and Receivables systems. The entries can be entered into the general ledger on a detail or journal entry basis.
- Reports — The system provides journal listings, trial balance, general ledger, financial statements, and budget reports.

A version of this product is available for the PDP-11 computer.

Price: $2,000 – $3,000
Product Support Available: Yes
Contact: Richard Northrup, Sales Director
(212) 221–2517
COMPUTRON BUSINESS SOLUTIONS, INC.
701 Seventh Avenue, Suite 9W
New York, NY 10036

Accountant II Purchasing System

Operating System: VMS
Keywords: Inventory Purchasing Report writer Retail
The purchase order subsystem accepts order information, prints purchase orders, tracks the orders, and updates the inventory when the orders are received. The receiving function is performed on line on an exception or blind receiving basis.

A version of this product is available for the PDP–11 computer.

**Price:** $2,000 – $3,000

**Product Support Available:** Yes

**Contact:** Richard Northrup, Sales Director
(212) 221–2517
COMPUTRON BUSINESS SOLUTIONS, INC.
701 Seventh Avenue, Suite 9W
New York, NY 10036

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**Accountant Write-up**

**Operating System:** MS/DOS, PICK, UNIX, XENIX

**Keywords:** • Data collection • Payroll • Purchasing • Report writer

The program supplies the following:

• Flexible account number formats.
• Uniquely defined fiscal year for each client.
• Statements produced through the statement generator and not tied to the chart of accounts format.
• Trial balance, general ledger, and worksheet reports.
• Entry screen for each unique type of original document — cash disbursements, sales, purchases, payroll deposits, and journals.
• After-the-fact payroll entry, which maintains employee master file.
• Payroll and cash disbursements check entry may be mixed.
• Payroll reports — summary, history, 941s, quarterly, and W–2s.
• Automatic budget generation, based on prior year’s budgets.
• On-line CRT account inquiry for any account.
• Recurring journal entry.
• Check reconciliation processing.
• Data-input accuracy — transaction entries may be edited and corrected prior to posting.
• Transaction entry screens match the format of original documents.
• Audit trails — posting programs automatically produce journals.

A version of this product is available for the PDP–11 computer.

**Price:** $3,500

**Product Support Available:** Yes

**Contact:** Steve Thomas
(713) 270–5218 or (800) 231–0062
THE SOFTWARE EXPRESS, INC.
10103 Fondren, Suite 220
Houston, TX 77096
10 Accounting

Accounting

Operating System: VMS
Keywords: • Accounts payable • Accounts receivable
• General ledger • Payroll

This collection of integrated business systems provides improved procedures, reduced paperwork, and timely information for later profitability. A logical solution for small and medium-size businesses, the system is flexible in size, meeting the needs of a small company with a dedicated computer or a multidepartmental organization requiring simultaneous computer access from many locations. Features of the system include:

• Extensive validation of input
• Comprehensive balancing, batch controls
• Audit trails
• Immediate validation of general ledger — distribution accounts for all companies and/or organizational units; complete, automatic generation of journal entries for simplified interface with general accounting; simultaneous accommodation of multiple accounting periods, eliminating the need to close one period before proceeding to the next one; vouchers-paid history by vendor; ability to enter vouchers for standard vendors and 1-time vendors; and automatic determination of scheduled installment payment amounts and due dates

A version of this product is available for the PDP-11 computer.

Price: $3,000 – $5,000
Product Support Available: Yes
Contact: E. Jackson Smith
(301) 296-9032
SMITH, ABBOTT AND COMPANY, INC.
300 E. Joppa Road
Baltimore, MD 21204

Accounting “Plus” Business Software

Operating System: UNIX, VMS
Keywords: • Accounts payable • Accounts receivable
• General ledger • Inventory

ABS software packages are designed to perform specific business functions as well as to work together to merge, sort, and rearrange information. Data is keyed into the computer once but is used to update several files and reports simultaneously. For example, entry of a sales order checks both customer and inventory records. The resulting invoice automatically reduces the inventory file, creates an accounts receivable record, and posts the transaction for general ledger.
In addition, ABS software features include security, audit trails, multiple-user access, multiple-branch capability, a menu of functions for each program, and instruction and reference guides.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $5,000

**Product Support Available:** Yes

**Contact:** Thomas L. Mitchell, President
(312) 381–2004
ABS ASSOCIATES, INC.
22 Witt Road
Barrington, IL 60010

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**Accounts Payable**

**Operating System:** VMS

**Keywords:** • Accounts payable • Financial analysis
• General ledger

The ADD Accounts Payable System provides a flexible vendor file that allows for variable discount/payment terms, multicompny internal distributions for general ledger reports, and a history of vendor activity detailing purchases and payments on an open-item basis. Vouchered checks are produced and discounts computed automatically. The system includes forecasts of future cash requirements, payables trial balance, aging of open invoices, bank reconciliation, disbursement reports, and general ledger distribution by account and automatically interfaces with ADD's General Ledger system.

A version of this product is available for the PDP–11 computer.

**Price:** $2,500 – $5,000

**Product Support Available:** Yes

**Contact:** Bruce A. Bott, President
(201) 584–4026
ADVANCED DIGITAL DATA, INC.
354 Route 206
Flanders, NJ 07836

---

**Accounts Payable**

**Operating System:** VMS

**Keywords:** • Accounts payable • Query facilities

Complete accounts payable processing, with general ledger distribution reporting and interface, are provided. Data is entered in on-line conversational mode, with operator prompting. Accounts Payable provides complete audit trails, selective check writing, and an open payables list, showing all outstanding payables, check reconciliation, aged reporting of payables, cash requirements reporting, and multiple expense months for invoices.
Accounts Payable

Operating System: VMS
Keywords: • Accounts payable  • Billing  • Report writer
         • Security

The Accounts Payable program features accurate aging, recurring invoices, holdback, check writing, discounts, quick pay, history files, G/L interface, full-function reports, security, statistical analysis, check reconciliation, and multicompany capabilities.

A version of this product is available for the PDP-11 computer.

Price: $2,000 – $10,000
Product Support Available: Yes
Contact: Tom Muskiluke
         (519) 893-4200
         DIGITAL BUSINESS COMPUTERS
         133 Manitou Drive
         Kitchener, Ontario N2C 1L4
         Canada

Accounts Payable

Operating System: ULTRIX, UNIX
Keywords: • Accounts payable  • Banking  • Billing
          • Information management

This integrated accounts payable system goes from purchase order to packing slip to invoice to check. Manual or automatic check printing can be done. Partial payment of invoices and multiple bank accounts are allowed. The system includes a series of reports for accounts payable, including balance due; projected cash flow by due date or discount date; vendor reports, including or excluding packing slips; cash disbursement reports; and bank account reconciliation.

Accounts Payable is written in C language and uses the public domain Ingres data base written by the University of California at Berkeley. Binary and source codes are available for UNIX* Berkeley 4.1 and 4.2. The source code is available for all others.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.

Price: $1,500 – $10,000
Product Support Available: Yes
Contact: Fred Potthoff  
(612) 941–9470  
FARGO ELECTRONIC SERVICES, INC.  
7150 Shady Oak Road  
Eden Prairie, MN 55344

Accounts Payable  

Operating System: VMS  
Keywords: • Accounts payable • Cost accounting

Accounts Payable is a multicompany/client payables system that interfaces with Franklen's CPA–11, General Ledger/Financial Reporting System. The system will function on either a cash or an accrual basis. Normal accounts payable capabilities, such as due-date control, cash requirements, check writing, and disbursement and distribution journals are provided. Because of the system's CPA–11 interface, Accounts Payable system incorporates the flexibility for job cost and cost center accounting.

A version of this product is available for the PDP–11 computer.  

Price: $1,500 – $3,000  
Product Support Available: Yes  
Contact: Frank J. O'Kane, President  
(213) 441–3123  
FRANKLEN COMPUTER SYSTEMS, INC.  
715 Fremont Avenue  
South Pasadena, CA 91030

Accounts Payable  

Operating System: VMS  
Keywords: • Accounts payable • Office systems • Report writer  
• Security

Accounts Payable is designed to operate as a voucher system to accumulate information on vendor invoices and other payable obligations. Voucher entries generate a unique voucher number assigned for audit and control purposes.

The system provides:  
• Payment selection key due date and individual invoices on individual vendor  
• Allowance for partial payments
14 Accounting

- Handling of prepayments for checks already paid as well as prepay checks scheduled to be paid
- Unlimited general ledger expense and job costing distribution per voucher
- Inquiry into MTD or YTD purchases, payments, and current balance
- Creation of accounts payable and cash disbursement journal entries
- Access to any journal of any month for current fiscal or prior year

The reporting features are vendor listing; mailing labels; voucher distribution; voucher history; precheck pay register; final port check writing register; check printing; journal listing for accounts payable, cash disbursement, or job costing; age analysis; and an open-invoice report.

Accounts Payable allows multiple users and provides password security.

A version of this product is available for the PDP-11 computer.

Price: $2,500 – $3,000
Product Support Available: Yes
Contact: Linda Wingfield, Software Product Manager
(919) 766–0571
RESOURCE SYSTEMS CORP.
P.O. Box 1546
Clemmons, NC 27012

Accounts Payable

Operating System: MS/DOS, PICK, UNIX, XENIX
Keywords: • Accounts payable • Printing • Report writer

This program provides the following:
- Entry, edit, and posting of manually written checks.
- Data-input accuracy — transaction entries may be edited and corrected prior to posting.
- Transaction entry screens match the format of the original documents.
- Audit trails — posting programs automatically produces journals.
- Vendor analysis reports and vendor file maintenance facilities.
- Alphabetic and numeric vendor listings.
- Aging report by all or selected vendors or A/P account.
- Screen display that allows inquiry into open items by vendor.
- Payables voucher selection for payment.
- Checks printed by A/P account and cash account number.
- Cash requirements report printed by vendor or A/P account number.
- Built-in check reconciliation capabilities.
- Distribution to the Job Cost and General Ledger systems.
• Comprehensive transaction entry capabilities — vendor invoices, debit and credit memos, adjustments, and manual checks.

A version of this product is available for the PDP–11 computer.

Price: $600
Product Support Available: Yes
Contact: Steve Thomas
(713) 270–5218 or (800) 231–0062
THE SOFTWARE EXPRESS, INC.
10103 Fondren, Suite 220
Houston, TX 77096

Accounts Payable (Canadian)

Operating System: VMS
Keywords: • Accounts payable • Data dictionary
• Query facilities

The Accounts Payable System, designed to work in conjunction with the Computer Management System, is table driven, with all files processed by data dictionaries. The system can be adapted to cover a wide range of requirements and provides a base of programs and file designs that can be used to meet the needs of any Canadian organization. The system may be used as is. However, it is assumed that the input and/or the output reports will be modified to meet the needs or the standards of the user.

Accounts Payable maintains the supplier master in both numeric and alphabetic sequence for inquiries. Image records of all checks and invoices are kept on line and are cross-referenced, so that inquiries are allowed by check date or number and invoice date or number. The system allows invoices to be recalled for payment each month in situations that require this feature.

Accounts Payable will automatically purge data by date as required — annually or semiannually. The automatic transfer of accounting data to other systems — for example, G/L — must be added into the system to meet the custom requirements of each user.

A version of this product is available for the PDP–11 computer.

Price: $2,500
Product Support Available: Yes
Contact: Bill Hay
(204) 888–5253 or 832–3680
BILL HAY & CO.
1164 Crestview Park Drive
Winnipeg, Manitoba R2Y 0W6
Canada
Accounts Payable System

Operating System: VMS
Keywords: • Accounts payable • Banking • Report writer
• Security

The Accounts Payable System, which can be used in all types of industry, is accessed through the communication terminal where data is input and verified. No updates can take place until all data input is balanced and verified.

The system includes:
• Data input through a communication terminal located in the client’s office
• Verification of all input data before acceptance
• Checks produced under the client’s control through the communication terminal
• Partial payment of invoice
• Distribution of invoice by account and General Ledger System
• Summary of general ledger entries created by the Accounts Payable System and accepted by the General Ledger System
• Customized reports, including aged open invoices, summary by vendor, and check register, which can be interfaced directly to the bank’s Automated Account Reconciliation System

A version of this product is available for the PDP–11 computer.

Price: $6,000 – $12,000
Product Support Available: Yes
Contact: Henry C. Gaylor
(412) 355–8523
PITTSBURGH NATIONAL BANK
Fifth Avenue and Wood Street
Pittsburgh, PA 15222

Accounts Receivable

Operating System: VMS
Keywords: • Accounts receivable • Query facilities

Accounts Receivable is an on-line interactive system with conversational operator prompting. The program provides complete audit trails; detail or summary trial balances for selective aging periods; statements for one, all, or selected ranges of customers; and on-line inquiry to customer and company information. Accounts Receivable can be used in a stand-alone environment or can interface automatically with the standard order processing system.

A version of this product is available for the PDP–11 computer.

Price: $2,000 – $9,800
Product Support Available: Yes
**Accounts Receivable**

**Operating System:** VMS  
**Keywords:** • Accounts receivable • Billing • File management

The open-item Accounts Receivable (A/R) system is comprised of a series of interactive programs designed for the control of customer invoices and payments. The utilities menu allows a high-level operator to configure the A/R to your needs. The file sizes can be specified, allowing an operator to increase or to decrease the size of those files. The system’s speed and efficiency can be improved by a reorganization of those files. Terms codes, foreign currencies, G/L numbers, and audit trails serialization can be controlled via A/R utilities programs.

A version of this product is available for the PDP–11 computer.

**Price:** $2,000 – $10,000  
**Product Support Available:** Yes

**Contact:** Tom Muskiluke  
(519) 893–4200  
DIGITAL BUSINESS COMPUTERS  
133 Manitou Drive  
Kitchener, Ontario N2C 1L4  
Canada

**Accounts Receivable**

**Operating System:** VMS  
**Keywords:** • Accounts receivable • Cost accounting

Accounts Receivable is a multicompany receivable system that interfaces to Franklen’s CPA–11, General Ledger/Financial Reporting System. The Accounts Receivable system provides for the normal accounts receivable functions and incorporates such features as optional customer accounts receivable history, finance charges, salesman’s commissions, sales analysis by customer, and product code, as well as recurring charges. The system’s CPA–11 interface allows the development of detailed revenue analysis by job or cost center.

A version of this product is available for the PDP–11 computer.

**Price:** $1,500 – $3,000  
**Product Support Available:** Yes
Accounts Receivable

Operating System: MS/DOS, PICK, UNIX, XENIX
Keywords: • Accounts receivable • Billing • Credit
• Report writer

The system provides the following:
• Comprehensive transactions entry capabilities — sales, cash receipts, credit memos, debit memos, adjustments, and finance charges.
• Accommodation of open-item and balance-forward accounts simultaneously.
• Production of detail or summary aged trial balances with automatic or operator-specified cut-off dates. Customer ranges may be specified.
• On-demand statements runs.
• Open credits held on accounts and applied as desired.
• Sales reports — monthly sales summary, monthly cash summary, and commissions due.
• On-line inquiry of customer’s account.
• Data-input accuracy — transaction entries may be edited and corrected prior to posting.
• Transaction entry screens that match the format of original documents.
• Audit trails — posting programs automatically produce journals.
• Complete customer and salesperson file maintenance facilities, including addition, deletion, and modification capabilities.
• Alphabetic and numeric customer listing.
• Automatic calculation and posting of finance charges.
• Interface to invoicing system for automatic input of sales entry information.

A version of this product is available for the PDP–11 computer.

Price: $600
Product Support Available: Yes
Contact: Steve Thomas
(713) 270–5218 or (800) 231–0062
THE SOFTWARE EXPRESS, INC.
10103 Fondren, Suite 220
Houston, TX 77096
Accounts Receivable System

Operating System: VMS
Keywords: • Accounts receivable • General ledger
        • Report writer

This full-operation accounts receivable system accommodates many different business environments. A series of highly flexible, on-line, interactive, and multiprocessing programs provide control of receipts entry, aged trial balance, statements, audit trail, and general ledger accounts receivable distribution.

Key management reports available on demand through inquiry include manual invoice register, cash receipt journal, audit trail, checks report, aged trial balance, statements, aged cash forecasts, monthly general ledger distribution, customer over-credit limit, list, and purge accounts receivable. The software continually distributes data to general ledger accounts with an audit trail and is automatically updated. Invoices are automatically aged into future due, current due, and four aging periods. This accounts receivable package is compatible with BAKCO's accounting control and warehouse distribution systems.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Jerry Baker, President
        (312) 956–1053
        BAKCO DATA, INC.
        85 W. Algonquin Road, Suite 190
        Arlington Heights, IL 60005

Accounts Receivable System

Operating System: VMS
Keywords: • Accounts receivable • Banking • Billing
        • Report writer

The system provides data input through a communication terminal located in the client's office and verification of all input data before updating the Billing Master File.

This system can be used by all types of industry and features:
• Verification of all input data before updating the receivables master file
• Aged Trial Balance Report sorted by customer and open invoices and displays 30-, 60-, and 90-day delinquent accounts
• Open Item Status Report sorted by customer and open invoices for a specified time period and includes more detail than Aged Trial Balance

A version of this product is available for the PDP–11 computer.
Accounting

Price: $6,000 – $12,000
Product Support Available: Yes
Contact: Henry C. Gaylor
(412) 355-8523
PITTSBURGH NATIONAL BANK
Fifth Avenue and Wood Street
Pittsburgh, PA 15222

ACCPAY–IMPRS Accounts Payable A/P System

Operating System: VMS
Keywords: • Accounts payable • General ledger
          • Query facilities

This total accounts payable system with complete interface to the general ledger has the following features:
• Data verification and information checks on entry
• Update routines with audit trail
• Automatic payment of monthly vouchers
• Register or invoices on the system
• Checks produced on a due-date basis as well as on a vendor-number basis
• Complete audit trails
• Credit memos as well as vouchers handled
• Automatic entry of “repeat” data during entering routine
• Automatic file backup before updates for recovery

A version of this product is available for the PDP–11 computer.

Price: $3,500
Product Support Available: Yes
Contact: Elvin E. Smith or Forrest E. Weddle
(913) 782-8544
RUF CORP.
1533 E. Spruce
Olathe, KS 66061

ACCREC–IMPRS Accounts Receivable A/R System

Operating System: VMS
Keywords: • Accounts receivable • Financial analysis
          • Query facilities • Report writer

This total accounts receivable system with complete A/R management reporting uses an open-item concept and does the following:
• Records all billable and nonbillable entries and up to four types of cash entries
• Allows for standard/optional $$ rates, optional service charge calculations by client, personalized client A/R statement messages, easy interactive reporting of all files, balance-forward and open-item account handling, and instant access to client records
• Provides complete on-line inquiring/processing
• Performs extensive on-line editing and balancing

A version of this product is available for the PDP–11 computer.

Price: $1,500
Product Support Available: Yes
Contact: Elvin E. Smith or Forrest E. Weddle
(913) 782–8544
RUF CORP.
1533 E. Spruce
Olathe, KS 66061

A/D (Fixed Assets and Depreciation)

Operating System: VMS
Keywords: • Cost accounting • Financial planning

Fixed Assets and Depreciation handles the basic accounting functions for asset acquisition, asset retirement, and the periodic calculation of depreciation. The new Accelerated Cost Recovery System (ACRS) for depreciation of fixed assets has been fully integrated into our Fixed Assets and Depreciation package and includes the new depreciation schedules, the new expensing regulations, and the new provisions for investment tax credit and recapture. In addition to handling the new ACRS depreciation methods, all other standard depreciation methods are implemented for assets put in service before 1981.

The user can simultaneously record and track two sets of depreciation figures: one for tax purposes and one for financial statement purposes. The user can obtain numerous reports on request, which provide a breakdown of assets from many points of view, with lesser or greater detail.

An “extra” of the package is the ability to print an amortization schedule for any loan, given the principal amount, interest rate, and term in years. The equal monthly or yearly payment is automatically calculated, and cumulative figures for interest paid and principal paid are shown, period by period, as well as the remaining principal in each period.

In addition, the program:
• Provides the user with the maximum tax benefits from depreciable assets
• Allows maintenance to the asset and general ledger code files
• Handles up to 13 accounting periods a year
Accounts

- Allows entry and editing of asset acquisitions, changes, and retirements
- Allows depreciation by nine methods and flexible handling of bonus depreciation and expensed amounts
- Allows tracking and maintenance of investment tax credit and provides for automatic recapture on retirement
- Projects depreciation amounts and the life of any asset, for all depreciation methods
- May be automatically interfaced to MCBA's general ledger package
- Provides the capability to separate assets from a previously grouped asset
- Includes the asset file printout; asset acquisition, fixed asset, and asset retirements registers; first-year expensed amounts, general ledger depreciation, investment tax credit, depreciation method change, asset change history, and A/D distribution to G/L reports; asset depreciation expense journal; projected depreciation summary; and amortization schedules

A version of this product is available for the PDP-11 computer.

**Price:** $2,000 – $3,000

**Product Support Available:** Yes

**Contact:** Sales Representative
(818) 957–2900
MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

**ADM (Accounting Data Management)**

**Operating System:** VMS

**Keywords:**
- Data base management
- Data collection
- General ledger
- Report writer

The ADM module, responsible for data collection, management, and consolidation, is an interactive accounting system that provides the flexibility of custom accounting and financial reporting without the expense of custom programming. ADM has few preconceptions about an organization's accounting procedures; instead, you conversationally supply ADM with your firm's formats for the chart of accounts, journals, ledgers, and reports. Normal accounting data supplied to ADM becomes a financial information data base that is easily accessible through the use of ADM's inquiry and reporting capabilities.

ADM was designed to provide project reporting and responsibility accounting. The firm's organizational structure defines the reporting hierarchies. Financial executives and divisional managers can monitor the profitability of specific profit centers, departments, projects, divisions, or the company as a whole by setting up the chart of ac-
counts to reflect the reporting requirements. ADM allows the specification of the firm's accounting system rather than forces a firm to modify its accounting practices to conform to an inflexible structure imposed by some other software packages.

ADM is used by operational personnel to record transactions quickly and accurately; financial managers to generate reports based on journals, ledgers and subledgers, or balance files; financial planners to generate current month and year-to-date figures for use in budgeting, planning, modeling, and forecasting with the SPREAD Financial Modeling Language; and the auditor in validating the firm's accounting methods, internal controls, and the contents of the accounting records.

ADM is a part of the COUNT® Integrated Financial System.

**Price:** $16,000

**Product Support Available:** Yes

**Contact:** Jenny Wiebler  
(703) 790–1700  
L&L SOFTWARE, INC.  
8200 Greensboro Drive, Suite 200  
McLean, VA 22102

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**Administrator 4/11**

**Operating System:** UNIX, VMS

**Keywords:** • Accounts payable  
• Accounts receivable  
• General ledger  
• Payroll

Administrator 4/11 is an integrated accounting and stock control system, suitable for any business. The system, also available in modular form, includes accounts receivable, accounts payable, general ledger, and payroll packages.

A version of this product is available for the PDP–11 computer.

**Price:** $800 – $14,000

**Product Support Available:** Yes

**Contact:** H. B. H. Reporter, Managing Director  
021 352 0011  
FOURTH DIMENSION PRODUCTS LTD.  
Rykniild House, Burnett Road  
Sutton C'Field, West Midlands B74 3EL  
United Kingdom

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**AIS Accounts Payable/Check Reconciliation System**

**Operating System:** VMS

**Keywords:** • Accounts payable  
• Billing  
• Credit  
• Taxes
This program handles on-line invoice entry, payment authorization, and check printing; 8 due dates and 999 distributors per invoice; automatic discount optimization and payment scheduling; multiple banks; full check reconciliation; handwritten checks; prepayment prooflist; vendor history; 4-way match and price validation with purchase order; and tax and 1099 reporting.

A job costing module is optional.

**Price:** $6,000 – $30,000

**Product Support Available:** Yes

**Contact:** Marketing Department
(415) 444–5954
ARGONAUT INFORMATION SYSTEMS, INC.
383 Grand Avenue
Oakland, CA 94610

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**AIS Accounts Receivable/Sales Analysis System**

**Operating System:** VMS

**Keywords:** • Accounts receivable  • Credit  • Financial analysis
• Report writer

This program provides on-line cash entry and posting, lockbox entry of cash, a high-speed cash entry option, automatic cash-posting algorithms, projected cash requirements, disputed items, automated collection follow-up, credit analysis, automatic service/late-charge calculation, statements, write-offs, bad debts, collection agencies, aged trial balance with seven aging categories, cash and invoice balancing, selective dunning, and 999 distributions per invoice.

**Price:** $6,000 – $30,000

**Product Support Available:** Yes

**Contact:** Marketing Department
(415) 444–5954
ARGONAUT INFORMATION SYSTEMS, INC.
383 Grand Avenue
Oakland, CA 94610

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**AIS General Ledger/Budgeting System**

**Operating System:** VMS

**Keywords:** • Cost accounting  • General ledger  • Report writer

This program provides on-line entry and posting; 99 years of actual history; 999 budgets per year; one billion accounts; multiple company hierarchy; 14 periods; automatic earnings calculation and posting; prior, current, and future period journal entries; recurring journal entries; foreign currency; accruals and automatic reversals; allocations; consolidations; and flexible budgeting. The software includes financial and audit report writers.
A job costing module is optional.

**Price:** $6,000 – $30,000

**Product Support Available:** Yes

**Contact:** Marketing Department  
(415) 444–5954  
ARGONAUT INFORMATION SYSTEMS, INC.  
383 Grand Avenue  
Oakland, CA 94610

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**AIS Inventory Accounting System**

**Operating System:** VMS  
**Keywords:** • Inventory • Warehousing

The AIS stand-alone or integrated Inventory Accounting System provides:

• On-line issues/receipts and stock availability  
• Real-time update from sales and purchase order  
• Master, branch, and lot (serial number) data bases  
• Standard and alternate part numbers  
• Thirteen periods historical and forecasted usage  
• Multiple company/multiple warehouse  
• Bin locator and optimization  
• Alternate shipping locations  
• Support for LIFO, FIFO, average, and standard costing  
• Physical inventory that does not interrupt on-line processing  
• Multiple safety stock and reorder options  
• Report writer  
• Twelve standard inquiries and reports

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Marketing Department  
(415) 444–5954  
ARGONAUT INFORMATION SYSTEMS, INC.  
383 Grand Avenue  
Oakland, CA 94610

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**AIS Payroll IV System**

**Operating System:** VMS  
**Keywords:** • Payroll • Personnel • Report writer • Security

This program has the following features: on-line timecard entry and update, employee setup and change, and prepayment proof; unlimited pay and deduction calculation types; extensive security; U.S., Canadian, and local tax tables and reporting; ACH processing; multiple banks; handwritten checks; flexible check format; deposit advice; 50 user-defined fields; midperiod pay and deduction changes; job costing; and report writer.
Price: $6,000 – $30,000
Product Support Available: Yes
Contact: Marketing Department
(415) 444–5954
ARGONAUT INFORMATION SYSTEMS, INC.
383 Grand Avenue
Oakland, CA 94610

AIS Purchase Order Processing System

Operating System: VMS
Keywords: • Inventory • Materials handling • Order entry
• Purchasing

The AIS Purchase Order Processing System provides:
• Automatic PO creation from requisition
• On-line receiver and invoice creation and matching from PO
• On-line printing of PO and update of accounts payable
• Four-way on-line match
• Requisition, blanket PO, and inspection
• Optional inventory module
• Multiple company/multiple warehouse
• Expense allocations by PO line item
• Encumbrance accounting
• Established vendors, one-time vendors, and vendor analysis
• Change history up to 99 times per PO; reconstruct PO

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Marketing Department
(415) 444–5954
ARGONAUT INFORMATION SYSTEMS
383 Grand Avenue
Oakland, CA 94583

AMFACS

Operating System: VMS
Keywords: • Financial analysis • General ledger • Security

This interactive financial management system features user-defined accounting periods, journals, financial reports, and an on-line maintenance capability. Security is ensured with password protection for all key modules. Reporting capabilities include balance sheet, trial balance, general ledger, income statement, footnotes to financial statements, and a statement of retained earnings.

A version of this product is available for the PDP–11 computer.
Price: $3,000 – $12,500
Product Support Available: Yes
Contact: Marketing Department
 (502) 491-9820 or 1–800–626–6268
AMCOR COMPUTER CORP.
1900 Plantside Drive
Louisville, KY 40299

AP–11 (Accounts Payable)

Operating System: VMS
Keywords: • Accounts payable • Billing • Financial analysis • Personal computing

The AP–11 system provides the user with a highly flexible method of posting A/P charges and making cash disbursements. All posting of invoices is done with an interactive screen form, designed for posting ease. Recurring charges can be stored for group posting each month. Any number of miscellaneous vendors may be used during posting. Multiple A/P control accounts can be used during each session, allowing multicompany usage. G/L account distribution is accomplished via a scrolling region, allowing up to 999 distributions for each invoice. Invoice payments can be made either specifically for each vendor or in group payment mode for ranges of vendors. During the payment specifications, invoices may be held indefinitely, partially paid, discounted (in addition to the original discount terms), or paid in a balance-forward method. Unapplied payments may also be made to vendor accounts, allowing prepayments, CODs, and so on. Check printing is table-driven, allowing users to design their own check forms. Allowances are made for manual check entry. All reporting is available for an unlimited date range, on demand by the user. Aging reports are available that detail the invoices that are current, past due, or not yet due. Cash requirement reporting is also available as a management tool, allowing specification of any four dates for use as due dates.

The AP–11 system interfaces to the GL–11 system for automatic posting of A/P information to the G/L. AP–11 also interfaces to the job cost accounts system (CN–11) for automatic distribution of accounts payable invoices into specified projects and cost centers.

A version of this product is available for the PDP–11 computer.

Price: $3,000 – $4,000
Product Support Available: Yes
Contact: Larry Landusky, Marketing
 (806) 792–3785
COMPU–SHARE, INC.
3824 50th Street
Lubbock, TX 79413
A/P (Accounts Payable)

Operating System: VMS
Keywords: • Accounts payable • Data entry
• Financial analysis • Report writer

The A/P module is an interactive payables system that manages cash disbursements by recording liabilities on vouchers and requiring authorization before checks can be printed. A/P, used to record payables, write checks, and produce a variety of reports, provides immediate access to the information necessary for effective financial control of an organization.

Using an automated system to control disbursements enables you to process vouchers quickly and efficiently. A/P simplifies invoice entry by allowing constant values to be supplied for all vouchers entered during a single session. Another timesaving feature is the ability to "type ahead" so that an entire voucher may be entered on one line or a series of reports produced while you work on something else. This on-line tool speeds up the process of entering information and receiving feedback.

A/P maintains comprehensive cash requirements information to aid in management of available funds. A report showing the cash requirements for any given period enables better cash flow analysis and planning. The listing of open items provided in the Aged Voucher Report facilitates full control over scheduling payments.

The A/P system allows for complete analysis of information about payables. The records of payments to a particular vendor may be examined, the distribution of expenses to certain accounts or departments may be tracked, and a listing of duplicate invoices is available to help prevent overpayment. A/P also provides direct access to historical files so that data from previous periods or years may be analyzed.

A/P is easy for anyone from clerical staff to financial managers to use. The system uses self-documenting English-language commands and provides an on-line help capability. Completely interactive, A/P supplies useful and informative error messages and comprehensive editing for data integrity. A/P’s flexibility makes it as easy to write a single check as it is to run a large batch of checks.

A/P is a part of the COUNT® Integrated Financial System.

Price: $10,000
Product Support Available: Yes
Contact: Jenny Wiebler
(703) 790-1700
L&L SOFTWARE, INC.
8200 Greensboro Drive, Suite 200
McLean, VA 22102
A/P (Accounts Payable)

Operating System: VMS

Keywords: • Accounts payable • Report writer

This accrual accounts payable package includes the following capabilities:

• Allows maintenance of the vendor file and prints the vendor file printout and alphabetical vendor list
• Allows entry and editing of new payables, adjustments, credits, and prepaids and prints the accounts payable voucher register
• Prints the accounts payable aging, the vendor analysis and the vendor account inquiry, and the cash requirements reports
• Allows flexible payment preparation, including partial payments, and prints the pre-check-writing report
• Prints accounts payable checks and the accounts payable check register
• Prints the accounts payable/general ledger distribution report and accounts payable/general ledger cross-reference by vendor
• Allows check reconciliation and prints the check reconciliation report
• Prints federal 1099 forms for designated vendors
• Can be automatically interfaced to MCBA’s general ledger package, as well as to MCBA’s job costing, standard product costing, and purchase order/receiving packages
• Allows full printer spooling capability
• Supports seven terminal types and multiple companies
• Provides a security system

A version of this product is available for the PDP–11 computer.

Price: $2,000 – $3,000

Product Support Available: Yes

Contact: Sales Representative
(818) 957–2900
MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

AP/CM (Accounts Payable/Cash Management System)

Operating System: VMS

Keywords: • Accounts payable • Financial management • General ledger • Report writer

AP/CM is generalized for many different business environments. A series of highly flexible on-line interactive multiprocessing programs provide easy control of vendor master file maintenance, batch entry of vendor invoices, cash requirements projection, check printing, and
general ledger accounts payable distribution. Reports may be printed on a detailed, summary, or exception basis. With on-line editing and immediate validation of data, AP/CM handles any payment terms. When vendor invoices are entered, payment terms are displayed, and the discount is automatically calculated. Invoice due date is automatically assigned to the invoice, based on payment terms, but may easily be changed. This program is compatible with BAKCO’s Financial Control and Warehouse Distribution systems.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:**
Jerry Baker, President
(312) 956–1053

BAKCO DATA, INC.
85 W. Algonquin Road, Suite 190
Arlington Heights, IL 60005

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**APF (Accounts Payable Facility)**

**Operating System:** VMS

**Keywords:**
- Accounts payable
- Data base management
- Data entry
- Diagnostics

The Accounts Payable Facility software package controls the normal accounts payable procedures. APF includes:

- Data entry for vendor file and for payable transactions, including credits
- Journalization of all posting and disbursing activity
- Vendor account and outstanding-item analysis
- Cash requirement report
- Selectable cash disbursement (check writing)
- Multiple check formats
- Check-voiding procedures
- Check register journal
- Data base inquiry and maintenance
- Error checking and correction

If the Accounts Payable Facility is used with the General Ledger Facility, automatic posting of payable transactions to the general ledger is also available.

The Accounts Payable package is designed for high efficiency and ease of use to meet the total interactive computing needs of the small business, corporate division, or institution. APF ensures the integrity of accounting procedures and security of data. All programs have individual password protection, which limits their use to authorized personnel.

A version of this product is available for the PDP–11 computer.
Price: $4,300
Product Support Available: Yes
Contact: Muriel King
(801) 224–5306
CLYDE DIGITAL SYSTEMS, INC.
3707 N. Canyon Road, Suite 3–E
Provo, UT 84604

APS (Accounts Payable System)

Operating System: VMS
Keywords: • Accounts payable • Data entry • Report writer

The White Hat Accounts Payable System is a comprehensive interactive system. All current vendor, as well as voucher and check payment information, is available through direct, on-line queries. Upon vouchering, invoices can be charged with multiple expense distributions. APS accommodates a 24-character alphanumeric distribution code and automatically consolidates and reports the distribution by code and vendor.

The flexibility of the system is demonstrated in the functions it performs. Cash disbursement prelists of scheduled vendor payments are generated to allow management to review and improve payment, hold payment, or extend payment dates. Checks are automatically generated and are designed for immediate mailing in window envelopes. Voucher stubs are attached as supporting detail to indicate which invoices are being paid. Payment runs can be made on a monthly, semimonthly, weekly, or as-needed basis. In addition, APS supports the use of manual (prepaid) checks with the subsequent terminal entry of all pertinent information. Screen-formatted entry programs foster user acceptance and transaction reliability. The system is fully integrated via an automatic interface to the White Hat General Ledger System, ensuring prompt and accurate accounting period closes. A comprehensive set of reports is produced: Voucher Register, Vendor Master List, Cash Requirement Reports, Check Registers, Transaction Proof Listings, Check Reconciliation Report, Outstanding Check Journals, Paid Voucher Lists, Detailed Expense Distributions, and a 1099 Vendor Summary.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: John M. Montgomery
(617) 933–3780
WHITE HAT SYSTEMS, INC.
331 Montvale Avenue
Woburn, MA 01801
AR–11 (Accounts Receivable)

Operating System: VMS
Keywords: • Accounts receivable • Personal computing
          • Sales and marketing • Taxes

The AR–11 system provides the user with an interactive method of posting customer charges and payments, obtaining historical reports and aging information, and creating customer statements. Each customer may have 99 shipping addresses, and any number of customers may be billed to another customer, allowing branch, franchise, or family billing. All posting of charges and receipts is done on an interactive form. Cash receipts may be applied in a balance-forward manner or on an open-item basis selectively for each invoice paid. Unapplied credits may be posted to customer accounts until the correct invoice can be matched and paid. Customer statements can also be in either balance-forward or open-item form. Virtually any statement format can be designed by the user with parameter files. Two methods of posting recurring customer charges are available. All reporting for management on customer account analysis is also available for any date range, with aging dates defined by the user. Sales analysis is available for the system as a whole or on a department basis. Commission reporting and calculation can be defined for the system as a whole or for each salesperson. Multiple salespersons can be combined to form a sales entity that shares in the total commission paid. The commission can be determined on either the sales or the receipts. Tax reporting for sales tax is also provided by the system. Multiple taxing entities can be accommodated.

The AR–11 system interfaces to GL–11 for direct posting of A/R entries to the G/L. The OE–11 system also interfaces to AR–11, providing automated posting of customer orders to their accounts receivable account.

A version of this product is available for the PDP–11 computer.

Price: $3,000 – $4,000
Product Support Available: Yes
Contact: Larry Landusky, Marketing
         (806) 792–3785
         COMPU-SHARE, INC.
         3824 50th Street
         Lubbock, TX 79413

A/R (Accounts Receivable)

Operating System: VMS
Keywords: • Accounts receivable • Report writer

This open and/or balance-forward accounts receivable package includes the following capabilities:
• Allows maintenance of the salesperson, customer master, and A/R valid G/L account files and prints the customer master file printout and the alphabetical customer list
• Allows entry and editing of sales, credit and debit memos, and cash receipts and prints the sales and cash receipts journals
• Allows inquiry into customer accounts through the CRT
• Prints the accounts receivable aging, the A/R-to-G/L distribution, and the commissions-due reports
• Allows automatic or manual calculation of finance charges and prints the finance charges report
• Prints the sales analysis by customer, customer type, salesperson, territory, and sectional center, as well as statements
• Can be interfaced into MCBA's general ledger and customer order processing packages
• Provides a security system and supports multiple companies

A version of this product is available for the PDP–11 computer.

Price:  $2,000 – $3,000
Product Support Available:  Yes
Contact:  Sales Representative
          (818) 957–2900
          MCBA, INC.
          2441 Honolulu Avenue
          Montrose, CA 91020

A/R, A/P (Accounts Receivable, Accounts Payable)

Operating System:  VMS
Keywords:  • Accounts payable  • Accounts receivable
            • Report writer  • Simulation

The Accounts Receivable system, which uses a detailed open-item-processing technique, maintains a complete breakdown of the invoices affected by any payment and a list of all payments applied to a given invoice. Other features include:

• Separate aged A/R listings of different revenue groups — for example, for sales and rental invoices. This feature is invaluable if groups are financed from different sources.
• On-line displays of a client's account, including all open-item transactions.
• An interactive routine for payments entry and allocation, thereby minimizing keystrokes and maximizing accuracy.
• Monthly statements for a set of clients (rather than for all clients).
• User-friendly validation reports; the system automatically includes the client's name and the G/L description.
• Automatic posting to the G/L.

The Accounts Payable system features:
• Multicurrency processing.
• Invoices that may be paid according to a regular cycle run or by specific invoice number. A simulation run precedes the actual check generation to allow careful analysis of the impact on cash flow.
• Support for manual checks and discounts.
• On-line display of vendor information, including all open items.
• Aged A/P listings.

Price: $12,000
Product Support Available: Yes
Contact: Robert Brown
(902) 429-3175
Dymaxion Research Ltd.
Box 1053, Armdale Station
Halifax, Nova Scotia B3L 4L5
Canada

ARF (Accounts Receivable Facility)

Operating System: VMS
Keywords: • Accounts receivable • Data base management
          • Diagnostics

The Accounts Receivable Facility is a software package that controls the normal accounts receivable procedures. ARF includes:
• Data entry for customer file, receivable transactions (including credits), and cash receipts
• Journalization of all posting and receipts activity
• Customer account analysis
• Aged trial balance report
• Customer invoices
• Month-end customer statements
• Customer transaction history reports
• Data base inquiry and maintenance
• Error checking and correction

A version of this product is available for the PDP-11 computer.

Price: $4,300
Product Support Available: Yes
Contact: Muriel King
(801) 224-5306
Clyde Digital Systems, Inc.
3707 N. Canyon Road, Suite 3-E
Provo, UT 84604
ARS (Accounts Receivable System)

**Operating System:** VMS

**Keywords:** · Accounts receivable · Order entry

ARS is a comprehensive interactive accounts receivable system capable of accounting for open-item and balance-forward methods of cash application. All current customer, credit, and invoice information is available through on-line queries from multiple terminals. Transactions are journalized for control purposes, providing a complete and comprehensive audit trail. Additionally, the system tracks and reports by general ledger distribution and organization code accounts all accounting data entering the system. The ARS user can apply and account for various types of postings, including cash, debit memos, and unapplied cash. Credit memo invoices may be entered and applied at a later date. Finance charge invoices for selected customers may also be generated. The ARS system contains an extensive credit management subsystem. Credit limits and risk codes may be assigned to each customer. The system is fully integrated via a posting process with the White Hat Order Processing and General Ledger systems, ensuring prompt and accurate accounting period closes. A comprehensive set of reports is available: Invoice Register, Posting Journals, Summary and Detailed Aged Trial Balances, Delinquent Register, Customer Master List, Sales Distribution Report, Input Proof Listing, Cash Application Journal, Cash Deposit Recap, and a Commission Register.

A version of this product is available for the PDP-11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** John M. Montgomery
(617) 933–3780
WHITE HAT SYSTEMS, INC.
331 Montvale Avenue
Woburn, MA 01801

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**Business Management System**

**Operating System:** VMS

**Keywords:** · Inventory · Order entry · Payroll · Purchasing

The Business Management System is fully documented to provide an ongoing reference source as well as a tool for training new employees. The versatility and adaptability of the software applications provide a user-friendly environment.

The interactive programs are in a menu format for ease of operator use. Error messages throughout the system prompt the operator for a correct response when invalid entries are made, thereby improving accuracy.
Accounting

The Business Management System software provides an on-line information system that gives management the tools to make timely and sound decisions based on accurate information. The software puts the power of the computer in the hands of the decision makers.

The structured design of the SDC Business Management System provides flexibility and control for the user. The application software packages are totally integrated and designed to work independently or in close interaction with one another. By choosing only the applications required, users may tailor their systems to their requirements. Other applications may be added at any time without disruption to the working system.

The system provides order processing, inventory control and purchasing, accounts receivable, sales analysis, accounts payable, general ledger and financial statements, payroll, and customer services inquiry.

Price: $2,000 – $12,000
Product Support Available: No
Contact: Frank Ciacci
(416) 475–5155
SYSTEM DYNAMICS CORP.
151 Esna Park Drive
Markham, Ontario L3R 3B1
Canada

C–CALC

Operating System: ULTRIX, UNIX, VMS
Keywords: • Report writer • Scheduling • Simulation • Spreadsheets

C–CALC is a menu-driven multidimensional forecasting, planning, data analysis, and modeling package with an interactive help facility and an on-line training procedure. Menus and single-level English-like editor commands allow even the inexperienced user to jump right in. For the advanced C–CALC user, a variety of optional shortcuts are included, allowing the user to bypass menus and prompts if desired.

C–CALC's sophisticated data importing/exporting facility and worksheet consolidation capabilities make it ideal for use in computer networks and workstations. Entire worksheets or raw data can easily be transferred between different computer systems. In addition, worksheet data is transportable between C–CALC and most other applications programs: graphics, word processing systems, general ledger, and so forth.

In addition to the standard spreadsheet features, C–CALC offers a 736-by-600-matrix worksheet area, boardroom-quality report genera-
tion (bolding, underlining, and so on) via stored print menus, alpha and numeric sorting, accessibility of data on other worksheets, consolidation of like or unlike worksheets or portions of worksheets, label and title identification, user-defined procedures for automating repetitive operations, conditional formatting, if-then-else capabilities, and a wide range of built-in mathematical, statistical, financial, and logical functions.

C–CALC's expanded user-defined procedures allow for broader applications, allowing C–CALC to become a programming language in itself. Training, data entry routines, and program interfaces can easily be tailored to a multiuse environment around the needs of individual users.

A version of this product is available for the PDP–11 computer.

**Price:**  Available upon request  
**Product Support Available:**  Yes  
**Contact:**  Ron Enos  
(206) 822–2252  
DSD CORP.  
10420 N.E. 37th Circle, Suite A  
Kirkland, WA 98033

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**Chronicle**

**Operating System:**  ULTRIX, UNITY, UNIX, VMS  
**Keywords:**  • Accounts payable  
• Billing  
• Distribution  
• Financial management

This family of advanced business applications software takes full advantage of advanced computer architecture and is particularly suited to the new generation of 16- and 32-bit microprocessor systems.

Chronicle may be run on almost any machine using the UNIX* system and is portable to any of the major relational data bases. Because it is built on a relational data base model, Chronicle incorporates the full power of modern data base technology, extracting the information you want, in the form you need it, when you want it.

The first phase of Chronicle is an accounting system incorporating accounts payable, accounts receivable, and general ledger. The second phase encompasses the requirements of the distribution industry and includes inventory, invoicing, purchase order processing, sales analysis, and sales order processing.

Chronicle's modular design permits customization at various levels to support national and local requirements. That modularity also supports ease of interfacing with other modules and packages. In a subsequent phase, other products will include interfaces to spreadsheet, graphics, and scheduling modules.

*UNIX is a trademark of AT&T Bell Laboratories.
A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Sales Department
(416) 922–1937

HUMAN COMPUTING RESOURCES CORP.
10 St. Mary Street
Toronto, Ontario M4Y 1P9
Canada

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**CJ/Accounts Payable™**

**Operating System:** VMS

**Keywords:** • Accounts payable • Data dictionary
• Financial analysis • Report writer

CJ/Accounts Payable is an on-line, menu-driven, data base–oriented accounts payable system providing cash requirements forecasting and disbursements function to achieve increased cash flow management. The system fully accommodates multiple companies, divisions, and departments, as well as single entities. System customization is achieved through user-defined master files, data tables, logic controls, and user-specified report parameters.

Features include efficient tracking of invoices, cash advances, expense statements, credit/debit memos, automatic recurring payments, and purchase orders; override pay dates; on-demand cash requirements forecasting; intercompany distribution; check reconciliation; and automatic data preparation for updating the general ledger.

**Price:** $14,000

**Product Support Available:** Yes

**Contact:** Dave Sloan
(813) 251–1077

COLLIER–JACKSON, INC.
P.O. Box 25546
Tampa, FL 33622

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**CJ/Accounts Receivable™**

**Operating System:** VMS

**Keywords:** • Accounts receivable • Billing • Report writer
• Statistics

CJ/Accounts Receivable is an on-line, menu-driven, data base–oriented invoicing and accounts receivable system providing control of customer account status for sales and collection analysis. The system fully accommodates multiple companies, divisions, and departments,
as well as single entities. System customization is achieved through user-defined master files, data tables, logic controls, and user-specified report parameters.

Features include open-item or balance-forward processing selection for each account; automatic invoices, statements, and age analysis; efficient cash receipts processing; cash receipts forecasting for current and future periods; sales analysis by salesperson, customer, and/or accounting period; and automatic data preparation for updating the general ledger.

Price: $14,000
Product Support Available: Yes
Contact: Laura Vaughan
(813) 251–1077
COLLIER–JACKSON, INC.
P.O. Box 25546
Tampa, FL 33622

CJ/Advanced General Ledger™

Operating System: VMS
Keywords: • Financial analysis • General ledger
• Report writer • Statistics

This on-line, menu-driven, data base–oriented general ledger and reporting system provides complete analysis, control, and forecasting features plus more sophisticated capabilities for intracorporate transactions, true variable budgeting, and highly individualized financial reporting for P&L and Balance Sheet. The system fully accommodates multiple-entity corporate structures. System customization is achieved through user-defined master files, tables, and logic parameters.

Features include an 18-position account number, both dollar and statistical accounts, summarization accounts, 99 years of retained history, multiple budgeting views with “best” and “worst” comparison capabilities, subledgers, corporate reorganizations independent of account structure, allocations, automatic batch interface from subsidiary accounting systems, automatic chart of accounts duplication for new divisions and/or companies, and allocations.

Price: $18,000
Product Support Available: Yes
Contact: Dave Sloan
(813) 251–1077
COLLIER–JACKSON, INC.
P.O. Box 25546
Tampa, FL 33622
CLASS — Education Billing and Receivables System

Operating System: VMS
Keywords: • Accounts receivable • Billing • Education
This student billing and receivables system generates billing and statements. Tuition and fee expenses are calculated automatically, based on specifications defined by the institution. Student billing can be handled by individual bills generated at registration and by group generation of monthly statements.

A version of this product is available for the PDP–11 computer.

Price: $3,500 – $7,000
Product Support Available: Yes
Contact: Elvin E. Smith or Forrest E. Weddle
(913) 782–8544
RUF CORP.
1533 E. Spruce
Olathe, KS 66061

Client Accounting

Operating System: COS–310, CP/M, UNIX, VMS
Keywords: • Financial analysis • General ledger • Payroll • Taxes
The Client Accounting system is user-oriented and CPA-supported. The system provides multiclient processing of general ledger and financial statements for an unlimited variety of client businesses. The key element is the highly flexible report writer for designing financial statements. Also integral is very sophisticated handling of consolidations for multentity clients (departments, regions, divisions, and so on).

The system contains a 12-digit general ledger account number, recurring journal entries, reversing journal, prior-year comparison, yearto-date detail of general ledger transactions, post-facto payroll, and continual updates and enhancements.

A version of this product is available for the PDP–11 computer.

Price: $2,000 – $12,500
Product Support Available: Yes
Contact: Marc Alexander, National Sales Manager
(503) 641–8100
ALPINE DATASYSTEMS, INC.
8043 SW Cirrus Drive
Beaverton, OR 97005
Cornerstone Accounting System

Operating System: VMS
Keywords: • Accounts payable • Accounts receivable
• Data dictionary • Documentation

This integrated system written in structured COBOL has operatorspecific menus to control access to applications that include general ledger, accounts receivable, accounts payable, payroll, order entry/inventory, asset depreciation, project control, joint interest, revenue distribution, and lease management. Operational characteristics of applications are user maintained by control file. A data dictionary–based inquiry and reporting option is also available. Applications are multicompany and come with documentation and source code. Copy libraries are used to standardize code and allow for efficient and consistent modifications.

A version of this product is available for the PDP–11 computer.

Price: $2,000 – $40,000
Product Support Available: Yes
Contact: Merrill Likes
(405) 843–8631
UP–TIME SYSTEMS, INC.
1140 N.W. 63rd, Suite G103
Oklahoma City, OK 73116

COSTRAC

Operating System: VMS
Keywords: • Accounts payable • Accounts receivable • Billing
• Cost accounting

The COSTRAC management information system is an integrated software package that performs payroll, accounts receivable and billing, accounts payable, general ledger, and, optionally, job cost accounting functions. COSTRAC also prints financial statements that can be tailored for your use with no reprogramming.

The principal modules are:

• Payroll calculates pay, deductions, fringe benefits, and payroll accrual. The module also performs labor distribution and makes journal entries automatically. Hourly, salary, commission, and special pays can be accommodated. Paychecks, stubs, and a check register are printed via Payroll.

• Accounts Receivable and Billing processes customer/client invoices and payments and prints aging/cash projections reports, cash receipts reports, and customer/client invoices and statements ready for mailing. Journal entries are made automatically for cash, revenue accounts, and accounts receivable.
Accounts Payable processes vendor invoices and payments. The module prints invoice, expense, cash requirements, and aging reports and prints checks and stubs ready for mailing. Discounts can be computed automatically. A check register is maintained. Journal entries are made automatically for expenses, discounts, and disbursements.

General Ledger consists of a master journal, accessed via a flexible reporting capability, containing all journal entries for the current accounting period; several subsidiary journals, including cash receipts, cash disbursements, and purchase journals; the ledger, which maintains account balances, current period activity and budget, and an annual budget for each general ledger account; and a generalized financial statement that includes a balance sheet, a profit and loss statement, and additional supporting data printed in a user-specified format that can easily be changed.

COSTRAC will fully integrate with the optional PROTRAC (Project Cost Tracking System).

A version of this product is available for the PDP-11 computer.

Price:  $9,000 – $11,000 +
Product Support Available:  Yes
Contact:  Gene Thayer, P.E., Vice President
          (800) 368-4203
          TECHNICAL INFORMATION SYSTEMS, INC.
          116 W. Plume Street
          Norfolk, VA 23510

The COUNT®/IFS (Integrated Financial System)

Operating System:  VMS
Keywords:  • Accounts payable  • Financial planning
            • General ledger  • Payroll

This comprehensive financial management and control package provides managers with the necessary tools to collect and analyze business information. The powerful decision support system provides timely and easily accessible financial data for businesses and organizations to manage and control their resources.

The basis for the package is the performance of a number of standard business applications; however, it is possible to use CIFS as a basis for creating a custom system tailored to specific needs. Some typical uses include budget developing and reporting, accounts payable and cash disbursements, accounts receivable tracking, general ledger accounting, project reporting, cash-flow analysis, financial modeling, ad hoc reporting, payroll processing, timekeeping, and labor-cost reporting.
Each component (module) of the package is designed to perform a particular set of related functions. The following master set of applications is available:

- ADM — Accounting Data Management
- A/P — Interactive Accounts Payable
- SPREAD — Financial Analysis and Reporting
- Payroll — Payroll with Labor Distribution

An organization’s CIFS installation may consist of one or more of those applications. All of the components have a built-in interface to enable detail or summary data to be collected and processed by one application before being passed to another. Thus, an organization can assemble its own CIFS system, using only those applications it requires; other modules can be added later, when the organization’s needs have expanded.

**Price:** $48,000

**Product Support Available:** Yes

**Contact:** Jenny Wiebler  
(703) 790–1700  
L&L SOFTWARE, INC.  
8200 Greensboro Drive, Suite 200  
McLean, VA 22102

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**CPA–11**

**Operating System:** VMS  
**Keywords:**  
- Cost accounting  
- Financial analysis  
- General ledger

This flexible multiple-entity client accounting general ledger and financial reporting system is designed for accountants’ client write-up as well as for business and nonprofit associations requiring multiple financial reporting for subsidiaries, location, cost centers, funds, and the like. Users can design their own reports. The system provides for virtually unlimited levels of consolidation: accounts receivable, accounts payable, and payroll and property management interface.

A version of this product is available for the PDP–11 computer.

**Price:** $3,500 – $5,000

**Product Support Available:** Yes

**Contact:** Frank J. O’Kane, President  
(213) 441–3123  
FRANKLEN COMPUTER SYSTEMS, INC.  
715 Fremont Avenue  
South Pasadena, CA 91030
DMS–1700 Accounting System

Operating System: VMS
Keywords: • Data entry • Financial planning • General ledger • Purchasing

This system features integrated systems of general ledger, budgeting, purchasing, and accounts payable. DMS–1700 is designed for central or remote locations. The chart of accounts is user defined. Data entry is via VDT, with menu-selected and menu-driven help facilities.

Price: $70,000
Product Support Available: Yes
Contact: Chris Freedland
(617) 863–5000
DISTRIBUTION MANAGEMENT SYSTEMS, INC.
81 Hartwell Avenue
Lexington, MA 02173

EASY (Energy Accounting Systems)

Operating System: VMS
Keywords: • Accounts payable • Accounts receivable • General ledger • Payroll

EASY is an on-line interactive system controlled by a comprehensive menu system. You have your own personalized menu allowing access only to defined options. The systems are multicompany and come with full documentation and source code. Centralized or distributed processing is supported. A user-maintainable configuration file controls the characteristics of system operation. System applications include general ledger/financial, accounts receivable, accounts payable, payroll, joint interest, revenue distribution, lease management, authority for expenditure, run tickets, outside-operated lease, and economic evaluation. A data dictionary–based inquiry and reporting option is also available. EASY II provides the full functionality of the listed applications, while EASY III is a subset for implementation on low-end VAXs and PDP–11s.

A version of this product is available for the PDP–11 computer.

Price: $6,000 – $48,000
Product Support Available: Yes
Contact: Merrill Likes
(405) 843–8631
UP–TIME SYSTEMS, INC.
1140 N.W. 63rd, Suite G103
Oklahoma City, OK 73116
**FA–11 (Fixed Assets)**

**Operating System:** VMS  
**Keywords:** • Financial analysis  • Report writer  • Taxes  

FA–11 allows several methods of depreciation to be stored and reported for any number of assets.

Assets are identified with a code, which may consist of four definable pieces, a group number for grouping depreciation schedules, a class (for another grouping of assets, such as class of property), and a multiple-line description. Depreciation history is kept intact as long as you wish for each asset. Different schedules may be maintained for the same asset, such as tax, book, and physical.

Reports on depreciation history, insurance, projected depreciation, ITC, and retirement assets are generated. FA–11 interfaces to the GL–11 General Ledger for automated postings concerning asset depreciations.

A version of this product is available for the PDP–11 computer.  
**Price:** $2,000 – $3,000  
**Product Support Available:** Yes  
**Contact:** Larry Landusky  
(806) 792–3785  
COMPU-SHARE, INC.  
3824 50th Street  
Lubbock, TX 79413

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**FAAS (Fixed Asset Accounting System)**

**Operating System:** VMS  
**Keywords:** • Property management  • Purchasing

The White Hat Fixed Asset Accounting System is an interactive asset management and depreciation system. Assets are tracked to seven levels of location, with optional transfer journaling. Up to six sets of accounting and tax books may be maintained, with separate depreciation information for each. Complete descriptive information is maintained for each asset. Reporting is extensive and includes reconciliation reports, property lists, transfer reports, acquisition and retirement reports, and depreciation expense reports.

More than ten depreciation methods are supported, including ACRS. Monthly financial book depreciation expense journal entries are passed to the White Hat General Ledger System.  
**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** John M. Montgomery  
(617) 933–3780
Fedder Accountants Data Processing

Operating System: ULTRIX, UNIX
Keywords: • Financial analysis • Financial management • Financial planning • Taxes

This sophisticated General Ledger/Financial Reporting System is for CPA firms and private companies with an in-house comptroller. Features include multidepartment and multicompany processing with comparatives, consolidations, supporting schedules, and automatic computations. Also included are a statement of changes in financial position, source and application of funds, automatic allocations, recurring and self-reversing journal entries, true subaccounts, ratio computations, after-the-fact P/R records, and depreciation and amortization schedules. The system includes user options. The user determines report formats and contents.

The Fedder General Ledger/Financial Reporting System may be easily integrated with other Fedder software products, including Fixed Asset Accounting, Rental Property Management, Order Entry/Billing/Inventory Control, Manufacturing Management, Job Cost, Product Costing, Medical Billing, Professional Time Accounting and Billing, Accounts Receivable, Accounts Payable, Payroll, Retail Merchandise Control, and Distributor/Wholesaler Management systems.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: David E. Fedder
(301) 561–3579
FEDDER SOFTWARE, INC.
P.O. Box 248
Timonium, MD 21093

Fedder Accounts Payable System

Operating System: ULTRIX, UNIX
Keywords: • Accounts payable • Manufacturing • Retail • Wholesale

Cash requirements forecasting, accurate discount calculations, selective payment procedures, void and manual check handling, and detailed vendor history (open and paid) are featured. The system integrates with Fedder General Ledger/Financial Reporting — Purchasing and Job Cost Systems. Form 1099s, warning of subcontractor
insurance expiration, and over budget (in optional Job Cost) are also provided. When used with Purchasing and Inventory Management System, the vouchering process checks for valid purchase orders and receiving reports. The system also checks for price changes.

Branch offices/divisions of Fortune 1000 companies; small retail, wholesale, service, and manufacturing companies; and contractors with retainages can use this system.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** David E. Fedder  
(301) 561–3579  
FEDDER SOFTWARE, INC.  
P.O. Box 248  
Timonium, MD 21093

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**Fedder Accounts Receivable System**

**Operating System:** ULTRIX, UNIX  
**Keywords:** • Accounts receivable  
• Manufacturing  
• Retail  
• Wholesale

This stand-alone version of the A/R portion of the Fedder Foresight™ Distribution Management System provides both open-item and balance-forward methods. Features include both detailed and summary agings, agings by salesperson, extensive sales analysis, selective service (finance) charges, open-item customer ledger cards, 24-month sales history with trend analysis, access by customer name or account I.D., password protection, and integration with the Fedder G/L — Financial Reporting System, on-line credit check, trend analysis, and so on. A companion post bill invoicing system with automatic pricing is also available. The system provides for future dating and a long list of user options.

The system is suitable for branch offices/divisions of Fortune 1000 companies; small retail, wholesale, service, and manufacturing companies; and contractors (with holdbacks).

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** David E. Fedder  
(301) 561–3579  
FEDDER SOFTWARE, INC.  
P.O. Box 248  
Timonium, MD 21093
Fedder Compas™ (Complete Professional Accounting System)

Operating System: ULTRIX, UNIX
Keywords: • Architecture • Engineering • Financial planning • Service industries

Compas combines in one integrated system all the accounting operations required for effective and profitable management of a professional firm. The system was designed for accountants, advertising agencies, architects, engineering firms, service organizations, and software developers. The system includes time and expense recording, work-in-process accounting, staff productivity analysis, and billing and open-item accounts receivable.

The system provides improved billing practices, profitability and collections; balanced staff assignments; factual data for staffing/training decisions; and improved control over assignment deadlines. Entries are made to the system through time and expenses by employee, payment received, work-in-process adjustments (markups and markdowns), and deferrals.

Compas integrates with the following companion Fedder software systems: Accounts Payable/Expense Analysis, Payroll Checkwriting and Personnel Information System, and General Ledger/Financial Reporting.

A version of this product is available for the PDP-11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: David E. Fedder
(301) 561–3579
FEDDER SOFTWARE, INC.
P.O. Box 248
Timonium, MD 21093

Fedder Fixed Asset Management System

Operating System: ULTRIX, UNIX
Keywords: • Financial planning • Manufacturing • Property management • Taxes

This multiasset data base system computes depreciation for personal property, income tax, and book purposes by all IRS-allowable methods, including ACRS. The system may be integrated with the Fedder General Ledger/Financial Reporting System. Schedules are produced for attachment to income tax returns.

The system is suitable for accounting firms, manufacturers (including branches/divisions of Fortune 1000 companies), contractors, larger wholesalers, retailers, service companies, and so on.
A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: David E. Fedder
(301) 561–3579
FEDDER SOFTWARE, INC.
P.O. Box 248
Timonium, MD 21093

Fedder Integrated Accounting System

Operating System: ULTRIX, UNIX
Keywords: • Accounts payable • Accounts receivable
• General ledger • Payroll

Fedder Accountrol, an integrated accounting and management information system, supports multiple corporations, divisions, branches, and locations. The system may include general ledger, financial reporting, accounts payable, payroll, personnel information, job/product costing, accounts receivable, order entry, invoicing, inventory control, sales analysis, and fixed asset management.

A user-friendly query report writer is optionally available. Each module is priced separately.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: David E. Fedder
(301) 561–3579
FEDDER SOFTWARE, INC.
P.O. Box 248
Timonium, MD 21093

Fixed Asset Depreciation

Operating System: UNIX, VMS
Keywords: • Financial analysis • Financial planning • Taxes

The Fixed Asset Depreciation system calculates depreciation for each asset rapidly and accurately. Depreciation is calculated for both book and tax values, so that assets may be recorded for maximum tax benefit (ACRS and TEFRA), as well as for the greatest impact on financial statements. The system incorporates both the new ACRS and TEFRA methods and the traditional depreciation methods. Totals can be stored for groups and classes, so that assets can be organized by branch, department, and so forth.
The system includes required government reports, such as depreciation schedule, schedule of investment tax credit, recapture of ITC, as well as the book tax comparison schedule. Separate fields are stored for purchase price and basis, if they are different.

A version of this product is available for the PDP–11 computer.

**Price:** $2,000 – $3,000

**Product Support Available:** Yes

**Contact:** Marc Alexander, National Sales Manager
(503) 641–8100

ALPINE DATASYSTEMS, INC.
8043 SW Cirrus Drive
Beaverton, OR 97005

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**Fixed Asset Depreciation**

**Operating System:** VMS

**Keywords:** • Financial analysis • Management • Report writer • Taxes

This on-line, easy-to-use system handles five depreciation methods: straight line, declining balance, double declining balance, sum-of-years digits, and ACRS. The system includes 1983 tax law changes, calculates investment tax credits and investment tax credit recapture of relevant assets, creates monthly journal entries that stand alone or interface to our General Ledger, maintains both book and tax depreciation, allows automatic conversion from accelerated depreciation methods to straight line, and handles full or partial disposals.

A Report Writer produces user-designed reports: year-to-date fixed asset analysis, detailed reports by location, asset traffic report, insurance value report, annual depreciation report for income tax purposes, investment tax report, investment tax recapture report, and yearly disposal report.

The table-driven software allows multiple operators, entry validation, and 2-word password security.

A version of this product is available for the PDP–11 computer.

**Price:** $2,500 – $6,000

**Product Support Available:** Yes

**Contact:** Linda M. Wingfield, Software Product Manager
(919) 766–0571

RESOURCE SYSTEMS CORP.
P.O. Box 1546
Clemmons, NC 27012
Fixed Assets

Operating System: VMS
Keywords: • Financial analysis • Taxes

The ADD Fixed Assets package is an integral part of the ADD Financial Management package. The package automatically computes depreciation, using any of the standard methods — straight line, double-declining balance, 150% declining, and the new ACRS formulas.

Assets are grouped and reports can be generated by division, company, location, ledger code, depreciation method, and more. In addition, the system can automatically generate journal entries on a monthly or a yearly basis in a mode suitable for direct automatic entry into the ADD General Ledger package.

A version of this product is available for the PDP–11 computer.

Price: $1,500 – $4,000
Product Support Available: Yes
Contact: Bruce A. Bott, President
(201) 584–4026
ADVANCED DIGITAL DATA, INC.
354 Route 206
Flanders, NJ 07836

Fixed Assets/Amortization

Operating System: MS/DOS, PICK, UNIX, XENIX
Keywords: • Financial analysis • Taxes

This program provides the following:
• Classification and categorization of assets in any order desired, with appropriate group totals.
• Depreciation computed for any period desired. Depreciation methods include all ACRS methods; 125%, 150%, and 200% declining balance; sum of the year’s digits; and straight line.
• Automatic shift from declining balance to straight line when advantageous, if requested.
• Bonus depreciation calculations, with automatic limitations.
• Investment credit report with automatic calculations of investment credit in the same format as Form 346B, including limitations on used Section 38 property.
• Investment credit recapture report.
• Automatic calculations of excess depreciation for recapture upon sale of asset.
• Depreciation schedule, 8½" x 11" size for submittal with tax return. A version of this product is available for the PDP–11 computer.

Price: $2,000
Product Support Available: Yes
Contact:  Steve Thomas  
(713) 270–5218 or (800) 231–0062  
THE SOFTWARE EXPRESS, INC.  
10103 Fondren, Suite 220  
Houston, TX 77096

FRS (Financial Reporting System)

Operating System:  VMS  
Keywords:  • Financial management  • General ledger  
• Report writer

FRS is a highly flexible interactive financial reporting system designed for organizations requiring comprehensive financial control. The reports can be run daily, weekly, monthly, annually, or on any other user-defined time schedule. Reports can be detailed by company, division, department, or other desired responsibility center. FRS can accommodate a user-defined chart of accounts. The system audit trails are both extensive and complete. Unbalanced ledgers and journal entries are prevented by extensive edit checks throughout the system. Other FRS features include the ability to generate allocating, adjusting, and automatic reversing journal entries. Comparative reports can be produced, enabling the user to compare any past actual or budget accounting period with the current period in a clear, concise format. This module, available separately, is part of the White Hat Integrated Manufacturing Management Product.

A version of this product is available for the PDP–11 computer.

Price:  Available upon request  
Product Support Available:  Yes  
Contact:  John M. Montgomery  
(617) 933–3780  
WHITE HAT SYSTEMS, INC.  
331 Montvale Avenue  
Woburn, MA 01801

FSG (Financial Statement Generator)

Operating System:  VMS  
Keywords:  • Financial analysis  • Report writer

FSG is designed to accommodate the complex, unusual reporting requirements of today’s accountant. The FSG is an extension of the free-formatting capabilities that exist in the Client Accounting System.

The FSG is designed to give the DSI user true free-formatting capability. The user is allowed to design an entire report on a line-by-line basis. Data elements and the positioning, printing, and numerical treatment of each element are user-defined.
Some highlights of the Financial Statement Generator are:
- Line-by-line report definition
- Line math capabilities (add, subtract, multiply, divide)
- Unlimited totaling levels
- Use of constants and percentages for calculations, projections, allocations, and so on
- Horizontal and vertical spacing
- Floating "$", "-", "()", and so on
- Nonnumerical printing of units
- Multiaccount positioning per line
- Multidivisor specifications
- Multiclient use of established formats

A version of this product is available for the PDP–11 computer.

**Price:** $1,000

**Product Support Available:** Yes

**Contact:** Bob Sprowls  
(904) 434–2685  
DIGITAL SYSTEMS OF FLORIDA, INC.  
114 E. Gregory Street  
Pensacola, FL 32501

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**General Ledger**

**Operating System:** VMS

**Keywords:** • Financial analysis  • General ledger

The ADD General Ledger system allows the user to define not only a chart of accounts, but also the financial reports. The system is automatically updated by other applications packages from ADD, such as Accounts Payable, Payroll, Accounts Receivable, and Fixed Assets.

The "compare" function allows the user to contrast any factors desired — for example, "current month to budget" or "this month to last year" or "year-to-date to last year-to-date." In addition to financial reports, the system produces worksheets, trial balance, journal of entries, and a detailed general ledger.

A version of this product is available for the PDP–11 computer.

**Price:** $2,000 – $6,000

**Product Support Available:** Yes

**Contact:** Bruce A. Bott, President  
(201) 584–4026  
ADVANCED DIGITAL DATA, INC.  
354 Route 206  
Flanders, NJ 07836
General Ledger

Operating System: VMS
Keywords: • Financial management • General ledger
          • Report writer • Security

The General Ledger—Financial Reporting (G/L and F/R) system is comprised of a series of interactive programs designed for companies demanding complete financial control. The ease of operation of this accounting system is made possible by a sophisticated approach to the software development.

Available features are an on-line system, program/data security, user-defined accounting periods, accounts flexibility, comprehensive financial reporting, supporting schedules, automatic reverse accruals, recurring journal entries, allocation transaction, prior-period adjustment, early entries, retention of yearly transactions, storage of nonfinancial data, multicompny concept, automatic consolidations/roll-up reporting, budgeting/modeling, and interfaces with other systems.

A version of this product is available for the PDP-11 computer.

Price: $2,000 – $10,000
Product Support Available: Yes
Contact: Tom Muskiluke
         (519) 893-4200
         DIGITAL BUSINESS COMPUTERS
         133 Manitou Drive
         Kitchener, Ontario N2C 1L4
         Canada

General Ledger

Operating System: ULTRIX, UNIX
Keywords: • Financial analysis • General ledger
          • Information management • Report writer

This complete double-entry system includes accounting journals, general ledger reports, financial statements, and posting routines that ensure that transactions are in balance before being posted. Month-end and year-end closing routines exist to ensure proper account balances. The user designates the start of the fiscal year. The general ledger system is written in C language and uses the public domain Ingres data base written by the University of California at Berkeley. Binary and source codes are available for UNIX* Berkeley 4.1 and 4.2. The source code is available for all others.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.

Price: $1,500 – $10,000
Product Support Available: Yes
Contact: Fred Potthoff
(612) 941–9470
FARGO ELECTRONIC SERVICES, INC.
7150 Shady Oak Road
Eden Prairie, MN 55344

General Ledger

Operating System: MS/DOS, PICK, UNIX, XENIX
Keywords: • General ledger • Printing • Report writer
General Ledger, also fed by Accounts Payable, Payroll, and Accounts Receivable as a comprehensive single-entry system, provides the following:
• Flexible account number formats.
• Automatic budget generation, based on prior year’s budget.
• On-line CRT account inquiry with detail.
• Recurring journal entry.
• Multicompany financial reporting.
• Data-input accuracy — transaction entries may be edited and corrected prior to posting.
• Transaction entry screens match the format of original documents.
• Audit trails — posting programs automatically produce journals.
The comprehensive statement generator allows customized financial statements, including statement of change in financial condition. Statements are not tied directly to the chart of accounts format. The trial balance, general ledger, and worksheet reports are standard.
A version of this product is available for the PDP–11 computer.
Price: $600
Product Support Available: Yes
Contact: Steve Thomas
(713) 270–5218 or (800) 231–0062
THE SOFTWARE EXPRESS, INC.
10103 Fondren, Suite 220
Houston, TX 77096

General Ledger System

Operating System: VMS
Keywords: • Banking • General ledger • Report writer
The system provides general ledger, financial statements, and budgeting modules, each of which can be customized to meet individual requirements and format.
The system maintains prior-year information, with beginning balance and separate monthly balances, and current beginning
balances, with separate monthly balances. On financial statements, this allows the user to generate many kinds of comparative statements.

The General Ledger System can be used by any type of industry and has the following features:

- Up to four levels of subtotals may be on a statement, with extensive formatting capability.
- Transaction files must be in balance prior to updating.
- Updates may be made for any period of time (monthly, quarterly, and so on), with unlimited updating for any period.
- A complete history of transactions is maintained for detailed printing.

The system can also distribute groups of accounts to other accounts on a weighted basis, that is, overhead to departments.

A version of this product is available for the PDP–11 computer.

**Price:** $6,000 – $12,000

**Product Support Available:** Yes

**Contact:** Henry C. Gaylor  
(412) 355–8523  
PITTSBURGH NATIONAL BANK  
Fifth Avenue and Wood Street  
Pittsburgh, PA 15222

### General Ledger/Budgetary Control System

**Operating System:** VMS

**Keywords:**  
- Financial management  
- Financial planning  
- General ledger  
- Report writer

The BAKCO General Ledger/Budgetary Control System meets general ledger, financial reporting, and managerial reporting requirements. A series of on-line interactive programs provide control of G/L master file maintenance, budget file management, automatic or manual journal entries, trial balance reporting, and year-end summary and update.

The software allows for 12 or 13 periods of reporting for the fiscal year with individual actual and budget control accounts. Detailed information for a total of 26 periods with year-to-date totals for three years is provided.

Reports include G/L master file, audit trail of G/L maintenance, audit lists of budget files and of standard journal entries, profit-and-loss statements, and balance sheets and trial balance (with print options for a range of transactions for a specific period). A built-in report writer allows the user to create a wide variety of tailored balance sheets, P & L statements, department expense reporting, and service and application of funds.
The BAKCO General Ledger/Budgetary Control System is a full stand-alone system. However, it may also be integrated with BAKCO's Financial Control and Warehouse Distribution systems.

A version of this product is available for the PDP-11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Jerry Baker, President  
(312) 956–1053  
BAKCO DATA, INC.  
85 W. Algonquin Road, Suite 190  
Arlington Heights, IL 60005

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**GL–11 (General Ledger and Financial Reporting)**

**Operating System:** VMS

**Keywords:**  
- Financial analysis  
- General ledger  
- Personal computing  
- Report writer

GL–11 features user-defined account number formats with up to 12 characters, user-defined accounting periods (up to 13 a year), multiple financial statements designed by the user through parameter files, multiple input screens for journal entries, detailed ledgers carried in open-item format, a detail posting collapse feature that does not hinder the ability to obtain prior-period financial statements or to make prior-period adjustments, recurring entries made automatically based on either constant dollar amounts or constant percentages of account balances, stringent audit trail for all entries, wildcard reporting for multiple companies, and multidivision capabilities. GL–11 interfaces with AP–11 Accounts Payable System, AR–11 Accounts Receivable System, PY–11 Payroll System, and CN–11 Job Cost.

GL–11's financial statements include balance sheet, income statement, statement of change, ratio analysis, loan analysis, asset analysis, disclaimer letters, and many more. Reports include chart of accounts, general ledger detail, trial balance, transaction journal, allocation and standard journals for recurring entries, and financial statements.

A user's guide includes information for the office manager, the terminal operator, and the application manager. A reference manual includes information for the system manager and programmers on installation procedures, program flows, data formats, and so forth.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $4,000

**Product Support Available:** Yes

**Contact:** Larry Landusky, Marketing  
(806) 792–3785
G/L (General Ledger)

Operating System: VMS

Keywords: Financial analysis, Financial planning, General ledger, Report writer

In this system, transactions are entered interactively, but the data base is updated in batches. A tight validation and approval process is followed for maximum control. Other features provide:

- Various levels of profit centers
- The capability to enter next year's budgets before this year's closing
- Interactive displays of current information on any account
- A financial statement generator permitting a wide range of reports in many formats

The same accounts may appear in different reports, using various levels of summation.

Price: $12,000

Product Support Available: Yes

Contact: Robert Brown  
(902) 429-3175  
DYMAXION RESEARCH LTD.  
Box 1053, Armdale Station  
Halifax, Nova Scotia B3L 4L5  
Canada

G/L (General Ledger)

Operating System: VMS

Keywords: General ledger, Report writer

General Ledger (G/L) handles up to eight companies, allows multiple profit centers, and includes the following capabilities:

- Allows the user to define 1 to 13 accounting periods in a company's fiscal year
- Provides automatic sequential numbering of all G/L reports
- Allows maintenance to the chart of accounts and prints the chart of accounts printout
- Allows entry and editing of general journal transactions and prints the general journal transaction register
- Prints the detailed general ledger report, the general ledger trial balance, and the general ledger source cross-reference
- Prints financial statements in flexible user-defined formats
• Allows transaction detail to be kept for the entire year so that year-end detail reports can be printed
• Has a comprehensive year-ending procedure
• Can be interfaced with MCBA’s accounts receivable, accounts payable, payroll, job costing, and fixed assets and depreciation packages
• Provides a security system

A separate menu provides the following functions:
• Optional compression of transactions in the year-to-date file into one period-ending transaction per period for each account as coded in the chart of accounts
• Creation of a sample set of year-to-date transactions, which can be used to check the format of all financial statements
• A program that displays the amount of space remaining in all the major G/L files

A version of this product is available for the PDP–11 computer.

Price: $2,000 – $3,000
Product Support Available: Yes
Contact: Sales Representative
  (818) 957–2900
  MCBA, INC.
  2441 Honolulu Avenue
  Montrose, CA 91020

IFAS (Interactive Financial Accounting System)

Operating System: VMS
Keywords: • Accounts payable • Accounts receivable
• General ledger • Order entry

IFAS is a comprehensive set of application modules for accounts receivable, accounts payable, financial reporting, and order entry/invoicing. The modules can be installed separately or combined with IMCS to form an integrated system. All functions in the IFAS system provide a high degree of database security through extensive on-line edit checking, numerous accounting controls, and the use of audit trails, transaction registers, and balancing techniques. Detailed descriptions of the many capabilities of these systems are available upon request.

A version of this product is available for the PDP–11 computer.

Price: $9,000 +
Product Support Available: Yes
Contact: David C. Lang, CPIM
  (513) 761–0132
  INTERACTIVE INFORMATION SYSTEMS
  10 Knollcrest Drive
  Cincinnati, OH 45237
InterAP™

Operating System: VMS
Keywords: • Accounts payable • Financial analysis

InterAP, a complete on-line interactive accounts payable system, may be interfaced with the InterGL General Ledger and Financial Reporting System or may be used in a stand-alone environment. InterAP allows the user flexibility in the definition of the accounts payable structure. Definable by the user are chart of accounts, vendor types and files, payment frequency schedule, bank accounts, discount accounting method, and fiscal periods.

To enter payables, the user tells the system the number and amount to be entered. The system assigns a voucher control number to each payable and allows the selection of the vendor from the files (by number or name) or the entry of the name and address during payable entry. The user enters invoice number (which is checked to ensure that it is not a duplicate), invoice date, amount, discount terms, due date (may be derived from vendor file), descriptive comment, and expense distribution. If the payable has been paid, the user is prompted for bank, check number (verified to ensure not already used), and check date. Voiding of previously issued checks is also accomplished through the payable entry function. Once a series of payables have been entered, they may be posted to the vendor ledger if the control figures balance with what has been entered.

At all times, on-line inquiries may be performed to determine the status of a vendor’s account and a particular or sequence of payables or checks. Selection is by vendor (number and/or name), voucher number or range, invoice number and/or date, check number, and/or a combination of the above. Detailed or summary information is displayed on the screen or printed in hard-copy form.

Upon request, the user can produce an accounts payable aging as of any specified date (accrual or only up to a given fiscal period) and a general ledger aged trial balance, which highlights possible inconsistencies in dating of payables.

The payment process is accomplished by producing a cash requirements report that shows what is due according to the payment schedule that the user has defined. The user then designates which items are to be paid and whether the discount is to be taken. A summary listing of what has been queued for payment is produced, and the user may add to or delete from the list. Then the system is requested to produce checks, after which, if the user has indicated that they are correct, a check (run) register is printed and the files are updated. It is also possible to pay items manually, by entering the check number used, rather than having the system print the checks.

Various reports and inquiries are available from the system: monthly check registers, settlement reports, agings and ledgers for individual vendors or vendor types, and short voucher inquiries.
Available with InterAP is a check reconciliation module that allows the user to reconcile bank statements and keep track of outstanding or uncleared checks. If that module is used, inquiries also indicate whether a check has cleared for a given payable.

A version of this product is available for the PDP–11 computer.

Price: $2,500

Product Support Available: Yes

Contact: Alexander J. Phillips, President
(201) 256–7633
INTERACTIVE SYSTEMS AND MANAGEMENT CORP.
1500 Cardinal Drive
Little Falls, NJ 07424

InterGL™

Operating System: VMS
Keywords: ● Financial analysis ● General ledger

InterGL, a complete on-line interactive general ledger and financial reporting system, can be used by any small- to medium-size business or medical entity. If more than 9,000 major general accounts are required, an expanded version of InterGL will be required. InterGL performs the commonly accepted and required steps in keeping an entity’s general and subsidiary ledgers, as well as produces the financial and management reports for the user.

The system allows the user to define and design a chart of account structure and financial reports, as well as the fiscal period structure of the accounting system. The account number is an 8-digit number (4-digit main account number, 2-digit division designation, and 2-digit cost center designation). If the divisional features are used, the system can be used to produce divisional and consolidated reports. The system definition functions are accomplished on line, and extensive editing of the input is performed to ensure its correctness.

General ledger postings are entered on line. The user specifies the fiscal period, as well as the number of postings being entered. As the individual postings are made, the account number is verified against the chart of account file, the name of the account is displayed, and the user then enters the date of the posting, its source (sources are also user definable and are the basis of the subsidiary ledger or journal reports that are later produced), the amount of the posting, and any audit reference and explanation. The entry process minimizes the number of keystrokes that are necessary, while ensuring that correct accounting principles are adhered to.

Once a series of postings have been entered into the system, they may be reviewed by the user before being posted to the ledger. If they are not in balance, they may not be posted to the ledger, and prior to posting to the ledger they may be modified. Once a posting has been
made to the ledger, the posting can be reversed only by making an adjusting entry. Complete journal listings can be produced for all postings, including those that are the result of other accounting packages, such as accounts payable. It is also possible to enter budget figures into the system.

The system includes the following reports: general ledger (with sub-sorting by vendor and customer within account), abbreviated general ledger (showing only journal entries in detail, and single entries for all subsidiary journals), summary general ledger (showing balances and total debits and credits), journals, and working trial balance. Financial statements include P&L reports by division and/or consolidated for current period versus year to date or versus budget or versus same period last year, YTD versus YTD budget or versus YTD last year, or any four periods and ranges of periods, and balance sheet. Statements can be produced with supporting and management schedules as defined by the user.

InterGL can take postings from other accounting systems, such as accounts payable, accounts receivable, and depreciation and amortization. Once a period has been closed, postings can no longer be made to that period. Closing of period creates the beginning balances for the next period. If a year-end closing is performed, only the balance sheet account figures are carried forward. The system may be used for both cash or accrual accounting.

A version of this product is available for the PDP-11 computer.

**Price:** $2,500

**Product Support Available:** Yes

**Contact:** Alexander J. Phillips, President  
(201) 256-7633  
INTERACTIVE SYSTEMS AND MANAGEMENT CORP.  
1500 Cardinal Drive  
Little Falls, NJ 07424

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**Job Cost**

**Operating System:** MS/DOS, PICK, UNIX, XENIX

**Keywords:** • Cost accounting  • Report writer

This program, automatically fed from the Accounts Payable and Payroll systems, provides the following:

• Flexible job identification
• Unlimited cost categories within a job
• User-defined subtotaling on reports
• Summary and detail cost tracking
• Cost versus budget, with completion percentage and projections
• CRT job inquiry for on-line analysis of jobs
• Period and job-to-date cumulative hours and dollars
A version of this product is available for the PDP–11 computer.

**Price:** $1,500

**Product Support Available:** Yes

**Contact:** Steve Thomas  
(713) 270–5218 or (800) 231–0062  
THE SOFTWARE EXPRESS, INC.  
10103 Fondren, Suite 220  
Houston, TX 77096

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**Job Cost Accounting**

**Operating System:** ULTRIX, UNIX  
**Keywords:**  
- Billing  
- Cost accounting  
- Information management  
- Report writer

The Job Cost Accounting system tracks costs for jobs by job number and activity and compares them to estimates. Employee, free-lance, invoices, and miscellaneous expenses billable are tracked. Billing rates and hourly costs exist for each employee and free lance by activity, allowing you to compute the billable amount, the cost amount, and the profit. A user-specified markup is applied to invoices and miscellaneous expenses billable. The actual amounts are compared to estimate amounts. Profitability reports analyze jobs by client and by job type.

The system is written in C language and uses the public domain Ingres data base written by the University of California at Berkeley. Binary and source codes are available for UNIX* Berkeley 4.1 and 4.2. The source code is available for all others.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** $1,500 – $10,000

**Product Support Available:** Yes

**Contact:** Fred Potthoff  
(612) 941–9470  
FARGO ELECTRONIC SERVICES, INC.  
7150 Shady Oak Road  
Eden Prairie, MN 55344

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**K–Accounts — Integrated Accounting**

**Operating System:** VMS  
**Keywords:**  
- Accounts payable  
- Accounts receivable  
- Decision support  
- General ledger

The K–Accounts system provides General and Purchase Ledgers on an integrated basis or separately. Facilities include standard update
and a series of report generators. The date held within the system is broken down into a number of files, each of which is in a format that makes it directly addressable. All systems are programmed in ANS Cobol.

- General Ledger provides multilevel and flexible chart of account structures; responsibility reporting, budget preparation, generation, and flexing; allocation, currency handling, multicompany processing, and corporate consolidation; and flexible period dating, detailed audit trail, and extensive report facilities.
- Sales Ledger provides extensive cash matching facilities, comprehensive debtor control, cash flow forecasting, service charge calculation, flexible reporting facilities, currency handling, sales budgets, statistical reporting, and sales analysis options.
- Purchase Ledger provides payment processing, using either payment or due date; dummy payments preview; payment control reports; payment terms; currency handling; one-off check production; bank reconciliation; and flexible reporting facilities.
- On-line facilities include flexible formatted screens, menu-driven operation, resubmission and batch correction; inquiry facilities at account and transaction level, and decision-making routines (cash matching, payment selection).

**Price:** £25,000 – £30,000

**Product Support Available:** Yes

**Contact:** Sally Bradley  
(01) 660–2444  
KCS SOFTWARE PACKAGES  
Horfield House, 814 Brighton Road  
Purley, Surrey CR2 2BR  
United Kingdom

**MANMAN/AP**

**Operating System:** VMS

**Keywords:**  
- Accounts payable  
- Data base management  
- Financial analysis  
- Report writer

MANMAN/AP (accounts payable), an on-line interactive menu-driven product that manages vendor and supplier payables, creates vouchers from purchase orders generated by MANMAN's manufacturing product or other sources. The 3-module product, comprised of Voucher Processing, Cash Disbursements, and Controls and Analysis, provides for multibank processing and project accounting. The product prints checks and reconciles account balances in the general ledger and allows for manual checks to be written and tracked. Expenses can be distributed to 50 general ledger accounts by account number and project. MANMAN/AP produces reports on vendor history, payments, and discounts taken. The product maintains a historical data base for vendors, month-end balances, and the accounts
payable budget in the general ledger and updates the general ledger data base with month-end and year-end balances.

**Price:** $15,000  
**Product Support Available:** Yes  
**Contact:** Carol Singh, Corporate Communications Coordinator  
(415) 969-4442 ext. 4152  
ASK COMPUTER SYSTEMS INC.  
730 Distel Drive  
Los Altos, CA 94022

**MANMAN/FA**

**Operating System:** VMS  
**Keywords:** • Financial analysis • Financial planning • Taxes

MANMAN/FA (fixed assets) is an on-line interactive menu-driven product that manages a company’s depreciable and nondepreciable assets from acquisition through retirement. The 3-module product, comprised of Asset Tracking, Expense Reporting, and Depreciation Processing, handles acquisition, depreciation calculation, changes to a depreciation schedule, incurred repair and maintenance expenses, and transfer and retirement. The user may enter separate book and tax-depreciation schedules for an asset. MANMAN/FA incorporates the Accelerated Cost Recovery System (ACRS) tax regulations for assets acquired or costs incurred in or after 1981. Pre-1981 tax depreciation is also available.

**Price:** $10,000  
**Product Support Available:** Yes  
**Contact:** Carol Singh, Corporate Communications Coordinator  
(415) 969-4442 ext. 4152  
ASK COMPUTER SYSTEMS INC.  
730 Distel Drive  
Los Altos, CA 94022

**MANMAN/GL**

**Operating System:** VMS  
**Keywords:** • Financial analysis • General ledger

MANMAN/GL (general ledger) is an on-line interactive menu-driven product that tracks all financial transactions and presents the balances through a variety of financial statements. The 3-module product, comprised of Financial Statements, General Ledger Maintenance, and Journal Processing, completes the financial functions implemented with MANMAN’s manufacturing, order management and accounts receivable, and accounts payable products. MANMAN/GL allows the user to budget or forecast balances by account number and
to compare the figures with actuals earned or spent. Among the financial statements available are trial balance, daily and monthly transaction journals, monthly and quarterly comparative balance sheets, income statements, project by account summary, project summary, and department expense. A consolidation feature allows reporting across department or divisional boundaries for increased control over projects.

Price: $15,000
Product Support Available: Yes
Contact: Carol Singh, Corporate Communications Coordinator
(415) 969–4442 ext. 4152
ASK COMPUTER SYSTEMS INC.
730 Distel Drive
Los Altos, CA 94022

MANMAN/PLANMAN™

Operating System: VMS
Keywords: • Financial analysis • Financial planning
• General ledger • Spreadsheets

MANMAN/PLANMAN is an on-line interactive menu-driven product that allows information from MANMAN’s general ledger product to be transferred from the general ledger data base to a personal computer. Once there, the VisiCalc™ spreadsheet format is used to create or revise budget information. When a budget is final, it is loaded back into the general ledger. MANMAN/PLANMAN requires MANMAN's general ledger product and a Hewlett-Packard 120 or 125 microcomputer. The product extracts account information by sequence of accounts, department or division, or natural account and can manipulate single or blocks of accounts.

VisiCalc™ is a trademark of Visicorp.

Price: $1,000
Product Support Available: Yes
Contact: Carol Singh, Corporate Communications Coordinator
(415) 969–4442 ext. 4152
ASK COMPUTER SYSTEMS INC.
730 Distel Drive
Los Altos, CA 94022

MAPS/AP

Operating System: VMS
Keywords: • Accounts payable • Data entry • Decision support

The fully interactive MAPS/AP accounts payable system performs all data edits at screen entry time and offers extensive on-line inquiry
for an up-to-the-minute picture of important information such as vendor status, cash position, and departmental expenses.

MAPS/AP interfaces with MAPS/GL, general ledger software. MAPS/AP uses the same chart of accounts and organization structure and mirrors the extensive security and control features of that CPA-designed package.

**Price:** $15,000 – $20,000  
**Product Support Available:** Yes  
**Contact:** Shelley Swackhamer  
(415) 856–1100  
ROSS SYSTEMS, INC.  
1860 Embarcadero Road  
Palo Alto, CA 94303

**MAPS/ISO**

**Operating System:** VMS  
**Keywords:** • Data collection  
• Personnel  
MAPS/ISO is a comprehensive accounting and tracking software system for stock option plans. MAPS/ISO manages and tracks all activity relating to the granting, exercising, canceling, and repricing of both incentive and nonqualified stock options. It offers features designed to bring a company's stock option plan up to full compliance with federal regulations regarding Incentive Stock Option (ISO) accounting and reporting. All input data is validated on line to ensure proper grant or exercise of options and is available at any time for reporting and ad hoc inquiries.

A version of this product is available for the PDP–11 computer.

**Price:** $27,000 – $66,000  
**Product Support Available:** Yes  
**Contact:** Shelley Swackhamer  
(415) 856–1100  
ROSS SYSTEMS, INC.  
1860 Embarcadero Road  
Palo Alto, CA 94303

**MAPS/MODEL**

**Operating System:** VMS  
**Keywords:** • Decision support  
• Financial analysis  
• Financial planning  
• Spreadsheets  
MAPS/MODEL combines the ease of use of electronic spreadsheets and the power of advanced modeling languages. MAPS/MODEL is ideal for problems involving multidimensional consolidations, iteration, or sensitivity analysis. Models are easily constructed for appli-
cations such as budgeting, cash flow management, and forecasting. MAPS/GRAPH, integrated with MAPS/MODEL, gives you the opportunity to use your financial planning data for presentation-quality color graphics.

A version of this product is available for the PDP–11 computer.

**Price:** $12,000 – $30,000

**Product Support Available:** Yes

**Contact:**
Kevin Walsh  
(415) 856–1100  
ROSS SYSTEMS, INC.  
1860 Embarcadero Road  
Palo Alto, CA 94303

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**MBA**

**Operating System:** VMS  
**Keywords:** • Banking • Credit • General ledger

After a decade of writing in-house data processing systems for the credit union industry, ECOM introduced the 32-bit VAX version in 1984. The basic application of share, loan, and certificate processing, along with the automated share draft integrated general ledger, proprietary ATM, switch ATM, and audioresponse, are available in conjunction with the highly efficient distributive teller operation via a front-end processor to maximize speed and processing capabilities.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:**
Jack Kreamer  
(901) 794–5501  
ECOM SYSTEMS, INC.  
2500 Mt. Moriah, Suite 720  
Memphis, TN 38115

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**MBS–AP (Manus Business Systems — Accounts Payable)**

**Operating System:** VMS  
**Keywords:** • Accounts payable

The Accounts Payable module gives the MBS user close control over cash disbursements and related accounting functions. It operates as an automatic vouchering system to accumulate information on vendors, vendor invoices, discounts, and expense distributions. It produces complete prepayment information, writes approved checks and related reports, includes check reconciliation, and maintains histori-
Accounting 69

cal data for analysis. A special inquiry function produces an immediate report of cash requirements within a user-specified period for a particular bank.

Several interactive entry functions are provided to enter vouchers, modify their status in the system, permit check voiding, and reconcile returned checks. All entries are accumulated and stored to provide necessary audit trails.

All entries must have a unique voucher number assigned for audit and control purposes. A payable voucher can be classified as a 1-time purchase or as a contractual recurring payable commitment. For recurring payables, the system automatically generates the payment voucher each time payment is due, with no further manual input necessary.

The Accounts Payable module interfaces with the MBS General Ledger module.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $6,000

**Product Support Available:** Yes

**Contact:** Gary Vowels
(206) 285–3260
MANUS SERVICES CORP.
1700 Westlake Avenue North
Seattle, WA 98109

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**MBS–AR (Manus Business Systems — Accounts Receivable)**

**Operating System:** VMS

**Keywords:** • Accounts receivable

The MBS Accounts Receivable module is designed to provide all capabilities required for receivables processing and control. The module includes functions needed by accounting personnel to maintain a customer master file and to record charges and credits for those customers on file with appropriate general ledger distributions generated to offset the transaction amount. The Accounts Receivable module gives the MBS user accurate working knowledge of outstanding accounts, individual customer credit positions, and incoming cash. Both open-item and balance-forward methods are supported.

Receivables may be created either through the Order Processing interface or by entering invoices directly into the Accounts Receivable module. Functions are included for entering invoices, cash receipts, and memos.

Several functions provide status and audit trail reporting. In many cases, those reports give the user the capability to supply special
selection and sorting criteria. Reports, including Aged Trial Balance, Receivables Ledger, and Monthly Statements of Account, can be produced, showing all open-item detail and including past and current finance charges. Inquiry functions provide immediate access to the receivables files and to historical credit information.

The Accounts Receivable module may operate as a stand-alone module or be integrated with the MBS Order Processing and General Ledger modules.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $6,000

**Product Support Available:** Yes

**Contact:** Gary Vowels  
(206) 285–3260  
MANUS SERVICES CORP.  
1700 Westlake Avenue North  
Seattle, WA 98109

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**MBS–GL (Manus Business Systems — General Ledger)**

**Operating System:** VMS  
**Keywords:** General ledger

The MBS General Ledger module is a comprehensive package capable of handling the financial reporting requirements of a wide variety of businesses. The system supports up to 13 reporting periods per fiscal year, maintains 13 monthly budgets, and allows a chart of account numbers of up to 12 digits. Journal entries may be entered directly into the General Ledger module in a tightly controlled fashion or interfaced in detail or summary form from subsidiary modules. Both recurring standard journal entries and accrual entries, which are automatically reversed in the following period, are supported. Automatic allocations processing is fully implemented.

A special Financial Report Generator allows the user to create custom financial reports that specifically match the reporting needs of the organization.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $6,000

**Product Support Available:** Yes

**Contact:** Gary Vowels  
(206) 285–3260  
MANUS SERVICES CORP.  
1700 Westlake Avenue North  
Seattle, WA 98109
Meat, Poultry, and Fish Purchasing Control System

Operating System: VMS
Keywords: • Inventory • Purchasing • Warehousing

This system creates, controls, and tracks purchase orders for meat, poultry, or fish by both pieces and weight. The system tracks receipts against purchase orders and integrates vendor ordering and receiving information with inventory and accounts payable records.

The system allows the generation of not only regular purchase orders but also drop-ship purchase orders, blanket purchase orders, and no-charge purchase orders. Upon entry of the purchase order data, each inventory item dynamically affects the inventory status of both pieces and weight. Both stocking and nonstocking items can be purchased from a vendor on the same purchase order.

Receiving reports can be printed at the receiving dock and show the pieces and weight to be received and where to store the merchandise in the warehouse. If partial receipt occurs, receiving reports can be reprinted, showing only those items still open.

Cash commitment reports can be produced, showing when payment should be due on all open purchase orders.

This system can also be integrated with our warehouse distribution application.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Jerry Baker, President
(312) 956–1053
BAKCO DATA, INC.
85 W. Algonquin Road, Suite 190
Arlington Heights, IL 60005

MODEL™

Operating System: VMS
Keywords: • Decision support • Financial analysis
• Programming tools • Simulation

MODEL Decision Support System is an interactive, upwardly compatible planning, modeling, and analysis tool developed for the non-programming businessperson. MODEL provides a complete English-like language to address applications such as budgeting, product planning, cash flow analysis, merger/acquisition studies, and project financing. The system consists of more than 28 separately priced modules.
MODEL features include hierarchical consolidation with a data manager, what-if analysis, prewritten routines (math, financial, forecasting, statistical, and more), goal seeking, optimization and risk analysis, simultaneous equation solving, PERT/CPM project scheduling, a user-defined vocabulary, plotting, a built-in editor, on-line help, and more. MODEL provides multiple matrix modeling, alpha data, and the user-defined vocabulary option (MODEL can be easily modified to run in any language). Perhaps the most important unique feature is the capability to develop interactive menu-driven applications using MODEL's English-like language.

MODEL is uniquely suited to building such systems. With MODEL's Black Box capability, one person can build a model to drive an entire system of models and routines that create menus for other users throughout an organization. Thus, MODEL provides the opportunity to use decision support for those who wish to build their own models or for those who wish only to use DSS through menus and prompts.

Because MODEL converts models into self-contained object code, MODEL applications can be sent throughout an organization without putting up separate copies of MODEL. Thus, MODEL Distributed Decision Support System generates DSS applications that can be used all by themselves and executed in the fastest possible manner.

**Price:** $9,000 – $150,000  
**Product Support Available:** Yes  
**Contact:** Jim Pricer  
(212) 962–4004  
LLOYD BUSH & ASSOCIATES  
156 William Street  
New York, NY 10038

**NMI CAP (Complete Accounting Package)**

**Operating System:** ULTRIX, UNIX  
**Keywords:** • General ledger • Inventory • Order entry • Payroll

The NMI Complete Accounting Package consists of Accounts Receivable, Accounts Payable, General Ledger, Inventory, Sales Order, Job Costing, Payroll, and Temporary Payroll/Integrated Billing subsystems designed to interface with one another. Special attention is paid to the retail application, with provisions made for cash sales, expenses payable, and VISA/Master Card and American Express transactions. The Temporary Payroll/Integrated Billing system is designed to be used by employment or temporary placement agencies in coordination with the NMI Personnel Searcher. The system is also compatible with most UNIX*-based word processors and all Version 7 utilities.

*UNIX is a trademark of AT&T Bell Laboratories.
A version of this product is available for the PDP–11 computer.

**Price:** $1,995  
**Product Support Available:** Yes  
**Contact:** Mac McLaughlin, Inside Sales  
(201) 953–9223  
NORTON–MURPHY INTERNATIONAL, INC.  
123 Claremont  
Bernardsville, NJ 07924

**PACS™ (Process Accounting and Chargeback System)**

**Operating System:** VMS  
**Keywords:** • Billing  
• Data collection  
• Report writer  
• Statistics

PACS, developed by Signal Technology, Inc., is a comprehensive computer facility management system that provides system-utilization statistics, income and expense allocations, and chargeback billing reports. PACS supports on-line reports to users, graphical output to VT100 terminals, and optional warning or log-in defeat for users who have exceeded their budgets.

The system features:

• Data collection cycle, which summarizes the day’s process accounting information and determines current disk utilization.

• Monthly report generation cycle, which creates detailed monthly invoices for the accounts, a data file suitable for automatic data entry into an existing financial accounting system, and a summary report of the month’s activity to date. The report generation cycle can be performed at any point during the month to get reports of activity to date.

The system reports include:

• Itemized summary of services  
• Customer summary  
• Daily system summary report  
• System hourly report file  
• Cost and income summaries by account and by resource, respectively

DIGITAL distributes this software product under license from Signal Technology, Inc.

PACS™ is a trademark of Signal Technology, Inc.

**Price:** $4,900  
**Product Support Available:** No  
**Contact:** Consult your local DIGITAL sales office (see Introduction).
Payroll

Operating System: VMS
Keywords: • Construction • Cost accounting • Manufacturing • Payroll

Payroll is a multicompany/client payroll system that interfaces to Franklen's CPA–11, General Ledger/Financial Reporting System. The normal check writing and federal/state tax reporting functions are provided. Comprehensive labor distribution is available. In addition to departmental and subdepartmental labor distribution, significant job information can be developed. Through integration with CPA–11, job cost files can be updated. This capability is of special interest to firms engaged in manufacturing and construction.

A version of this product is available for the PDP–11 computer.

Price: $1,500 – $3,000
Product Support Available: Yes
Contact: Frank J. O'Kane, President
         (213) 441–4123
         FRANKLEN COMPUTER SYSTEMS, INC.
         715 Fremont Avenue
         South Pasadena, CA 91030

Payroll (Canadian)

Operating System: VMS
Keywords: • Employment • Payroll • Personnel • Report writer

The Payroll system provides:

• Flexible formatting: The user has flexibility in the selection of deductions, benefits, personnel information, department, and union data. Since the system is totally table-driven, information can be selected on an employee-by-employee basis.

• Multiemployees types: The Payroll system provides for hourly, staff, and executive employees. For each of those payroll types, the user can run Payroll on a weekly, biweekly, monthly, and semi-monthly basis.

• Free-format payroll checks: The system provides for a free-format payroll stub. The stub contains weekly as well as year-to-date totals.

• Labor distribution: Direct labor expense is distributed on a daily basis through a payroll time recording program.

• Indirect expense allocation: The Payroll Master File provides for automatic distribution of indirect labor to up to four general ledger accounts. Those allocations are done on a percentage basis.

• Personnel information: The Employee Master File contains a series of fields for personnel information. For example, you can record layoff dates, rehire dates, UIC information, and so on.
• UIC data: The Payroll system records the last 52 weeks' pay for each employee for purposes of UIC separation certificates.
• Complete reporting: The Payroll system provides for detailed audit trails, a prepayroll register that gives the user an exact picture of what net pays and deductions will be in a given payroll, and payroll distribution reporting as well as automatic T4 preparation.

A version of this product is available for the PDP-11 computer.

**Price:** $2,000 – $10,000  
**Product Support Available:** Yes  
**Contact:** Tom Muskiluke  
(519) 893–4200  
DIGITAL BUSINESS COMPUTERS  
133 Manitou Drive  
Kitchener, Ontario N2C 1L4  
Canada

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**Payroll System**

**Operating System:** VMS  
**Keywords:**  
• Data entry  
• Financial management  
• Payroll  
• Taxes

This interactive and multiprocessing program provides employee master file maintenance, P/R data entry, P/R check printing, P/R register, and 941–A or W–2 report printing. Output reports include an employee master record; registers for preliminary P/R, earnings, deductions, tax deductions, and year-to-date P/R; monthly earnings summary; and labor distribution.

This system allows on-line editing and validation of data entered. Password entry into the system and employee master file is required so that only assigned employees may access files. Net pay is automatically calculated, based on payroll data in the employee master file. Regular hourly or salary rates may be overridden at time of payroll data entry. Six automatic deductions and 1-time deductions are provided. Deductions may be taken as dollar amounts or as a percentage of gross earnings.

The BAKCO Payroll System is a full stand-alone system and is also compatible with BAKCO's financial control applications.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Jerry Baker, President  
(312) 956–1053  
BAKCO DATA, INC.  
85 W. Algonquin Road, Suite 190  
Arlington Heights, IL 60005
Payroll/Labor Distribution

Operating System: VMS
Keywords: • Payroll • Personnel • Taxes

The Payroll module is a totally interactive payroll/personnel system for both hourly and salaried employees. It is an information management system that will retain payroll data to whatever degree of detail necessary to meet organizational requirements. Payroll benefits the organization by encouraging fast and accurate entry of time record information; by allowing on-line retrieval and update of personnel records to ensure that personnel information reflects the present, not the end of last month; and by making crucial labor cost information available to management immediately, allowing corrective action rather than historical analysis.

The Payroll module automatically provides full federal and state tax computations; accruals for federal and state unemployment tax; validation of timesheet project codes; labor distribution reports by project, person, and organization; quarterly federal 941 information and state unemployment tax reports; W-2 forms; payroll registers summarizing hourly and salaried transactions; cumulative employee payroll register; tracking of vacation and sick leave; and voluntary deduction summaries.

The interactive mode of Payroll meets the time-critical requirements of the application. All processing steps within the system are initiated by English-language commands. Reports are produced on request in response to the appropriate command and may either be printed immediately at the terminal or sent to a permanent file for later printing.

Payroll allows for both salaried and hourly employees on the same payroll. The system permits up to 99 rates and as many as 20 voluntary deductions. Multiple batches of timesheets can be combined into a single payroll period. Charge and cost rates can be assigned on labor grade code, and there is an optional allocation of fringe over direct labor. Paychecks are easy to produce, and special bonus or 1-time payments are easily cut and tracked.

Sites with project accounting needs can post accurate charges by project number from Payroll to an ADM ledger.

Payroll is a part of the COUNT® Integrated Financial System.

Price: $14,000 +
Product Support Available: Yes
Contact: Jenny Wiebler
(703) 790–1700
L&L SOFTWARE, INC.
8200 Greensboro Drive, Suite 200
McLean, VA 22102
PAYSOLVE (Payroll)

Operating System: VMS
Keywords: • General ledger • Payroll • Report writer
• Security

PAYSOLVE is a comprehensive, easy-to-operate payroll package meeting all existing statutory requirements. PAYSOLVE can be used for weekly, fortnightly, monthly, lunar monthly, and quarterly payrolls and year-end procedures. The package offers full up-to-gross calculation, including 99 pay elements, such as overtime, holidays, sickness, bonuses, and so on, as well as complete gross-to-net calculation — tax, NI up to nine pension schemes, rounding. Open-format payslips, checks, analyses, summaries, and so forth, are provided, as are user-generated reports and maintenance procedures. Security is maintained through passwords and checks on nonpaid/highly paid staff. Full SSP facilities and BACS are provided. Also available are optional labor costing and automatic normal ledger interfacing (onto SCC General Package or FINCON/IMPCON).

A version of this product is available for the PDP–11 computer.

Price: £3,000 – £10,000
Product Support Available: Yes
Contact: M. J. Bradley, Sales and Marketing Manager
0905 53335
STAVELEY COMPUTING
Blackpole Road
Worcester WR3 8TH
United Kingdom

PF (Payroll Facility)

Operating System: VMS
Keywords: • Data entry • Diagnostics • Payroll • Taxes

The Payroll Facility is a software package that controls the normal payroll procedures. It includes:
• Data entry for personnel file, time records (hours per project), and tax table information
• Journalization of all posting and disbursing activity
• Employee account analysis
• Payroll register (by department or employee)
• Payroll distribution by project
• Comprehensive payroll deduction and credit mechanism
• Selectable payroll disbursement (check writing)
• Multiple check formats
• Check-voiding procedures
• Check register journal
• Automatic W–2 forms
• Data base inquiry and maintenance
• Error checking and correction

If the Payroll Facility is used in conjunction with the General Ledger Facility, automatic posting of payroll transactions to the general ledger is available.

The Payroll package is designed for high efficiency and ease of use to meet the total interactive computing needs of the small business, corporate division, or institution. PF ensures the integrity of accounting procedures and security of data. All programs have individual password protection, which limits their use to authorized personnel.

A version of this product is available for the PDP-11 computer.

Price: $5,400
Product Support Available: Yes
Contact: Muriel King
(801) 224-5306
CLYDE DIGITAL SYSTEMS, INC.
3707 N. Canyon Road, Suite 3-E
Provo, UT 84604

Plycom Core Accounting Systems

Operating System: VMS
Keywords: • Accounts payable  • Accounts receivable
• General ledger  • Payroll

These simple yet flexible packages were designed by accountants for use by accountants. Operation is interactive, uses extensive prompting, and fully utilizes RSTS/E and VMS yet retains security and ease of recovery of batch and manual systems. Batch controls are on all data, accounting controls are preserved, interim data is held separate until verified and then passes into the regular files, an excellent audit trail exists throughout, and the file and report structure divides information into the user’s own traditional accounting periods.

The packages support basic accounting requirements as well as multiple divisions, multiple profit centers, or multiple companies, allowing growth without restricting established accounting practices. Features include:

• Accounts receivable — Complete receivables control via varied account reports; on-line inquiry by customer number or name, flexible yet controlled entry of cash receipts, numerous customer options (balance forward or open item, customer type, credit limit, and so on).
• Payroll — Easy maintenance of employee records; multipayrolls possible, labor distribution reports by distribution code or pay type (regular, premium, and other) within department and division, excellent printer control for special forms, user-defined deduction and labor codes.
• Accounts payable — Complete control over discounts, payment scheduling, and cash requirements forecasting; flexible reporting includes past history as well as current information and excellent printer control for special forms.

• General Ledger — On-line availability to all journal entries and purchase distributions for entire fiscal year; account inquiry for detail or balances automatically feeds Financial Reporting Package; complete audit trail from journal entry to Financial Reports includes trial balance and trial balance in 10-column worksheet format for easy period reconciliations.

• Financial reporting — Complete flexibility in statement formatting; multiple formats are easy, with automatic feeding from regular, history, or budget general ledgers; comprehensive multitenant reporting with multilevel consolidations, eliminations, or adjustments.

• Fixed assets — Comprehensive system includes all the programs, forms, and procedures necessary for complete asset reporting; accommodates reporting assets for both book and tax purposes and includes depreciation forecasting and an automatic interface to the General Ledger.

A version of this product is available for the PDP-11 computer.

**Price:** $3,000 – $35,000

**Product Support Available:** Yes

**Contact:** Bobby E. Sharp  
(512) 734-4366  
PLYCOM SERVICES, INC.  
P.O. Box 380465  
San Antonio, TX 78280

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**P/R (Payroll)**

**Operating System:** VMS  
**Keywords:** • Payroll  • Report writer

This payroll package handles both hourly and salaried employees and includes the following capabilities:

• Allows maintenance of employee master file and prints the employee file printout, the alphabetical employee list, alphabetical employee mailing labels, and employee time card labels

• Allows entry and editing of payroll attendance transactions and prints the payroll attendance edit list

• Calculates the payroll, including gross wages, taxes, and deductions; prints payroll checks in one of two formats; and prints payroll check distribution summary and the payroll check, savings bond, and union deductions registers

• Allows entry of payroll adjustment transactions and prints the manual payroll transaction register
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- Prints the payroll to G/L distribution and the payroll history reports and provides for history data to be preserved off line
- Prints the overtime and sick pay, the job class/equal opportunity, the state taxable wages, and city withholding tax reports
- Allows payroll check reconciliation that uses the same files as A/P check reconciliation
- Prints quarterly 941A forms and year-end W-2 and 1099 forms
- Allows interactive entry and editing of general ledger account information by department and federal and state tax percents, limits, and withholding tax tables
- Interfaces to two other MCBA packages
- Allows full printer spooling capability at the user's option
- Supports seven terminal types, including the VT100 in both ANSI and VT52 modes
- Provides security and supports multiple companies

A version of this product is available for the PDP–11 computer.

**Price:** $2,000 – $3,000

**Product Support Available:** Yes

**Contact:** Sales Representative
(818) 957–2900

MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

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**Practice Management**

**Operating System:** COS–310, CP/M, UNIX, VMS

**Keywords:** • Accounts receivable     • Billing     • Management
              • Report writer

The Practice Management system does the following:

- Simplifies recording and reporting of time and expenses
- Accommodates firms with more than one office
- Tracks clients on an engagement-by-engagement basis
- Offers progress billings or final billings
- Allows for the writing up or writing down of charges
- Generates both statements and invoices

In the system, clients are stored by billing responsibility. The reports and management analyses are printed to monitor staff, clients, work codes, and profit areas in the firm. All reports come out by billing responsibility or for the firm or for a particular branch.

The system maintains a fiscal year billing history, which is used to analyze current clients and also to project the budget for the coming year.

A version of this product is available for the PDP–11 computer.

**Price:** $1,500 – $7,500

**Product Support Available:** Yes
Contact: Marc Alexander, National Sales Manager  
(503) 641–8100  
ALPINE DATASYSTEMS, INC.  
8043 SW Cirrus Drive  
Beaverton, OR 97005

Practice Management
Operating System: VMS  
Keywords: • Accounts receivable • Billing • Law  
• Scheduling

The Practice Management System gives the firm requiring a detailed breakdown of time and billing information the ability to break a client’s work in process down to particular matters or engagements. Since a matter classification is often used by attorneys, many accountants find that the Practice Management System allows them to process time and billing for some of their attorney clients. This can make the Practice Management System a source of revenue as well as a tool for managing the accounting firm.

The Practice Management System has all the features of the Time and Billing System, as well as multiple-office breakdown capability; 4-digit matter number and 10-digit user-definable sort codes; 999 user-definable billing codes; open-item accounts receivable; automatic invoicing capability — eight invoice formats; statement preparation; production reports and work-in-process reports by client, by matter, or by employee; transaction history file for future scheduling; automatic retainer billing, realization rate, and percentage report; and four billing adjustment allocation methods.

A version of this product is available for the PDP–11 computer.
Price: $4,500  
Product Support Available: Yes  
Contact: Bob Sprowls  
(904) 434–2685  
DIGITAL SYSTEMS OF FLORIDA, INC.  
114 E. Gregory Street  
Pensacola, FL 32501

Purchasing Control System
Operating System: VMS  
Keywords: • Accounts payable • Accounts receivable  
• Inventory • Purchasing

The BAKCO Purchasing Control module creates, controls, and tracks purchase orders. The system tracks receipts against purchase orders and integrates vendor ordering and receiving information with inventory and accounts payable records.
The Purchasing Control module generates regular, drop-ship, blanket, and no-charge purchase orders. Upon entry of the purchase order data, each inventory item dynamically affects the inventory status. Both stocking and nonstocking items can be purchased from a vendor on the same purchase order.

Purchase orders show due date for each inventory item and special comments for any line item, and each item is priced and extended. Open purchase orders can be modified and generated when necessary.

Extensive purchase order status reporting can be prepared by vendor, purchase order number, item number, due date, or buyer. You can sort all purchase orders for a selected vendor.

Receiving reports can be printed at the receiving dock and show not only what is to be received, but also where the merchandise is to be stored. If partial receipt occurs, receiving reports can be reprinted, showing only those items still open.

Cash commitment reports can be produced, showing when payment should be due on all open purchase orders. The cash commitment report ages each vendor and provides grand totals.

The BAKCO Purchasing Control System may be integrated with our warehouse distribution application.

A version of this product is available for the PDP-11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Jerry Baker, President

(312) 956-1053

BAKCO DATA, INC.

85 W. Algonquin Road, Suite 190

Arlington Heights, IL 60005

**PY–11 (Payroll)**

**Operating System:** VMS

**Keywords:** • Payroll • Personal computing • Personnel • Taxes

PY–11 features immediate on-line calculation of all pay, deductions, and net check. PY–11 also calculates an unlimited number of deductions/extra pay allowed, with totals for dollars and hours accumulated, and has parameter-driven check formatting that accommodates almost any check design. PY–11 also has table-driven tax tables for both federal and state taxes, multiple pay rates for each employee, recurring deductions and/or extra pay amounts, and special user-defined pay/deduction types. The software will calculate additional withholding, automatic cut-off of extra pay/deductions by
dollar amount or ending date, governmental reporting — 941 infor-
mation, state unemployment form, W–2 forms, managerial reporting —
salary review, rate changes, and terminated employees report,
earned income credit, and tips required to reach minimum wage.
PY–11 can be adapted to Canadian payroll requirements.

PY–11 interfaces to GL–11 General Ledger and Financial Reporting
System and the CN–11 Job Cost System.

Reports include check register, historical check register, QTD/YTD
earnings report, automatic pay/deductions, general ledger distribu-
tions, earnings by payroll code, quarterly report, W–2 forms, rate
review, rate change, and terminated employees.

A user’s guide includes information for the office manager, the termi-
nal operator, and the application manager. A reference manual in-
cludes installation procedures, program flows, and data formats for
the system manager and the programmer.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $4,000  
**Product Support Available:** Yes  
**Contact:** Larry Landusky, Marketing  
(806) 792–3785  
COMPU–SHARE, INC.  
3824 50th Street  
Lubbock, TX 79413

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**RABBIT–1 (Resource Accounting, Auditing, and Billing System)**

**Operating System:** VMS  
**Keywords:** • Accounts receivable • Billing • Report writer • Service industries

RABBIT–1 audits, accounts for, and allocates computer usage to indi-
viduals, groups, projects, or customers. Those users can be real ac-
counts receivables, like a service bureau. Or, RABBIT–1 can be used
to budget in-house system resource consumption.

RABBIT–1, a session-accounting system, keeps such up-to-date ses-
sion data details as date, log-on time, connect time, and CPU. That
audit trail gives accountants and auditors detailed invoicing backup
and system security. Furthermore, RABBIT–1 calculates such
charges as tape storage, equipment rental, manuals, communication
costs, printer forms, and programming services. That added charge-
back capability makes organizing and accessing data usage easier
and quicker.
RABBIT-1 has a powerful report generator that provides summaries, subtotals, recaps, and cross-footing for complete control of usage data. Three main report levels — user, account, and recap — help communicate to customers or users very effectively. The summary report prints out as either an invoice or a statement. RABBIT-1 users may design that report and others as required. The detail report is a tabular-type report. It optionally lists each charge according to how much information is to be shown. The recap report is used to summarize information across accounts. Those reports — user, account and recap — along with many others, help present technical data in terms that nontechnical persons can understand. All reports can be modified without reprogramming. Other RABBIT-1 reports include project accounting, disk file usage, communication analysis, tape storage rental, program usage/surcharge, production throughput, budget-to-date, printer usage, and end-of-session.

Menu-driven set-up procedures make installation quick and easy. Automatic prompting and HELP commands make RABBIT-1 easy to set up, maintain, and modify. Along with free remote installation, RAXCO provides free enhancements, technical support, and training.

A version of this product is available for the PDP-11 computer.

Price: $1,995 – $5,995

Product Support Available: Yes

Contact: Joseph Musler
(301) 258-2620
RAXCO, INC.
1370 Piccard Drive
Rockville, MD 20850

RABBIT-2

Operating System: VMS

Keywords: • Graphics • Operations • Report writer • Service industries

RABBIT-2 is a performance analysis and capacity planning tool. Bar charts and graphic displays show how much you use system components and peripherals. Charts show your system performance hour by hour, user by user, or program by program. Sketches show a profile of your average system day, your average user demands, and your average program resource requirements, even projections of your future computer needs.

System programmers, operations managers, and DP management all benefit from RABBIT-2 data. The system's output is directed to a user's terminal, printer, or plotter, where resource usage appears in graph and bar chart form. That resource usage information is gath-
erer by using interactive English-like commands. RABBIT-2 accepts more than 100 command functions.

You can get RABBIT-2 for image or program analysis. You choose the time interval (seconds, minutes, hours, days) and time period. For example, you can analyze resources such as CPU, BIO, DIO, PWS, FAU, QIO, PAGES, and ELAPSED time. Then, after modification, you can review a program for efficiency percentages. Thus, you can see the true needs of a program and can pinpoint your capacity needs.

You can use RABBIT-2 monitor data as input to get systemwide demand graphs, plus user or program demand requirements. RABBIT-2 even gives you minute-by-minute "time-frame" graphs, monitor "snapshots" that detail each use of the system. RABBIT-2 takes that material and converts cumulative resource usage values to intervals specified to get true time interval reporting. RABBIT-2 can help you determine relative response time under various circumstances. It reports the reality rather than the subjective user impression; that accuracy is important to the successful use of your system.

RABBIT-2 generates three basic categories of report: time interval, rank, and profile. The time interval report is a horizontal or vertical bar chart of resource usage. The rank report lists resource consumption by user or program in decreasing statistical order and also ranks usage by ratio, such as CPU per connect hour. The profile report lists all entity names in the active data set, sums up all statistics, and shows you the percentage breakdown for each statistic by process type.

A version of this product is available for the PDP-11 computer.

Price: $1,995 – $4,995
Product Support Available: Yes
Contact: Joseph Musler
(301) 258–2620
RAXCO, INC.
1370 Piccard Drive
Rockville, MD 20850

Random Number Generator

Operating System: VMS
Keywords: Mathematics  Statistics

This program enables the accountant preparing for an audit to quickly and easily select random samples of checks, invoices, journal entries, and so on. No longer must random-number tables be consulted and lists prepared manually.

The basis for generating the random-number tables is a seed number, an unbiased 6-digit number, such as your birth date or the hour
of the day. Optionally, the system will generate the seed number if manual entry is not desired.

The DSF Random Number Generator offers simplicity of operation and automatic reporting and provides for a valid statistical sampling of transactions. The system features:

- Menu application selection
- Generation of up to 100 random-number schedules per batch
- Sample size range to four digits
- User-selected output — unsorted output without sequence numbers, sorted output with or without sequence numbers, unsorted and sorted output
- User-selected formats — nonoverlapping series, overlapping series, page/number series, alphanumeric series

A version of this product is available for the PDP-11 computer.

**Price:** $350  
**Product Support Available:** No  
**Contact:** Bob Sprowls  
(904) 434–2685  
DIGITAL SYSTEMS OF FLORIDA, INC.  
114 E. Gregory Street  
Pensacola, FL 32501

**RealWorld™ Accounts Payable**

**Operating System:** UTRIX, UNIX  
**Keywords:**  
- Accounts payable  
- General ledger  
- Office systems  
- Report writer

This accrual Accounts Payable system for small businesses provides rapid access to and control of cash out-flow data. The system defines A/P aging periods and G/L accounts to which distributions can be made, as well as sets the parameters of reports to fit company needs.

The program does the following:

- Maintains vendor files and lists
- Allows entry, editing, and posting of new payables, adjustments, cancellations, and prepaids, with edit list and journal
- Prints the open-item and cash-requirements reports
- Allows on-line vendor account inquiry
- Allows flexible payment selection, including partial payments, with precheck writing report
- Prints A/P checks and the check register
- Prints the A/P distributions to the General Ledger and the vendor analysis report
- Interfaces to the RealWorld General Ledger or may be used stand-alone
- Includes password protection, extensive data file integrity check, and backup/restore facilities
A version of this product is available for the PDP–11 computer.

**Price:** $795

**Product Support Available:** Yes

**Contact:** Larry Wilber
(603) 798–5700
REALWORLD INC.
Dover Road
Chichester, NH 03263

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**RealWorld™ Accounts Receivable**

**Operating System:** ULTRIX, UNIX

**Keywords:** • Accounts receivable  • Billing  • Report writer  
• Sales and marketing

This open-item and balance-forward Accounts Receivable system for small businesses contains user-definable parameters that tailor the system to fit company needs.

The system does the following:

• Provides maintenance and lists of both salesperson and customer files
• Allows sales transactions entry, editing, and posting, with edit list and journal
• Allows cash receipts entry, editing, and posting, with edit list and journal
• Prints the aging report and statements
• Allows on-line customer account inquiry
• Calculates and posts finance charges, with edit list and journal
• Controls sales commissions due and prints the commissions due report
• Prints A/R distributions to the General Ledger
• Interfaces to the RealWorld General Ledger or may be used stand-alone
• Includes password protection, extensive data file integrity check, and backup/restore facilities

A version of this product is available for the PDP–11 computer.

**Price:** $795

**Product Support Available:** Yes

**Contact:** Larry Wilber
(603) 798–5700
REALWORLD INC.
Dover Road
Chichester, NH 03263
RealWorld™ General Ledger

Operating System: ULTRIX, UNIX
Keywords: • Financial management  • General ledger
          • Inventory  • Office systems

This flexible general ledger system for small businesses provides for customer formatting of financial reports to assist in financial management.

The system does the following:
• Handles up to 13 accounting periods
• Supports multiple profit centers
• Maintains and lists chart of accounts
• Allows general and standard journal transaction entry, editing, and posting, with edit list and journal, and on-line G/L account detail inquiry
• Prints the trial and working trial balances, the source cross-reference report, and the financial statements in flexible, user-defined formats
• Allows transaction detail to be kept for the year, if disk space is available, and has a flexible year-end closing procedure
• May be interfaced to the RealWorld Accounts Receivable, Accounts Payable, and/or Payroll systems
• Includes password protection, extensive data file integrity check, and backup/restore facilities

A version of this product is available for the PDP–11 computer.

Price: $795
Product Support Available: Yes
Contact: Larry Wilber
         (603) 798–5700
         REALWORLD INC.
         Dover Road
         Chichester, NH 03263

RealWorld™ Order Entry/Billing

Operating System: ULTRIX, UNIX
Keywords: • Accounts receivable  • Billing  • Inventory
          • Order entry

The Order Entry system runs in conjunction with RealWorld’s Accounts Receivable and Inventory Control systems. It provides both 1- and 2-step billing procedures.

The system does the following:
• Allows orders to be entered and edited and, on request, prints the order edit list
• Invoices orders on entry (1-step billing) or holds them as open orders for later billing (2-step billing)
• Adjusts inventory levels interactively during order entry
• Prints picking tickets, invoices for all orders billed, and the price list
• Enters credit memos on request
• Has back-order retention and control and prints back orders by item and/or back orders by customer reports
• Posts inventory information to the RealWorld Inventory Control system
• Posts billing information to the RealWorld Accounts Receivable system
• Optionally interfaces to the RealWorld Sales Analysis system, providing that system with data required for sales analysis by item, sales analysis by product category, and sales analysis by sales volume reports
• Optionally interfaces to the RealWorld General Ledger system via Accounts Receivable and Inventory Control

A version of this product is available for the PDP-11 computer.

**Price:** $795

**Product Support Available:** Yes

**Contact:** Larry Wilber
(603) 798-5700
REALWORLD INC.
Dover Road
Chichester, NH 03263

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**TBS Accounts Payable System**

**Operating System:** VMS

**Keywords:** Accounts payable, Data entry, General ledger

The TBS Accounts Payable System does the following:

• Maintains full vendor file, including Alphabetical Vendor List, full accounts file, and job file
• Has CRT entry of new payables and CRT inquiry by vendor and automatic voucher number and batch control totals
• Prints A/P Voucher Register
• Distributes payables by G/L account and optionally by job number
• Prints A/P Aged Trial Balance, A/P Distribution report in detail or in summarized form, and Vendor Analysis, A/P Job Distribution, Cash Disbursement, and Cash Requirement reports
• Allows payables to be selected for payment by type or individually, with selected items deferred
• Prints the Check Verification report prior to check printing and prints checks with invoice detail on stubs
• Prints the Check Register, showing all computer-written, handwritten, and voided checks
• Allows use of multiple A/P, cash, and discount accounts
90  Accounting

- Has a check reconciliation module
- Automatically interfaces to TBS G/L system

A version of this product is available for the PDP–11 computer.

Price: $995 – $2,500
Product Support Available: Yes
Contact: Chuck Tebbetts  
(213) 245–0917
THETA BUSINESS SYSTEMS
1110 Sonora Avenue, Suite 106
Glendale, CA 91201

TBS Accounts Receivable System

Operating System: VMS
Keywords: Accounts receivable

The TBS Accounts Receivable System does the following:
- Handles open-item and balance-forward customers
- Provides full Customer File maintenance with alphabetical list
- Permits discount, tax, and finance charge percentages to be set to a standard default value or set for each customer
- Has separate Terms Code and Ship Code maintenance modules
- Permits on-line entry of sales, CR memos, DR memos, and manual finance charges with batch totals for control of transaction flow
- Prints Sales and Cash Receipts journals
- Permits on-line entry of cash receipts and allows partial payments and payments to more than one invoice
- Provides an A/R Open File that contains full transaction detail
- Prints the Customer Aging Report in detail or summarized form
- Provides CRT Customer Account Inquiry
- Prints Monthly Sales and Monthly Cash Receipts summaries
- Permits statements to be selectively printed with aged totals and a tear-off remittance
- Prints A/R History, Finance Charge, and Salesman Commission Due reports
- Automatically calculates and posts finance charges
- Provides automatic interface to TBS G/L system

A version of this product is available for the PDP–11 computer.

Price: $995 – $2,500
Product Support Available: Yes
Contact: Chuck Tebbetts  
(213) 245–0917
THETA BUSINESS SYSTEMS
1110 Sonora Avenue, Suite 106
Glendale, CA 91201
TBS General Ledger System

Operating System: VMS  
Keywords: • General ledger

This system does the following:
• Maintains a full chart of accounts with a 7-digit account number and a 3-digit subaccount number for profit centers or cost centers
• Permits user-generated wording and formats on financial statements and up to 13 user-defined accounting periods
• Provides CRT entry of G/L transactions, which can be edited prior to posting and with running balance displayed during entry
• Prints G/L Transaction Register
• Automatically distributes transactions to accounts on a percentage basis
• Automatically generates counterbalancing entries
• Handles accrual reversals
• Prints the General Ledger Trial Balance with work space for adjustments
• Prints the General Ledger List, selected by account number or date and with detail or summary
• Prints G/L transaction analysis by source
• Allows CRT inquiry into accounts by period
• Prints Balance Sheet, Profit and Loss Statement, Supporting Schedules, and Source and Application of Funds reports
• Has a recurring-entries module
• Automatically interfaces to TBS A/R, Payroll, and A/P systems

A version of this product is available for the PDP-11 computer.

Price: $995 – $2,500  
Product Support Available: Yes

Contact: Chuck Tebbetts  
(213) 245-0917

THETA BUSINESS SYSTEMS  
1110 Sonora Avenue, Suite 106  
Glendale, CA 91201

TBS Order Entry System with Inventory Control, Billing, and Sales Analysis

Operating System: VMS  
Keywords: • Billing  • Inventory  • Order entry

TBS Order Entry does the following:
• Features on-line entry of orders and CR Memos
• Permits items to be partially back ordered and partially shipped
• Automatically extends prices and calculates tax and weight
• Produces picking tickets for each order
• Prints daily order log by order number or product number
Accounting

- Prints Open Order Analysis reports by customer number or product number
- Produces Back Order Analysis reports by customer number or product number
- Maintains separate ship-to addresses
- Changes or deletes orders automatically to adjust inventory

The Billing software selects invoices for printing, adjusts quantity ordered and shipped in Invoice Preparation program, provides interface for invoices and CR Memos to A/R, and prints Invoice Register.

The Inventory Control software provides on-line update of the Product File, which contains a 10-character product number, 3 prices, average cost, QTY on hand, QTY on order, QTY RES, QTY BO, EOQ, ROL, and much more; prints Daily Inventory Activity Register; and prints Purchase Advice report and the price list.

The Sales Analysis produces five reports.

A version of this product is available for the PDP-11 computer.

**Price:** $995 – $2,500

**Product Support Available:** Yes

**Contact:** Chuck Tebbetts
(213) 245–0917
THETA BUSINESS SYSTEMS
1110 Sonora Avenue, Suite 106
Glendale, CA 91201

TBS Payroll Accounting

**Operating System:** VMS

**Keywords:** • Payroll • Personnel • Taxes

This fully integrated automated payroll system does the following:

- Maintains Employer Master File containing extensive payroll and personal data and produces Was-Is Report of all transactions
- Permits CRT entry of time worked and editing of transactions
- Provides automatic calculation of gross and net pay for hourly and salaried employees
- Handles regular, overtime, and premium pay rates and all standard pay frequencies
- Calculates vacation, holiday, and sick and miscellaneous pay
- Permits up to eight standard deductions, which may be prioritized and have maximum limits
- Calculates FWT, SWT, FICA, FUI, CITY TAX, and SUI
- Prints paychecks with Payroll Register detailing payroll calculations and prints Check Register
- Prints Labor Distribution, General Ledger Account Distribution, and Hours History reports
- Reconciles outstanding checks
- Prints 941-A, State Tax Registers, and W-2 forms
• Prints Payroll History report
• Allows entry of handwritten checks and can void checks
• Provides automatic interface to TBS G/L system

A version of this product is available for the PDP–11 computer.

**Price:** $995 – $2,500

**Product Support Available:** Yes

**Contact:** Chuck Tebbetts  
(213) 245–0917  
THETA BUSINESS SYSTEMS  
1110 Sonora Avenue, Suite 106  
Glendale, CA 91201

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**TBS Time Accounting for Professionals**

**Operating System:** VMS  
**Keywords:** • Billing

The TBS Time Accounting System was designed for a wide variety of professional service organizations. It has great flexibility in the type and manner of transaction entry. A large number of management-level reports are available for analysis of productivity and revenue sources. An interface to the TBS General Ledger system is optional.

A version of this product is available for the PDP–11 computer.

**Price:** $995 – $2,500

**Product Support Available:** Yes

**Contact:** Chuck Tebbetts  
(213) 245–0917  
THETA BUSINESS SYSTEMS  
1110 Sonora Avenue, Suite 106  
Glendale, CA 91201

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**TCB–11 (Time, Charges, and Billing for Professional Firms)**

**Operating System:** VMS  
**Keywords:** • Accounts receivable • Billing • Cost accounting • Engineering

TCB–11 is a professional practice management system designed to meet the needs of accounting firms. The system provides for time, cost, and cash receipts posting by client. Work-In-Process reports (prebilling ledgers) and monthly invoices are produced for each client. Accounts receivable age analysis and client statistics are provided, as well as reports relative to employee productivity and work/service category activity. The system is usually used in conjunction with Franklen’s CPA–11, General Ledger/Financial Reporting System.
A version of this product is available for the PDP–11 computer.

**Price:** $1,500 – $2,500  
**Product Support Available:** Yes  
**Contact:** Frank J. O’Kane, President  
(213) 441–3123  
FRANKLEN COMPUTER SYSTEMS, INC.  
715 Fremont Avenue  
South Pasadena, CA 91030

**THETA**

**Operating System:** ULTRIX, VMS  
**Keywords:**  
• Accounts receivable  
• Billing  
• General ledger  
• Payroll

THETA, an efficient, integrated accounting system designed by THETA Business Systems, is CRT interactive and menu-driven, making operator training and use easy. A user’s requirements can be met with minimum labor, permitting low-cost, rapid modification. THETA consists of the following modules: Accounts Payable, Accounts Receivable, Order Entry, General Ledger, and Payroll Accounting. In addition, in General Ledger you can format many types of financial statements and run them whenever and as often as you like. A variety of fixed formats are available, as well as several runtime options.

A version of this product is available for the PDP–11 computer.

**Price:** $995 – $1,995  
**Product Support Available:** Yes  
**Contact:** Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue, Suite 117  
Orange, CA 92665

**Thoroughbred Accounts Payable**

**Operating System:** VMS  
**Keywords:**  
• Accounts payable  
• Data base management  
• Data dictionary  
• Query facilities

The Vendor Master File for this system can maintain up to 999,999 vendors, and the Vendor Master File Report is generated automatically. The system provides vendor invoice entry and automatic updates, automatic control during data entry to ensure debit/credit balance, comprehensive file maintenance, and instant vendor and open-item inquiry at the terminal as well as hard-copy printout.
Edits and data verification can be performed on line. Complete system-generated or manual check processing is available. Payable checks are produced with check numbers and detailed payment information. Flexible invoice processing is provided for time and partial payments as well as prepaid invoices, with provision for discounts by percentage or dollar amount on invoices. The system can apply payment to the oldest invoice and offers full protection against duplication of invoice payment. Nonvendor or 1-time expenses can be entered into the system for payment distribution. The system can handle both credits and debits to a specific invoice or vendor. The system provides automatic totals on all monthly expensed payments. Reconciliation of payable checks includes registers providing outstanding and cleared-check information.

The system generates Open Accounts Payable, Cash Requirements, and Accounts Payable Aging reports by vendor or company. Control over cash allocation is provided at individual invoice level. The system has multiple account aging capability for cash flow reports, determines cash flow requirements for approved invoice payment, provides reporting for up to 26 profit centers, and generates automatic Cash Disbursement Reports for designated time periods. Year-to-date and prior-year expenditures are summarized for analyzing vendor activity. System-generated mailing labels are provided, as are Distribution Reports for both payable and payment distribution. Automatic posting of payments and invoices to appropriate General Ledger accounts is provided. Each pay cycle produces a check register that is summarized monthly. Optional Purchase Order and General Ledger interface and automatic audit trails are provided.

A version of this product is available for the PDP–11 computer.

**Price:** $795 – $8,000

**Product Support Available:** Yes

**Contact:** David E. Capel, Vice President
(415) 930–9932
COMPUTER SYSTEMS DEVELOPMENT, INC.
140 Mayhew Way, Suite 700
Pleasant Hill, CA 94523

**Thoroughbred Accounts Receivable**

**Operating System:** VMS

**Keywords:**
- Accounts receivable
- Data base management
- Data dictionary
- Query facilities

This cost-effective microcomputer solution for measuring your company's sales performance provides timely aged management reports and statement preparation that will improve your cash flow and overall cash management. Complete open-item cash posting of credits, debits, cash, and on-account balances provides comprehensive
control over receivables. Aged delinquent analysis by salesperson facili
titates credit collections. Customer credit limits can be easily estab-
lished to eliminate poor payers and to facilitate cash flow. File sizes
are variable and expandable and are based on the user’s activity.
System prompts are designed for easy operator use. The system is
easily installed and maintained and can be utilized in either a single
or a multiuser environment.

The Thoroughbred Accounts Receivable System’s Customer Master
File can maintain up to 999,999 customers. The system features au-
tomatic customer Master File Report generation, easy data entry for
customer and transaction adjustments, and instant inquiry for cus-
tomer status and accounts receivable information.

The system handles complete sales, sales tax, freight, cash receipts,
discounts, credits, and miscellaneous accounts receivable transac-
tions. Nine categories of nontaxable sales are offered, and multiple
state tax tables apply the appropriate sales tax to an invoice. The
user may select percentage or dollar amount discounts. Interest
charges can be applied to past-due accounts. Partial or total pay-
ments can be applied to individual invoices, and detailed reporting is
provided on outstanding invoices, with automatic generation of De-
linquent reports. The system prints customer statements with op-
tional user-determined sales or reminder messages as frequently as
desired, as well as complete sales analysis by customer on month-to-
date and year-to-date bases. Sales Commission reports are automi-
cally produced.

Information is provided on last customer payment date and account
aging by user-defined periods. The system handles miscellaneous
cash receipts and can process numerous general ledger periods. Flexi-
ble processing provides for both open-item and balance-forward cus-
tomers. Trial balance with options of minimum days past due, mini-
mum invoice amount, and detail or summary are printed automati-
cally. The system generates mailing labels and provides for multiple-
company requirements. Optional Order Processing and General
Ledger interface and automatic audit trails are provided.

A version of this product is available for the PDP-11 computer.

Price: $795 – $8,000
Product Support Available: Yes
Contact: David E. Capel, Vice President
  (415) 930–9932
  COMPUTER SYSTEMS DEVELOPMENT, INC.
  140 Mayhew Way, Suite 700
  Pleasant Hill, CA 94523
Thoroughbred Fixed Assets

Operating System: VMS
Keywords: • Data base management • Data dictionary
• Query facilities • Report writer

The Thoroughbred Fixed Assets system features instant asset inquiry at the terminal, automatic generation of the Fixed Asset Master Report, user-determined asset information, multiple data edit check and multiple depreciation schedules, depreciation of new assets under the Accelerated Cost Recovery System as well as standard methods, reports by asset value as well as depreciation methods, generation of intercompany transfer of assets, Added Cost reports and a Depreciation Report that summarizes current asset depreciation, and automatic audit trails. A General Ledger interface is optional.

A version of this product is available for the PDP–11 computer.

Price: $795 – $8,000
Product Support Available: Yes
Contact: David E. Capel, Vice President
(415) 930–9932
COMPUTER SYSTEMS DEVELOPMENT, INC.
140 Mayhew Way, Suite 700
Pleasant Hill, CA 94523

Thoroughbred General Ledger

Operating System: VMS
Keywords: • Data base management • Data dictionary
• General ledger • Query facilities

The Thoroughbred General Ledger system provides instant General Ledger account information at the terminal or as a hard-copy print-out and can handle 999,999 different account numbers. Journal entry editing prevents out-of-balance posting; a Journal Activity Report based on data entry is provided. Adjustment entries eliminate the need for account editing. User-defined financial statements are generated automatically. Income Statements may be produced with either quarter-to-date or year-to-date comparisons.

General Ledger handles general ledger posting and processing on a multiperiod basis, and transactions may be purged monthly or retained for the entire year. Year-to-date and prior-year balance information is provided for each account. The system accommodates up to 26 General Ledger files, providing independent or consolidated financial reporting. A monthly General Ledger Detail Report is provided, a monthly and quarterly Trial Balance generated, and automatic balance sheet produced. The system provides Capital Statement Account reporting, Chart of Accounts reporting with option to print monthly balances, and a Budget Master Report that details budgets
for the entire year. The Income Statement design is facilitated with the Format Report. The General Ledger Account Activity Report summarizes all General Ledger transactions, providing the user with an option to review all accounts or a specified range. Automatic audit trails are provided.

A version of this product is available for the PDP–11 computer.

**Price:** $795 – $8,000

**Product Support Available:** Yes

**Contact:** David E. Capel, Vice President

(415) 930–9932

COMPUTER SYSTEMS DEVELOPMENT, INC.

140 Mayhew Way, Suite 700

Pleasant Hill, CA 94523

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**Thoroughbred Payroll**

**Operating System:** VMS

**Keywords:**  * Data base management  * Data dictionary

  * Payroll  * Query facilities

The Thoroughbred Payroll System’s Employee Master file can handle up to 999,999 employees and can be stored by employee number or alphabetically. The Employee Master Report includes deduction information, year-to-date and quarter-to-date information, and employee status; all data entries can be easily corrected. Payroll checks are produced automatically with check numbers. Payroll can be produced weekly, biweekly, semimonthly, and monthly. Payroll processing includes hourly, overtime, doubletime, salaried, holiday, sick, vacation, bonus, and per diem. Both multicompny and departmental pay categories are provided.

Manual and reverse check entry are available, as is automatic re-start payroll check processing. Withholding schedules include federal, state, and local taxes; FICA, FUTA, SUTA, unemployment, and workmen’s compensation; state tax requirements; nonresident and resident taxation; standard deductions, including medical, life insurance, savings, savings bonds, loan repayment, and garnishment; five miscellaneous deductions by percent, dollar amount, or per hour dollar amount; and flexible miscellaneous deductions. Discretionary withholding tax is provided, as is a nontaxable payroll option. The system automatically provides tax deposit schedules for federal and state taxes withheld and adjustable tax rates. The system accommodates payrate overrides and automatically generates W–2 forms and 941 information.

Payroll can report earned-income credits and has an optional General Ledger interface. Flexible filing status per tax deduction category is provided. The time sheet Edit Report is generated automatically; the register summarizes complete payroll data for the current
cycle, quarterly, and yearly; the Labor Distribution Report summarizes all payroll data by department. Workmen’s Compensation reports are generated automatically; General Ledger Distribution reports by department and audit trails are also provided.

A version of this product is available for the PDP–11 computer.

**Price:** $795 – $8,000

**Product Support Available:** Yes

**Contact:** David E. Capel, Vice President
(415) 930–9932

COMPUTER SYSTEMS DEVELOPMENT, INC.
140 Mayhew Way, Suite 700
Pleasant Hill, CA 94523

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**Thoroughbred Purchase Order**

**Operating System:** VMS

**Keywords:** • Data base management • Data dictionary
• Purchasing • Query facilities

The Thoroughbred Purchase Order system features easy entry and verification of purchase orders; purchase order query and reporting by vendor, item number, or purchase order number at the terminal or as a hard-copy printout; automatic purchase order updating; multiple-page purchase orders; control of stock receipts and incomplete purchase orders; automatic adjustments of variance in purchase price; automatic unit conversions; flexible ship-to instructions; automatic generation of Vendor Master File Report; inventoried and non-inventoried item ordering; optional interface with Accounts Payable; and automatic audit trails.

A version of this product is available for the PDP–11 computer.

**Price:** $795 – $8,000

**Product Support Available:** Yes

**Contact:** David E. Capel, Vice President
(415) 930–9932

COMPUTER SYSTEMS DEVELOPMENT, INC.
140 Mayhew Way, Suite 700
Pleasant Hill, CA 94523

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**Time and Billing**

**Operating System:** VMS

**Keywords:** • Accounts receivable • Billing • Scheduling

The Time and Billing System establishes a flexible and comprehensive information system that provides management controls and analytical reports to evaluate the time spent on a client’s work. The heart of the system is the billing code file. Up to 99 codes may be grouped into 16 major categories by billable and nonbillable time.
Accounting

The system provides:
- Four entry journals — time and expense, billing, cash receipts, and file maintenance
- Work-in-process reports by client or employee
- Gross profit by client
- Accumulation of Y-T-D billing and adjustments
- Work-in-process review sheet
- Billed and unbilled receivables
- Aged accounts receivable reports by client or employee
- Client billing and billing code analyses
- Productivity, time and expense, and billing analyses by employee
- Automatic monthly A/R statements
- Monthly charge capability

A version of this product is available for the PDP-11 computer.

Price: $2,350
Product Support Available: Yes
Contact: Bob Sprowls
          (904) 434–2685
          DIGITAL SYSTEMS OF FLORIDA, INC.
          114 E. Gregory Street
          Pensacola, FL 32501

Time Management

Operating System: VMS
Keywords: • Billing  • Management  • Report writer

The Time Management program can interface with Digital Systems’ Practice Management or can complement the Time and Billing System.

Time Management allows a firm to track the actual time spent, as compared to the time budgeted, for a client or an engagement. Time Management also allows a firm to review time spent last year for a month or a year at the client, engagement, employee, or code level.

The system provides:
- Automatic accumulation of time, when interfaced with Practice Management
- Reporting by month or year
- Budgeting capabilities
- Predefined as well as user-defined reports

A version of this product is available for the PDP-11 computer.

Price: $1,500
Product Support Available: Yes
Contact: Bob Sprowls
          (904) 434–2685
TOLAS

**Operating System:** VMS

**Keywords:** • Distribution  • Financial analysis  • Manufacturing  
• Purchasing

This comprehensive software package for the distribution and light manufacturing industries provides a complete multifunction, multiuser business system. Installations may run from 10 to more than 90 interactive terminals and may perform batch processing and program development or maintenance concurrently with on-line operations.


Information from the Financial Reporting System can be passed directly to financial analysis and modeling packages on both the mainframe or on microcomputers. Special functions, known collectively as "Salestream," allow a centralized TOLAS data base to be accessed remotely by customer, vendor, or salesperson terminals. More than 300 business functions are represented in the standard package. Modules may be installed separately or combined to form an integrated system.

TOLAS offers many important features to the end user: ease of operation, improved operator efficiency and accuracy, extensive on-line edit checking, formatted CRT screens, consistent logical flow across functions, and numerous accounting controls and audit trails.

Although TOLAS can be installed as a complete off-the-shelf system, it is typically customized by Transcomm to fit a customer's unique business environment and can easily be expanded to meet growing EDP needs. This flexibility is achieved through several report and inquiry generators and by the use of modular programming techniques.

TOLAS is available on a turnkey basis or as add-on software on existing DIGITAL computers. Included with the software license are standard system specifications, program sources and documentation, users' manuals, and three months warranty. Available at additional cost are systems analysis and custom specifications, package modifications, custom documentation, data conversion, user training, and extended warranty and support services.
A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $20,000

**Product Support Available:** Yes

**Contact:** Allen L. Pinkus
(412) 963–6770

TRANSCOMM DATA SYSTEMS, INC.
1380 Old Freeport Road
Pittsburgh, PA 15238

**Turnkey Data**

**Operating System:** VMS

**Keywords:** Cost accounting  Manufacturing  Office systems  Report writer

The Turnkey data base business package for DIGITAL OEMs/distributors/end users, featuring job costing, includes the necessary programs, procedures, and startup command files to generate, to run, and to track a DIGITAL OEM or distributorship.

The universal job-costing system, powered by the DIBOL and the DECFORM programming languages, includes job costing, payroll, accounts receivable, accounts payable, and general ledger. The package enables the holder to offer clients Turnkey software without having to leave the office. Data base file structures incorporate one central information master file (ISAM), one to two daily/periodic transaction files (ISAM), and one to three optional work files for selected listings (SEQ).

Report programs allow for displaying report information on screens with 132-character display capabilities. The package contains 100 DIBOL programs, 18 sorts, and 30 DECFORM screens.

A version of this product is available for the PDP–11 computer.

**Price:** $1,200 – $8,500

**Product Support Available:** Yes

**Contact:** Peter J. Marcantonio
(518) 793–8023

EXECUDATA COMPUTER SYSTEMS
1392 Redmond Road
Gansevoort, NY 12831

**V–OLOE (Vendor On-Line Order Entry)**

**Operating System:** VMS

**Keywords:** Order entry  Purchasing
The Vendor On-Line Order Entry package contains the following features:

- Vendor order function, including original order posting to vendor purchase order file, inventory update for new lot on order, and primary and alternate vendor selection
- Automatic generation of vendor purchase order forms, including table-driven logic for custom data presentation and layout
- Automated vendor delinquency notices and delivery follow-up
- Receiving function, including inventory file update for goods on reorder with partial receipt capability, vendor purchase order file update with partial receipt capability, posting to general ledger accounts for value of new goods in inventory, and posting to the vendor record and general ledger accounts for new payable obligations together with appropriate journalization

The V–OLOE package may be run on any system supporting BASIC–PLUS or BASIC–PLUS II. The package is designed for high efficiency and ease of use to meet the total interactive computing needs of the small business, corporate division, or institution. V–OLOE ensures the integrity of the vendor order-posting procedures and the security of data. All programs have individual password protection, which limits their use to authorized personnel.

A version of this product is available for the PDP–11 computer.

**Price:** $11,500

**Product Support Available:** Yes

**Contact:** Muriel King

(801) 224–5306

CLYDE DIGITAL SYSTEMS, INC.
3707 N. Canyon Road, Suite 3–E
Provo, UT 84604

**Welding Distributor System**

**Operating System:** VMS

**Keywords:** • General ledger  • Inventory  • Order entry  • Payroll

The Welding Distributor System is a unique combination of small-parts (supplies) inventory, cylinder inventory control, and accounts receivable systems. Because of the modular design of the programs, the small-parts inventory system is optional.

Cylinder records may be tracked and maintained by either individual serial number or by cylinder size for company-owned and customer tanks. Cylinder rental, demurrage, and lease invoices may be printed as required. Leases can be set up for any period of time in increments of one month. A Lease Expiration Report lists leased cylinders for each customer, along with the expiration date.
Customer Account Inquiry provides for the display of financial and cylinder activity. In this program, the customer can be accessed by name or account number. Cylinder Inquiry provides a method of researching the status of cylinders maintained by serial number.

A sales tax code file automatically calculates sales taxes when orders and cash sales are entered. Extensive sales tax reporting features are provided at state, city, and county levels, if necessary. Cash sales are entered separately from charge transactions. The cash sale program allows for the entry of cylinder records, which permits the customer's file to be updated for rental or demurrage.

The system can handle both balance-forward and open-item-type customers. Orders — or charge invoices, if the small-parts inventory system is not to be used — can be entered, as well as shipping/returning cylinders in the same process. Open orders may be queried, added to, changed, or deleted at any time prior to billing. Changes to line items or cancellations automatically result in adjustments to inventory. Noninventory sales and debit or credit memos are entered through regular sales entry and editing. The system prints the Sales Journal, including credit and debit memos.

The system allows interactive entry and editing of cash receipts. Non-A/R cash received may also be entered through cash receipts. A general ledger account number must be entered to indicate distribution.

The system has complete customer and inventory master file maintenance; additions, changes, deletions can be made and printed. An alphabetical customer list can also be printed. Billing is automatically interfaced to the accounts receivable system and uses the same customer file.

Processing for small-parts inventory is separated into four distinct areas: front counter processing, file maintenance, regular processing, and report printing. Front counter processing consists of order entry, inventory item display, and kit display. File maintenance consists of inventory, kit, equivalence, contract, and salesperson master files and lost-sale, price change, and customer price files. Regular processing consists of invoicing, credit memo entry, inventory receivings, purchase orders, cash sale entry, inventory price and quantity changes, and inventory transfers. Report printing consists of price tags, bin labels, stock status report, vendor and category analysis, back-order reports, dated orders, commission report, line-item history, and price lists.

A version of this product is available for the PDP–11 computer.

Price: $10,000 – $50,000
Product Support Available: Yes
Contact: Stan Hoggatt, Market Manager
         (406) 652–2620
COMPUTERS UNLIMITED
2407 Montana Avenue
Billings, MT 59101

ZIN

Operating System: ULTRIX, UNIX
Keywords: • Data base management • Financial management
• General ledger • Spreadsheets

ZIN is a relational data base system with built-in applications. The system consists of seven standard modules — General Ledger, Accounts Payable, Accounts Receivable, Payroll, Statistical Analysis, Spreadsheet, and Fixed Assets.

A version of this product is available for the PDP-11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Contact: Dennis R. Thompson
(619) 283–6211
EPICOM INC.
3647 Fairmount Avenue
San Diego, CA 92105
Agriculture
ADAM (Automated Dairy and Management)

**Operating System:** VMS  
**Keywords:**  
  - Management  
  - Production control  
  - Property management  
  - Veterinary

This fully integrated dairy herd management system is designed to meet the current and future record-keeping needs of dairy herd managers. Developed and maintained by a staff of dairy herd management experts, ADAM maintains complete herd health, reproduction, and production records. ADAM, available for on-farm computers or interactive time-sharing on remote computers, was designed to interface with any manufacturer’s automatic data collection devices. It can be interfaced with not only automatic milk meters and feed stalls but also all the other devices being developed and announced (milk conductivity, milk or body temperature, animal activity, body weight, and so on).

ADAM interfaces electronically with Dairy Record Processing centers to allow direct input of management information and distribution of DHI results. Sire production and type proofs can be automatically updated after each USDA Sire Summary. Management reports can be customized by the user; up to 10 versions of each report may be permanently defined and generated by request. Herd summary information for the last 13 months and 2 previous years allows within-herd analysis of herd health, reproduction, production, cost, and genetic trends. ADAM has special provisions to support the special processing needs of registered feeders — complete embryo transfer, classification, registration, and pedigree capabilities are provided. Table-driven prompts and comments allow the system to be converted from one language to another in a relatively short period of time.

A version of this product is available for the PDP-11 computer.  
**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Roger W. Palmer, Ph.D., President  
  (608) 233–6484 or 231–2005  
  AGRICULTURAL COMPUTING AND CONSULTING  
  215 Lathrop Street  
  Madison, WI 53705
Arts
LEONARDO

Operating System: UNIX, VMS
Keywords: • Accounting • Data management
          • Forms management • Inventory

LEONARDO is a turnkey fine art inventory management system with multiuser capabilities. Designed for art galleries, art dealers, and museums, LEONARDO is a complete business system applicable to businesses that handle large inventories of unique items. The system includes a complete forms driver data base system that is customized to the specifications of the purchaser. The system maintains inventory, invoice, accounting, and client files. File configuration allows multiattribute retrieval; for example, clients may be retrieved by name, address, artist interests, recent contacts, and/or recent sales to target potential customers for specific works of art.

Files may be fully cross-linked — for example, inventory items listed by purchaser, clients listed by all purchasers. Inventory and client files can also be fully integrated with ledger files, so single operations, such as order writing at the time of a sale, update all related items in client, inventory, and ledger files.

Accounting, which conforms to FSAB standards, includes accounts receivable and payable, profit/loss, and trial balance. Word processing with mail merge capabilities is included.

The system supports fully protected, concurrent access to all files, with dynamic incremental backup on floppy disk.

A version of this product is available for the PDP–11 computer.

Price: $10,000 – $15,000
Product Support Available: Yes
Contact: Margaret Jensen, President
         (804) 971–7987
         ALBEMARLE FINE ART RETRIEVAL GUILD, INC.
         P.O. Box 3116
         Charlottesville, VA 22903
Construction
Accounts Payable

Operating System: VMS
Keywords: • Accounting  • Report writer

The Accounts Payable system prepares invoices for payment, prints checks, and provides up-to-date information on cash requirements. The system is flexible enough to handle almost any type of invoice payment — partial, complete, even prepaid. The Accounts Payable system permits control of each flow based on the client’s unique requirements.

Some significant features and reports are:
• Vendor listing, alphabetically or numerically, and vendor analysis
• Expense account cross-reference
• Cash requirements, aged analysis, and pre-check-writing reports
• Payment deferral
• Automatic check writing
• Interface option to bank reconciliation program
• Optional interface to the job cost module for updating costs charged to specific job cost breakdowns
• Complete handling of subcontract retainage, with flexibility in both calculating and paying the retained amounts

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Bob Sprowls
(904) 434–2685
DIGITAL SYSTEMS OF FLORIDA, INC.
114 East Gregory Street
Pensacola, FL 32501

Accounts Receivable

Operating System: VMS
Keywords: • Accounting  • Billing  • Report writer

The Accounts Receivable system offers a sophisticated yet simple-to-operate method of accomplishing all the general accounting functions associated with accounts receivable. Data entered once into the system updates or prepares every record, document, and management report affected, leaving a clear audit trail.

Some significant features and reports are:
• Capability of handling balance-forward and open-item records for the same client
• Automatic posting of fixed charges — up to 999 user-defined charge types
• Automatic age analysis, statement preparation in several formats, and commission calculations
• Three invoice formats
• Service charge capability
• User-defined terms and shipping instructions
• Sales reports by customer, customer type, city, county, or state and by division or tax code
• Trial balance and sales history reports
• Optional interface to the job cost module, which will update amounts billed and received by job
• Complete flexibility in calculating and paying job retainage amounts

A version of this product is available for the PDP–11 computer.

**Price:** $2,500

**Product Support Available:** Yes

**Contact:** Bob Sprowls  
(904) 434–2685
DIGITAL SYSTEMS OF FLORIDA
114 East Gregory Street
Pensacola, FL 32501

**BMDES**

**Operating System:** VMS

**Keywords:** • Architecture  • Civil engineering  • Engineering  
• Mechanical engineering

BMDES designs reinforced concrete beams in accordance with CP110, including reinforcement design, serviceability, and shear checks. Input is either interactive or from previous analysis programs. Output is formatted suitably for submission to checking authorities.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** A. J. Beveridge  
(0274) 391076
CIVIL & STRUCTURAL COMPUTING (NORTHERN) LTD.
"Ashcourt," 2 Ash Grove, Great Horton Road  
Bradford, Yorkshire BD7 1BN
England

**Builder (Homebuilders System)**

**Operating System:** VMS

**Keywords:** • Cost accounting  • Real estate

This system, designed for the general contractor who specializes in residential development and construction, monitors costs of material and labor and applies them against each lot and unit. Cost reports
can be obtained at any time, comparing costs to budget and other like models.

A complete buyer profile analysis is built into the system to assist in future advertising plans.

A version of this product is available for the PDP–11 computer.

**Price:** $5,000  
**Product Support Available:** Yes  
**Contact:** Nigel Harris  
(613) 829–8888  
HARRIS COMPUTER SYSTEMS  
16 Credit Union Way  
Nepean, Ontario K2H 8R6  
Canada

### CBEAM

**Operating System:** VMS  
**Keywords:**  
- Architecture  
- Civil engineering  
- Engineering  
- Environmental

CBEAM analyzes continuous beams subjected to various loading conditions. Output is produced graphically and optionally includes bending moments, shear force, diagrams, influence line diagrams, or max/min envelopes. Various support conditions may be included, and the graphical output may be sent to plotting devices for retention of submission. Output from the program may be retained for use in subsequent member design programs.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** A. J. Beveridge  
(0274) 391076  
CIVIL & STRUCTURAL COMPUTING (NORTHERN) LTD.  
"Ashcourt," 2 Ash Grove, Great Horton Road  
Bradford, Yorkshire BD7 1BN  
England

### CN–11 (Job Cost)

**Operating System:** VMS  
**Keywords:**  
- Construction  
- Cost accounting  
- Project management  
- Report writer

The Job Cost accounting system is a layered package that requires the GL–11, AP–11, and PY–11 systems as a base. These four packages work together to provide the user with a complete method of posting job cost information to projects and cost centers. Both the
AP-11 and the PY-11 systems post directly into the job cost files, saving data entry time and reducing the opportunity for operator error. Only one entry is required to post an invoice into accounts payable and to distribute the costs into the necessary projects and cost centers. Payroll information is distributed on an employee basis to the applicable projects and cost centers. Manual postings into the job cost system are also allowed. Estimates for each project and cost center may be posted. Transfers between cost centers and projects are also allowed. Reporting is accomplished in three different approaches. All reports are available for an unlimited date range and in a variety of specification formats. The Project Cost Analysis reports any amount of summarization or detail by any range of projects. The Cost Center Analysis reorganizes the same information, reporting by cost centers. The Labor, Materials, Subcontract report shows information in these three categories, organized by project. The length and the format of the project code are designed with a tailoring option. All cost centers are user-defined, and an unlimited number may be established.

A version of this product is available for the PDP-11 computer.

**Price:** $12,500 – $17,500

**Product Support Available:** Yes

**Contact:** Larry Landusky, Marketing
(806) 792–3785
COMPU-SHARE, INC.
3824 50th Street
Lubbock, TX 79413

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**CONSTRUCTIMATE (Construction Management System)**

**Operating System:** VMS

**Keywords:** • Cost accounting • Project management
• Real estate • Report writer

CONSTRUCTIMATE is a comprehensive construction management system that can be configured for the residential and the commercial contractor. The system consists of the following modules: job costing, standard costing (for home builders), cost estimating (for general contractors), critical path management, general ledger, payroll, accounts receivable, and accounts payable.

Those modules are part of an integrated system that eliminates multiple manual postings for each module. Accounts payable and payroll entries update both job costing and financial reports. Posting to multiple profit centers, jobs, and phases is accommodated. Cost estimating captures historical job costing data for comparison while preparing estimates.
CONSTRUCTIMATE has the flexibility to allow users to maintain their current accounting procedures. It is menu driven and therefore easy to use.

Some of the reports generated, in addition to the standard accounting reports, include job cost report, projected cost report, job contract summary, application for payment, model estimate listing, option estimate listing, standard job cost listing, history performance report, job estimate report, final estimate report, critical path chart, and critical path bar graph.

A version of this product is available for the PDP–11 computer.

**Price:** $6,000

**Product Support Available:** Yes

**Contact:** Armand Van Velthoven, Marketing Manager  
(303) 574–8086  
PROFESSIONAL COMPUTER SERVICES, INC.  
2345 N. Academy Boulevard, Suite 209  
Colorado Springs, CO 80909

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**ConTrac® (Construction Management and Accounting)**

**Operating System:** VMS

**Keywords:**  
- Cost accounting  
- General ledger  
- Payroll  
- Word processing

With its routine and language derived directly from builder and contractor vocabulary and business practices, this system's functions address the situations builders face every day. Information is provided on job billings in detail, comparison of job billing to cost, purchase order status by job and vendor, job-complete percentage and remaining cost, tracking of committed dollars against purchase orders, invoices by job and vendor, vendor payment history, tracking of bids by type of job, and job cost estimating. Completely functional payroll with provisions for job deductions, union benefits, as well as standard deductions and benefits, are provided. In addition, individual project managers have total flexibility of inquiry, separate operators can have simultaneous access to common files, all files are protected by password, equipment can be transported to job sites, unlimited upgrade capability and a word processing package are provided, and the program can be customized.

The system consists of DIGITAL processors, CRTs, printers, controllers, and disk drives in tandem with exclusive ConTrac system software. The application programs are built around a data base management file structure, allowing DBMS to be added later with full integration. Also available are an integrated electronic spreadsheet and word processor. System purchasers receive one week of computer
instruction for up to three employees and are offered a maintenance contract for both hardware and software.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $25,000

**Product Support Available:** Yes

**Contact:** Richard B. Carroll  
(502) 527–3293  
UNITED SYSTEMS & SOFTWARE, INC.  
547 Mayfield Highway, P.O. Box 361  
Benton, KY 42025

**Contractor Management System**

**Operating System:** VMS

**Keywords:** • Accounting  • Management  • Payroll  
• Purchasing

This comprehensive system provides total management control over job costing and the related contractor payroll functions. The complete flexibility and simplicity of the system allow in-house use by all phases of the contractor market. The fully integrated system allows updating of all phases of job cost information, check writing for payroll, and report generating, both for job costing and for payroll-related reports.

Some significant features of the system are:

• Unlimited numbers of jobs and classifications
• User flexibility in formatting jobs and cost breakdowns
• Complete editing and audit trail of journalizing for verification prior to posting to permanent records
• Ability to track both units and dollars for each breakdown of a job
• Sixteen types of job cost reports, with numerous run-time selection options
• Automatic printing of budget to actual, including the respective variances as well as percent complete figures for each job phase
• Multiple distribution of payroll by department, job, federal labor classification, cost code, and source
• Automatic posting of the payroll module to both general ledger and job cost
• Flexible handling of multiple pay rates, overtime rates, other pays, deductions, and union burdens
• Automatic calculation of taxes and workman’s compensation and printing of government forms, such as W–2s and 941s
• Multiple occupational rates for state and federal jobs
• Automatic updating of job cost information from accounts payable, accounts receivable, equipment cost, and purchase order

The Contractor Management System consists of the basic general ledger program, job cost (which includes a payroll module), accounts
Construction

Payable, loan amortization, and fixed asset accounting (depreciation). An optional interface to job cost is available with purchase order, accounts receivable, equipment cost, and bank reconciliation.

A version of this product is available for the PDP-11 computer.

Price: $9,900
Product Support Available: Yes
Contact: Bob Sprowls
(904) 434-2685
DIGITAL SYSTEMS OF FLORIDA, INC.
114 E. Gregory Street
Pensacola, FL 32501

Contractors' Plus

Operating System: VMS
Keywords: - Accounting - Decision support - Project management - Report writer

Contractors’ Data Systems supplies and supports a full range of accounting and management software for the contracting industry. This package includes Accounts Payable, Accounts Receivable, General Ledger, Payroll, Job Cost, Fixed Assets, Inventory, and Financial Statements — all geared specifically for the construction and contracting industry. A unique feature of this software is a powerful yet easy-to-use report generator that allows any user to create a report without need of programmer intervention. The payroll system handles multistate jobs and is powerful enough to handle complicated shift differentials, premium and overtime hours, and specialized employee reimbursements.

Price: $2,500 – $18,000
Product Support Available: Yes
Contact: Rick Rohles
(312) 323-7207
CONTRACTORS' DATA SYSTEMS
1741 Summer Street
Hammond, IN 46320

CPM (Critical Path Method)

Operating System: VMS
Keywords: - Civil engineering - Cost accounting - Project management - Scheduling

CPM computes critical path for medium-to-large construction projects with a maximum of 1,000 individual tasks. CPM sorts by early and late starts, early and late finishes, total float, bid items, and sequentially. Dollar values for each task and the total for the project are printed by option.
Price: $995
Product Support Available: Yes
Contact: Lyman E. Byrd, Director of Operations
(800) 368-4203
TECHNICAL INFORMATION SYSTEMS, INC.
116 W. Plume Street
P.O. Box 1900
Norfolk, VA 23501

D4 +

Operating System: VMS
Keywords: • Architecture • Civil engineering • Engineering
• Manufacturing

D4+ is a set of programs for the plastic design of steel multibay portal buildings, including all the ancillaries, such as side rails, pur- lins, crane beams, connections, base plates, and foundations. Design is carried out in accordance with UK BCSA recommendations and current codes of practice used in the steel industry. The programs apply to construction, iron, steel, metal manufacture, and fabrication markets.

Price: Available upon request
Product Support Available: Yes
Contact: A. J. Beveridge
(0274) 391076
CIVIL & STRUCTURAL COMPUTING (NORTHERN) LTD.
"Ashcourt," 2 Ash Grove, Great Horton Road
Bradford, Yorkshire BD7 1BN
England

Equipment Cost

Operating System: VMS
Keywords: • Billing • Cost accounting • Maintenance
• Management

The Equipment Cost system is designed to assist a contractor in maintaining control of vehicles, equipment, and tools by providing information on revenue, cost, and maintenance scheduling. The system is interfaced to general ledger, job cost, and job cost payroll mod- ules.

Some of the significant features are:
• User-defined revenues and costs
• Ten user-defined fields in the equipment master file in addition to standard items
• Multiple billing rates for each piece of equipment
Construction

- Rental billing capability by hour, day, week, or month
- Maintenance scheduling by dates or units
- Numerous management reports with variable sort features

A version of this product is available for the PDP–11 computer.

**Price:** $2,250

**Product Support Available:** Yes

**Contact:** Bob Sprowls  
(904) 434–2685

DIGITAL SYSTEMS OF FLORIDA, INC.  
114 E. Gregory Street  
Pensacola, FL 32501

FOUNDS

**Operating System:** VMS  
**Keywords:** • Architecture • Civil engineering • Manufacturing

The foundations to a structure are very important. Considering all possible critical loadings is essential and may well result in lengthy calculations. The use of FONDS removes the tedium of calculation and permits the rapid assessment of a pad foundation subjected to several loading conditions. The program is interactive, allowing the engineer to modify the foundation at various stages. Hard-copy print-out is available.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** A. J. Beveridge  
(0274) 391076

CIVIL & STRUCTURAL COMPUTING (NORTHERN) LTD.  
"Ashcourt," 2 Ash Grove, Great Horton Road  
Bradford, Yorkshire BD7 1BN  
England

JCA (Job Cost Accounting)

**Operating System:** VMS  
**Keywords:** • Architecture • Cost accounting • Project management • Scheduling

Job cost accounting enhances the professionalism and cost control on any project. JCA, a budget analysis and management control tool for architects and development firms, produces fast and timely results. Cost controls and accurate accounting and analysis take the guesswork out of project accounting.

JCA can:

- Track all phases and tasks of a job from design to completion
• Compare job cost estimates to actual expenditures for all phases
• Track add-on costs and overhead-per-hour costs
• Indicate total billed and paid to date with timely job inquiry
• Interact with accounts receivable, accounts payable, general ledger, and payroll systems
• Automatically write payable checks and provide invoices

A version of this product is available for the PDP–11 computer.

Price: $1,500 – $20,000
Product Support Available: Yes
Contact: Kent Hoffman
(405) 848–8818
METRO–MARK PROPERTIES
818 N.W. 63rd Street
Oklahoma City, OK 73116

MTS–II (Master Tracking System II)

Operating System: VMS
Keywords: • Facilities management • Management
• Project management • Scheduling

MTS–II is a computer-based management tool that documents, coordinates, expedites, and provides accountability for exception items that develop during large-scale construction and start-up projects. A field-proven system, MTS–II leads to improved control of on-site efforts in resolving the completion of items that would otherwise have an adverse effect on construction and start-up progress. By bringing potential problem areas into sharp focus, MTS–II can help management avoid costly schedule delays.

Price: $75,000 – $90,000
Product Support Available: Yes
Contact: Dale R. Blann
(904) 795–2362
SYSTEMS COORDINATION INC.
P.O. Box 2600
Crystal River, FL 32629

PCM (Project Cost Model)

Operating System: VMS
Keywords: • Architecture • Civil engineering
• Project management • Simulation

PCM, a project management computer system, provides project managers with a tool for integrated project control of time, money, and resources. PCM includes facilities for planning, critical path network analysis, resource allocation, scheduling, cost control, and cash flow
forecasting. Modules for each of those functions are available separately if required. A comprehensive range of printed and plotted reports, such as project network drawings, bar charts, and histograms, are available, together with very selective reporting options.

PCM can be used with equal facility by project promoters, project managers, designers, and construction contractors to prepare estimates, monitor progress, and plan remaining work on a project. PCM is particularly effective when a forecasting and decision-making support tool is required. PCM allows forecasts of the consequences of alternative courses of action to be provided before project management decisions are taken.

A version of this product is available for the PDP–11 computer.

**Price:** £8,000 – £20,000
**Product Support Available:** Yes
**Contact:** Martin Barnes, Director  
061–439 6639 Telex: 666650  
PROJECT SOFTWARE LTD.  
Foden Lane, Woodford  
Stockport, Cheshire SK7 1PT  
United Kingdom

**PRODAT (Project Day Computation)**

**Operating System:** VMS  
**Keywords:**  
- Civil engineering  
- Project management  
- Scheduling  

PRODAT computes the dating sequence for any construction-project duration, considering holidays, overtime, and so forth. Output depicts the entire project and the relationship of the nth day of the project to the calendar date. Leap years are considered. PRODAT is written in ANSI 1966 FORTRAN IV.

**Price:** $200
**Product Support Available:** Yes
**Contact:** Lyman E. Byrd, Director of Operations  
(800) 368–4203  
TECHNICAL INFORMATION SYSTEMS, INC.  
116 W. Plume Street  
P.O. Box 1900  
Norfolk, VA 23501

**Purchase Order System**

**Operating System:** VMS  
**Keywords:**  
- Cost accounting  
- Financial management  
- Purchasing
The Purchase Order System is a flexible, comprehensive module designed to interface to the accounts payable, general ledger, and job cost modules in the Contractor Management system.

Some of the features are:
- Up to 99 line items per purchase order, with each line item assigned to a vendor and charged to a job, category, class, and source
- Individual item status maintained and indicated by open, received in full, partially received, or canceled
- Units on order, unit cost, description, and inventory number maintained
- Flexible report capabilities by job, vendor, issue, or delivery date
- Committed-cost reporting
- Automatic posting to job cost, accounts payable, and general ledger as items are received

A version of this product is available for the PDP–11 computer.

Price: $1,250
Product Support Available: Yes
Contact: Bob Sprowls
(904) 434–2685
DIGITAL SYSTEMS OF FLORIDA, INC.
114 E. Gregory Street
Pensacola, FL 32501

RTAIN

Operating System: VMS
Keywords: • Architecture • Civil engineering • Engineering
• Materials science

The program RTAIN is interactive and conversational in nature and uses traditional analysis techniques, producing output in a format immediately suitable for submission to checking authorities and fully in accordance with CP.2 Earth Retaining Structures and CP100 — The Structural Use of Concrete. The user specifies a first trial for the wall profile, together with the soil and loading parameters. The user is given the opportunity, during the running of the program, to change the data if necessary. When the user is satisfied with the design, a set of calculations and results are output on standard calculation sheets automatically headed and numbered.

Price: Available upon request
Product Support Available: Yes
Contact: A. J. Beveridge
(0274) 391076
CIVIL & STRUCTURAL COMPUTING (NORTHERN) LTD.
"Ashcourt," 2 Ash Grove, Great Horton Road
Bradford, Yorkshire BD7 1BN
England
SBEAM

Operating System: VMS
Keywords: Architecture, Civil engineering, Engineering

The SBEAM program designs steel members subject to major axis bending. The program can take virtually any type or combination of locking on the beam and can handle various end coordinations. Output includes paged calculations suitable for submission to checking authorities, with bending, shear, equipment stress, and deflection checks fully covered. Sections are automatically selected from BCSA section tables or user-defined lists. Operation of the program is totally interactive, allowing the engineer complete control of the design process.

Price: Available upon request
Product Support Available: Yes
Contact: A. J. Beveridge
(0274) 391076
CIVIL & STRUCTURAL COMPUTING (NORTHERN) LTD.
"Ashcourt," 2 Ash Grove, Great Horton Road
Bradford, Yorkshire BD7 1BN
England

SLAB

Operating System: VMS
Keywords: Architecture, Civil engineering, Engineering

SLAB designs 1-way and 2-way spanning slabs in compliance with CP110. Any support conditions may be specified, and a prescribed area of steel may be specified over any of the supports. The moments for 2-way spanning slabs are based on yield lines and are similar to those calculated using table 13 of the code. If a steel area is specified, it is taken into account when calculating the remaining moments. For 1-way spanning slabs, yield lines are again used. Clark, in his research paper on the serviceability of slabs designed by yield lines, states that this method is acceptable for the ultimate limit state but could give problems due to deflection at serviceability. As the moments from yield lines are low compared to factored elastic moments, the program factors them by 1.2 to bring them into the same range as the elastic moments and to reduce the possibility of problems at serviceability.

Price: Available upon request
Product Support Available: Yes
Contact: A. J. Beveridge
(0274) 391076
CIVIL & STRUCTURAL COMPUTING (NORTHERN) LTD.
"Ashcourt," 2 Ash Grove, Great Horton Road
Bradford, Yorkshire BD7 1BN
England

SOLVE

Operating System: VMS
Keywords: • Architecture • Civil engineering • Manufacturing
• Mechanical engineering

SOLVE is a general engineering analysis package for the documenta-
tion of deflections and forces in various structures, including 2-
dimensional plane frames and grillages, 3-dimensional space frames,
and pin-jointed trusses. Included is a general element finite package
capable of handling most structures. A number of graphical features
are included. This package applies to construction, iron, steel, metal
manufacturing, and fabrication markets.

Price: Available upon request
Product Support Available: Yes
Contact: A. J. Beveridge
(0274) 391076
CIVIL & STRUCTURAL COMPUTING (NORTHERN) LTD.
"Ashcourt," 2 Ash Grove, Great Horton Road
Bradford, Yorkshire BD7 1BN
England
Distribution
Accountant II Inventory Control System

Operating System: VMS
Keywords: • Inventory • Report writer • Warehousing
          • Wholesale

The Accountant II Inventory Control system is interrelated with the Accountant II Order Entry System. As merchandise is ordered and shipped to customers, the inventory movement is recorded by the Inventory Control System. The system provides the following:

• Inquiry capabilities — You can request a display of any item in the Inventory Master File. The information displayed includes the current on hand, on order, quantity allocated to unshipped orders, pricing, costs, and vendor information.

• Purchasing and receiving — Included is a purchase order subsystem that accepts order information, prints purchase orders, tracks the orders, and updates the inventory when the orders are received. The receiving function is performed on line on an exception or blind receiving basis.

• Physical inventory — A complete physical inventory subsystem is provided for taking and reporting physical inventory data. The system produces count sheets (in warehouse location sequence) for counting the inventory and prints physical inventory reports comparing physical counts to book inventory. When completed, the results of a physical inventory will update the inventory files.

• Management information — The system provides a number of standard reports to monitor inventory levels and movements. Since the system captures all activity affecting the inventory, any number of custom management reports can be designed.

• Reports — The system provides the following reporting capability: Low Inventory Level Report, Inventory Movement (Detail and Summary), Omission Reports, Purchase Orders, Open Purchase Order Lists, Receiving Reports, and Physical Inventory Reports.

A version of this product is available for the PDP–11 computer.

Price: $2,000 – $3,000

Product Support Available: Yes
Contact: Richard Northrup, Sales Director
         (212) 221–2517
         COMPUTRÓN BUSINESS SOLUTIONS, INC.
         701 Seventh Avenue, Suite 9W
         New York, NY 10036

Accountant II Order Entry System

Operating System: VMS
Keywords: • Billing • Order entry • Point of sale
          • Wholesale
The Accountant II Order Entry System includes inventory allocation, invoicing, automatic back ordering, variable pricing, and prebilling or postbilling operations:

- Invoicing options — The system provides for variable discounting structures, special pricing, separate bill-to and ship-to addressing, variable salesperson commissions, and special terms. Normal default options established for each customer can be changed at order entry time for a particular order.
- Inventory interaction — All orders are verified against available inventory at the time of order entry. Out-of-stock conditions are immediately known so that substitutions can be made. All items ordered are reserved to prevent overallocation of stock.
- Picking documents — The picking documents produced by the system include the generation of a short-form Straight Bill of Lading. In addition, the quantity to be back ordered is printed.
- Reports — The system provides warehouse picking documents, invoices, open-order lists, daily invoice registers, and out-of-stock reports.

A version of this product is available for the PDP-11 computer.

Price: $2,000 – $3,000
Product Support Available: Yes
Contact: Richard Northrup, Sales Director  
(212) 221-2517
COMPUTRON BUSINESS SOLUTIONS, INC.  
701 Seventh Avenue, Suite 9W  
New York, NY 10036

BICAR (Billing, Inventory Control, and Accounts Receivable)

Operating System: VMS  
Keywords: • Accounts receivable • Billing • Inventory • Sales and marketing

BICAR is a generalized menu-driven software package for performing billing, inventory control, accounts receivable, and sales analysis. Highly operator-oriented, BICAR has a large number of operator-controllable options and extensive data entry verification checking. Designed for small businesses, the package is configured such that implementation may consist of specific function modules, such as billing or inventory control, or may comprise the total package.

A version of this product is available for the PDP-11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: John T. Rasted  
(203) 265-2226
Distribution — Wholesale and Retail

Operating System: VMS
Keywords: • Purchasing • Retail • Warehousing
        • Wholesale

This comprehensive set of modules is installed in a wide variety of major distributors. The PDP–11 version will run on MICRO–11 upwards; the VAX version is specially designed and written to exploit VAX to the maximum. More than 12 years experience in on-line commercial distribution is built into the packages.

Multiwarehouse, sophisticated inventory control, and sales management are integrated into financial accounting.

A version of this product is available for the PDP–11 computer.

Price: $30,000 – $100,000
Product Support Available: Yes
Contact: Dr. E. A. Haworth
       01 248–7100
       M.C.S.
       3, Wynnsly Grove, Fallowfield
       Manchester
       United Kingdom

Distribution Management System

Operating System: VMS
Keywords: • Billing • Inventory • Order entry • Retail

The interactive Distribution System allows one to process customer orders, keep inventory, create invoices, and store sales information. The system provides for price changes, cost calculations, inventory status, and sales data and supports sales history, gross profit, and inventory control. In addition, the system can integrate fully with the Accounts Receivable and General Ledger systems. The system greatly reduces time and effort in creating, shipping, and billing orders. Features of the system include:

• Validation: All data entered is validated immediately. This procedure increases productivity and reduces the likelihood of shipping the wrong product.

• Control: System accuracy is ensured through batch totals and data entry journals.

• Management reports: Order processing provides management and summary reports showing customer and inventory activity, helping the user plan and manage.
• Integration: Complete integration is provided with the General Ledger via the Accounts Receivable System. Journal and General Ledger account numbers are controlled by the user.
• Manual override: Automatic features may be changed by data entry operations, meeting unique requirements easily.
• Immediate updating: The system identifies items on order, back ordered, reserve amounts ready for shipment, and items on hand.
• Credit control: Customer preset credit limit is used to control order entry.

A version of this product is available for the PDP–11 computer.

Price: $3,000 – $5,000
Product Support Available: Yes
Contact: Charles Calvert
(301) 296–9032
SMITH, ABBOTT, AND COMPANY, INC.
300 E. Joppa Road
Baltimore, MD 21204

**DMS–1000 Distribution System**

Operating System: VMS
Keywords: • Accounts receivable • Inventory • Order entry
• Warehousing

The system, designed to support all phases of finished goods inventory control and distribution for medium and large companies, handles order processing, inventory management, sales analysis, invoicing, and accounts receivable. Most functions are performed on line, and a full complement of reports for audit, operations support, and management analysis are provided.

The system is sold as an independent software package and operates in either distributed or centralized mode. Modules are fully integrated. A range of options can be added at any time. The package also includes operating support/maintenance software and implementation services. Modules that can be purchased separately are accounts receivable, physical inventory support, requirements planning, and finished goods inventory replenishment. The package is easily customized. Customization can be provided by DMS or can be done by the customer.

The DMS–1000 Multinational Distribution System is a specialized version of the DMS–1000 and adds currency conversion, multilingual capability, customs/duty documentation, and accounting to the baseline DMS–1000 System.

Price: $145,000
Product Support Available: Yes
Contact: Chris Freedland
(617) 863–5000
DMS–1500 Warehouse Management System

Operating System: VMS
Keywords: • Data dictionary • Inventory • Order entry
• Warehousing

This interactive software system provides a complete tool to improve warehouse information processing and to control inventory storage and distribution. Designed to interact with automated materials handling equipment as well as with bar code readers and hand-held terminals, the system handles order processing, picking and shipping, inventory location and control, and receiving and putaway.

Productivity analysis is available on an optional basis. The system uses a random stock locator to optimize the use of warehouse space and also handles lot, serial number control, expiration dates, and so on. The productivity analysis module can be purchased separately. The package is easily customized. Customization can be provided by DMS or can be done by the customer.

Price: $85,000
Product Support Available: Yes
Contact: Chris Freedland
(617) 863–5000
DISTRIBUTION MANAGEMENT SYSTEMS, INC.
81 Hartwell Avenue
Lexington, MA 02173

Electronic Component Distribution System

Operating System: VMS
Keywords: • Electronic • Inventory • Order entry
• Wholesale

The electronic component distribution system is specially designed to improve and maximize profitability of distributors of components, boards, and modules. This well-proven, robust system can be supported worldwide and is installed in the United States, United Kingdom, France, and Germany.

The system is very economical to run, easy to install, and has many features specific to electronic component distribution.

A version of this product is available for the PDP–11 computer.
Price: $10,000 – $60,000
Product Support Available: Yes
EMIS (Equipment Management Information System)

**Operating System:**  CICS, VMS  
**Keywords:**  • Maintenance  • Manufacturing  • Transportation  
  • Utilities

EMIS, a comprehensive fleet management system, reports on equipment, inventory, fuel, repairs, finances, preventive maintenance, and shop productivity; identifies vehicles and personnel with good and bad MPG; tracks all the detailed data needed for day-to-day operation; and summarizes key cost and performance items for management.

A version of this product is available for the PDP-11 computer.  
**Price:**  $15,000 – $75,000  
**Product Support Available:**  Yes  
**Contact:**  John Gorman  
(305) 788–3474  
FLEET MANAGEMENT SYSTEMS, INC.  
147 W. Lyman Avenue  
Winter Park, FL 32789

Fedder Auto Parts System

**Operating System:**  ULTRIX, UNIX  
**Keywords:**  • Automotive  • Construction  • Retail  
  • Warehousing

This specialized version of the Fedder Foresight™ Scientific Inventory Management System provides both front counter and back office operation, with special features for cores, supersedes parts, and interchanges. The system handles multiple pricing, branch store, jobber, and warehouse distributor operations.

Individual auto parts stores and jobbers are the prime market. The system is also suitable for parts departments of auto dealers and truck, farm, construction, and other equipment dealers.

A version of this product is available for the PDP-11 computer.  
**Price:**  Available upon request  
**Product Support Available:**  Yes
Distribution

Contact: David E. Fedder  
(301) 561–3579  
FEDDER SOFTWARE, INC.  
P.O. Box 248  
Timonium, MD 21093

FORMS (Forms Order Reorder Management System)

Operating System: VMS  
Keywords:  • Data entry  • Forms management  • Order entry  • Purchasing  
FORMS provides order entry, purchase order processing, invoicing, inventory, and forms management functions for a business forms distributor.  
A version of this product is available for the PDP–11 computer.  
Price: $5,000  
Product Support Available: Yes  
Contact: Donald Rubin, President  
(301) 982–1818  
SYSTEMS ENGINEERING TECHNOLOGY INC.  
10676 High Beam Court  
Columbia, MD 21044

Fuel Oil Accounting/Delivery Scheduling

Operating System: VMS  
Keywords:  • Accounts receivable  • Billing  • Petroleum  • Scheduling  
The ADD Fuel System helps the petroleum marketer to forecast deliveries (on either a degree day or a dated basis), automatically adjust for hot-water consumption in all seasons, control credit and collections, and generate dunning notices as required. The system can also produce “instant invoices” and “instant statements,” maintain balance-forward and open-item accounts, and process budget and nonbudget accounts. The system accommodates accounts that purchase multiple products or that have many delivery locations. Accounts may be located and all account information displayed on a terminal via the account’s name, address, number, telephone number, or practically any other key.  
A report generator is an integral part of this system, thus allowing the user to produce ad hoc reports. The system also provides a total accounts receivable system, including sales and cash journals for any period desired by the user as well as detailed tax reports and summaries.
A version of this product is available for the PDP–11 computer.

**Price:** $15,000 – $30,000

**Product Support Available:** Yes

**Contact:** Bruce A. Bott, President  
(201) 584–4026  
ADVANCED DIGITAL DATA, INC.  
354 Route 206  
Flanders, NJ 07836

**IC–11 (Inventory Control)**

**Operating System:** VMS  
**Keywords:**  
- Billing  
- Inventory control  
- Retail  
- Wholesale

IC–11 is a layered product, requiring OE–11 and AR–11 as a base. The combination of these three packages provides the user with complete information required for maintaining inventory records, placing orders, invoicing, and updating accounts receivable information. The IC–11 system provides flexibility through quantity tailoring, allowing the user to position the decimal point anywhere in an 18-character field. Unlimited units of measure can also be established for different packaging, lengths, types, colors, and finishes. Multiple warehouses can be defined, stocked, and relieved. Transfer of products from one warehouse to another is handled expeditiously with an interactive screen form and is costed according to either branch or separate company determination. IC–11 perpetually costs each order from order entry as it is invoiced. This cost can be based on any one of four methods (set by a tailoring code): LIFO, FIFO, average cost, or specific cost. During check-in, the purchase order cost may be entered (to speed the sale of merchandise). Any number of subsequent cost adjustments may be made, reflecting an invoice discrepancy, freight-in, and so on. Cost adjustments are automatically reflected for invoiced as well as stock merchandise. All IC–11 reporting allows the specification of any date range, warehouse, unit of measure, and product range. The Inventory Turns shows an annual turns calculation based on the date range specified. The Inventory Movement report allows up to six period/date specifications to show the movement between each period. The Purchase Analysis calculates an average movement for six months, reports last month’s sales, and compares this with reorder quantities and other purchasing information. Physical inventory is facilitated by incremental freezing of stock and an interactive adjustment screen that automatically adjusts the inventory levels. Physical inventory is accomplished after freezing any portions of stock, allowing incremental counting of merchandise.

A version of this product is available for the PDP–11 computer.

**Price:** $3,500 – $4,500

**Product Support Available:** Yes
ICAMS (Inventory Control and Management System)

**Operating System:** VMS  
**Keywords:**  
- General ledger  
- Inventory  
- Order entry  
- Wholesale

ICAMS is a complete order entry and inventory control system that applies discounts and quantity breaks by vendor line and customer, identifies substitution and alternate inventory items, offers "bill-to" and multiple "ship-to" capabilities, contains 10 price levels based on customer type, interfaces into complete inventory and sales analysis systems, and completely interfaces with accounts payable, purchase order, accounts receivable, and general ledger systems.

A version of this product is available for the PDP–11 computer.

**Price:** $5,000 – $25,000

**Product Support Available:** Yes

**Contact:** Anthony J. Ruggeri  
(314) 644-4050  
AUTOMATED INFORMATION INC.  
6710 Clayton Road  
St. Louis, MO 63105

INV (Inventory Control Facility)

**Operating System:** VMS  
**Keywords:**  
- Inventory  
- Security

The INV package includes the following basic features:

- Inventory record loading, including standard record header fields, table-driven custom subfields, repeating groups of fields for vendor order information, field change, and record delete  
- Global change to all records for a field or a subfield  
- Inventory display, including inquiry and report generation

When INV is installed with other packages, there is automatic posting to the various relevant master files, including the customer, vendor general ledger, and inventory files.

The INV package is designed for high efficiency and ease of use to meet the total interactive computing needs of the small business, corporate division, or institution. INV ensures the integrity of the inventory posting procedures and security of data.
A version of this product is available for the PDP-11 computer.

**Price:** $9,000  
**Product Support Available:** Yes  
**Contact:** Muriel King  
(801) 224–5306  
CLYDE DIGITAL SYSTEMS, INC.  
3707 N. Canyon Road, Suite 3–E  
Provo, UT 84604

### Inventory Control System

**Operating System:** VMS  
**Keywords:** • Cost accounting • Inventory • Warehousing

This on-line interactive system controls the basic inventory functions and provides comprehensive reports for efficient inventory management. The system manages restocking, physical count processing, inquiry, price books, and file maintenance for single or multiple warehouse locations. The I/C system provides comprehensive master and warehouse records, quantity and customer-based pricing, plus trade, customer, and chain discounting. Provisions are also made for replacement, highest replacement, average, and user-defined costs. The complete reporting features allow for timely, effective management for cost control.

A version of this product is available for the PDP-11 computer.

**Price:** $6,900 – $33,500  
**Product Support Available:** Yes  
**Contact:** Marketing Department  
(502) 491–9820 or 1–800–626–6268  
AMCOR COMPUTER CORP.  
1900 Plantside Drive  
Louisville, KY 40299

### Master Route Distribution System

**Operating System:** VMS  
**Keywords:** • Accounts receivable • Billing • Inventory • Wholesale

The BAKCO Master Route (Beer/Softdrink) Distribution System consists of three different route accounting systems, as follows:

• Driver Sell, a route accounting system by which delivery trucks are filled with merchandise that the drivers deliver and sell. The drivers go out on established routes, selling and delivering to individual customers. Completed sales tickets (invoices) are generated, and cash is often collected as part of this delivery function.
Distribution

- Presell, a route accounting system by which salesmen solicit orders from customers in advance of delivery. Invoice and truck load sheets are then prepared, and the delivery trucks are loaded with merchandise for customers according to specific routes.
- A combination of both Driver Sell and Presell within the same company.

The BAKCO Master Route Distribution System loads salesmen’s orders into the computer (Presell), generates preprinted invoices (Presell) and truck load sheets (Presell), and generates preprinted order forms (Driver Sell). Other application areas are route reconciliation, invoice registers, accounts receivable, inventory and purchase control, salesman commissions, sales analysis reports, marketing and statistical reports, state tax reports, and general ledger.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Jerry Baker, President
(312) 956–1053
BAKCO DATA, INC.
85 W. Algonquin Road, Suite 190
Arlington Heights, IL 60005

MBS–ASR (Manus Business Systems —
Automatic Stock Replenishment)

Operating System: VMS
Keywords: Inventory  Purchasing  Warehousing
                      Wholesale

MBS Automatic Stock Replenishment uses data collected by the (prerequisite) MBS Order Processing and MBS Purchase Order Management modules to calculate suggested stock reorders. The system uses 18 months of order and ship quantity data to classify products based on movement and cost. Once products have been classified, the system will apply one of five ordering algorithms to calculate the proper suggested order quantity. The purchasing manager is then able to order on an exception basis, concentrating on the small number of products for which special knowledge and experience are most important.

A version of this product is available for the PDP–11 computer.

Price: $4,000 – $6,000
Product Support Available: Yes
Contact: Gary Vowels
(206) 285–3260
MANUS SERVICES CORP.
1700 Westlake Avenue North
Seattle, WA 98109
MBS–IM (Manus Business Systems — Inventory Management)

Operating System: VMS
Keywords: • Inventory • Warehousing • Wholesale

The MBS Inventory Management Module is designed to provide the capabilities needed for effective inventory accounting and control. The module includes functions for maintaining product files for single or multiple warehouses. Inquiry functions provide rapid summary information on inventory status. A function is available to adjust stock levels through several types of inventory transactions, including physical adjustments, returned merchandise, and interwarehouse transfers. Audit trails are produced to allow management to monitor changing stock levels and to guard against erroneous or unauthorized stock access.

Several functions are included to assist in performing physical inventory count. Special functions are available in the module for maintaining item price and cost data over periodic intervals and for having product values automatically updated at predefined dates. Various reports provide useful management tools to help prevent loss of sales due to out-of-stock conditions.

The Inventory Management Module interfaces, through transaction processing, the MBS Order Entry/Invoicing, Purchase Order Management, and General Ledger modules.

A version of this product is available for the PDP–11 computer.

Price: $4,000 – $9,000
Product Support Available: Yes
Contact: Gary Vowels
(206) 285–3260
MANUS SERVICES CORP.
1700 Westlake Avenue North
Seattle, WA 98109

MBS–OP (Manus Business Systems — Order Processing)

Operating System: VMS
Keywords: • Order entry • Warehousing • Wholesale

The MBS Order Processing module provides all capabilities required for single or multiple warehouse order processing operating in pre- and postbilling modes. In a complete system, this module is fully integrated with four other MBS modules: Inventory Management, Sales Analysis, Accounts Receivable, and General Ledger. The module has been successfully installed in low-volume single-warehouse and high-volume (8,000+ order lines/day) multiwarehouse environments.
140 Distribution

In the prebilling mode, orders are entered with stock volume checking. Picking tickets are directed to a warehouse printer. The open order is maintained until picking exceptions and shipping information is entered, at which time the invoice is generated and back orders are created. When back orders become fillable due to receipt of stock, a new order is automatically generated. The postbilling mode bypasses the picking ticket production, creating an invoice or memo immediately, with back-order support as needed. Several inquiries give the user complete visibility of orders, back orders, and stock levels.

Reports are provided for status and audit trail purposes. Those reports offer the user sort and selection options. Special functions support interwarehouse transfer of stock.

A version of this product is available for the PDP–11 computer.

Price: $6,000 – $15,000
Product Support Available: Yes
Contact: Gary Vowels
(206) 285–3260
MANUS SERVICES CORP.
1700 Westlake Avenue North
Seattle, WA 98109

MBS–PO (Manus Business Systems — Purchase Order Management)

Operating System: VMS
Keywords: • Inventory • Purchasing • Warehousing
• Wholesale

The MBS Purchase Order Management module provides the capabilities for performing all purchasing activities related to an inventory control system. The module includes functions needed to maintain a vendor master file and to prepare purchase orders in an on-line mode for those vendors. All purchase orders issued are retained on file until all the line items ordered are processed. Received merchandise is recorded through receipt transactions and is applied against an open P/O. Back-order information can be generated at receipt entry time, if desired. Receipt transactions for noninventoried items are specially processed so that the receipt of such merchandise can be related back to the original sales order. Several report functions, with varying selection and sort options, provide P/O status and audit trail reporting. A Vendor History Report shows vendor service performance on a year-to-date basis. Inquiry functions give immediate access to vendor data and to the current status of issued P/Os. In an integrated system, the Purchase Order Management module directly interfaces with Inventory Management.
A version of this product is available for the PDP-11 computer.

**Price:** $6,000 – $9,000

**Product Support Available:** Yes

**Contact:** Gary Vowels  
(206) 285–3260  
MANUS SERVICES CORP.  
1700 Westlake Avenue North  
Seattle, WA 98109

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**MBS–SA (Manus Business Systems — Sales Analysis)**

**Operating System:** VMS

**Keywords:**  
- Financial analysis  
- Sales and marketing  
- Warehousing  
- Wholesale

The MBS Sales Analysis module provides reports to aid in the evaluation of individual customer, customer groups, territories, salespeople, and product sales activity. As such, this module recaps pertinent activity of the entire MBS Sales Accounting subsystem.

Used as a management tool, the Sales Analysis module produces information necessary to detect complex sales trends (thus providing a basis for determining competitive activity), to perform market share analysis, and to improve the efficiency of sales personnel. In addition, product activity information can be obtained by product classification for a specified demand period. Depending on the amount of historical data available on the demand period increments, the sales analysis information can help reduce inventory levels that increase the extent of stock turnaround.

Reports containing information on percent profit and profit dollars can be used by management to make decisions concerning marketing strategies for various product categories.

The Sales Analysis module captures and accumulates sales history data as a result of invoicing in the MBS Order Processing module. A current and prior year-to-date history file is used for producing reports.

A version of this product is available for the PDP-11 computer.

**Price:** $3,000 – $6,000

**Product Support Available:** Yes

**Contact:** Gary Vowels  
(206) 285–3260  
MANUS SERVICES CORP.  
1700 Westlake Avenue North  
Seattle, WA 98109
Meat, Poultry, and Fish Distribution System

Operating System: VMS
Keywords: • Inventory • Order entry • Warehousing

This on-line interactive multiprocessing system gives management control of the distribution environment. The system handles up to 99 warehouses for each of 9 companies. Regular customer orders, drop-ship orders, quotations, warehouse transfers, debit memos, and several types of credit memos can be entered. Orders may be entered on line, locally, or from branch locations. Common data is shared for all customer credit checking, parts validation, and pricing.

Picking tickets can be produced on demand, requesting both pieces and weight of each product ordered. Invoices can be generated on demand to go with the shipment. This part of the program can be integrated with an accounts receivable module.

Comprehensive stock-status reports can be selectively produced by vendor and show not only inventory status (both pieces and weight), but also 15-month sales trends and lost-sales history for each inventory item. The system includes a full purchasing control module. The pricing module accommodates extensive matrix pricing.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Jerry Baker, President
(312) 956–1053
BAKCO DATA, INC.
85 W. Algonquin Road, Suite 190
Arlington Heights, IL 60005

MMS–1 (Material Management System)

Operating System: VMS
Keywords: • Inventory • Materials handling • Warehousing

The MMS–1 system for stockrooms, suppliers, and distribution centers manages your stockroom, warehouse, tool crib, or supply center. MMS–1 operates with conventional storage, using racks, bins, shelves, or pallets. MMS–1 also controls automated storage and retrieval equipment, such as miniload stackers and carousels.

MMS–1 provides real-time inventory control through on-the-spot data capture for immediate and accurate inventory of up to 50,000 items. Part-location indexing eliminates time-wasting searches by providing exact locations for picking or stocking items. Space management provides automatic assignment of free space to new items for efficient use of storage facilities.
An additional feature is cycle audit control, for automatic scheduling and recording of progressive inventory counting to eliminate annual shutdown. MMS–1 also provides audit trail reporting for a complete printed log of all transactions. Finally, MMS–1 provides management reporting through attractive screen displays and reports of activity, inventory, and status summaries.

Host computer feedback, label printing for travel tickets and locations tags, and AS/RS control are optional.

A version of this product is available for the PDP–11 computer.

**Price:** $11,000 – $21,000  
**Product Support Available:** Yes  
**Contact:** Ronald Tepper, President  
(212) 695–5001  
RGTI SYSTEMS SOFTWARE  
One Penn Plaza  
New York, NY 10001

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**OE–11 (Order Entry and Invoicing)**

**Operating System:** VMS  
**Keywords:** • Order entry • Purchasing • Retail • Wholesale

OE–11 is an order entry, invoicing, and sales analysis system that operates with the Inventory Control system (IC–11) and the Accounts Receivable system (AR–11).

Each product may be defined with a 15-character product code, a 120-character description, and a 3-character department. Product code formats are user-defined. Products can be either generic (no inventoried item) or inventoried and can be classified as obsolete or replaced. Each product has an 18-digit quantity field with 8 characters to the right of the decimal point. Price changes are made in advance of the actual pricing change and are stored until the date of change. Pricing is controlled by four base-price fields plus special controls that can be limited by customer, class, product department, quantity purchased, dollar amount purchased, and so forth. The system tells what contract pricing is available, has unlimited units of measure, and supports multiple warehouses.

The order entry process validates customers, recalls information from the customer files, provides on-hand quantity, and performs immediate pricing. Prices can be changed during order entry with reason codes or passwords. A customer can be added during order entry. Credit memos can be entered and processed. The status of an order can be determined at any time, and processing requirements can be defined by the user.

Reports include new orders, master orders, order status, product sales analysis, customer sales analysis, back orders, missed orders,
cancelled orders, direct ships, special orders, current prices, historical price changes, and pending price changes. Forms include new-order information, generic price sheets, customer price sheets, acknowledgments, picking lists, packing lists, shipping papers, invoices, and credit memos.

A user's guide includes information for the office manager, the terminal operator, and the application manager. A reference manual for the system manager and the programmer includes installation procedures such as program flows and data formats.

A version of this product is available for the PDP-11 computer.

**Price:** $3,500 – $4,500

**Product Support Available:** Yes

**Contact:** Larry Landusky, Marketing
(806) 792–3785
COMPU-SHARE, INC.
3824 50th Street
Lubbock, TX 79413

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**ORDENT–IMPRS General Business Order Entry O/E System**

**Operating System:** VMS

**Keywords:** • Billing • Credit • Inventory • Order entry

The fully interactive, self-prompting Business Order Entry System with inventory control, credit limit checking, automatic back ordering, and interactive reporting has the following features:

• Automatic credit checking authorization, selective back-ordering techniques, and generation of picking tickets/invoices/credit memos
• On-line O/E editing with error and correction prompts, as well as on-line shipping entry with selective back ordering
• Overriding out-of-stock conditions
• Immediate inventory control allocation functions
• Flexibility to allow for special pricing and discounting techniques
• Add-on picking ticket and invoices comments
• Overriding ship-to address information
• Integration with other IMPRS application packages

A version of this product is available for the PDP-11 computer.

**Price:** $2,000

**Product Support Available:** Yes

**Contact:** Elvin E. Smith or Forrest E. Weddle
(913) 782–8544
RUF CORP.
1533 E. Spruce
Olathe, KS 66061
Order Entry/Inventory System

Operating System: VMS
Keywords: • Accounts receivable • Inventory • Order entry • Wholesale

The Order Entry System automatically converts shipped orders to receivables. The Accounts Receivable rounds out the Inventory System, informing you of your current receivables. The Order Entry/Inventory package includes:
• Generation of packing slips
• Entry of shipments
• Automatic invoicing and updating of inventory
• Order cancellation with automatic inventory adjustment
• Partial or complete shipments
• Full array of back-order reporting
• Period-to-date and year-to-date unit sales, dollar sales, and cost figures
• Stock status reports indicating items requiring reordering, below minimum inventory level, or above maximum inventory level
• Ten price lists with automatic selection by customer (prices can also be changed at time of order entry)

The Order Entry/Inventory System produces packing slips; invoices; cancellation, inventory transaction, open order (by customer or items), stock status, and customer analysis reports; and sales journals.

A version of this product is available for the PDP–11 computer.

Price: $1,500 – $20,000
Product Support Available: Yes
Contact: Mark McCubbin
(405) 236–8351
MCCUBBIN HOSIERY
P.O. Box 24047
Oklahoma City, OK 73124

Order Processing

Operating System: VMS
Keywords: • Data entry • Order entry • Query facilities

This interactive system features operator prompting and extensive on-line editing and validation of order entry information. The system automatically adds data to existing order data. Picking tickets and invoices are automatically produced from the open-order file. Complete maintenance is available against open orders. Order Processing operates in prebilling and/or postbilling environments and provides for simultaneous entry of orders from multiple terminals, multiple location processing, multiple selling prices, and automatic back order and future order (seasonal) control with full reporting.
A version of this product is available for the PDP-11 computer.

Price: $6,900 – $33,500
Product Support Available: Yes
Contact: Marketing Department
(502) 491-9820 or 1-800-626-6268
AMCORN COMPUTER CORP.
1900 Plantside Drive
Louisville, KY 40299

ORDERS Wholesale Distributor System

Operating System: VMS
Keywords: Order entry, Report writer, Warehousing, Wholesale

This fully interactive on-line system is for the wholesale distributor. An order entry subsystem allows multiple terminal operators to perform order entry directly over the telephone or from order forms. The system provides on-line customer credit checking, automatic back-ordering, and the ability to override credit hold and out-of-stock conditions. The system also allows special pricing and discounting techniques.

The inventory control subsystem automatically allocates inventory during order entry. Inventory management maintains lot history from receipt to deletion, performs requirements forecasting, and reports year-to-date inventory sales histories. The system prints work orders, UPS shipping labels, invoices, and statements.

Accounts Receivable offers billing statements and aged receivables reports as well as daily and monthly status reports to compare sales, profit percentages, and aged total receivables.

The salesperson/commission subsystem tailors commission plans for individual salespeople and produces reports on demand.

A version of this product is available for the PDP-11 computer.

Price: $5,000 – $15,000
Product Support Available: Yes
Contact: Elvin E. Smith or Forrest E. Weddle
(913) 782-8544
RUF CORP.
1533 E. Spruce
Olathe, KS 66061

PIC (Parts Inventory Control System)

Operating System: VMS
Keywords: Cost accounting, Data entry, Inventory, Report writer
PIC provides interactive data entry and data base inquiry for parts inventory accounting and control. Labor expense can also be included to produce project cost reporting by a number of categories.

Reports of low stock and reports by vendor, part number, or size can be produced. An audit trail report by work order or by purchase order is available.

Data entry errors are trapped at entry time. Any number of parts can be stored on multiple disks. Reporting across disk files is standard.

A version of this product is available for the PDP–11 computer.

Price: $10,000
Product Support Available: Yes
Contact: W. G. Welter
(713) 373–1905
ADVANCED MANAGEMENT TECHNOLOGIES
Box 71
Cypress, TX 77429

RealWorld™ Inventory Control

Operating System: ULTRIX, UNIX
Keywords: • File management • Inventory • Purchasing
• Sales and marketing

This highly flexible multiwarehousing inventory control system for small distributors provides efficient methods of tracking goods and products.

The system does the following:
• Maintains item files and lists
• Allows inventory transaction entry, editing, and posting, with edit list and journal
• Allows for inventory costing by average cost, standard cost, LIFO, or FIFO
• Provides a detailed LIFO/FIFO cost history, which can optionally be kept at the warehouse level
• Features automatic price change, price list, stock status, inventory value, purchasing advice, and usage reports
• Runs an ABC analysis on all or part of the inventory
• Prints a physical count worksheet
• Interfaces with the RealWorld Sales Analysis system
• Includes password protection, extensive data file integrity check, and backup/restore facilities

A version of this product is available for the PDP–11 computer.

Price: $795
Product Support Available: Yes
Contact: Larry Wilber
(603) 798–5700
REALWORLD INC.
Dover Road
Chichester, NH 03263

REPFAX (Food Broker System)

Operating System: VMS
Keywords: • Accounts receivable • Order entry • Retail
• Wholesale

The REPFAX Broker System is designed for food, health and beauty aids, and general merchandise brokers and provides the following:

• Order processing: The manufacturer's catalog data is prestored in a master file. Price, policies, minimum-order requirements, promotional allowances, and shipping information are automatically applied to each order. Salesman’s Price Books contain all order information, plus effective dates and details of upcoming promotions. As promotions become effective or end, prices and terms are automatically changed.

• Brokerage: On-demand status analysis of each principal's account.

• Sales and promotion tracking: On-demand inquiry/reports effectiveness of products, promotions, salespeople, and principals.

• Spoils accounting: Entering each spoils certificate generates detailed invoices for principal and credit memos on a store-by-store basis.

• Retail reporting: Survey reports of current shelf plan, customer by customer, are customized for each user and include comparisons of proposed, to present, to previous surveys by buyer and manufacturer, plus specific deficiencies within each store.

REPFAX is integrated into DIBS–11 and MCBA G/L, A/P, and Payroll.

A version of this product is available for the PDP–11 computer.

Price: $13,500 – $17,500
Product Support Available: Yes

Contact: Nick Culbreth
(404) 256–3067

AMERICAN DIGITAL PRODUCTS CORP.
5775–B Glenridge Drive N.E., Suite 320
Atlanta, GA 30328

Shipping/Distribution

Operating System: VMS
Keywords: • Inventory • Order entry • Payroll
• Warehousing
The system handles shipping and distribution of products, including consolidations, freight charges by geographic location, kitting, invoices, and so forth.

A version of this product is available for the PDP–11 computer.

**Price:** $25,000 – $100,000
**Product Support Available:** Yes
**Contact:** Jon Springer
(617) 828–1529
WORLD–WIDE COMPUTER RESOURCES
127 Tolman Street
Canton, MA 02021

### Thoroughbred Order Processing

**Operating System:** VMS

**Keywords:**
- Data base management
- Data dictionary
- Inventory
- Order entry

The Thoroughbred Order Processing System Master Inventory File can provide up to 999,999 inventory items. Instant order and inventory information is available at a terminal or on hard-copy printout. Inventory information, including sales, costs, and reorders, are automatically updated in the Inventory Master File. Instant updates of on-hand and committed quantities are provided to prevent overshipment.

The system accommodates costing, entry, and shipment of noninventory items; provides complete tracking of inventoried items by in-stock, on-order, and back orders; and automatically maintains stock-item history. The physical inventory subsystem provides forms for physical inventory and updates inventory files. Returned goods are processed automatically. The system maintains five warehouses; offers automatic or manual back-order reporting, processing, and release; and accommodates order cancelations, order changes, and partial shipments. Costing methods include market, weighted average, and LIFO/FIFO.

The system provides six levels of multipricing by customer, item, and category. Automatic markup pricing is available, as is selective pricing by customer. Optional cash sales processing with invoice printing is available. The system prints multiple-page invoices, sales orders, and shipping forms. On-line credit checks can be made during data entry. User-defined messages can be printed on invoices and sales orders. Automatic calculation of state sales tax is provided. The system provides total for month-to-date billing and booking. Commissions can be determined by item or by salesperson.

The system automatically produces Sales Commission reports; provides Open-/Back-Order Status reports and automatic Credit Exception reporting; and automatically generates Sales Analysis reports,
including customer item, class, sales representative, and invoice summaries, and Inventory reports by status, activity, committed, critical, movement, price, warehouse, and customer contract. Optional General Ledger and Accounts Receivable interface and automatic audit trails are provided.

A version of this product is available for the PDP–11 computer.

**Price:** $795 – $8,000

**Product Support Available:** Yes

**Contact:** David E. Capel, Vice President
(415) 930–9932
COMPUTER SYSTEMS DEVELOPMENT, INC.
140 Mayhew Way, Suite 700
Pleasant Hill, CA 94523

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**Tire Dealer (Complete Inventory Control)**

**Operating System:** VMS

**Keywords:** • Inventory • Order entry • Purchasing
• Sales and marketing

This stand-alone inventory control system contains all the necessary functions required to keep records for a multiple-location tire company. The system allows inventory to be costed at both a regular average cost and a special cost, along with a complete sales history for each month of the year.

This system includes purchase order control, inventory receipts, inventory adjustment, a sales journal, and a complete physical inventory subsystem. A stock status list, a slow-moving items list, an inventory valuation, and a stock movement report, along with complete dollar and unit sales, are included reports.

A version of this product is available for the PDP–11 computer.

**Price:** $5,000

**Product Support Available:** Yes

**Contact:** Nigel Harris
(613) 829–8888
HARRIS COMPUTER SYSTEMS
16 Credit Union Way
Nepean, Ontario K2H 8R6
Canada

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**Warehouse Distribution System**

**Operating System:** VMS

**Keywords:** • Billing • Inventory • Order entry
• Warehousing
BAKCO’s Warehouse Distribution System is a series of on-line modules that provide comprehensive management control of the product distribution environment. Regular orders, drop-ship orders, quotations, contracts (blanket orders), credit hold orders, counter sales, prepaid orders, warehouse transfers, debit memos, and a variety of credit memos can be entered into this multiwarehouse system. Common data is shared for customer credit checking, parts validation, and pricing from an extensive matrix pricing module.

On-line allocation against inventory maintains up-to-date inventory status data. Picking tickets can be produced on demand, and a full back-order system is provided when the product cannot be shipped. Invoices and invoice registers are generated and integrated into an open A/R system.

The ability to detach inventory shortage conditions, based on a user’s selected criteria, permits inventory problems to be brought to management attention each day. Comprehensive stock status reports can be selectively produced by vendor and show not only inventory status, but also 15-month sales trends and lost-sales history for each inventory item.

The purchasing control module generates many different types of purchase orders, including blanket purchase orders. Purchase orders can be printed on demand and modified when desired. Modified purchase orders can then be produced to minimize clerical work. Extensive purchase order status reporting is provided on demand and receiving reports generated, when needed. In addition, open purchase order cash commitment reports can be produced.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Jerry Baker, President  
(312) 956–1053  
BAKCO DATA, INC.  
85 W. Algonquin Road, Suite 190  
Arlington Heights, IL 60005

**Warehousing/Order Entry/Inventory/Purchasing**

**Operating System:** VMS

**Keywords:** • Inventory  • Order entry  • Purchasing  
• Warehousing

The ADD Warehouse Distribution System is a complete order entry/invoicing/inventory and purchase order system designed to meet the needs of a wide variety of TBA, motor, and lube oil distributors, as well as general warehouse operators. This full inventory management system allows multiple warehouse locations; inventory valuation based on FIFO or LIFO methods; cost, profit, and reorder
analysis; and more. The order entry module ensures automatic and accurate pricing based on practically any volume or special discount structure, optional generation of picking lists, truck loading tickets, bills of lading, and invoices. Orders remain open until delivery, when adjustments and returns can be included. Point-of-sale applications are handled easily by allowing automatic generation of invoices at order entry time. The purchase order control module automatically produces purchase orders based on user-defined reorder points and/or sales history; when goods are received, they are automatically updated into inventory, and exception reports are generated if necessary. In addition, the system is fully integrated with ADD’s Accounts Receivable package for credit control and more.

A version of this product is available for the PDP-11 computer.

**Price:** $5,000 – $15,000

**Product Support Available:** Yes

**Contact:** Bruce A. Bott, President  
(201) 584-4026  
ADVANCED DIGITAL DATA, INC.  
354 Route 206  
Flanders, NJ 07836

**Wholesale/Liquid Product Inventory**

**Operating System:** VMS

**Keywords:** • Billing • Inventory • Petroleum • Wholesale

This system provides complete product control from purchase to sale. Inventory is tracked by storage location, by vendor, and by transportation vehicle (truck, barge, ship, and so on) with true, layered FIFO costing. “Thruput” and “exchange” agreements are easily monitored, including temperature-corrected gallons. Sales are easily posted to this system, which allows for a highly sophisticated pricing structure including freight charges; temporary and voluntary allowances; and federal, state, and municipal taxes, including gross receipt taxes, prompt pay discounts, and more.

A version of this product is available for the PDP-11 computer.

**Price:** $10,000 – $20,000

**Product Support Available:** Yes

**Contact:** Bruce A. Bott, President  
(201) 584-4026  
ADVANCED DIGITAL DATA, INC.  
354 Route 206  
Flanders, NJ 07836
Wholesaler's Software System

**Operating System:** VMS
**Keywords:** • Billing • Order entry • Point of sale • Wholesale

This system is built around entry and invoicing systems. A customer number is entered, and the name and address are displayed for verification. Then products and quantities are entered. Prices need not be entered; they will be automatically picked up from the product master file. After all orders have been entered, a picking list is produced. The list has all products and quantities ordered and is sorted by a zone code. Next, orders are picked and the invoice correction program is run. Any changes in quantities or products may now be made. Lines may be added or deleted. Out-of-stock items may be back ordered or canceled, or substitutions may be made.

The invoice printing program then produces the corrected invoices, extends and foots all the invoice lines, and automatically calculates sales tax. Past-due customers are flagged at this point and will not continue without override authority. That also relieves inventories, updates accounts receivable data, and collects data for various reports to be generated later. The system also contains an over-the-counter-sales program and a program to enter cash receipts, adjustments, discounts, and merchandise returns.

Pricebooks, inventory status reports, inventory evaluation, product movement, gross profit reports (by product, customer, and salesperson), sales analysis, and accounts receivable information are produced. Customer statements are produced bimonthly. To save expensive statement forms, statements for customers with zero or credit balances are printed on stock paper and kept only for the company's records; they are not mailed to the customer. An aging report is printed with each statement run.

**Price:** $28,000

**Product Support Available:** Yes

**Contact:** Terry K. Holder or Nathan I. Lieberman
(812) 479–6951
EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
P.O. Box 2469
Evansville, IN 47714
Education
ARCHON: ADMISS

Operating System: VMS
Keywords: • Query facilities • Recruiting • Report writer

ARCHON: ADMISS serves as an effective means of tracking prospects by automatically processing the prospect through the admissions stages. Features include on-line query and update, automatic followup and tracking, five value levels for prospect, nontechnical operations, flexible report formats, ad hoc reports, letter-quality printing, flexibility to meet changing requirements, personalized letters, user-defined value levels, controlled feedback, and simultaneous input and output.

A version of this product is available for the PDP–11 computer.

Price: $6,650
Product Support Available: Yes
Contact: Nancylou Rapp
(203) 728–6777
QUODATA CORP.
266 Pearl Street
Hartford, CT 06103

ARCHON: BILLS

Operating System: VMS
Keywords: • Accounts receivable • Billing • Data entry • Personnel

ARCHON: BILLS provides a complete solution to the continuing need for controlling funds owed to the institution by the student population or membership. Flexibility to meet unique requirements, ease of use by nontechnical personnel, and immediate access to information have been primary design criteria. An interactive terminal orientation permits the combination of minimum personnel involvement with timely control of financial reporting. Features include on-line data entry and inquiry, flexible report generation, single entry charges many bills, accounts receivable aging reports, student account history on file, user-defined transaction types, default answers to speed data entry, transaction batch control, and linkage to financial accounting system. BILLS is designed to interface with the ARCHON: FRS Financial Reporting System.

A version of this product is available for the PDP–11 computer.

Price: $8,280
Product Support Available: Yes
Contact: Nancylou Rapp
(203) 728–6777
QUODATA CORP.
266 Pearl Street
Hartford, CT 06103
ARCHON: STUDENT

Operating System: VMS
Keywords: • Data entry • Printing • Query facilities
• Scheduling

This student information and on-line registration system integrates information on total enrollment with data management to provide great flexibility. Competitive and financial pressures within dictate increasingly sophisticated management reporting. STUDENT answers with fast on-line inquiry and a do-it-yourself report generator. STUDENT strikes a balance between computer-oriented repetitive tasks and the requirement for human intervention. Sorting, tallying, computing, and printing are tasks that the computer performs better than humans do. Taking care of exceptions, overriding planning, and thinking are best left to you.

Features include on-line terminal entry, create-it-yourself reporting, customized data definitions, preregistration any time, course-overflow checking, class lists on request, student schedules, grade reports, transcript labels, teacher workloads, class rank by year, nondeposited students, student housing director, and a menu-driven system.

A version of this product is available for the PDP–11 computer.

Price: $8,800
Product Support Available: Yes
Contact: NancyLou Rapp
(203) 728–6777
QUODATA CORP.
266 Pearl Street
Hartford, CT 06103

CAS (Courseware Authoring System), Version 1.0

Operating System: VMS
Keywords: • Compilers • Computer-aided instruction
• Forms management • Graphics

CAS combines an easy-to-learn authoring language with a user interface and a utility package for developing, delivering, and monitoring computer-based instruction. CAS requires a GIGI terminal. The full graphics capabilities of the GIGI terminal are used by commands that draw specific objects (box, line, circle) and others that access files produced by the optional GIGI Graphics Editor and GIGI Slide Projection System.

CAS components include the Authoring Language Compiler, runtime library, user interface, and utilities.

• DIGITAL Authoring Language (DAL) is a high-level programming language designed expressly for computer-based instruction. The
language features special response-judging capabilities, including a spelling algorithm, logging of lesson performance information, screen addressing, and full integration of graphics.

- The Courseware Authoring System run-time library is shared among users for improved performance during lesson delivery.
- The system user interface provides access to CAS. This menu-driven interface provides support for three types of users: author, instructor, and student. The menus are tailored to meet the varying needs of each user type.
- The utility package contains all report programs, which access CAS files to produce reports specifically designed for the instructors and authors. All reports contain information only for the group to which the instructor or author belongs. The reports are designed to use both graphics terminal output and line printer output. Included in the reports are student status report, responses to a unit in a lesson, student scores for a lesson, and available lessons.

Refer to SPD #25.95.0 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office
(see Introduction).

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**CAST (Computer-Assisted Self-Training System)**

**Operating System:** ULTRIX, UNIX, VMS

**Keywords:**
- Computer-aided instruction
- Graphics
- Programming tools

CAST is a programming language for the development and execution of computer-aided instruction (CAI) courseware. The language is designed for use by inexperienced and experienced designers of computer-assisted and computer-managed instruction.

CAST's vocabulary is a superset of the PILOT language. Special CAST features include the use of split-screen text, limited graphics, the use of any UNIX* process, the use of other scripts as subroutines, the recording of student performance for later analysis, enhanced computational facilities, the generation of random numbers, direct use of external soft-copy documentation within a lesson, and enhanced storage/retrieval capabilities for program variables. CAST allows for pauses (think time) and automatic recueing when no answer is obtained within a definable interval. Multiuser installations are supported. The educational applications of CAST are numerous. CAST was designed to support business and industrial training.

A minimum memory of 64K is required. The system is written in C language. Custom installation is accomplished via telecommunications. CAST is terminal independent and can be used with a mixture
of terminals possessing cursor positioning commands. Hard-copy terminals are also supported. TERM Cap is used when available.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** $495 – $2,000

**Product Support Available:** Yes

**Contact:**

David Clark  
(315) 337–1000  
MEASUREMENT CONCEPT CORP.  
1721 Black River Boulevard  
Rome, NY 13440

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**CLASS — IMPRS**

**Operating System:** VMS

**Keywords:**  
• Data base management  
• Information management  
• Programming tools  
• Query facilities

IMPRS is a relational data base software package that allows both technical and nontechnical users to establish and maintain relational data base systems, interactively generate sophisticated reports, and write fourth-generation high-level programs to support application systems.

IMPRS is designed to increase programming productivity through the use of a complete data-manipulation language. IMPRS also supports several query language interface modules that allow nontechnical users to browse through the data base and quickly produce reports. IMPRS is fully documented and comes with a full complement of utility programs to support the data base and to provide additional flexibility to the user.

A version of this product is available for the PDP–11 computer.

**Price:** $10,000 – $20,000

**Product Support Available:** Yes

**Contact:**

Elvin E. Smith or Forrest E. Weddle  
(913) 782–8544  
RUF CORP.  
1533 East Spruce  
Olathe, KS 66061

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**CLASS — Education Accounts Payable A/P System**

**Operating System:** VMS

**Keywords:**  
• Accounts payable  
• General ledger

This total accounts payable system with complete interface to the general ledger provides the following:
• Daily listing of checks written
• Check balance report by year, month, status, and check number
• Check audit report by bank, year, and selected months
• Check register sequence by check number or voucher number
• Check report by paid date
• Report and status of voided checks
• Voucher proof listing
• Open-voucher, paid-voucher, and missing-voucher reports
• Complete voucher registers by company and division
• Voucher distribution to the general ledger
• Vendor name and address list

A version of this product is available for the PDP-11 computer.

**Price:** $2,500 – $5,000

**Product Support Available:** Yes

**Contact:** Elvin E. Smith or Forrest E. Weddle
(913) 782–8544
RUF CORP.
1533 E. Spruce
Olathe, KS 66061

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**CLASS — Education Admission System**

**Operating System:** VMS

**Keywords:** • Database management  • Information management  • Recruiting

This admission package for educational institutions enables the admissions office to respond immediately to inquiries, process application documents, and constantly provide current information for the prospective student. Information on the type and number of inquiries, analysis of recruiting efforts, and profiles on accepted students are available as required.

A version of this product is available for the PDP-11 computer.

**Price:** $3,500 – $7,000

**Product Support Available:** Yes

**Contact:** Elvin E. Smith or Forrest E. Weddle
(913) 782–8544
RUF CORP.
1533 E. Spruce
Olathe, KS 66061

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**CLASS — Education Alumni/Development System**

**Operating System:** VMS

**Keywords:** • Database management  • Recruiting  • Report writer
This alumni/development system provides a base for solicitation, acknowledgments, and generation of mailings for any group. The Alumni/Development System can produce personalized letters, solicitations, gift acknowledgments and receipts, and mailing labels for any selected group of alumni or donors. A variety of reports can be generated by using the reporting capabilities.

A version of this product is available for the PDP–11 computer.

**Price:** $2,500 – $5,000  
**Product Support Available:** Yes  
**Contact:** Elvin E. Smith or Forrest E. Weddle  
(913) 782–8544  
RUF CORP.  
1533 E. Spruce  
Olathe, KS 66061

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**CLASS — Education Personnel System**

**Operating System:** VMS  
**Keywords:** • Employment • Labor • Personnel

This personnel system monitors job applicants and tracks employees from hiring to termination date. All pertinent personnel information is tracked from the time application is made through employment to termination.

A version of this product is available for the PDP–11 computer.

**Price:** $2,500 – $5,000  
**Product Support Available:** Yes  
**Contact:** Elvin E. Smith or Forrest E. Weddle  
(913) 782–8544  
RUF CORP.  
1533 E. Spruce  
Olathe, KS 66061

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**CLASS — Education Registration System**

**Operating System:** VMS  
**Keywords:** • Data entry • Query facilities • Scheduling

This on-line registration system provides inquiry and updating of student information for the registrar. Through the use of either single- or multiterminal facilities, preregistration, registration, and add/drop functions are effectively performed. The registrar can generate, update, and print course offerings, course status reports, closed-class listings, class rosters, and student schedules during the registration process. The timely and efficient processing of demographic data; information for federal, state, and institutional reporting; grade reports; transcript labels; and honor listings are an integral part of the Registration System.
A version of this product is available for the PDP-11 computer.

**Price:** $4,000 – $8,000

**Product Support Available:** Yes

**Contact:** Elvin E. Smith or Forrest E. Weddle  
(913) 782-8544  
RUF CORP.  
1533 E. Spruce  
Olathe, KS 66061

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**CLASS — Educational Financial Aid System**

**Operating System:** VMS  
**Keywords:**  
- Data base management  
- Financial analysis  
- Report writer  

This student financial aid management system for colleges and universities ensures on-line control of the financial aid process. The aid administrator can do budgeting, awarding, award notification, acceptance, cancellation, and disbursement of funds. The Relational Data Base Management System can be utilized to generate reports to provide for both effective and efficient management of financial monies.

A version of this product is available for the PDP-11 computer.

**Price:** $3,000

**Product Support Available:** Yes

**Contact:** Elvin E. Smith or Forrest E. Weddle  
(913) 782-8544  
RUF CORP.  
1533 E. Spruce  
Olathe, KS 66061

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**CLASS — Educational Financial System**

**Operating System:** VMS  
**Keywords:**  
- Financial analysis  
- General ledger  
- Report writer  

This financial package for educational institutions is an encumbrance system that includes budget, cash receipts, journal entries, and general ledger. The system provides clear and complete audit trails for maximum fiscal accountability. All financial reporting is controlled by the designated user offices.

A version of this product is available for the PDP-11 computer.

**Price:** $3,500 – $7,000

**Product Support Available:** Yes

**Contact:** Elvin E. Smith or Forrest E. Weddle  
(913) 782-8544
CLASS — Educational Payroll System

Operating System: VMS
Keywords: • Employment • Payroll • Report writer • Taxes
This payroll package for educational institutions provides the accurate and timely information required for writing checks and for preparing federal, state, and institutional reports.

A version of this product is available for the PDP–11 computer.
Price: $3,500 – $7,000
Product Support Available: Yes
Contact: Elvin E. Smith or Forrest E. Weddle
(913) 782–8544
RUF CORP.
1533 E. Spruce
Olathe, KS 66061

CLASS (College-Level Administrative Software System)

Operating System: VMS
Keywords: • Data base management • File management
• Management • Query facilities
The CLASS system is a fully integrated college-level administrative software system built around the IMPRS relational data base management system. CLASS consists of the following modules: Admissions, Financial Aid, Registration and Records, Financials, Student Accounts Receivable, and Alumni Development.

A version of this product is available for the PDP–11 computer.
Price: $40,000 – $60,000
Product Support Available: Yes
Contact: Elvin E. Smith or Forrest E. Weddle
(913) 782–8544
RUF CORP.
1533 E. Spruce
Olathe, KS 66061
ELEX/IMS (Instructional Management System)

**Operating System:** VMS

**Keywords:** • Computer-aided instruction
• Data base management

ELEX/IMS is designed to assist instructors in the delivery of instructional programs to students. It enhances the instructor's course of study, manages individual and small-group instruction, monitors and assesses student progress, and provides instructor feedback. The system is used by secondary school teachers, college faculties, and institutional trainers.

Using an instructional software program, the instructor develops support activities and materials to accompany each segment of the course of study. A series of checkpoints in the program assist the instructor in determining the student's understanding of the material being taught. A student who demonstrates a level of comprehension that suggests remedial assistance or a greater challenge is directed to specific activities to meet his/her individual needs. Such an instructional management system supports the instructor, allows more time for instructor/student contact, and gives the instructor control of the educational process.

ELEX/IMS software uses PDP/11s and VAX systems with print and/or video (CRT) terminals to deliver its programs. The central computer is used for providing objectives and directions for course modules, measuring student performance, and keeping student records. Print and video terminals are used by the students to access their assignments and to take self-evaluation exercises and instructors' tests.

A version of this product is available for the PDP–11 computer.

**Price:** $12,500 – $15,000

**Product Support Available:** Yes

**Contact:** Dr. Nicholas J. Maldari
(609) 654–1100
ELEX, THE EFFECTIVE LEARNING EXCHANGE
P.O. Box 14
Medford, NJ 08055

Engineering Science Program Exchange

**Operating System:** VMS

**Keywords:** • Computer-aided instruction • Engineering
• Graphics • Simulation

This library of more than 70 computer-assisted learning packages covers topics in aeronautical, civil, chemical, mechanical, electrical and electronic, and nuclear engineering. Most of the packages are engineering system simulations that a student may investigate by
interacting with a computer terminal. The programs are written in ANSI FORTRAN IV or BASIC; some are available in both languages. Many of the FORTRAN programs make use of graphical display.

A package comprises a machine-readable source code and supporting documentation containing information for the teacher, the programmer, and the student. Most of the FORTRAN packages have been run on a PDP–11/40; some of the BASIC packages will require translation to IAS BASIC before they will run.

A version of this product is available for the PDP–11 computer.

Price: £25 – £110
Product Support Available: No
Contact: P. A. Tinson, Exchange Coordinator
        01–980 4811
        ENGINEERING SCIENCE PROGRAM EXCHANGE
        Faculty of Engineering, Queen Mary College
        Mile End Road
        London E14NS
        United Kingdom

GIGI CAI Primer, Version 1.0

Operating System: VMS
Keywords: • Computer-aided instruction • Graphics
          • Simulation • Text editing/formatting

The GIGI CAI Primer is a computer-assisted instruction course that teaches the use of a GIGI terminal. All instruction is presented on line via a GIGI terminal connected to a RSTS/E, a VAX/VMS, or a TOPS–20 operating system host.

The course is composed of three instructional modules that cover the operation of the GIGI keyboard, the use of various set-up modes that determine GIGI’s operating characteristics, and a demonstration of the terminal’s graphic capabilities. The course takes about one hour to complete.

Refer to SPD #30.11.0 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
         (see Introduction).
Multi-Tester System

Operating System: VMS
Keywords: • Data base management • Information management

The Multi-Tester System gives and grades tests on any subject matter by maintaining a data base of questions, including such question data as question type (true/false, multiple choice, text), question category (Introduction to Theatre, World History, Calculus II, and others), question text (unlimited number of lines up to size of text file), answer text if a text question (unlimited number of lines up to size of text file), and question's answer (if not a text question). The system can generate screen tests or paper tests. Questions on tests can be preselected or randomly chosen at the time the test is either printed or given at the screen. Screen tests have a user-definable time limit. Tests given at the screen automatically print out a test result report for the teacher, showing what questions were asked, what the student's answers were, what the correct answers were, the student's score on the test, and the student's current test average. The computer can grade the test and update the student's record in the file. Since test questions can be randomly selected at test time, the computer can allow a student to take the same test repeatedly and record only the highest score to date. Or the teacher can allow students to take the test without grading them. Then, when the teacher decides that the students are proficient enough (the system maintains a test average for all the times the test has been taken), the system can be directed to begin grading the test. The system also keeps files on classes of students. The information includes the student's SSN, his/her name, the tests he/she has taken, and the high score on each test.

The versatile Multi-Tester System runs on any PDP-11 using FORTRAN IV or VAX using VAX-11 FORTRAN. The system is written in modular form and is easily modified, since source code is available.

A version of this product is available for the PDP-11 computer.

Price: $250 – $500
Product Support Available: Yes
Contact: Mitchell R. Sowards
         (512) 692–0953 (696–8018 after 6 PM Central)
         DRAGON SYSTEMS
         8746 Wurzbach Road, Suite 203
         San Antonio, TX 78240

QUEST Graphical and Text Information System

Operating System: ULTRIX, UNIX
Keywords: • Architecture • Computer-aided instruction
          • Graphics • Text editing/formatting
QUEST is a generalized subset of the larger BADGER system, developed for the Scottish Education Department and the Department of Education and Science and used for the COSLA/SED National Schoolbuilding Survey. QUEST offers convenient facilities for recording and viewing information held as plain language text linked to drawings; access to records is either by hierarchically ordered text headings or by pointing at drawings. Typically, drawings may be building plans or diagrams depicting an organizational structure. QUEST includes procedures for tracing (digitizing) from existing drawings to a computer and for capturing text data via user-designed forms (templates) on a display screen.

QUEST does not commit users to any particular anticipation of what data is to be stored; users are able to build up and modify their own data structures for holding information. QUEST can be used for holding any information associated with buildings and for office management applications.

No computing skills are required, but users have to think logically about how they wish to organize their information. Input includes digitized drawings. Output includes printed text.

The system is written in the C programming language to run in a UNIX* software environment. On-site expertise in operating with UNIX* or good access to such expertise is required.

The system requires any computer that runs full UNIX* V7, SIII BSD 4.1, or commercially available versions such as XENIX or UNITY. Current smallest configurations include DIGITAL’s LSI-11/23 microprocessor with 22-bit addressing, with at least 256Kb memory and 10Mb hard disk, plus back-up media. Available hardware includes more powerful Motorola 68000–based microcomputers, such as the Plessey System 68, at similar cost.

Peripherals include a raster graphics terminal, such as the Westward GT1015 or GT2015; a graphics plotter, such as the Hewlett-Packard 7221 (A3) or 7580/5 (A1/0); a digitizer, such as the TD HR–48 or Summagraphics ID–36; and a dot matrix or daisywheel printer. Equipment can be obtained independently of software; consultancy services are offered on selection, purchase, and commissioning of equipment.

The data base management system supplied works efficiently on small computers; it can be used for other computing applications and allows the possibility of adding applications functions. Error trapping and recovery functions to protect users from accidental loss of files are included.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** £10,000

**Product Support Available:** Yes
ReGIS CAI Primer, Version 1.0

Operating System: VMS
Keywords: • Computer-aided instruction • Graphics
• Simulation • Text editing/formatting

The ReGIS CAI Primer is a computer-assisted instruction course that teaches the use of ReGIS, the Remote Graphics Instruction Set firmware that is resident in the GIGI graphics terminal (see SPD 30.10). All instruction is presented on line via a GIGI terminal connected to a RSTS/E, a VAX/VMS, or a TOPS–10 operating system host.

The course is composed of seven instructional modules that explain the use of GIGI's firmware graphics language, the Remote Graphics Instruction Set (ReGIS). hose modules cover the specification of screen and writing attributes as well as basic graphic entities, such as points, circles, vectors (lines), text, and curves. The course takes between six and eight hours to complete.

Refer to SPD #30.12.0 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

SIGI (System of Interactive Guidance and Information)

Operating System: VMS
Keywords: • Decision support • Simulation

SIGI is an interactive guidance system designed to aid students in (or about to enter) college in making informed career decisions. The system emphasizes not only the decisions, but also the process of decision making. SIGI consists of five subsystems: Values, Locate, Compare, Planning, and Strategy.

• Values: The student examines 10 occupational values, such as helping others, income, independence, and security, and weighs the importance of each one. The student then plays a values “game” to
test the validity of the assigned weights and to help redefine his or her value structure.

- Locate: The student puts in specifications and gets lists of occupations that meet those specifications.
- Compare: The student asks questions and gets specific information about occupations of interest.
- Planning: The student gets displays of programs for entering occupations, licensing or certification requirements, and sources of financial aid.
- Strategy: The student evaluates occupations in terms of the rewards they offer and the risks of trying to enter them.

A version of this product is available for the PDP–11 computer.

**Price:** $2,400  
**Product Support Available:** Yes  
**Contact:** Ray Potter, SIGI Program Manager  
(609) 734–5165  
EDUCATIONAL TESTING SERVICE  
Princeton, NJ 08541

**UNIX® System Tutorials**

**Operating System:** None required  
**Keywords:** • Compilers • Computer-aided instruction  
• Development tools • Operating systems

The UNIX® System Tutorials, developed by User Training Corporation, are a new method of learning the UNIX® system. The series of courses make available at low cost to the user a one-on-one style of instruction. The innovative audiodigital process, using standard audio cassettes, permits live recordings of on-line instructional sessions to be played back to your CRT terminal. The tutorials are an effective way to introduce the UNIX® system to your in-house development or clerical personnel. The UNIX® System Tutorials include courses for both technical and nontechnical personnel, spanning the important topics within the UNIX® system, as well as courses on C programming and the Multiplan® Electronic Worksheet.

*UNIX is a trademark of AT&T Bell Laboratories. Multiplan® is a registered trademark of Microsoft, Inc.

A version of this product is available for the PDP–11 computer.

**Price:** $200 (rental) – $476 (rental)  
**Product Support Available:** Yes  
**Contact:** Marketing Department  
(408) 425–7222  
THE SANTA CRUZ OPERATION, INC.  
500 Chestnut Street  
Santa Cruz, CA 95060
Engineering
ABEAM

Operating System: UNIX, VMS
Keywords: • Civil engineering • Mechanical engineering

The three modules that ABEAM provides are:

• ASCII data of section properties from the AISC manual of steel construction, both the seventh and eighth editions. The following shapes are included: W, M, S, HP, C, MC; structural tees from W, M, and S shapes; structural L-shapes, single and double; structural tubing, square and rectangular; and structural pipe. For each section, the properties available include area, moments of inertia, radii of gyration, and section moduli.

• A set of FORTRAN subroutines to return the properties in response to the input of a code for the section.

• A FORTRAN program to print out the desired data in response to typing in the name of the beam section — for example, "W14x68."

A version of this product is available for the PDP-11 computer.

Price: $295 – $535
Product Support Available: Yes
Contact: Michael L. Bussler
(412) 661–2100
ALGOR INTERACTIVE SYSTEMS, INC.
Essex House, Suite L1
Essex Square
Pittsburgh, PA 15206

ACSL® (Advanced Continuous Simulation Language)

Operating System: VMS
Keywords: • Aeronautics/aerospace • Graphics
• Process control • Simulation

ACSL helps the engineer or scientist analyze dynamic response, given a mathematical description of the system. Designed for modeling the behavior of continuous systems described by time-dependent, nonlinear differential equations or transfer functions, the ACSL system helps design engineers express their models for complete solution by eliminating extraneous statements and by providing an extensive sequence of programs associated with obtaining data output and particularly plots or pictures.

Features of ACSL include the following:

• On-line interaction with the simulation model
• Full FORTRAN compatibility
• Choice of integration routines — includes Gears algorithm for stiff systems
• Complete dictionary formed for symbolic access to all variables by
  SET, DISPLAY, PLOT, PRINT, RANGE, and so on
• Permits any number of names, states, or labels to be used
• Follows standards established by CSSL Technical Committee in
  1967
• Low overhead in central processor time and memory utilization
• Array capabilities complemented by vector and matrix integration
  operators
• Simple structure with default options for the novice; advanced fa-
  cilities for the experienced user
• Automatic determination of steady state or trim operation
• Jacobian evaluation and calculation of eigenvalues/eigenvectors for
  control system design

ACSL can be run interactively or from batch for long-running simu-
lation studies. Plots of dynamic response can be obtained interac-
tively on most graphic terminals (such as Tektronix 4000 or Zeta) or
on off-line plotters (such as CalComp or Stromberg Carlson). Charac-
ter plots can be selected as an alternative for an impact terminal or
line printer.

**Price:** $3,000 – $16,000

**Product Support Available:** Yes

**Contact:** Dr. Edward E. L. Mitchell
(617) 369–5115
MITCHELL & GAUTHIER ASSOCIATES, INC.
290 Baker Avenue
Concord, MA 01742

**ADAPT**

**Operating System:** VMS

**Keywords:** • CAD/CAM • Manufacturing
  • Mechanical engineering

ADAPT, a part program system for numerical control, is designed for
full 2-axis contouring on flat or tilted surfaces and for 3-axis position.

This product is also available for $775 – $1,680/mo.

**Price:** $16,000 – $35,000

**Product Support Available:** Yes

**Contact:** Richard Russell
(513) 576–2400
GENERAL ELECTRIC CAE INTERNATIONAL INC.
300 TechneCenter Drive
Milford, OH 45150
ANSYS

Operating System: VMS
Keywords: • CAD/CAM • Civil engineering
• Mechanical engineering • Pre- and postprocessors

ANSYS, a computer program for engineering analysis using the finite-element method, integrates into one package a preprocessor for mesh generation, many analysis capabilities, several postprocessors for evaluating analysis results, and graphics. ANSYS has the following attributes:

• Preprocessor: Model definition by mesh generation, specifying geometry, digitizing, and interfaces with many CAD systems
• Analysis capabilities: Static — linear, nonlinear included plasticity, creep, temperature-dependent materials, large deformations, and bilinear elements
• Dynamic: Modal (natural frequencies), harmonic response, time history, and nonlinear materials and/or geometries
• Heat transfer: Convection, conduction, radiation, steady-state or transient, phase change, coupled to fluid flow, and coupled to electrical flow
• Element library: More than 60 structural and heat-transfer elements
• Postprocessors: Evaluation of analysis results by selectively examining data; plotting distorted shapes, stress contours, isotherms, and graphs; and combinations of load cases
• Graphics: Multiple windows, zoom, different view, perspective, hidden-line geometry and stress or thermal contours, sections, and color

ANSYS has been used worldwide for more than 10 years. Some industries using ANSYS include aerospace, automotive, communications, computer equipment, construction, machinery, nuclear, petrochemical, steel, and transportation.

Price: $1,100/mo – $2,500/mo
Product Support Available: Yes
Contact: Suzanne C. Batt
(412) 746–3304
SWANSON ANALYSIS SYSTEMS, INC.
P.O. Box 65, Johnson Road
Houston, PA 15342

AOS/MAGNETIC™

Operating System: VMS
Keywords: • Electrical • Electronic • Graphics
• Mechanical engineering

This program calculates the magnetic fields and performance of a wide variety of magnetic and electrical products. AOS/MAGNETIC
uses the finite element method, which has proved successful in calculating structural behavior and extends that technology to the analysis of electromagnetic devices. The system computes the magnetic fields, induced currents and losses, and forces of a magnetic device that is representative as an assemblage of finite elements.

AOS/MAGNETIC is composed of two modules. The MAGNETIC module handles the analysis, with the DISPLAY module handling the pre- and postprocessing. The MAGNETIC module computes the magnetic field, induced currents and losses, and forces of a magnetic device. The DISPLAY module allows the user to easily define the analysis model and, after results are obtained, to present the computations graphically.

AOS/MAGNETIC is a means of calculating the field that allows for fringing, saturation, permanent magnets, and complicated shapes. Because the program includes nonlinear B-H curves and computes inductances, forces, and eddy-current losses, it can help the designer to minimize the materials used in a device and to maximize efficiency.

Price: Available upon request
Product Support Available: Yes
Contact: Nancy J. Lambert
(414) 357-2860
A. O. SMITH DATA SYSTEMS CO.
8901 North Kildeer Court
Milwaukee, WI 53209

APT (Automatically Programmed Tools Software)

Operating System: VMS
Keywords: • CAD/CAM • Pre- and postprocessors
• Process control • Production control

The APT code is one of the most widely used software tools for complex numerically controlled (N/C) machining. APT is used to denote both a language and the computer software that processes that language. APT is a problem-oriented language developed for the explicit purpose of aiding the N/C machine tools. Machine tool instructions and geometry definitions are written in the APT language to constitute a part program. The APT part program is processed by the APT software to produce a cutter location (CL) file. That CL file may then be processed by user-supplied postprocessors to convert the CL data into a form suitable for a particular N/C machine tool. This current offering of the APT system represents an adaptation, with enhancements, of the public domain version of APT IV/SSX8 to the VAX–11/780 for use by the Engineering Services Division of the NASA Goddard Space Flight Center.

Price: $2,500/10-yr lease
Product Support Available: No
Contact:  Customer Support Department
(404) 542–3265
NASA'S COMPUTER SOFTWARE MGT. AND INFO.
CENTER
112 Barrow Hall, University of Georgia
Athens, GA 30602

BDARE (Dynamic-System Simulation in BASIC)

Operating System: UCSD p-System, VMS
Keywords:  • Chemical engineering  • Education  • Research  • Simulation

BDARE is a software package that supports VT–11 and VS–60 graphics, permits multirun simulation studies (for example, parameter optimization), and is well suited for interactive experimentation, since there are no delays for compilation and loading. BDARE offers either Runge-Kutta-Heun or Runge-Kutta-Merson (variable-step) integration.

UCSD p-System™ is a trademark of University of California Regents.

A version of this product is available for the PDP–11 computer.

Price:  $110
Product Support Available:  No
Contact:  G. A. Korn
(602) 298–7054
G. A. AND T. M. KORN, INDUSTRIAL CONSULTANTS
6801 E. Opatas Street
Tucson, AZ 85715

CCSI–PLOT®

Operating System: UCSD p-System ULTRIX, UNIX, VMS
Keywords:  • CAD/CAM  • Graphics

CCSI–PLOT is a software package that allows the convenient use of a dot matrix printer/plotter as though it were a multipen, incremental X-Y plotter. Using CCSI–PLOT, a programmer can easily convert computed data into graphic form, taking full advantage of the available printer/plotter dot resolution. CCSI–PLOT also performs many extended functions that are impossible on standard pen plotters, including erasing previously drawn lines and shaded areas. The CCSI–PLOT subroutines can be used as the building blocks for constructing user programs to produce a variety of graphic output, such as bar charts, organization charts, engineering drawings, contour plots, 3-dimensional plots, and perspective drawings.

The CCSI–PLOT package supplies graphics for the following:
• Printronix P-Series, MVP, and 4160 printers
• Trilog T-Series, Tip Series, and C-Series Colorplot printers
• Anadex printers
• Epson MX Series printers
• Okidata printers
• Advanced Color Technology ACT-1 printers
• Quantex printers
• Integral Data Systems, Inc., Prism, and Color Prism printers
• CIE Terminals, Inc., CI300/CI600 printers
• QMS Lasergrafix 1200 printers
• Ramtek 4100 printers

UCSD p-System™ is a trademark of University of California Regents.

A version of this product is available for the PDP–11 computer.

Price: $1,500 – $1,950
Product Support Available: Yes
Contact: Catherine Martin
(213) 595–8607
CERRITOS COMPUTER SERVICES, INC.
4320 Atlantic Avenue, Suite 1
Long Beach, CA 90807

Civil Library

Operating System: UNIX, VMS
Keywords: • CAD/CAM • Civil engineering • Graphics
• Mapping

Civil Library is a package of interactive programs for the civil engineer, land surveyor, or structural engineer. The package includes a powerful set of graphics programs interfaced to several popular plotters.

The library’s main strengths are surveying, mapping, and subdivision design and drafting. Programs were developed and are supported by registered engineers, and prime importance has been placed on simplicity of operation and extensive documentation. Operating manuals use an “example and sketch” instructional technique, ensuring that the engineer or designer will become fully productive in a short time.

Some of the applications are:
• Traverse geometry (unknowns anywhere, rotation and translation, shape duplicator, fixed-area solutions, map checking, radial and offset stakeouts, and field traverse reduction and adjustment)
• Subdivision plotting (full annotation, automatic windowing, automatic parallel-line generation for sidewalks and gutters on improvement and grading plans, and plot preview on graphics display terminals)
• Topo reductions (five types, topo traversing, and topo plotting)
• Vertical and horizontal stakeout (construction staking with stationing)
• Earthwork (site or highway, automatic terrain interpolation and balancing, error control, and section plotting)
• Geographical positions (state plane to geographical and vice versa)
• Hydraulics (network analysis and backwater curves)
• Structural (indeterminate frame, truss, and continuous beams)

Approximately 100 engineering users currently dial into CONCAP's computer center or use the library on their own in-house minicomputer/plotter system. The library is also very popular with city and county public works departments.

A version of this product is available for the PDP-11 computer.

**Price:** $10,000 – $30,000

**Product Support Available:** Yes

**Contact:** Ron Sawyer  
(415) 635–5750  
CONCAP COMPUTING SYSTEMS  
Civil Engineering Group  
Sixty 98th Avenue  
Oakland, CA 94603

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**CLM COGO™ (Coordinate Geometry and Graphics)**

**Operating System:** UCSD p-System, VMS  
**Keywords:** • CAD/CAM • Civil engineering • Graphics  
• Mapping

CLM COGO is a software package for civil engineering, geometrics, surveying, mapping, estimating, design, and inventory. The system features a powerful user-oriented interactive command language, multiple geographic data bases of classified geometric objects and spatial data in double-precision coordinate fields, an interactive digitizer input option, and complete display graphics, plot preview, and plotter drafting. Full-screen editing and word processing of text data are provided. The system may be applied to highway design, subdivision and utility mappings, construction cost estimating, land use planning, site engineering, and other problems involving geometric and spatial data.

UCSD p-System™ is a trademark of University of California Regents.

A version of this product is available for the PDP-11 computer.

**Price:** $5,000

**Product Support Available:** Yes

**Contact:** Frank Eby, Vice President  
(813) 831–7090  
CLM/SYSTEMS, INC.  
3654 Gandy Boulevard  
Tampa, FL 33611
COGO (Coordinate Geometry)

**Operating System:** VMS

**Keywords:** • Civil engineering • Mapping • Mathematics

COGO is designed to solve problems in plane coordinate geometry. Complex problems may be solved by starting from known points and progressing through a series of simple COGO commands. COGO commands input and determine points, lines, areas, tangents, and circular and spiral horizontal curves. The required series of COGO commands are similar in practice to the user's step-by-step solution to the problem if solved by hand.

Major applications for COGO include land surveying, highway design, right-of-way surveys, bridge geometry, and subdivision work. Traverse adjustment commands have been added to the latest version. Plotting capability is also available.

COGO may be run in either interactive or batch mode. COGO offers a user much flexibility in the input format. Input consists of commands and comments. A comment can be on a COGO input record, by itself, or after the last datum of any COGO command. A COGO command is made up of a command name and perhaps some data. Each command may be abbreviated in almost any way. Distances, angles, azimuths, and bearings may be typed in as the sum or difference of several terms. Since the input is in free format, the command names or their abbreviations and the data do not need to be in certain columns of an input record.

Error messages are printed near the left margin of terminal output for speed of printing but end in column 72 of line printer output for ease of reading.

In practical problems, a user is not dealing simply with points but rather with groups of points that define property boundaries, streets, right of ways, traverses, and so on. COGO-11 allows the user to define and to refer to lists, or figures, of related points. Up to 9,999 figures can be defined and referred to by number to compute intersections, parallel figures, areas, and so on. The ability to operate on a group of points by specifying a figure number greatly reduces the amount of effort required to do a job.

The coordinates and figures are stored by the computer in an area called a COGO table. The computer saves this table so that the user can refer to the points and figures in future runs. Each table has a variable length up to 9,999 points. A maximum of 99 tables can be saved. People working on several jobs can use separate COGO tables for the different jobs. Vertical alignment is not available.

A version of this product is available for the PDP-11 computer.

**Price:** $3,500

**Product Support Available:** Yes
Computer Guided Probe — Electronic Fault Isolation Package

Operating System: ULTRIX, UNIX, VMS
Keywords: • CAD/CAM  • Diagnostics  • Electronic
           • Instrumentation

SofTest Inc. has developed the core of a digital guided probe algorithm for use on automatic test equipment (ATE). The core has been designed for easy integration with existing ATE operating software through the careful modularization of ATE/probe interfaces and through implementation using a high-level programming language.

The guided probe is a tool for diagnosing the cause of failure of a unit under test (UUT). The guided probe works through interaction, asking the test system operator to place a probe or an IC clip on a given point on the UUT. The data from the probed points is analyzed by the guided probe software to determine if other points should be probed or if the source of the UUT's failure has been located. Once the failure has been located, the operator is informed as to its location both in hard and soft copy. The probe handles the difficult situations of wired nodes, large bus nodes, and complex feedback loops.

The guided probe requires two pieces of information from the board programmer besides the test program: the circuit interconnects and IC reference data. The circuit interconnect is a list of all UUT components and a list of all interconnections between those components. The IC reference data consists of the logic value (zero, one, or tri-state) one expects to occur at every node for each step in the test program. Signature data may also be used.

The probe package contains software to allow the data bases for the circuit description and "learned" nodal data to be created easily. The circuit description is entered in an English-like language; nodal data is learned by a program that prompts the operator for all actions. However, if a digital logic simulator is available, it can generate those data bases, and the probe can be interfaced to them.

A version of this product is available for the PDP-11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Shelley Schneider
         (201) 447–3901
CSM/O/P (Continuous System Modeling and Optimizing Program)

Operating System: VMS
Keywords: • CAD/CAM • Electronics • Simulation

CSM/O/P is designed for on-line interactive, transient/AC simulation of continuous systems and processes. The program uses a simple yet versatile application-oriented input language to simulate and evaluate those systems expressed by either an analog block diagram or a set of ordinary differential equations.

Program features include conversational, discipline-oriented input language; several optional integration methods; expanded-element block and function capabilities; graphic output and selective output control; unique AC analysis, frequency, and phase response plots; online file-handling and editing capabilities; response optimization of linearized systems by parameter iteration under program control; and printout of the “A” matrix and eigenvalues.

The user describes a problem by entering block parameter and interconnection data. Thirty-five block types are available. Realistic system simulations can be obtained by including blocks that simulate noise, backlash, flip-flop, and so forth. Up to six transient response plots can be stored on disk files and retrieved for later use.

Frequency response optimization of a linearized system can be achieved. CSM/O/P allows the user to change the values of the system parameters under program control in order to realize a response closer to the response desired. Optimization is accomplished by varying only the user-selected parameters to maximize a merit function.

A spiral least-squares algorithm minimizes the difference between the desired frequency response and the system’s response over a specified frequency interval.

Note: Floating-point hardware and FORTRAN 77 are required to run this program.

Price: $6,000 – $15,000 +

Product Support Available: Yes
Contact: Sergio Bernstein, President
(505) 266–9622
BERNE ELECTRONICS, INC.
120 Dartmouth, S.E.
Albuquerque, NM 87106
Curve Fitting

Operating System: UNIX, VMS
Keywords: • Mathematics • Scientific

The following two programs are included:

• CURFIT fits a given data set to six functions and shows which function best fits the data. The six functions are $Y = A + (B*X)$, $Y = A*EXP(B*X)$, $Y = A*(X**B)$, $Y = A + B/X$, $Y = 1/ (A + B*X)$, $Y = X/ (A + B*X)$.

• POLFIT fits data to a polynomial of order 2 through $N$.

A version of this product is available for the PDP–11 computer.

Price: $250
Product Support Available: Yes
Contact: Michael L. Bussler
(412) 661–2100
ALGOR INTERACTIVE SYSTEMS, INC.
Essex House, Suite L1, Essex Square
Pittsburgh, PA 15206

DACS (Data Acquisition and Conversion System)™

Operating System: VMS
Keywords: • A/D, D/A • Data collection • Data conversion
• Disk utilities

DACS is a library of FORTRAN-callable subroutines for digital-to-analog and analog-to-digital conversion of data, data compression/expansion, and efficient disk file input/output. DACS interfaces the DIGITAL LPA–11K Laboratory Peripheral Accelerator hardware and software operating on VAX–11/780 or PDP–11 computers to a user-oriented FORTRAN environment.

DACS allows for multichannel input and output to/from disk in dedicated mode while under FORTRAN control. In addition, nonlinear scaling is optionally available for compressing 12-bit A/D samples to 8-bit byte representations in real time. Those samples are efficiently stored on the disk, then expanded back to linear 12-bit samples at the D/A output. Both A-law and micro 255-law compression tables are provided with DACS. DACS incorporates fast and efficient input/output MACRO routines for data transfer to/from disk.

The maximum aggregate sampling rate available to the user is determined by the LPA–11K hardware specifications, disk drive transfer rates, priority level, and system loading. Typical maximum aggregate sampling rates to/from disk are near 50 kHz, and rates to/from memory buffers are near 150 kHz.
DACS functions as a stand-alone software library or as a software interface to Signal Technology’s Interactive Laboratory System (ILS), an organized software package for high-level user-oriented digital signal processing.

DIGITAL distributes this software product under license from Signal Technology, Inc., 5951 Encina Rd., Goleta, CA 93117.

Refer to SPD #A0.21.03 when requesting further information on this product from your local DIGITAL sales office.

DACS (Data Acquisition and Conversion System)™ is a trademark of Signal Technology, Inc.

A version of this product is available for the PDP–11 computer.

**Price:** $4,000

**Product Support Available:** No

**Contact:** Consult your local DIGITAL sales office (see Introduction).

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**DAREP (Differential Analyzer Replacement — Portable), DARE/11**

**Operating System:** None required

**Keywords:** • Electrical • Mechanical engineering • Scientific • Simulation

DAREP is a FORTRAN-based simulation language for dynamical system simulation — for example, the solution of large groups of differential equations. Line printer and Tektronix plotting routines are available for solution display. Numerical integration routines are available — some with automatic step-size adjustment and error control. Programming is scale-factor free.

Mass storage of problem and solution files is included. Using a VDU, semiinteractive simulation with run-time alteration of parameters is possible.

DARE/11 runs interactively on DIGITAL PDP–11s with VT–11 graphics. Furnished on RK05 disk, DARE/11 is an RT–11 V2C implementation.

For more information, see Digital Continuous System Simulation, G. A. Korn and J. V. Wait, Prentice-Hall.

A version of this product is available for the PDP–11 computer.

**Price:** $1,500 – $3,800

**Product Support Available:** Yes

**Contact:** John V. Wait, Professor

(602) 621–2434

UNIVERSITY OF ARIZONA
Dept. of Electrical and Computer Engineering
Tucson, AZ 85721
DISCOS (Dynamic Interaction Simulation of Controls and Structure)

Operating System: VMS
Keywords:  • Aeronautics/aerospace  • CAD/CAM
          • Mechanical engineering  • Robotics

DISCOS was developed for the dynamic simulation and stability analysis of passive and actively controlled spacecraft. In the use of DISCOS, the physical system undergoing analysis may be generally described as a cluster of contiguous flexible structures (bodies) that comprise a mechanical system such as a spacecraft. The entire system or portions thereof may be either spinning or nonspinning. Member bodies of the system may undergo large relative excursions such as those of appendage deployment or rotor/stator motion. The general system of bodies is, by its inherent nature, a feedback system in which inertial forces, such as those due to centrifugal and Coriolis acceleration, and the restoring and damping forces are motion-dependent. The system may possess a control system in which certain position and rate errors are actively controlled through the use of reaction control jets, servomotors, or momentum wheels. Bodies of the system may be interconnected by linear or nonlinear springs and dampers, by a gimbal and slider block mechanism, or by any combination of those.

The DISCOS program can be used to obtain nonlinear and linearized time responses of the system, total system resonance properties, and frequency domain response and stability information for the system. DISCOS is probably the most powerful computational tool to date for the computer simulation of actively controlled coupled multiflexible-body systems. The program is not easy to understand and effectively apply but is not intended for simple problems. The DISCOS user is expected to have extensive working knowledge of rigid-body and flexible-body dynamics, finite-element techniques, numerical methods, and frequency-domain analysis. Various applications of DISCOS have included simulation of the Shuttle payload deployment/retrieval mechanism, solar panel array deployment, antenna deployment, analysis of multispin satellites, and analysis of large, highly flexible satellites, including the design of attitude-control systems.

Price: $1,800/10-yr lease
Product Support Available: No
Contact: Customer Support Department
        (404) 542–3265
        NASA'S COMPUTER SOFTWARE MGT. AND INFO. CENTER
        University of Georgia
        112 Barrow Hall
        Athens, GA 30602
DOGS (Design-Oriented Graphics System)

Operating System: VMS
Keywords: • CAD/CAM • Graphics • Mechanical engineering

DOGS is a comprehensive 2-dimensional, computer-aided drafting and design package that can produce high-quality technical drawings for a wide range of disciplines. DOGS offers the greatest possible financial savings and improved drawing quality. DOGS has been designed to emulate as closely as possible the procedures and techniques familiar to engineering drafters and designers. DOGS can automatically copy, rotate, scale, and move partial drawings from one location to another and can store and recall any number of user-defined symbols.

A version of this product is available for the PDP–11 computer.

Price: $15,000 – $30,000
Product Support Available: Yes
Contact: Jeff Thompson
(615) 584–2117
PAFEC ENGINEERING CONSULTANTS, INC.
5401 Kingston Pike, Suite 610
Knoxville, TN 37919

DUCT (Design Using Computer Techniques)

Operating System: VMS
Keywords: • Automotive • CAD/CAM • Mechanical engineering • Simulation

DUCT, a powerful tool in the field of computer-aided engineering, enables a designer to develop a complete surface definition of an object, which can then be used for analysis or to provide manufacturing information. DUCT was developed primarily as a design system and is best used by the designer to turn a design concept into a full surface model. Used in that manner, the designer can control and retain details of any modifications.

DUCT is being applied successfully to the design of engineering castings and moldings and is used to program numerically controlled machine tools for the manufacture of prototypes, patterns, molds, and dies. Applications include the design and manufacture of tooling for combustion engine manifold cores, pump volutes, turbine blades, plastic and glass bottle molds, and plumbing brass foundry, including taps, valves, and other pipe fittings.

The DUCT system of representation is based on a planar cross-sections positioned in true cartesian space by means of a 3-dimensional curve known as a spine. A graphics terminal can be used to define and modify the model interactively. DUCT has facilities for calculating cross-sectional and surface areas and component volume, thus
enabling the user to determine the amount of material contained within a casting or molding.

DUCT can also be used to optimize a design to conform to a volume constraint or, in the case of a turbine scroll, for example, to ensure a uniform decrease in cross-sectional area along the length of the passageway. Another important design feature is the facility for finding complex die-split lines to give satisfactory draft angles. DUCT also has an automatic blending facility to join two interesting surfaces smoothly. The DUCT surface model can be used to generate a finite element analysis mesh via an interactive mesh generation.

DUCT also provides visualization facilities, including first and third angle, isometric, conic projections, and stereo pairs. Finally, when a satisfactory design is achieved, an NC machine tool path can be generated to machine the DUCT surface pattern or mold. The many facilities of DUCT offer economic and technical advantages, making it an invaluable aid in designing, visualizing, and manufacturing 3-dimensional components.

A version of this product is available for the PDP-11 computer.

Price: £17,000 - £30,000

Product Support Available: Yes

Contact: E. B. Lambourne
(021) 327–3401
DELTA COMPUTER AIDED ENGINEERING LTD.
Argyle Street
Birmingham B75TH
United Kingdom

DWC Land Parcel Data Base System

Operating System: VMS

Keywords: • Data base management • Data entry • Mapping
• Real estate

Originally designed for a governmental/engineering mapping project, this sophisticated system includes tape-loading programs, data entry functions, on-line changes and inquiries, a flexible report generator, and a property index card program. The data base can be accessed by account number or map number, owner’s name, and owner’s tax ID number. Pertinent data includes township number, area and quarter sections, parcel number, multiple deed and plat book entries, lot dimensions, acreage, and various district numbers and codes (tax, city codes, addition codes, and so on). Lot and block numbers, subdivision name, township, section and range, parcel address, owner name and address, and a variable-length field for a complete land description are also included. Both split and consolidated properties can be tracked.

A version of this product is available for the PDP-11 computer.
EASE2 (Elastic Analysis for Structural Engineers)

Operating System: VMS
Keywords: • Aeronautics/aerospace • CAD/CAM
          • Civil engineering • Mechanical engineering

EASE2 is a linear finite element analysis program used for:
• Heat transfer analysis — transient or steady state and convection and
  heat flux
• Static stress analysis — mechanical and thermal and multiple and
  combination loads
• Natural frequencies and mode shapes — subspace iteration and
  Guyan reduction
• Response spectrum (shock) analysis — NRC, CQC, and SRSS and
  eight combination methods
• Transient (time history) analysis — mode superposition and direct
  integration
• Random response — base or acoustic excitation and response PSD
  or RMS element stresses
• Harmonic response — multiple support excitations and sine sweep
  or dwell

The element library has been simplified to include beam, pipe, shell,
solid, and axisymmetric element types. Matrix additions can be used
in input special element types. Multipoint constraints can be rigid
links, interface constraints, or cyclic-symmetry conditions.

The manual is designed for the engineer who wants to create a finite
model and obtain a computer solution without attending
training sessions. The sophisticated multipass preprocessor, E2IN,
performs mesh generation, plotting, error checking, bandwidth re-
duction, and core allocation. Since E2IN is a stand-alone program, all
data checking can be done quickly and inexpensively prior to submit-
ting the full static or dynamic solution. E2IN virtually guarantees a
successful EASE2 run. Translators to and from graphics programs
(such as PATRAN) are available.

Price: $5,000 – $12,000/yr
Product Support Available: Yes
Contact: Fred P. Blissmer
         (213) 530–3273
ELAN–AC

Operating System: VMS
Keywords: • CAD/CAM • Electrical • Simulation

ELAN–AC, an interactive AC analysis program for circuit designers who need a comprehensive analysis tool, can analyze large circuits and provide information about circuit performance, including gain, phase shift, input and output impedances, y-parameters, and group delay. Sensitivity analysis can pinpoint components that most affect circuit performance. Monte Carlo simulation of production spreads (with any kind of distribution) allows economical prediction of production yields.

Built-in models are included for resistors, capacitors, inductors, mutual couplings, independent and dependent generators, transistors, FETs, and operational amplifiers. If more complex models are desired, user-defined FORTRAN equations can be added.

Efficient algorithms allow ELAN–AC Monte Carlo simulation to be performed economically. For example, simulating gain, phase shift, and input/output impedances of a 25-node, 50-branch circuit at 10 frequencies takes less than two CPU seconds.

ELAN–AC features include:
• 100-node, 300-branch capability.
• Built-in models for R, C, L, M, transistors, FETs, OP-amps.
• Automatic linearization of operating point parameters from previous ELAN–TR or ELAN–REL program analysis. (Data from operating points is automatically obtained from previous analyses and inserted as data to ELAN–AC.)
• User-defined FORTRAN equation capability for complex modeling and other special calculations.
• Sensitivity, worst-case, and Monte Carlo analyses and simulations, with histogram plots.
• Coupled tolerances and distributions between elements for realistic simulations of element variations.
• Availability of a semiconductor data library (ELAN–LIB) and an interactive program for calculating diode and transistor parameters (ELAN–MOD).
Note: Requirements to run this program are floating-point hardware and FORTRAN 77.

A version of this product is available for the PDP–11 computer.

**Price:** $6,000 – $15,000 +

**Product Support Available:** Yes

**Contact:** Sergio Bernstein, President  
(505) 266–9622  
BERNE ELECTRONICS, INC.  
120 Dartmouth, S.E.  
Albuquerque, NM 87106

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**ELAN–MOD (Transistor and Diode Modeling Program)**

**Operating System:** VMS  
**Keywords:** · Electrical · Simulation

ELAN–MOD is an interactive program that calculates diode and transistor parameters for use in the ELAN programs. The user enters certain data from measurements and/or from manufacturer’s data sheets. Default values are used by ELAN–MOD when the user does not have appropriate parameter data. ELAN–MOD then calculates the parameters required for ELAN. The user can check, modify, and recalculate parameters until suitable model data is obtained.

Note: Requirements to run this program are floating-point hardware and FORTRAN 77.

A version of this product is available for the PDP–11 computer.

**Price:** $6,000 – $15,000 +

**Product Support Available:** Yes

**Contact:** Sergio Bernstein, President  
(505) 266–9622  
BERNE ELECTRONICS, INC.  
120 Dartmouth, S.E.  
Albuquerque, NM 87106

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**ELAN–TR (Transient Radiation)**

**Operating System:** VMS  
**Keywords:** · Electrical · Graphics · Nuclear · Simulation

ELAN–TR, an easy-to-learn but powerful nonlinear analysis program, is designed for use by both the beginner and the experienced user.

ELAN–TR features include:

· Easy-to-use input language, which prompts the user  
· Complete nuclear radiation effects analysis
Engineering

- High-resolution graphic output presentations
- A large semiconductor data bank containing approximately 300 devices
- Linear transconductance models for Beta, Mu, Gm, Zm
- Automatic storage and retrieval of problem data from disk files
- User-defined FORTRAN equation capability for additional modeling flexibility
- Support for users by experienced engineers and computer specialists
- Interface for further circuit and reliability analysis using the ELAN–AC and ELAN–REL programs
- Availability of a semiconductor data library (ELAN–LIB) and an interactive program for calculating diode and transistor parameters (ELAN–MOD)
- Additional FORTRAN equations to increase the possible range of analyses

Note: Requirements to run this program are floating-point hardware and FORTRAN 77.

A version of this product is available for the PDP–11 computer.

**Price:** $6,000 – $15,000

**Product Support Available:** Yes

**Contact:** Sergio Bernstein, President
(505) 266–9622
BERNE ELECTRONICS, INC.
120 Dartmouth, S.E.
Albuquerque, NM 87106

**EXP1234 (Exponential Model Fitter)**

**Operating System:** UNIX, VMS

**Keywords:** Biology  Mathematics  Simulation  Statistics

This interactive FORTRAN program sequentially provides weighted least-squares fits of time-series data to sums of one, two, three, and four exponential functions, with a tabular analysis of the quality of all fits, using several statistical criteria — residual tests, F-ratio tests, information criterion tests, and correlation matrices. Five options for entering measurement error variances are provided, with three choices for data weighting. The nonlinear regression algorithm is a second-order gradient search scheme. Program input and output are highly readable and user-friendly. Telephone demos are available.

A version of this product is available for the PDP–11 computer.

**Price:** $350 – $750

**Product Support Available:** Yes

**Contact:** Dr. Joseph J. DiStefano, Professor
(213) 825–7482 or 825–4033
FLUENT (Fluid Flow Modeling System)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Chemical • Petroleum • Process control • Simulation

FLUENT, a general-purpose computer program for modeling fluid flow, allows the engineer/designer to quickly analyze complex flow problems, without requiring prior expertise in computational fluid dynamics or computer programming. The system incorporates the latest modeling techniques available for simulating a wide range of fluid-flow problems. FLUENT therefore enables the fluids engineer to apply state-of-the-art computer simulation methods to analyze and solve practical design problems, without costly time-consuming computer programming.

FLUENT is ideally suited for modeling the complex internal flows frequently encountered in industrial process equipment. The program can handle diverse 2- or 3-dimensional steady-state flow situations, including single-phase gas or liquid flows, turbulent or laminar flows, isothermal or thermal mixing, fluids laden with dispersed phase of particles or liquid droplets (with or without evaporation and/or combustion), fluids with reacting chemical species, and combustion.

A version of this product is available for the PDP–11 computer.

Price: $15,000 – $40,000
Product Support Available: Yes
Contact: Bart Patel
(603) 643–3800
CREARE R&D INC.
P.O. Box 71
Hanover, NH 03755

GENOPTICS (General Optical Systems Evaluation Program)

Operating System: VMS
Keywords: • Graphics • Instrumentation • Research • Scientific

GENOPTICS was developed as an aid for the analysis and evaluation of optical systems that employ lenses, mirrors, diffraction gratings, and other geometrical surfaces. The GENOPTICS evaluation is per-
formed by means of geometrical ray tracing based on Snell’s law. The GENOPTICS program can provide for the exact ray tracing of as many as 800 rays through as many as 40 surfaces. Those surfaces may be planar, conic, toric, or polynomial shaped lenses, mirrors, and diffraction gratings. Each surface may be tilted about as many as three axes and may be decentered. Surfaces having bilateral symmetry may also be analyzed. GENOPTICS provides for user-oriented input and for a wide range of output for the evaluation of the optical system being analyzed.

GENOPTICS performs paraxial ray tracing and computation of the third-order aberrations, including aspheric contribution. Graphical output can be generated for spot diagrams, radial energy distributions, and modulation transfer functions, for each object point and each color. Sag tables may be generated for any rotationally symmetric surface, with options to obtain the sag differences from a reference sphere in units of lengths or wavelengths. Statistics and plots of ray intercepts with any surface in the system may be obtained for use in vignetting analysis and beam distribution analysis. A focal system can be examined with image statistics generated in terms of tangents of angles with respect to the optical axis. For exact ray tracing, a ray pattern at the entrance pupil can be specified as a rectangular or polar grid, where each ray samples an equal amount of area, or as a pattern, where each ray samples an equal amount of solid angle for a finite object. This latter pattern is useful in radiometric work.

Price: $765
Product Support Available: No
Contact: Customer Support Department
         (404) 542–3265
         NASA’S COMPUTER SOFTWARE MGT. AND INFO.
         CENTER
         University of Georgia
         112 Barrow Hall
         Athens, GA 30602

GIFTS (Graphics-Oriented Interactive Finite Element Time-Sharing System)

Operating System: VMS
Keywords: • Computer-aided instruction
• Data base management • Graphics
• Pre- and postprocessors

Developed with the support of the Office of Naval Research and the U.S. Coast Guard, GIFTS is a graphics-oriented collection of programs that operate on a standardized data base. The system is designed to fit in a relatively small core area and is specifically suited
to time-sharing and minicomputer systems. GIFTS may be used as a stand-alone finite element package or as a pre- and postprocessor for other systems.

A version of this product is available for the PDP–11 computer.

**Price:** $2,500/yr – $5,000/yr  
**Product Support Available:** Yes  
**Contact:** Susan Lewis or Dr. Kamel  
(602) 621–6129  
UNIVERSITY OF ARIZONA  
AME Department, Building 16, Room 204  
Tucson, AZ 85721

**GPSS (General Purpose Simulation System)**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:** • Materials handling • Scheduling • Simulation  
• Transportation

GPSS is a block diagram–oriented simulation language that facilitates development of simulation models of discrete systems, such as queuing systems or traffic flow systems. Used in industrial engineering, GPSS is preferred for the teaching of simulation. Application areas include manufacturing systems, computer communication networks, transportation networks, mining operations, and many others.

The products feature automated collection and display of statistics and interactive debugging facilities. User-written FORTRAN subroutines may be called from the model for special applications, including graphics displays or animated traces of system behavior.

Prices vary, depending on the computer system. Educational discounts are available. Full documentation is included. Several excellent textbooks describing GPSS and its applications are available from publishers.

A version of this product is available for the PDP–11 computer.

**Price:** $750 – $6,000  
**Product Support Available:** Yes  
**Contact:** David Martin  
(519) 679–3575  
SIMULATION SOFTWARE LTD.  
760 Headley Drive  
London, Ontario N6H 3V8  
Canada
GROUSE Ground Modeling System

Operating System: ULTRIX, UNIX
Keywords: • Architecture • CAD/CAM • Civil engineering • Construction

GROUSE generates ground surfaces from random spot height survey data and displays surfaces as contoured plans, sections, and perspective views. Input includes digitized site boundary and spot height data. Users can interact with displayed results to modify surfaces, and the program calculates consequent cut-and-fill requirements.

GROUSE includes a range of additional facilities to superimpose objects such as buildings or vegetation on a ground form and to obtain area values, density of objects within an area, linear distances, and slope conditions. GROUSE applications continue to be developed to meet particular user needs. The emphasis is on congenial user interaction.

The system is written in the C programming language to run in a UNIX* software environment. On-site expertise in operating with UNIX* or good access to such expertise is required.

The system requires any computer that runs full UNIX* V7, SIII BSD 4.1, or commercially available versions such as XENIX or UNITY. Current smallest configurations include DIGITAL’s LSI-11/23 microprocessor with 22-bit addressing, with at least 256Kb memory and 10Mb hard disk, plus back-up media. Available hardware includes more powerful Motorola 68000–based microcomputers, such as the Plessey System 68, at similar cost.

Peripherals include a raster graphics terminal, such as the Westward GT1015 or GT2015; a graphics plotter, such as the Hewlett-Packard 7221 (A3) or 7580/5 (A1/0); a digitizer, such as the TD HR–48 or Summagraphics ID–36; and a dot matrix or daisywheel printer. Equipment can be obtained independently of software; consultancy services are offered on selection, purchase, and commissioning of equipment.

The data base management system supplied works efficiently on small computers; it can be used for other computing applications and allows the possibility of adding applications functions. Included are error trapping and recovery functions to protect users from accidental loss of files.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: £10,000
Product Support Available: Yes
Contact: Aart Bijl
(031) 667 1011 ext. 4598
GTSTRUDL

Operating System: VMS
Keywords: • Architecture • CAD/CAM • Civil engineering
          • Mechanical engineering

GTSTRUDL assists an engineer in the structural analysis and design process and can be executed in a batch mode, interactive mode, or any combination of batch and interactive modes. This sophisticated, state-of-the-art, and fully integrated structural information processing system can supply accurate and complete technical data for structural design decision making. The system has been designed and structured to satisfy many important computational, data management, and decision-making needs of the structural analyst and structural engineer.

GTSTRUDL integrates a wide variety of structural and finite element analysis, design, graphical display, and structural data base management features into a single system. Analysis includes both linear static and dynamic (response spectrum and transient) analysis of structures. More than 30 finite elements, including conventional, isoparametric, and hybrid formulation elements, are available.

Design in steel is performed by the AISC, API, and ASCE specifications for general steel structures and steel transmission towers. Design in reinforced concrete is performed in accordance with the latest ACI and British specifications for general framed structures.

Graphical display includes undeformed, deformed, and mode shape plots, as well as 3-D rotation, windowing, panning, zooming, hidden-and boundary-line removal, shrink plots, split screen, extensive annotation and data base display, FE stress contours, and member-force diagram and envelope plots. Comprehensive structural data base management facilities are available to the engineer. All communication with GTSTRUDL is performed by the engineer using POL, an extremely convenient and powerful English-language, structural engineering, command-structured problem-oriented language.

Significant discounts are available for educational institutions.

Price: $5,500 – $23,000
Product Support Available: Yes
Contact: Dr. Leroy Z. Emkin
         (404) 894–2260
GEORGIA INSTITUTE OF TECHNOLOGY
School of Civil Engineering
Atlanta, GA 30332

HARDY

Operating System: VMS
Keywords: • Civil engineering • Mathematics
The HARDY system performs flow analysis on pipe networks, using the HARDY-CROSS loop balancing method. Input consists of pipe diameter, length, roughness coefficient, assumed flow, and loop and head path data. Pumps and reservoirs can be analyzed. The program accepts a maximum of 300 pipes and 60 loops. A user-defined tolerance factor will limit the number of iterations the program performs. English or metric units are acceptable.

A version of this product is available for the PDP-11 computer.

Price: $150
Product Support Available: Yes
Contact: Robert E. Branch
(804) 622-1755
TECHNICAL INFORMATION SYSTEMS, INC.
116 West Plume Street
Norfolk, VA 23510

HEC 1

Operating System: VMS
Keywords: • Civil engineering • Mathematics
HEC 1 performs a variety of runoff hydrograph computations, including manipulations of station and basin rainfall and snow data, calibration of rainfall/snowmelt/runoff models, and river-routing models. HEC 1 also computes stream system flood hydrographs and economic evaluations of basin modifications and structural effects. Input and output may be in either English or metric units.

A version of this product is available for the PDP-11 computer.

Price: $700
Product Support Available: Yes
Contact: Lyman E. Byrd, Director of Operations
(800) 368-4203
TECHNICAL INFORMATION SYSTEMS, INC.
116 W. Plume Street
P.O. Box 1900
Norfolk, VA 23501
HEC 2

**Operating System:** VMS  
**Keywords:** Civil engineering, Mathematics

HEC 2 computes the backwater surface profile for channels of any cross section for either subcritical or supercritical flow conditions. The effects of bridges, culverts, and weirs may be considered in the computations. Capabilities are available for assessing the effects of channel improvements, levees, and floodways on the water surface profiles. Input may be in either English or metric units.

A version of this product is available for the PDP–11 computer.

**Price:** $950  
**Product Support Available:** Yes  
**Contact:** Robert E. Branch, P.E.  
(800) 368–4203  
TECHNICAL INFORMATION SYSTEMS, INC.  
116 W. Plume Street  
P.O. Box 1900  
Norfolk, VA 23501

I/CAP (Interactive Electronic Circuit Analysis Program)

**Operating System:** VMS  
**Keywords:** CAD/CAM, Electronic, Simulation, Text editing/formatting

I/CAP is a revised and augmented interactive version of the IBM ECAP/360 program. Data can be input by using the full ECAP formats, as specified in the ECAP manuals. In addition to those of ECAP/360, the following features are provided: full 50-node, 200-branch capability; conversational, easy-to-use interactive free-format input language; built-in text editor; selected output control; graphic output; and stored subcircuit models.

Note: Requirements to run this program are floating-point hardware and FORTRAN 77.

A version of this product is available for the PDP–11 computer.

**Price:** $6,000 – $15,000 +  
**Product Support Available:** Yes  
**Contact:** Sergio Bernstein, President  
(505) 266–9622  
BERNE ELECTRONICS, INC.  
120 Dartmouth, S.E.  
Albuquerque, NM 87106
ICLAYOUT

Operating System: MINC, UNIX, VMS
Keywords: • CAD/CAM • Electrical • Graphics
          • Manufacturing

ICLAYOUT is a CAD/CAM software package for designing and manufacturing masks for integrated circuits, hybrid circuits, discrete devices, and so on. The package features:

• Extensive on-line design and editing capability.
• Parametric cells.
• Built-in pick a menu, and arc and alphanumerics, BASIC-like commands that allow the user to define his/her own design rule.
• User-definable fill density.
• Total number of definable points equal to $10^{14}$.
• True zoom/pan to any magnification.
• Multiple step and repeat, rotation, mirror reflection, and other commands for feature addition, modification, and measurement.
• Powerful cut command that removes features within specified boundaries.
• User-definable named cells and their subsequent manipulation as single entities.
• Automatic documentation files creation. Session dialog is preserved in instruction files. Graphic information is saved in drawing files.
• Continuous display when desired of digitizing grid points, center coordinates, resolution, and scale.
• On-line CAM check.
• True display of final artwork.

The package supports a hard-copy unit to dump graphic/text information from screen, a data tablet, a modem, color graphics/text display, a drum plotter, a digitizer, a color printer/plotter, a camera, a half-inch magnetic tape drive, and a paper tape puncher.

A version of this product is available for the PDP–11 computer.

Price: $5,000 – $30,000
Product Support Available: Yes
Contact: Nancy Wang, Assistant Manager
          (617) 891–9829
          COMPUTER GRAPHICS
          22 College Farm Road
          Waltham, MA 02154

IDSP (Interactive Digital Signal Processor)

Operating System: VMS
Keywords: • Acoustics • Scientific • Signal processing
          • Text editing/formatting
IDSP consists of a set of time series analysis "operators" based on the various algorithms commonly used for digital signal analysis work. The processing of digital time series to extract information is usually achieved by the application of a number of fairly standard operations. Also, it is often desirable to experiment with various operations and combinations of operations to explore their effect on the results. IDSP is designed to provide an interactive and easy-to-use system for that type of digital time series analysis. The IDSP operators can be applied in any sensible order, even recursively, and can be applied to single time series or to simultaneous time series. IDSP is being used extensively to process data obtained from scientific instruments on board spacecraft. IDSP is also an excellent teaching tool for demonstrating the application of time series operators to artificially generated signals.

IDSP includes 28 standard operators. Processing operators provide for Fourier transform operations, design and application of digital filters, and eigenvalue analysis. Additional support operators provide for data editing, display information, graphical output, and batch operation. User-developed operators can be easily interfaced with the system to provide for expansion and experimentation. Each operator application generates one or more output files from an input file. The processing of a file can involve many operators in a nontrivial application. IDSP maintains history information as an integral part of each file so that the user can display the operator history of the file at any time during an interactive analysis.

**Price:** $1,200

**Product Support Available:** No

**Contact:** Customer Support Department
(404) 542–3265
NASA'S COMPUTER SOFTWARE MGT. AND INFO. CENTER
University of Georgia
112 Barrow Hall
Athens, GA 30602

**I/LOGIC (Interactive Logic Simulation)**

**Operating System:** VMS

**Keywords:** • CAD/CAM • Diagnostics • Simulation

This interactive program for simulation of digital logic circuits allows the engineer to check out logic designs prior to breadboarding. The user can input data for each logic block, run the simulation, make modifications, and store the problem on data files. The problem can then be retrieved from disk files, edited, and rerun as desired. Timing diagrams are printed at the terminal, thus allowing the user to check designs quickly. The program can handle logic blocks of the following types:
• RS, JK, T, D, 1-shot, flip-flop
• AND, NAND, OR, NOT, and XOR gates
• Buffers and inverters, with or without delays
• Programmable switches and clocks

All gates allow up to eight inputs, and all signal complements can be obtained by using the negative of the signal desired. A macro command is available for definition and repeated use of special functions in a simulation. Initialization of all blocks, variable waveform inputs, and race condition checks are also provided.

Note: Requirements to run this program are floating-point hardware and FORTRAN 77.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Sergio Bernstein, President
(505) 266–9622
BERNE ELECTRONICS, INC.
120 Dartmouth, S.E.
Albuquerque, NM 87106

ILS (Interactive Laboratory System)™

Operating System: UNIX, VMS
Keywords: • Acoustics • Medical • Scientific
• Signal processing

ILS is a comprehensive set of FORTRAN programs used to investigate signals and their properties. Those signals may be EKG traces, heart sounds, sonar signals, speech sounds, seismic pressure waves, radar reflections, and so on.

The software handles both real and complex data and supports functions such as addition, multiplication, magnitude, hard and soft limiting, phase wrapping and unwrapping, FFT and inverse FFT, autocorrelation, cross-correlation, convolution, spectral density, coherence, and moving or exponential averaging to reduce the variance of the estimates. The ILS programs allow data scanning and manipulation, spectral analysis, and pattern analysis/recognition. The software operates in an interactive or batch mode and makes extensive use of graphics.

ILS contains a standard set of file structures, including sampled data files, analysis files, record files, and label files, which in combination allow for efficient storage and access of numerous data types. The file conventions allow for convenient information transfer from one program to the next and enhance the transportability of data and programs among installations.
ILS allows for numerous graphical operations such as scaled data displays, multiple calibrated data displays with user-defined grid options, scatter plots with principal component analysis options, and 3-D displays of spectra and spectral models.

DIGITAL distributes this software product under license from Signal Technology, Inc., 5951 Encina Rd., Goleta, CA 93117.

Refer to SPD #A0.19.02 when requesting further information on this product from your local DIGITAL sales office.

ILS (Interactive Laboratory System)™ is a trademark of Signal Technology, Inc.

A version of this product is available for the PDP–11 computer.

**Price:** $13,000 – $18,000  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

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**INSCAL**

**Operating System:** VMS  
**Keywords:** • Instrumentation  • Inventory  • Quality control

This FORTRAN program tracks and reports calibration dates for all instruments and equipment in the data base. Instruments are categorized by such key characteristics as manufacturer, model number, serial number, date of purchase, and date of last calibration. The various reports and listings available allow users to schedule and use their calibration facilities efficiently.

Human interfacing is achieved through a built-in menu-driven format and simple English dialog. Full file maintenance is provided to allow easy updating and editing of the data base.

A version of this product is available for the PDP–11 computer.

**Price:** $15,000  
**Product Support Available:** Yes  
**Contact:** Robert Loesch  
(203) 238–2351  
CANBERRA INDUSTRIES, INC.  
One State Street  
Meriden, CT 06450

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**Lambert Geodetic Conversion**

**Operating System:** VMS  
**Keywords:** • Civil engineering  • Mathematics
This program converts geodetic longitude and latitude values to state plane coordinates and vice versa. Input is interactive or from COGO files. Source language is BASIC or FORTRAN.

A version of this product is available for the PDP-11 computer.

**Price:** $350  
**Product Support Available:** Yes  
**Contact:** Robert E. Branch, P.E.  
(800) 368-4203  
TECHNICAL INFORMATION SYSTEMS, INC.  
116 W. Plume Street  
P.O. Box 1900  
Norfolk, VA 23501

**MCSIM (Monte Carlo Simulation)**

**Operating System:** UNIX, VMS  
**Keywords:** • Biology • Mathematics • Research • Statistics  
MCSIM is a FORTRAN program for evaluating parameter estimation accuracies and related sample statistics for a given model with given data error statistics, by computer simulation of multiple experiments. The user provides the model and data statistics in a FORTRAN subroutine and standardized format. Program output is highly readable and user-friendly.

A version of this product is available for the PDP-11 computer.

**Price:** $500 – $1,000  
**Product Support Available:** Yes  
**Contact:** Dr. Joseph J. DiStefano III, Professor  
(213) 825-7482 or 825-4033  
UNIVERSITY OF CALIFORNIA, LOS ANGELES  
School of Engineering and Applied Science  
Biocybernetics Laboratory, 4731K Boelter Hall  
Los Angeles, CA 90024

**MOLDFLOW™**

**Operating System:** VMS  
**Keywords:** • Graphics • Manufacturing  
MOLDFLOW is an interactive computer program used to design plastic molds and parts manufactured by thermoplastic injection molding. The designer uses MOLDFLOW to simulate the molding of a plastic part by predicting how plastic will flow into a mold.

This product is also available for $2,800/mo.

MOLDFLOW™ is a proprietary product of MOLDFLOW Australia Pty. Ltd., Borona Victoria, Australia.
Price: $50,000
Product Support Available: Yes
Contact: MOLDFLOW
(513) 576–2400
GENERAL ELECTRIC CAE INTERNATIONAL INC.
300 TechnCenter Drive
Milford, OH 45150

MOSAID 1000 (MOS IC Circuit Simulator)

Operating System: VMS
Keywords: • CAD/CAM • Electronic • Simulation
MOSAID 1000, designed for transient simulation of MOS circuits, has a capacity of 1,000 transistors and up to 500 resistors, cross-coupled capacitors, or diodes. Twenty power supplies and 20 clocks can be specified. The program can handle circuits with up to 580 working nodes, in addition to those specified as clocks or power supplies. The program can also handle up to 10 device types, enabling the designer to work on NMOS, PMOS, and CMOS technologies.

Menu driven and fully interactive, MOSAID 1000 allows a designer to rapidly gain an appreciation of the performance of a proposed circuit. The modeling algorithm enables the user to ensure convergence by control of the time-step. MOSAID 1000 is able to directly use the results of the parameter extraction program, MOSFIT.

A version of this product is available for the PDP–11 computer.

Price: $15,000 – $20,000
Product Support Available: Yes
Contact: Ray St. Laurent, Technical Specialist
(613) 836–3134
MOSAID INC.
P.O. Box 13579
Kanata, Ontario K2K 1X6
Canada

MOSFIT (MOS Transistor Model Parameter Extraction Package)

Operating System: VMS
Keywords: • CAD/CAM • Electronic • Research • Simulation
The software is for use in modeling MOS transistor characteristics. A companion to MOSAID 1000 MOS Integrated Circuit CAD program, the package contains three routines that measure transistor I–V data via the IEEE 488 bus, extract and optimize model parameter values, and display measured and simulated I–V curves for visual comparison.
Parameter optimization is carried out within user-set search boundaries. The menu-driven software is interactive to allow control over the parameter extraction process. The model provides an accurate representation of MOS device behavior, including short and narrow channel effects, drift velocity saturation, nonuniform impurity profiles, channel length modulation, and parasitic series resistance effects. The program is structured to allow other device model subroutines to be installed, if required.

A version of this product is available for the PDP-11 computer.

**Price:** $3,000 – $6,000

**Product Support Available:** Yes

**Contact:** Allan Silburt, Technical Specialist  
(613) 836–3134  
MOSAID INC.  
P.O. Box 13579  
Kanata, Ontario K2K 1X6  
Canada

**MSC/NASTRAN**

**Operating System:** VMS  
**Keywords:**  
- Aeronautics/aerospace  
- Automotive  
- CAD/CAM  
- Civil engineering

MSC/NASTRAN is a general-purpose finite element analysis program proprietary to MacNeal-Schwendler Corporation. Program capabilities include linear and nonlinear static and dynamic structural analysis, including aeroelasticity, heat transfer, acoustics, electromagnetism, and other types of field problems. Engineers in large and small companies worldwide use MSC/NASTRAN in industries such as aerospace, automotive, energy, civil engineering, chemical engineering, shipbuilding, optics, and government research.

MSC/NASTRAN solves complex engineering problems accurately and efficiently. The system architecture was designed to allow for this capability and includes features such as sparse matrix routines, multilevel superelements, cyclic symmetry, generalized dynamic reduction, and component-mode synthesis. Additionally, special features include automatic card-driven restart, automatic singularity suppression, automatic resequencing, and data checking with error analysis. MSC/GRASP, a pre- and postprocessor for graphic display of finite element models, complements the MSC/NASTRAN program.

**Price:** $1,800/mo  
**Product Support Available:** Yes

**Contact:** Perry L. Grant  
(213) 258–9111  
MACNEAL–SCHWENDLER CORP.  
815 Colorado Boulevard  
Los Angeles, CA 90041
MTS–50

Operating System: VMS

Keywords: • Process control  • Production control
        • Quality control  • Shop floor control

This is a process and product engineering evaluation and control system for industries involved with the manufacture of semiconductors, printed circuit boards, and complete integrated electronic products. The system is designed to assist all phases of engineering in the areas of process control, equipment control, and yield improvement.

This relational data base system includes:

• Work-in-process material tracking and the display of process specifications or operator instructions, as well as the ability to enter comments at each data entry station.

• Several levels of data — in-wafer, wafer-to-wafer, lot-to-lot or components, boards, subassemblies, and so on, with roll up to higher levels — are handled.

• The definition of all data, units, scale multiplier, valid limits, and specification limits. The system can also perform calculations on data and treat the calculated values as original data.

• Comparisons of all data for validity, specification, and internally generated X–R statistics for normalcy. Reporting on any out-of-control or out-of-specification situations, with material disposition feedback, is provided.

• Maintenance of running statistics for update of standards for cycle times, scrap and rework rates, yields, and data.

• Easy selection and reporting of data. Powerful statistical analysis capabilities include regression and correlation.

Custom versions of the system are easy to define and install, and modification and expansion are simple.

A version of this product is available for the PDP–11 computer.

Price: $35,000 – $75,000

Product Support Available: Yes

Contact: Brian Taylor
(617) 263–3408
MICROPRODUCT TECHNOLOGY SOFTWARE, INC.
945 Concord Street
Framingham, MA 01701

NASTRAN® (NASA Structural Analysis System)

Operating System: VMS

Keywords: • Aeronautics/aerospace • Architecture • CAD/CAM
        • Mechanical engineering
This general-purpose computer program for the analysis of structures by the displacement method of the finite element approach provides the engineer with a wide range of modeling and analysis capabilities. Development of NASTRAN was initiated in the mid-1960s by the National Aeronautics and Space Administration to provide its research centers with a powerful, general-purpose finite element computer program for structural analysis. Over the years, NASA has actively maintained and improved NASTRAN such that it remains a state-of-the-art finite element program with a wide range of applications potential.

The intended range of applications of NASTRAN includes almost every kind of structure and construction. Structural and modeling elements are provided for the specific representation of the more common types of structural building blocks, including rods, beams, shear panels, plates, and shells of revolution. More general types of building blocks can be treated as combinations of those simple elements or by use of the "general" element capability. The substructuring capability allows different sections of a structure to be modeled jointly after having already been modeled separately. NASTRAN permits the effects of control systems, aerodynamic transfer functions, and other nonstructural features to be incorporated into the solution of the structural problem.

The range of analysis types that NASTRAN can automatically handle includes static response to concentrated loads, to distributed loads, to thermal expansion, and to enforced deformations; dynamic response to transient loads, to steady-state sinusoidal loads, and to random excitation; and the determination of real and complex eigenvalues for use in vibration analysis, dynamic stability analysis, and elastic stability analysis. NASTRAN also has a limited capability for the solution of nonlinear problems, including piecewise linear analysis of nonlinear static response and transient analysis of nonlinear dynamic response. Users may develop their own analysis capabilities by using the Direct Matrix Abstraction Programming (DMAP) language.

Price: $5,600/yr
Product Support Available: Yes
Contact: Customer Support Department
         (404) 542–3265
         NASA'S COMPUTER SOFTWARE MGT. AND INFO. CENTER
         University of Georgia
         112 Barrow Hall
         Athens, GA 30602
NEXUS/NASCAD

Operating System: VMS
Keywords: • Aeronautics/aerospace • CAD/CAM • Graphics
• Mechanical engineering

NEXUS, the NASA Engineering Extendible Unified Software system, is an integrated set of computer programs that support the full sequence of activities encountered in NASA engineering projects. That sequence spans preliminary design, design analysis, detailed design, manufacturing, assembly, testing, and servicing. NEXUS addresses mainly the process of prototype engineering, which is the job of getting a single copy or a small number of copies of a product to work. Prototype engineering is a critical element of large-scale industrial production.

NEXUS extendibility and unification are achieved by organizing the system as an arbitrarily large set of programs that can be accessed in a common manner through a single user interface. The NEXUS interface is a multipurpose interactive graphics interface called NASCAD, for NASA Computer-Aided Design. With NASCAD, the user can construct and display 3-dimensional geometric models, activate sequences of programs, and transfer data among programs. NEXUS readily interfaces with external programs such as NASTRAN for finite element analysis and with APT for supporting the manufacturing process. Statistical analysis programs will analyze test data and correlate measurements with design analysis data. With NEXUS, NASA can effectively apply the constantly evolving capabilities of computer-aided design techniques. In addition, NEXUS should also find a wide range of commercial applications.

Price: $2,500/10-yr lease
Product Support Available: No
Contact: Customer Support Department
(404) 542-3265
NASA'S COMPUTER SOFTWARE MGT. AND INFO. CENTER
University of Georgia
112 Barrow Hall
Athens, GA 30602

OPTAN (Optical Systems, Evaluation, and Analysis)

Operating System: VMS
Keywords: • CAD/CAM • Scientific

An interactive optical analysis program, OPTAN is designed for ray-tracing very complex multiple imagery, including nonrotationally symmetric aspheric systems. Two glass catalog data bases — Schott
and Ohara — are provided for easy access and changes of glass parameters. Nonstandard parameters may also be entered. Systems of up to 48 surfaces may be analyzed, and up to fifth-order aberrations can be calculated for nominal, minimum, and maximum wavelengths. Output can be obtained for surface-by-surface ray data; paraxial marginal and principal ray heights and angles at the surfaces; upper and lower rim-ray heights at each surface for relative vignette apertures, for three relative field positions; and any general skew ray for specified object and pupil coordinates.

Running this program requires floating-point hardware and FORTRAN 77.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Sergio Bernstein, President
(505) 266–9622
BERNE ELECTRONICS, INC.
120 Dartmouth, S.E.
Albuquerque, NM 87106

### Predictor

**Operating System:** VMS

**Keywords:** • CAD/CAM • Electronics • Mechanical engineering

Predictor represents a set of more than 11 computer programs used in the evaluation of systems of electronic and mechanical components. Predictor provides reliability estimation (Mil–HDBK–217B/C/D and other methods), maintainability estimation at multiple echelons with multiple tasks, cataloging of parts to reduce inputs, failure modes and effects analysis to filter nonrelevant failures, parts lists to aid in design to cost, failure rate analysis from failure reports, and a report analysis program to assist in information retrieval.

Predictor is the most widely used computer program for evaluation engineering. The programs are fully supported, with ongoing training classes, documentation, and support to users.

Due to its internal cataloging capability of more than 10,000,000 parts and formula methods and external cataloging for unique parts, the Predictor programs easily handle any parts list. A unique data capability produces information in sortable and reportable order.

A version of this product is available for the PDP–11 computer.

**Price:** $15,000 – $50,000

**Product Support Available:** Yes
Contact:  Jim Tanzola  
(505) 255–8611  
MANAGEMENT SCIENCES, INC.  
6022 Constitution, N.E.  
Albuquerque, NM 87110

Project Time Management

Operating System:  UNIX, VMS  
Keywords:  • Accounts receivable  • Architecture  • Billing  
• Project management

The Project Time Management system for architects and engineers does the following:

• Maintains records for each employee, client, project and project type, phase and task within a project, staff and departmental assignment, and activity performed by your firm  
• Records and posts each time, expense, and accounts receivable transaction by client and project  
• Allows adjustment of work-in-process and billing amounts  
• Prints detailed or summarized statements in several user-selected formats  
• Ages accounts receivable and unbilled time-and-expense transactions and prints valuable aging reports

Your ability to manage projects depends on the amount and quality of your information. Alpine’s Professional Time Management System provides you with extensive management data as it collects and reports on project and staff activities month to date, year to date, and since opening; analyzes billings and time-and-expense transactions; issues reports on productivity and profitability within project and staff types; and fully integrates with Alpine’s Accounts Payable, Payroll, and General Ledger systems, enabling simplified 1-time entry of time-and-expense transactions.

A version of this product is available for the PDP–11 computer.

Price:  $13,000 – $18,000  
Product Support Available:  Yes  
Contact:  Byron Wilkes, Marketing Manager  
(503) 641–8100  
ALPINE DATASYSTEMS, INC.  
8043 SW Cirrus Drive  
Beaverton, OR 97005

Rave

Operating System:  VMS  
Keywords:  • CAD/CAM  • Data conversion  • Graphics  
• Signal processing
Rave is a raster-to-vector conversion software system that converts raster data from a scanning input device to vector data compatible with most interactive graphics systems (CAD). A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** W. C. Schmidt  
(215) 328–1040  
BROOMALL INDUSTRIES, INC.  
700 Abbott Drive  
Broomall, PA 19008

**RES 2**

**Operating System:** VMS  
**Keywords:** Civil engineering  
RES 2 performs standard reservoir flood routing through multiple linear reservoirs. The maximum number of reservoirs is three. Source code (FORTRAN IV) is available.

A version of this product is available for the PDP–11 computer.

**Price:** $450  
**Product Support Available:** Yes  
**Contact:** Robert E. Branch, P.E.  
(800) 368–4203  
TECHNICAL INFORMATION SYSTEMS, INC.  
116 W. Plume Street  
P.O. Box 1900  
Norfolk, VA 23501

**REWALL (Retaining Wall Design)**

**Operating System:** VMS  
**Keywords:** Civil engineering Mathematics  
REWALL designs cantilevered concrete retaining walls according to ACI 318–77. Ultimate strength design is used. Input consists of wall height, trial toe, heel, and base dimensions; soil parameters; and steel and concrete constants. Output consists of final dimensions, sliding and overturning factors of safety, and reinforcing percentages required.

A version of this product is available for the PDP–11 computer.

**Price:** $400  
**Product Support Available:** Yes  
**Contact:** Robert E. Branch, P.E.  
(800) 368–4203
TECHNICAL INFORMATION SYSTEMS, INC.
116 W. Plume Street
P.O. Box 1900
Norfolk, VA 23501

RKLIN (Linear System Simulation: Runge-Kutta)

Operating System: UNIX, VMS
Keywords: · Biology · Mathematics · Research · Simulation

RKLIN is an interactive FORTRAN program that solves any set of \( n \) linear, constant-coefficient, ordinary differential equations, where \( n \) is limited only by the host machine’s memory capacity. Options for step (constant), impulse, and impulse-train inputs are provided as standard options. Other inputs can be easily implemented.

The algorithm used is a variable-step fifth-order Runge-Kutta procedure. Program input and output are highly user-friendly (self-explanatory). The user is required to enter only the number of equations, input type, parameter values, and initial values of the \( n \) variables, all interactively. Telephone demos are available.

A version of this product is available for the PDP–11 computer.

Price: $350 – $750
Product Support Available: Yes
Contact: Dr. Joseph J. DiStefano III, Professor
(213) 825–7482 or 825–4033
UNIVERSITY OF CALIFORNIA, LOS ANGELES
School of Engineering and Applied Science
Biocybernetics Laboratory, 4731K Boelter Hall
Los Angeles, CA 90024

S541/S641 APOGEE

Operating System: VMS
Keywords: · Data collection · Instrumentation · Nuclear · Scientific

APOGEE collects and analyzes complicated Ge(Li) and HpGe gamma spectra. Written in FORTRAN IV/VAX–11, the software has been optimized for speed of execution and employs a user-friendly menu-driven format. Extensive help commands allow infrequent users to operate the software with minimal training. Command language operation is available for frequent users who prefer not to use the menu structure. Both immediate-mode and extensive batch-file operations are supported. Preprogrammed batch files permit job stream operation for routine laboratory applications. This feature allows tasks to be defined by system users and executed through simple commands.
Routines are included for calibrating the system, searching for peaks, calculating peak centroids, determining net areas, resolving multiplets, identifying nuclides, calculating specific activities per unit of volume, minimum detectable activities, lower limit of activities, maximum permissible concentration, and iodine activity equivalency. The LLD calculation complies with the method defined by the U.S. Nuclear Regulatory Commission.

A version of this product is available for the PDP–11 computer.

**Price:** $5,000 – $9,000

**Product Support Available:** Yes

**Contact:** Steve Starbala
(203) 238–2351
CANCERRA INDUSTRIES, INC.
One State Street
Meriden, CT 06450

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**SAMSAN**

**Operating System:** VMS

**Keywords:** • CAD/CAM • Mathematics
• Mechanical engineering • Robotics

SAMSAN, modern numerical methods for classical sampled system analysis, was developed to aid the control system analyst by providing a self-consistent set of computer algorithms that support large order control system design and evaluation studies. SAMSAN reduces the burden on the analyst by providing a set of algorithms that have been well tested and documented and that can be readily integrated for solving control system problems. Algorithm selection for SAMSAN has been biased toward numerical accuracy for large order systems, with computational speed and portability being considered important but not paramount.

In addition to containing relevant subroutines from EISPAK for eigen-analysis and from LINPAK for the solution of linear systems and related problems, SAMSAN contains the following not so generally available capabilities:

• Reduction of a real nonsymmetric matrix to block diagonal form via a real similarity transformation matrix that is well conditioned with respect to inversion
• Solution of the generalized eigenvalue problem with balancing and grading
• Computation of all zeros of the determinant of a matrix of polynomials
• Matrix exponentiation and the evaluation of integrals involving the matrix exponential, with option to first block diagonalize
• Root locus and frequency response for single-variable transfer functions in the S, Z, and W domains
• Several methods of computing zeros for linear systems
• The ability to generate documentation on demand

Price: $1,200
Product Support Available: No
Contact: Customer Support Department
(404) 542–3265
NASA'S COMPUTER SOFTWARE MGT. AND INFO. CENTER
University of Georgia
112 Barrow Hall
Athens, GA 30602

SDM (Symbolic Drawing Machine)

Operating System: VMS
Keywords: • CAD/CAM • Electronic • Flowcharting
• Graphics

SDM is a highly sophisticated program for the interactive development of circuit diagrams, flowcharts, data base structures, and other symbolic diagrams. SDM is unique in that it does not require a large computer or hard disk. The only graphics hardware required is a B-size interactive plotter, which is both the input and the output device. (A vector or TV graphics terminal may be interfaced, if desired.)

SDM provides low-cost, powerful graphics. SDM's simple operation allows all company personnel to use and benefit from the system directly, rather than just one specialized operator.

SDM drawings are composed from four primitive element types: symbols, character strings, parameterized figures, and subpictures. Subpictures are sets of symbols, character strings, and parameterized figures that may be used to define other subpictures. A powerful feature of the SDM is that subpictures may be defined with linked data fields whose characters are requested for each copy of the subpicture drawn. For example, in drawing logic diagrams, a subpicture for a logic gate will request its reference designator characters each time the gate is drawn. Subpicture definitions may also be undefined back to their primitive elements to any desired level (of subpicture nesting). Thus, redefinition of a subpicture comprised of complex nested subpicture sets is easy.

Once a drawing or set of drawings has been drawn on the SDM, its drawing data base can be compiled by computer to extract drawing or interconnection information. A compiler for logic circuit diagrams is available.

Features of SDM include:
• High-speed grid-independent element and interconnection addressing mechanisms
Engineering

- User-programmable function keys
- 13 grid sizes and 4 character sizes (both expandable)
- 90-degree rotations of all elements
- Minimal hardware requirements
- Ease of use

A version of this product is available for the PDP–11 computer.

Price: $7,500
Product Support Available: Yes
Contact: John Thorne
(818) 884–8957
CADMATICS
21907 San Miguel Street
Woodland Hills, CA 91364

SDRC® FATIGUE™

Operating System: VMS
Keywords: • Civil engineering • Mechanical engineering
SDRC FATIGUE software uses predicted and/or measured strain data and material property information to predict product life under various conditions. That kind of fatigue information can help engineers design products that meet stringent requirements for maximum life expectancy, energy efficiency, and cost effectiveness.

This product can also be leased for $500 – $900/mo.

FATIGUE™ is a trademark of SDRC. SDRC® is a service mark of Structural Dynamics Research Corporation.

A version of this product is available for the PDP–11 computer.

Price: $8,000 – $20,000
Product Support Available: Yes
Contact: Richard Russell
(513) 576–2400
GENERAL ELECTRIC CAE INTERNATIONAL INC.
300 TechnoCenter Drive
Milford, OH 45150

SDRC® FRAME™

Operating System: VMS
Keywords: • Architecture • Graphics • Mathematics
- Mechanical engineering
SDRC FRAME software is a family of interactive beam analysis programs. FRAME helps engineers perform static, dynamic, limit, and buckling analysis of complex frame and truss structures. Complete diagnostics and geometric displays provide fast model debugging.
Flexible output displays mean that results can be readily interpreted.

This product is also available for $1,100/mo.

FRAME™ is a trademark of SDRC. SDRC® is a service mark of Structural Dynamics Research Corporation.

**Price:** $25,000

**Product Support Available:** Yes

**Contact:** Richard Russell
(513) 576–2400

GENERAL ELECTRIC CAE INTERNATIONAL INC.
300 TechneCenter Drive
Milford, OH 45150

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**SDRC® GEOCOOL™**

**Operating System:** VMS

**Keywords:** • Management • Mechanical engineering
• Quality control

GEOCOOL is an interactive software tool used to optimize the cooling circuitry in thermoplastic injection molding. Plant operating personnel and plastic mold designers use GEOCOOL to predict the efficiency of mold-cooling functions.

This product is also available for $1,650/mo.

GEOCOOL™ is a trademark of SDRC. SDRC® is a service mark of Structural Dynamics Research Corporation.

**Price:** $30,000

**Product Support Available:** Yes

**Contact:** Richard Russell
(513) 576–2400

GENERAL ELECTRIC CAE INTERNATIONAL INC.
300 TechneCenter Drive
Milford, OH 45150

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**SDRC® GEOMOD™**

**Operating System:** VMS

**Keywords:** • CAD/CAM • Graphics • Mathematics
• Mechanical engineering

SDRC GEOMOD software is a convenient, interactive solid modeling tool that helps engineers construct realistic geometric models to design components and assemble them into total systems inside the computer. Using GEOMOD's powerful mathematical, kinematic, and display capabilities, users can quickly and efficiently explore alter-
native design concepts and generate a physical “feel” for their designs. Geometric information created in GEOMOD can be interfaced through a shared data base with other GE–CAE International products for engineering analysis. Data interface to major CAD/CAM systems through IGES files is also possible. Key features include solid geometry creation, system assembly, programmability, hybrid geometry creation, kinematics property calculations, special shaping and skinning operations, and multiple display options.

This product can also be leased for $1,080 – $2,700/mo.

**Price:** $24,000 – $60,000

**Product Support Available:** Yes

**Contact:** Richard Russell  
(513) 576–2400

GENERAL ELECTRIC CAE INTERNATIONAL INC.  
300 TechnoCenter Drive  
Milford, OH 45150

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**SDRC® HI–PRO**

**Operating System:** VMS  

**Keywords:**  
- CAD/CAM  
- Manufacturing  
- Mechanical engineering  
- Simulation

The SDRC HI–PRO system for sheet metal fabrication combines computer-assisted part programming, graphically plotted pattern layout, machine-time optimization, and visual verification into a single easy-to-use numerical control system.

Additional, right angle notching shear N/C tapes can be automatically prepared for prepunched sheets. The system will simulate production run layouts and assist in the choice of best raw material sheet size strategy.

This product can also be leased for $800 – $2,400/mo.

**SDRC®** is a service mark of Structural Dynamics Research Corporation.

A version of this product is available for the PDP–11 computer.

**Price:** $17,000 – $50,000

**Product Support Available:** Yes

**Contact:** Richard Russell  
(513) 576–2400

GENERAL ELECTRIC CAE INTERNATIONAL INC.  
300 TechnoCenter Drive  
Milford, OH 45150
**SDRC® I–DEAS™ (Integrated Design Engineering Analysis Software)**

**Operating System:** VMS  
**Keywords:**  
- CAD/CAM  
- Mathematics  
- Mechanical engineering  
- Simulation  

SDRC I–DEAS is the first integrated software package to offer a full range of functionality in one program. The entire design process, from initial conceptual design to handoff to CAD/CAM systems, can be performed within the I–DEAS package. I–DEAS software includes the full array of capabilities found in GE–CAE International’s proprietary computer-aided engineering software programs: SDRC GEOMOD, SUPERTAB, SUPERB, SYSTAN, and MODAL–PLUS. Those programs are integrated into I–DEAS with consistent user interfaces and a shared data base. Capabilities include solid modeling, finite element modeling and analysis, system dynamic analysis, frame analysis, modal analysis, mechanism analysis, and fatigue analysis.

This product can also be leased for $3,200/mo – $8,000/mo.

**I–DEAS™** is a trademark for SDRC. SDRC® is a service mark of Structural Dynamics Research Corporation.  
**Price:** $68,000 – $170,000  
**Product Support Available:** Yes  
**Contact:** Richard Russell  
(513) 576–2400  
GENERAL ELECTRIC CAE INTERNATIONAL INC.  
300 TechneCenter Drive  
Milford, OH 45150

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**SDRC® MODAL–PLUS™**

**Operating System:** VMS  
**Keywords:**  
- Data collection  
- Mechanical engineering  
- Simulation  

This interactive software package is used to collect, analyze, and display data from controlled excitation tests. In MODAL–PLUS, a physical model is vibrated by an exciter through a range of frequencies to test system dynamics. MODAL–PLUS software then creates a mathematical model of the prototype’s performance; that model can be compared to the system model.

This product can also be leased for $1,300 – $2,500/mo.

**MODAL–PLUS™** is a trademark of SDRC. SDRC® is a service mark of Structural Dynamics Research Corporation.

A version of this product is available for the PDP–11 computer.
Price: $14,000 – $28,500
Product Support Available: Yes
Contact: Richard Russell
(513) 576–2400
GENERAL ELECTRIC CAE INTERNATIONAL INC.
300 TechneCenter Drive
Milford, OH 45150

**SDRC® SABBA™**

**Operating System:** VMS
**Keywords:** • Debugging • Mechanical engineering
• Simulation

SDRC SABBA software is a systems analysis package used to debug prototypes, conveniently and efficiently, by computer simulation. SABBA creates a mathematical representation of the system that can be analyzed to predict its natural frequencies and modes of vibration. Then, to help engineers understand the impact of changes to the product’s physical properties, modifications can be made to the computer model and the impact of those changes automatically calculated in SABBA.

This product can also be leased for $1,100/mo.

SABBA™ is a trademark of SDRC. SDRC® is a service mark of Structural Dynamics Research Corporation.

A version of this product is available for the PDP–11 computer.

Price: $20,000
Product Support Available: Yes
Contact: Richard Russell
(513) 576–2400
GENERAL ELECTRIC CAE INTERNATIONAL INC.
300 TechneCenter Drive
Milford, OH 45150

**SDRC® SUPERB™**

**Operating System:** VMS
**Keywords:** • Materials science • Mechanical engineering
• Scientific

SDRC SUPERB is a general-purpose finite element program with superior capabilities for static and dynamic structural analysis and heat conduction analysis. SUPERB’s extensive library of isoparametric and conventional finite elements makes modeling and analysis of both simple and complex structures more convenient and efficient. When coupled with SUPERTAB, extensive output display capabilities make it easier for engineers to interpret complex results.
This product is also available for $1,100/mo.

SUPERB™ is a trademark of SDRC. SDRC® is a service mark of Structural Dynamics Research Corporation.

Price: $25,000
Product Support Available: Yes
Contact: Richard Russell
(513) 576–2400
GENERAL ELECTRIC CAE INTERNATIONAL INC.
300 TechneCenter Drive
Milford, OH 45150

SDRC® SUPERTAB™

Operating System: VMS
Keywords: • CAD/CAM • Graphics • Mechanical engineering
• Pre- and postprocessors

SDRC SUPERTAB software is an interactive pre- and postprocessing finite element modeling program that frees designers and analysts of the routine demands of model preparation and results interpretation. Unique features of SUPERTAB software include TRIQUAMESH, an enhanced mesh generator for irregular surfaces; Model Solution for model analyses directly within the program; and integration with both SDRC GEOMOD for solid 3D geometry transfer and other GE–CAE International software programs. Data interface to major CAD/CAM systems through IGES files is also possible.

This product can also be leased for $920–$2,300/mo.

SUPERTAB™ is a trademark of SDRC. SDRC® is a service mark of Structural Dynamics Research Corporation.

Price: $20,000 – $60,000
Product Support Available: Yes
Contact: Richard Russell
(513) 576–2400
GENERAL ELECTRIC CAE INTERNATIONAL INC.
300 TechneCenter Drive
Milford, OH 45150

SDRC® SYSTAN™

Operating System: VMS
Keywords: • Graphics • Mathematics
• Mechanical engineering

SDRC SYSTAN software, an interactive design-oriented analysis tool, combines component models from a complex mechanical structure into a single model to mathematically predict overall system performance. Unlike traditional computerized analysis techniques
that require several programs to complete the process, SYSTAN can be used to construct and verify the system model, determine system characteristics, and evaluate system performance, interactively, with a single program.

This product is also available for $2,000/mo.

SYSTAN™ is a trademark of SDRC. SDRC® is a service mark of Structural Dynamics Research Corporation.

**Price:** $40,000

**Product Support Available:** Yes

**Contact:** Richard Russell  
(513) 576–2400  
GENERAL ELECTRIC CAE INTERNATIONAL INC.  
300 TechneCenter Drive  
Milford, OH 45150

**SINDA (Systems Improved Numerical Differentiating Analyzer with SINFLO)**

**Operating System:** VMS  
**Keywords:** • Energy • Materials science • Mathematics • Scientific

SINDA was developed for solving physical problems governed by diffusion-type equations that can be modeled by lumped parameter representation. The system is most widely used as a general thermal analyzer with resistor-capacitor network representations but may be adapted to a wide range of problems represented by differential equations, such as Fourier, Poissons, or LaPlace equations. SINDA can numerically solve almost any set of ordinary differential equations that may be used to represent the transient behavior of a lumped parameter system or any set of nonlinear algebraic equations that might represent the steady conditions of a physical system. For user decision flexibility, SINDA offers a number of numerical solution techniques; those include such finite difference formulations of the explicit method as forward-difference explicit approximation, DuFort-Frankel approximation, exponential approximation, and alternating direction approximation, as well as such formulations of the implicit method as backward-difference implicit approximation and Crank-Nicolson approximation.

Most of the subroutines in the SINDA library were developed for use in solving thermal analysis problems. As a thermal analyzer, SINDA can handle such interrelated complex phenomena as sublimation, diffuse radiation within enclosures, transport delay effects, sensitivity analysis, and thermal network error correction. Special subroutines, the SINFLO group, are included in the SINDA library to facilitate the thermal analysis of systems incorporating fluid flow.
networks. SINDA can easily account for pumps, valves, and heat exchangers during a thermal analysis.

**Price:** $3,400/10-yr lease  
**Product Support Available:** No  
**Contact:** Customer Support Department  
(404) 542–3265  
NASA'S COMPUTER SOFTWARE MGT. AND INFO. CENTER  
University of Georgia  
112 Barrow Hall  
Athens, GA 30602

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**SLAM II**

**Operating System:** VMS  
**Keywords:** • Aeronautics/aerospace  
• Graphics  
• Manufacturing  
• Simulation

SLAM II is a FORTRAN-based simulation language that allows alternative approaches to modeling. SLAM II permits network, discrete event, and continuous modeling perspectives or any combination of the three. The graphical (network) framework decreases model building, analysis, and communication time. Numerous interfaces to FORTRAN programming inserts are supported, allowing for expanding levels of model complexity.

SLAM II is fully supported, with more than 300 sites worldwide. Many academic institutions teach courses in simulation, using our text and software.

**Price:** $6,000  
**Product Support Available:** Yes  
**Contact:** Thomas L. Howell  
(800) 428–7636  
PRITSKER & ASSOCIATES, INC.  
P.O. Box 2413  
West Lafayette, IN 47906

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**SPAR (Structural Performance Analysis and Redesign)**

**Operating System:** VMS  
**Keywords:** • Architecture  
• Environmental  
• Mechanical engineering  
• Scientific

SPAR is a system of computer programs designed to perform stress, buckling, vibration, and thermal analysis of large linear finite element structural models (some exceeding 50,000 degrees of freedom) while minimizing processing cost, execution time, central memory
storage, and secondary data storage through the use of sparse matrix solution techniques and other computational and data management procedures. In contrast to the many data files used in conventional finite element systems, the more than 25 SPAR processors (programs) store and retrieve information and communicate with one another through a unified database. SPAR is a package of general-purpose matrix, data base, and analysis utilities that permit significant user control and flexibility in solving problems. An example of such control and flexibility is the built-in capability for users to modify control parameters (iteration and convergence controls) at the initiation of calculations in each processor. That capability can reduce unnecessary calculations and permit the user to adjust parameters based on "just computed" results. SPAR can be executed in both the batch and interactive modes to enhance usability.

The SPAR structural element library includes a very general class of beam elements (offsets for shear center and centroid, effects of transverse shear stiffness, and nonuniform torsion), 3-node and 4-node plate/shell membrane and bending elements (isotropic, anisotropic, or composite laminate), 6-node and 8-node brick (3-dimensional elements), and fluid elements. Elements may be defined singly or through a variety of network generators, or combinations thereof, by specifying the joints to which they are connected and pointers to applicable entries in tables such as section properties and material constants. Efficient eigensolver techniques often allow the same finite element model to be used for both static and dynamic analysis.

The graphics capabilities include undeformed, deformed, and vibrational-mode plots of the structure and plots of the structure modeling, including node and element labeling.

**Price:** $4,100/10-yr lease

**Product Support Available:** No

**Contact:** Customer Support Department  
(404) 542–3265

NASA'S COMPUTER SOFTWARE MGT. AND INFO. CENTER  
University of Georgia  
112 Barrow Hall  
Athens, GA 30602

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**SPICE2 V2G.5**

**Operating System:** VMS  
**Keywords:** • Electrical • Electronic • Simulation  
Memory required: 1MB.

SPICE2 is a general-purpose circuit simulation program for nonlinear dc, nonlinear transient, and linear ac analyses. Circuits may contain resistors, capacitors, inductors, mutual inductors, independent
voltage and current sources, four types of dependent sources, trans-
mission lines, and the four most common semiconductor devices: diodes, RJTS, JFETS, and MOSFETS.

U.S. government export regulations prohibit distribution of this pro-
gram outside the United States without appropriate export licenses.
The MOS convergence problem has been corrected.
Documentation is on magnetic media. DECUS number VAX–6.
Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

SPIPE (Circular Pipe Analysis)

Operating System: VMS
Keywords: • Civil engineering • Mathematics
SPIPE computes the hydraulic elements for circular pipes. Input con-
sists of pipe size, slope, roughness coefficient, and intervals desired.
Output includes flow, velocity, area of flow, depth of flow, and so on.
Gravity flow is considered.
A version of this product is available for the PDP–11 computer.
Price: $200
Product Support Available: Yes
Contact: Robert E. Branch, P.E.
(800) 368–4203
TECHNICAL INFORMATION SYSTEMS, INC.
116 W. Plume Street
P.O. Box 1900
Norfolk, VA 23501

SPLICE

Operating System: VMS
Keywords: • Civil engineering • Mathematics
SPLICE designs high-strength bolted splices for standard rolled
beams and welded-plate girder sections (symmetrical about their
major axis).
A version of this product is available for the PDP–11 computer.
Price: $200
Product Support Available: Yes
Contact: Robert E. Branch, P.E.
(800) 368–4203
TECHNICAL INFORMATION SYSTEMS, INC.
116 W. Plume Street
P.O. Box 1900
Norfolk, VA 23501
STAAD–III (Structural Analysis and Design)

**Operating System:** UTRIX, UNIX, VMS  
**Keywords:** Civil engineering, Mechanical engineering

STAAD–III is a comprehensive package performing complete analysis and design for structural engineers. Similar to the STRUDL–II program in both input and capability, yet six to nine times faster, STAAD–III has excelled in different leading timesharing networks. Other features include:

- Simple English inputs are free-formatted with simple English-type commands.
- Built-in units contain FPS metric and SI units and can be changed during input phases.
- All types of 2D and 3D frame/finite element structures, as well as P-delta effect, can also be incorporated in analysis.
- AISC steel tables (1978) contain W S M HP C MC shapes, angles, double angles, double channels, tees, composite sections, beam with cover plates, and pipes and tubes.
- Loads and load combinations consist of joint load, member loads (uniform, linear, and concentrated), temperature load, support displacements, and fixed-end member loads and are accepted in both local and global axes. A combination of any of these loadings, including a combination of combinations, is permitted.
- Checking of the 1978 AISC code and/or selecting the least-weight member section from AISC tables can be performed, based on the analytical results.
- Complete concrete design based on ACI–78 code.
- Structure geometry or deflected shape can be plotted in almost any graphics device.

A version of this product is available for the PDP–11 computer.

**Price:** $6,000 – $10,000  
**Product Support Available:** Yes  
**Contact:** Amrit K. Das  
(609) 983–5050  
RESEARCH ENGINEERS, INC.  
9003–D Greentree Commons  
Marlton, NJ 08053

STAGSC–1 (Structural Analysis of General Shells)

**Operating System:** VMS  
**Keywords:** Aeronautics/aerospace, Architecture, CAD/CAM, Mechanical engineering

STAGSC–1 is intended primarily for the practical engineering analysis of thin shell structures. Those shell structures may contain a
number of separate shell branches or segments connected to one another along their boundaries. STAGSC–1 contains options for static stress analysis (including geometric and material nonlinearities), bifurcation buckling analysis (including nonlinear prestress), vibration analysis (including nonlinear prestress), and transient analysis (linear or with geometric and material nonlinearities). Although intended primarily for the analysis of shells, the capability of STAGSC–1 is extended by the inclusion of axial and torsional springs, as well as general nonlinear beam elements. The STAGSC–1 program is a flexible structural analysis system with many features that enhance computational efficiency and user convenience.

The available shell element configurations are triangular and quadrilateral. The triangular element, developed by Clough and Felippa, is used primarily where quadrilateral elements are unsuitable. Quadrilateral elements may be selected from a series based on the combination of two Clough-Felippa triangles. Presently, the “workhorse” element is a flat quadrilateral element developed especially for STAGSC–1; that element shows excellent economy in most cases of nonlinear and stability analysis. A “transition element” with five nodes (three triangles) is included so that irregular grids may be defined more easily. The definition of the structural configuration may include data from user-written subroutines, providing increased generality and more compact input. Another feature that often makes input preparation easier is that the user is allowed to define a number of substructures separately and indicate how those are to be connected.

**Price:** $5,000/1-yr lease

**Product Support Available:** Yes

**Contact:** Customer Support Department
(404) 542–3265
NASA’S COMPUTER SOFTWARE MGT. AND INFO. CENTER
University of Georgia
112 Barrow Hall
Athens, GA 30602

**Steam**

**Operating System:** UNIX, VMS

**Keywords:** • Chemical • Energy • Mechanical engineering

Steam, both a program and a FORTRAN subroutine set, enables an engineer to extract any thermodynamic property of water/steam without aid of a steam table manual. Some variables covered are saturation pressure, saturation temperature, enthalpy, density, heat of vaporization, viscosity, true specific heat, and thermal conductivity. Table values are calculated closely to those of the Kennan and Keys steam tables.
A version of this product is available for the PDP–11 computer.

Price: $500

Product Support Available: Yes

Contact: Michael L. Bussler
(412) 661–2100
ALGOR INTERACTIVE SYSTEMS, INC.
Essex House, Suite L1
Essex Square
Pittsburgh, PA 15206

STRESS (Structural Engineering Solver)

Operating System: VMS

Keywords: • Civil engineering

STRESS performs linear elastic analysis of statically loaded structures composed of prismatic members. STRESS solves for forces, reactions, and displacements, using the matrix stiffness method. The maximum structure size is 125 members and 250 joints.

A version of this product is available for the PDP–11 computer.

Price: $850

Product Support Available: Yes

Contact: Robert E. Branch, P.E.
(800) 368–4203

TECHNICAL INFORMATION SYSTEMS, INC.
116 W. Plume Street
P.O. Box 1900
Norfolk, VA 23501

Structural Member Analysis Programs

Operating System: VMS

Keywords: • Aeronautics/aerospace • CAD/CAM • Civil engineering • Mechanical engineering

These general analysis FORTRAN programs for classical structural members with arbitrary mechanical or thermal loading are small, portable, efficient, and easy to use. The members can be of variable cross-section with any in-span supports, foundations, and boundary conditions. Composite cross-sections can be handled. The member can be modeled with either continuous or lumped mass. Static and steady-state displacements and forces, natural frequencies and mode shapes, and buckling loads are calculated. Pre- and postprocessors permitting interactive use of the programs are available. All the programs can be used in batch or interactive form with fixed, free, or prompted input formats.
• Beams: Deflection, slope, bending moment, shear force, buckling loads, frequencies, and mode shapes; can include bending, shear deformation, and rotary inertia effects
• Torsional systems: Angle of twist, twisting moment, and frequencies of shaft system
• Extension systems: Axial displacement, force, and natural frequencies
• Thick cylinder: Radial displacement, radial stress, tangential stress, and frequencies
• Torsion of thin-walled beams: Angles of twist, bimoments, warping shear, internal twisting, moments, unstable loads, and natural frequencies
• Sectional properties: Cross-sectional properties of a bar of any shape
• Stress analysis: The normal and shear stresses on the cross-section of a bar of any cross-sectional shape; the stresses include bending stresses, shear stress due to torsion and warping, shear stresses due to transverse loads, and normal stresses due to warping
• Rotating shafts: For a shaft with unbalance forces, calculation of the displacements, internal forces, and bearing forces; the critical speeds are found for damped or undamped shaft systems
• Circular plate: Deflection, slope, radial moment, shear transverse moment, twisting moments, and frequencies
• Rectangular plate: Static, steady state, stability, and free vibration
• Gridworks: Uniform grillages subjected to uniform, hydrostatic, and concentrated forces
• Disks: Radial displacement, radial force, tangential force, and frequencies

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: W. D. Pilkey
(804) 296–4906
STRUCTURAL MEMBERS USERS GROUP
P.O. Box 3958, University Station
Charlottesville, VA 22903

SUPER–COMPACT

Operating System: UNIX, VMS
Keywords: • CAD/CAM • Electronic • Signal processing
SUPER–COMPACT is the recognized industry standard in CAD for microwave circuit analysis, optimization, and synthesis. The program provides the necessary tools for choosing a design topology and active elements, synthesizing amplifier matching circuits, and optimizing complete circuits having as many as four external ports. Circuit elements include lumped, microstrip and stripline, filter, thin
film, coupler, and active devices. The circuit analysis portion of SUPER–COMPACT features tabular and interactive CRT graphics. Mapping and variable-element analysis are also featured. Optimization features random and/or gradient methods, with performance criteria that can include combinations of parameters with noise and group delay characteristics. Circuits can be modified without exit from the program. Transistor and dielectric data banks provide for selection on a conversational basis. A Monte Carlo analysis feature can be used to predict manufactured-unit performance spreads. SUPER–COMPACT can be used with its companion program, AUTOART, to generate masks for Microwave Integrated Circuits (MICs).

A version of this product is available for the PDP–11 computer.

**Price:** $30,000 – $80,000

**Product Support Available:** Yes

**Contact:** Henry Wong  
(415) 966–8440  
COMPACT SOFTWARE/A COMSAT CO.  
1131 San Antonio Road  
Palo Alto, CA 94303

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**SUPERSAP**

**Operating System:** UNIX, VMS  
**Keywords:**  
- CAD/CAM  
- Graphics  
- Mathematics  
- Mechanical engineering

SUPERSAP is a comprehensive finite element stress and dynamic analysis system for structural and mechanical engineers. SUPERSAP incorporates all parts of the finite element chain of events, from modeling and preprocessing through analysis and postprocessing. It is the only system needed for the finite element process and is easy to use. Thus, the power of finite element analysis is now available to a much wider range of engineers than in the past.

SUPERSAP is the ideal system for the beginning graduate engineer. The beginning engineer can “start with it and grow with it.”

SUPERSAP is fully integrated with SUPERDRAW, Algor’s computer-aided design and drafting system. SUPERSAP uses graphics and interactive graphics to a high degree to simplify modeling and analysis. Virtually any structure or mechanical part can be modeled and analyzed with SUPERSAP. Extensive capabilities exist for both civil and mechanical engineers.

Monthly rental is available.

A version of this product is available for the PDP–11 computer.

**Price:** $2,495 – $36,810  
**Product Support Available:** Yes
SVD (Singular-Value Decomposition)

Operating System: UNIX, VMS
Keywords: • Mathematics • Research • Simulation
• Statistics

SVD determines the singular-value decomposition of a real $m$ by $n$ matrix $A$. That includes the inverse, determinant and rank of $A$, if $m = n$, or the pseudoinverse and rank of $A$, if $m \neq n$.

This FORTRAN program comes either as a subroutine, for calling from a main program, or as a user-friendly stand-alone program, for interactive terminal use. The latter program uses free-format FORTRAN 77-type extensions for interactive I/O. Telephone demos are available.

A version of this product is available for the PDP–11 computer.

Price: $250 – $500
Product Support Available: Yes
Contact: Dr. Joseph J. DiStefano III, Professor
(213) 825–7482 or 825–4033
UNIVERSITY OF CALIFORNIA, LOS ANGELES
School of Engineering and Applied Science
Biocybernetics Laboratory, 4731K Boelter Hall
Los Angeles, CA 90024

SYNOPSYS (Synthesis of Optical Systems)

Operating System: UNIX, VMS
Keywords: • Graphics • Mathematics • Report writer
• Scientific

SYNOPSYS is a state-of-the-art computer program for the design and evaluation of complex optical systems containing lenses, mirrors, and prisms. SYNOPSYS is intended to satisfy the needs of modern optical designers and engineers by providing them with the best of currently available technology.

SYNOPSYS is:

• Cost effective: The optimization program uses the exclusive PSD algorithm, which gives faster convergence than most DLS programs — in some cases an order of magnitude faster.
Flexible: The user can create a custom merit function giving powerful control over specific details of a lens at the lowest possible cost. The multiconfiguration feature will design lenses with moving components, common modules, and either optical or mechanically compensated zooms.

Complete: SYNOPSISYS contains all the features a designer is likely to need, including image analysis, tolerancing, comprehensive utilities, and an extensive array of report-ready graphics.

Easy to learn: SYNOPSISYS is simple to master. Users can expect to start getting useful results the first day.

A version of this product is available for the PDP–11 computer.

Price: $1,200/mo

Product Support Available: Yes

Contact: Donald C. Dilworth
(617) 488–3099
OPTICAL SYSTEMS DESIGN, INC.
3 Johnson Avenue
Medford, MA 02155

TR–20

Operating System: VMS

Keywords: Civil engineering  Data collection  Graphics
Natural resources

The TR–20 system flood routes any frequency storm through user-specified hydrologic networks. Detailed hydrographs and summary output reports are optionally requested. The software computes surface runoff resulting from any synthetic or natural rainstorm, will take into account conditions having a bearing on runoff, and will route the flow through stream channels and reservoirs. The system will combine the routed hydrograph with those of other tributaries and will print the peak discharges, their time of occurrence, and the water-surface elevation for each at any cross section or structure. The program provides for the continuous analyses of nine storms over a watershed under present conditions and with combinations of land treatment floodwater — retarding structures and channel improvement. A maximum of 120 reaches and 60 structures can be analyzed in one continuous run.

Price: $600

Product Support Available: Yes

Contact: Robert E. Branch
(804) 622–1755
TECHNICAL INFORMATION SYSTEMS, INC.
116 West Plume Street
Norfolk, VA 23510
TRASYS II (Thermal Radiation Analyzer System)

**Operating System:** VMS
**Keywords:** • Energy • Environmental • Pre- and postprocessors • Scientific

TRASYS II is a computer software system with generalized capability to solve the radiation-related aspects of thermal analysis problems. When TRASYS II is used in conjunction with a generalized thermal analysis program such as the Systems Improved Numerical Differencing Analyzer (SINDA) program, any thermal problem that can be expressed in terms of a lumped parameter R–C thermal network can be solved. TRASYS II provides for the calculation of internode radiation interchange data and for the calculation of incident and absorbed heat rate data originating from environmental radiant heat sources.

The TRASYS II system consists of two major components: the preprocessor and the processor library. TRASYS II allows users to write their own executive, or driver, programs that organize and direct the library routines toward solving each specific problem in the most expeditious manner. The preprocessor first reads and converts the user's geometry input data into the form used by the processor library routines. Next, the preprocessor accepts the user's driving logic, written in the TRASYS II modified FORTRAN language, which directs the user-provided and processor library routines in the solution of the problem. The processor library consists of FORTRAN routines that perform the functions commonly needed by the user to solve thermal radiation problems. In many cases, the user has a choice of solution techniques to perform the same function.

TRASYS II allows problems with as many as 1,000 nodes and time-variable problem geometry. The edit capability allows for the easy modification of complex thermal radiation problem models. Output from TRASYS II consists of two basic types of data: internode radiation interchange data and incident and absorbed heat rate data.

**Price:** $4,100
**Product Support Available:** No
**Contact:** Customer Support Department  
(404) 542–3265  
NASA'S COMPUTER SOFTWARE MGT. AND INFO. CENTER  
University of Georgia  
112 Barrow Hall  
Athens, GA 30602

UDAP (Urban Drainage Analysis Package)

**Operating System:** VMS
**Keywords:** • Civil engineering
UDAP performs hydraulic analysis of classical urban storm-water pipe systems. Input data consists of size, shape, material, inverts, time of concentration, inlet area, runoff coefficients, and so forth. The output consists of relevant input data plus flow, velocity, and hydraulic grade line from each pipe in the system. A system with up to 1,000 pipes can be analyzed.

A version of this product is available for the PDP–11 computer.

Price: $2,500

Product Support Available: Yes

Contact:
Robert E. Branch, P.E.
(800) 368–4203

TECHNICAL INFORMATION SYSTEMS, INC.
116 W. Plume Street
P.O. Box 1900
Norfolk, VA 23501

VANGO

Operating System: VMS

Keywords: • CAD/CAM • Civil engineering • Graphics
• Mapping

VANGO is an easy-to-use interactive computer-aided design and drafting system for surveying, mapping, land development, civil engineering, and geographically based information. The system provides a tool for calculation, data management, and automated drafting, beginning with the boundary survey and proceeding through each phase of the project to final drawings.

VANGO performs the tedious, error-prone calculations typically involved in land planning. At each step of the design process, computer-plotted drawings may be generated to show the current project status. Drafting on a high-speed plotter ensures clearer, more accurate drawings and reduces the time required to produce them. Changes in design criteria are easily accommodated, since new drawings may be plotted on demand.

A key component of the VANGO software is its unique integrated data structure. The data created at each step is preserved and fully utilized in all successive steps. Furthermore, the data for all active projects is maintained on line and is instantly accessible by all users.

The VANGO Digital Terrain Model (DTM) optional earthwork module is a highly advanced earthwork computational system based on Digital Terrain Models of the existing topography and of the design grades. Volumes are computer-based on a cell that is typically a \( \frac{1}{8} \)-inch square at plan scale. Elevation interpolation for determining the cell elevations from the random data is performed 2-dimensionally rather than the more typical linear interpolation. Hence, accuracy of results does not depend on defining special features. The module is fully integrated with VANGO.
The VANGO DTM Highway module, fully integrated with the DTM Earthwork module, permits passing any number of cross-section templates, each following its own alignment and profile through the Digital Terrain Model. The templates as well as the side slopes may change at any station and can represent a highway, transportation corridor, channel, or rail line. Since existing terrain cross-sections along the proposed route are not required, this module is ideal for studies requiring analysis of several alternate routes or several iterations of a chosen route. Profiles, daylight lines (catch points), cross-sections, mass, and haul diagrams are very quickly generated for each iteration of alignment and profile, enabling an optimum route to be established.

A version of this product is available for the PDP–11 computer.

**Price:**  $20,000 – $85,000

**Product Support Available:**  Yes

**Contact:**  Charles Oliver  
(714) 966–8855  
VLSYSTEMS, INC.  
17801 Cartwright Road  
Irvine, CA 92714

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**WATDIS (Water Distribution Analysis)**

**Operating System:**  VMS  
**Keywords:**  • Civil engineering

WATDIS analyzes water distribution systems. Any type of pipe system can be analyzed. Pressure or flow requirements can be specified, and any number of storage tanks, pumps, valves, meters, and fittings can be input. Pumps can be specified by useful power or by inputting head flow data from operating curves. Check valves may be used also. Flow units of CRS, GPM, MGD, or SI are acceptable. Output includes pressures, elevations, and grade lines at all junctions, head losses in lines and at all valves, pump heads, flow rates, and flow velocities. WATDIS is limited to 1,500 pipes.

WATDIS is the PDP–11 and VAX–11 conversion of the University of Kentucky water distribution analysis software.

A version of this product is available for the PDP–11 computer.

**Price:**  $1,200

**Product Support Available:**  Yes

**Contact:**  Robert E. Branch, P.E.  
(800) 368–4203  
TECHNICAL INFORMATION SYSTEMS, INC.  
116 W. Plume Street  
P.O. Box 1900  
Norfolk, VA 23501
WENTHL, WTABLE

Operating System: UNIX, VMS
Keywords: Civil engineering, Energy, Mechanical engineering

WENTHL returns the enthalpy of water in any phase as a function of temperature and pressure. WTABLE is a complete FORTRAN subroutine set of steam table functions. All table values are returned very close to those of the Keenan and Keys tables. The subroutines can be linked into the end user's own FORTRAN program for heat transfer, heat exchanger, boiler analysis, or heat balance calculations.

Functions include:
- Saturation pressure as a function of temperature
- Saturation temperature as a function of pressure
- Enthalpy of superheated steam as a function of pressure and temperature
- Enthalpy of liquid water as a function of pressure and temperature
- Enthalpy of saturated liquid as a function of pressure
- Density of saturated liquid as a function of pressure
- Enthalpy of saturated steam as a function of pressure
- Density of saturated steam as a function of pressure
- Density of superheated steam as a function of pressure and temperature
- Heat of vaporization as a function of pressure
- Viscosity of liquid water as a function of temperature
- Viscosity of superheated steam as a function of pressure and temperature
- True specific heat of liquid as a function of temperature
- True specific heat of superheated steam as a function of pressure and temperature
- Thermal conductivity of liquid as a function of temperature
- Thermal conductivity of superheated steam as a function of pressure and temperature
- Temperature of liquid water as a function of pressure and enthalpy

A version of this product is available for the PDP-11 computer.

Price: $500
Product Support Available: Yes
Contact: Sales Manager
         (412) 661-2100
         ALGOR INTERACTIVE SYSTEMS, INC.
         Essex House, Suite L1, Essex Square
         Pittsburgh, PA 15206
Facilities Management
CHAMPS (Computerized History and Maintenance Planning System)

Operating System: VMS
Keywords:  • Inventory  • Maintenance  • Management  • Operations

CHAMPS, a generalized system to schedule, track, and permanently record the maintenance and operational tasks of complex industrial facilities, is user-defined, allowing the user to customize data contents, transactions, and reporting formats to accommodate existing administrative methods without programmer assistance. Key functional modules perform repetitive tasking (PM), corrective action work-order control, personnel management, inventory and spare parts management, and report writing.

Price:  $50,000 – $300,000
Product Support Available:  Yes
Contact:  Dale R. Blann
(904) 795–2362
SYSTEMS COORDINATION INC.
P.O. Box 2600
Crystal River, FL 32629

Mainstay®

Operating System: VMS
Keywords:  • Cost accounting  • Inventory  • Maintenance  • Purchasing

This comprehensive software package provides total command of all the elements that together determine the efficiency level of any maintenance operation. Mainstay was designed for large plant environments, including chemical and process industries, large manufacturing and assembly facilities, and utilities.

Mainstay is functionally modular. The system supports work order generation, planned maintenance, equipment identification and history, inventory control, purchasing, resource control and allocation, employee work assignment and accounting, and cost accounting.

All components of the system are on line and provide the user with data reflecting an activity’s present operational status. Mainstay’s data base management system produces current, timely, and accurate information; once data has been entered into the system, multiple users can have immediate access to the same version of the requested information.

A version of this product is available for the PDP–11 computer.

Price:  $85,000 – $110,000
Product Support Available:  Yes
Contact: Larry DeFrance  
(615) 366–1979  
MORROW COMPUTER AND ELECTRONIC DESIGN, INC.  
1140 Murfreesboro Road  
Nashville, TN 37217

MAINSY–IMPRS Preventive Maintenance System

Operating System: VMS  
Keywords:  • Cost accounting  • Maintenance  • Scheduling  
MAINSY–IMPRS schedules preventive maintenance and maintains complete historical summary information. Any type of maintenance schedule may be set up — on a daily, weekly, monthly, quarterly, semiannual, or annual basis. Schedules may be selected for printing by frequency, by cutoff date, or by PM number. Summary schedules may be printed, or the full schedule (with text) may be printed.

The system has complete data verification and on-line validation capabilities. Job costing information is applied via on-line timecard entry. A full year's PM historical information is kept on line. Instant access is available to all master files for selective reporting.

A version of this product is available for the PDP–11 computer.  
Price: $2,500  
Product Support Available: Yes  
Contact: Forrest E. Weddle  
(913) 782–8544  
RUF CORP.  
1533 E. Spruce  
Olathe, KS 66061

Maintenance Management System

Operating System: VMS  
Keywords:  • Cost accounting  • Decision support  • Maintenance  • Property management  
The Maintenance Management System is a comprehensive application software package for managing and controlling preventive (PM) and repair maintenance of physical plants and equipment. The system handles manpower planning, work order scheduling and tracking, and cost accounting more quickly and effectively and with less paperwork than manual methods do. Individual users can customize the system with system codes that define maintenance locations or zones, crafts or shops, work order types, project or account numbers, and types of measurements.
Complete, accurate, and readable PM work orders are printed automatically in advance of a given calendar period from task descriptions and schedules. Unscheduled work orders are entered into the system manually. Uncompleted work appears on a backlog report until the work order is either completed or canceled. Management can determine the causes for uncompleted work and take appropriate action. The system guards against work order pileup. New work orders are not produced for previously scheduled tasks until the tasks are completed.

A permanent history of repairs and inspections performed on equipment is stored and is available to aid in making repair or replace decisions. That history also provides documentation for safety, legal, or insurance compliance.

The system provides a means of scheduling and reporting equipment performance measurements. Parameters such as operating temperature, motor current, and filter pressure readings are compared with established normals to indicate the need for adjustment, repair, or replacement of equipment.

An equipment cross-reference list provides a powerful tool for organizing the user's inventory of capital equipment by equipment type, manufacturer, or location. That list also assists in developing a standard routine preventive maintenance schedule for similar types of equipment.

A labor summary report, produced automatically as a by-product of handling daily work, gives management important information on the relative efficiency of each maintenance craft or shop by reporting both the type and the amount of work done by each craft. The report compares both the number of work orders and labor hours scheduled with the actual number of work orders and labor-completed hours expended.

The cost center report enables management to allocate or charge back the cost of maintenance labor and materials to specific departments or projects. The report is also useful in documenting manpower requirements.

Work logs are automatically produced to schedule and control routine equipment maintenance procedures with less paperwork than individually printed work orders. Routine work is expedited, since the logs group similar tasks to be performed on equipment within a specific geographic zone or location.

The system consists of approximately 70 application program modules written in 1974 ANSI Standard COBOL. A COBOL run-time system is provided for RT-11 systems. A COBOL compiler is required for RSTS, RSX-11M, and VMS systems.

A version of this product is available for the PDP-11 computer.
Price: $15,000
Product Support Available: Yes
Contact: Tom Coleman, Systems Manager
         (616) 676–2666
         FAIRBROTHER CORP.
         6090 E. Fulton, P.O. Box 211
         Ada, MI 49301

PROMIS (Process Management Information System)

Operating System: VMS
Keywords: • CAD/CAM • Process control • Quality control

PROMIS is a complete computer-aided engineering and production system for semiconductor manufacturers. It provides process and recipe management, production and inventory planning and control, routing and tracking of work in process, production reporting, facilities monitoring and control, and direct automated interfaces using SECS protocols to production and test equipment.

Engineering analysis tools include frequency distribution reports for engineering data, trend reports, correlation plots, performance charts, initialization reports, scatter plots, control charts, and facilities history plots. The production and inventory control system includes production scheduling, capacity planning and control, material planning and control, work center loading, priority planning and control of work in process, inventory control, and standard costing.

What-if simulation allows users to predict the effects of proposed changes in product mix, required completion dates, expected yields, equipment capacity, standard lead times, overtime, number of shifts, and so on.

Reports are provided on planned versus actual completions, forecast versus planned completions, work in process, inventory, production activity, performance to schedule, throughput performance, yield variances, reworks, rejects, slow-moving lots, equipment availability, equipment usage, facility sensor current readings and limits, off-normal summaries, lot history analyses, and so forth.

A version of this product is available for the PDP–11 computer.

Price: $70,000 – $350,000
Product Support Available: Yes
Contact: Doug Scott
         (416) 364–5361
         I. P. SHARP ASSOCIATES
         2 First Canadian Place, Suite 1900
         Toronto, Ontario M5X 1E3
         Canada
SABA (Stacking and Blocking Algorithm)

Operating System: VMS
Keywords: • Architecture • CAD/CAM • Graphics
• Property management

SABA provides space planners with powerful, easy-to-use tools for producing locational stacking plans and schematic block floor plan layouts for buildings. The SABA systems reliably produce high-quality solutions to both large and small problems, at relatively moderate cost for data preparation and computer processing.

The Stacking Plan Program takes as input a list of spaces, workstations, or departments to be located in a building or buildings, together with their required areas, their adjacency/communication requirements, and a description of the floors into which they are to be placed. The system’s objective is to assign activities (spaces, workstations, departments, and so on) to zones (buildings, floors, and so on) in such a way that highly interrelated activities are placed onto the same or adjacent zones and intrazone circulation is minimized. Output is a printed list of the activities assigned to each zone, which resembles a “section” of the building, showing all occupancies and their areas used.

The Block Plan Program takes a similar list of activities, areas, and interaction requirements. In addition, it utilizes a plan description of the available floor area onto which the requirements are to be laid out. The objective is to place activities onto the floor in such a way that highly interrelated activities are located close together. Zones, preassignments, and fixed elements in the plan can also be taken into consideration. Output is a plan of the floor, with all activities located — either printed, utilizing line printer “character graphics,” or plotted on a graphic plotter.

A version of this product is available for the PDP–11 computer.

Price: $9,500 – $14,500
Product Support Available: Yes
Contact: Thomas Kvan
(213) 392–4183
THE COMPUTER–AIDED DESIGN GROUP
2407 Main Street
Santa Monica, CA 90405

SESAM–11 (Security/Access Control System)

Operating System: VMS
Keywords: • Personnel • Property management • Real time
• Security

SESAM–11 controls entry to facilities by regulating locking devices. Multiple levels of security, from simple identity check to privileged
access, can be implemented. The intelligent terminals used to regulate the locking devices have battery backup and will continue to function even if separated from the host.

SESAM–11 can be combined with TEMPUS–11, the time and attendance system, to add security access control to real-time personnel information. TEMPUS–11 records work-force status and provides continuous input to cost centers while SESAM–11 guards access to restricted areas. SESAM–11, with its convenient credit card–like identity check, can screen personnel quickly and efficiently. Where more restrictive access is necessary, SESAM–11 can require knowledge of unique codes in order to gain entry.

The recording of all attempts at unauthorized entry, as well as a full record of all access by identity card and time, can provide a security manager with indicators of potential deficiencies in the security system. Reliable equipment and efficient software can accomplish the routine repetitious screening and checking, freeing security personnel to concentrate on enforcement, information, and interpersonal activities.

A version of this product is available for the PDP–11 computer.

**Price:** $12,550 – $19,975  
**Product Support Available:** Yes  
**Contact:** Robert L. Hirtle  
(904) 433–7578  
ATS DATA PROCESSING, INC.  
1101 North 9th Avenue  
Pensacola, FL 32501

**UNI (User Needs Information)**

**Operating System:** VMS  
**Keywords:** • Architecture • CAD/CAM • Data collection • Programming tools

The UNI system is a set of procedures and computer programs that collect and manage information about group space for architectural or interior projects.

Questionnaires and interview forms are the tools used to solicit a manager's knowledge of needs for personnel, equipment, and support spaces both current and projected. UNI manipulates square-footage data based on the information gathered on the forms. Reports are generated by the computer, providing the designer with a detailed analysis of each group's square footage needs as well as summaries for the complete project.

UNI is a general programming tool for use in preparing the analysis of client needs. UNI can be used at a general level for building sizing and area projections. At a detailed level, UNI is used for determining
criteria for interior planning. The program is particularly powerful for facility programming with repetitive elements — for example, offices, medical facilities, hotels, dormitories, educational facilities, laboratories, and multiple-tenant residencies.

UNI can provide three broad categories of information related to the needs of a project:
- Personnel, equipment, and space requirements projections
- Special characteristics (attributes of items within the space program)
- Adjacency data for groups

UNI establishes space requirements over points in time at which the information is desired. Plan dates are usually set to coincide with an organization’s expansion and development milestones.

UNI’s information can automatically be passed in machine-readable form for use by The Computer-Aided Design Group’s STACKing and BLOCK Plan programs (SABA).

A version of this product is available for the PDP–11 computer.

**Price:** $2,500 – $19,500  
**Product Support Available:** Yes  
**Contact:** Thomas Kvan  
(213) 392–4183  
THE COMPUTER–AIRED DESIGN GROUP  
2407 Main Street  
Santa Monica, CA 90405
Financial Management
1040 Tax System

Operating System: VMS

Keywords: • Financial analysis • Report writer • Taxes

The on-line multiple-terminal 1040 Tax System prepares federal income tax forms, related schedules, and selected state income tax routines. The features include:

• Preprinted or computer-generated forms and overlays
• Automatic pro forma generation
• Taxpayer systemizer
• Interview sheets corresponding to federal forms
• Complete diagnostics
• Transmittal letter
• Selected state tax routines (31 states)
• Automatic taxpayer billing computation
• Multiple-terminal and remote-terminal operation
• Automatic update of state return from federal return
• Exclusive “password” security system
• Fast retrieval of taxpayer interview, facilitating individual additions, corrections, and returns

A version of this product is available for the PDP–11 computer.

Price: $4,000

Product Support Available: Yes

Contact: Bob Sprowls
(904) 434–2685
DIGITAL SYSTEMS OF FLORIDA, INC.
114 E. Gregory Street
Pensacola, FL 32501

ACCESS (Accounting Essentials for Financial Institutions)

Operating System: VMS

Keywords: • Accounting • Banking • Cost accounting
• Word processing

ACCESS, a complete in-house electronic data processing system, provides:

• A management tool for any size financial institution
• Automatic preparation of past-due notices and reports
• Automatic preparation of maturity notices and reports
• Payoff figures, stop pay, account hold orders, and call statements
• Float, cost-of-money, and interest analyses
• An interface to proof machines with industry-compatible diskettes or NCR cassette
• Increased clerical efficiency
• Reduction in paperwork, thereby reducing costs
• An easily operated system for personnel
• Confidentiality and security
• Minimal use of special forms and report sizes to reduce costs and complications

A version of this product is available for the PDP-11 computer.

**Price:** $55,000 – $250,000

**Product Support Available:** Yes

**Contact:** Steve Nau, President
(417) 881-5057

SPRINGFIELD COMPUTER CONSULTANTS, INC.
1949 East Sunshine, Suite 2-116
Springfield, MO 65804

### Access Fund Raising System

**Operating System:** VMS

**Keywords:** • Arts • Education • Environmental • Health care

This interactive system for the management of fund-raising activities supports annual membership; pledge processing; special events; capital campaigns; planned giving; subscription; telemarketing; volunteers; prospect development and exchanges; statistical analysis of donors; word processing interface; individuals, corporations, and foundations; cash and noncash gifts; complete transaction history; cash forecasting; inquiry by number, name, and zip match code; electronic fund transfer; change cards; and gift giving.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Charles Longfield
(617) 367-3690

ACCESS INTERNATIONAL, INC.
208 Union Wharf
Boston, MA 02109

### AMS (Asset Management Client Reporting System)

**Operating System:** VMS

**Keywords:** • Accounting • Data entry • General ledger

AMS is an on-line asset/portfolio investment management system with a fully integrated general ledger to facilitate effective management and full entity reporting (financial statements and investment review). The system performs five basic functions:

• Recording is done through the entry, processing, and posting of capital and income transactions.
Control is provided by transaction and investment registers, cash statements, income-due reports, and inquiry routines. Every entry to the system produces a complete audit trail.

Internal/external reporting is presented by investment summaries, income summary reports, transaction statements, and financial statements (balance sheet and income statement).

Analysis is done on income statements with budget comparisons (year to date and current period), prior year/period actuals comparison (also year to date and current period), investment registers drawing cost versus market value, indicated incomes, and yields by security.

Cash management is accomplished by daily cash availability reports showing all entities’ current cash balances.

A version of this product is available for the PDP-11 computer.

**Price:** $2,000 – $10,000

**Product Support Available:** Yes

**Contact:** Tom Muskiluke  
(519) 893–4200

DIGITAL BUSINESS COMPUTERS  
133 Manitou Drive  
Kitchener, Ontario N2C 1L4  
Canada

ARCHON: FRS (Financial Reporting System)

**Operating System:** VMS

**Keywords:** • Accounts payable  • Education  • General ledger  
• Government

This generalized system of computer programs provides a sound financial reporting basis for educational institutions and other non-profit organizations. FRS performs accepted accounting practices in accordance with models such as the Planned Program Budgeting System (PPBS), financial guidelines issued by the American Institute of Certified Public Accountants (AICPA), the National Association of Colleges and University Business Officers (NACUBO), and Handbook II, revised. FRS was developed to combine several standard accounting functions, budgetary expenditure and encumbrance accounting, revenue of income accounting, accounts payable processing, and general ledger, including financial reporting. The payroll and personnel system (PAY) and the billing system (BILLS) are designed to interface with FRS.

A version of this product is available for the PDP-11 computer.

**Price:** $14,740

**Product Support Available:** Yes

**Contact:** Nancylou Rapp  
(203) 728–6777
ARCHON: FUND–AL

Operating System: VMS
Keywords: • Education • Information management
• Recruiting • Report writer

The FUND–AL system harnesses the power of data management and combines the flexibility of letter processing to provide a truly unique fund-raising tool. FUND–AL supplies the personal touch necessary in cultivating an institution’s or organization’s supporters. It provides solutions to the problems of keeping information on donors and friends current and helps control valuable gift-giving processes.

This system records all important data relative to pledges, payments, and gifts. It also provides current reports on selected prospects, produces pledge reports, and stores biographical details necessary to maintain a close relationship with valuable contributors. A generalized reporting system makes it possible to sort and select small subgroups of donors and prospects. On-line terminals assist in keeping all financial and biographical data current. Inquiry may be made to determine the current status of any individual, and an unlimited number of addresses can be stored for each prospect donor.

A version of this product is available for the PDP–11 computer.

Price: $14,300 – $56,300
Product Support Available: Yes
Contact: Nancylou Rapp
(203) 728–6777
QUODATA CORP.
266 Pearl Street
Hartford, CT 06103

Bank Master

Operating System: VMS
Keywords: • Accounting • Banking • Decision support
• Financial planning

Strategic Information’s Bank Master services makes possible the integration of banks’ analytical efforts. Employing only one data base, drawn from existing financial systems to operate on a single system, Bank Master facilitates:
• Asset/liability management, including both static and dynamic gap measurements, separate liquidity and sensitivity analyses, and the ability to track funding gap on a monthly, weekly, or daily basis
• Budgeting and profit forecasting with improved net-income accuracy and better control of operating performance
• Strategic planning, including what-if analyses and mixed-frequency forecasts ranging from daily to an unlimited time horizon
• Merger/acquisition analysis, including pooled interest accounting and net present value
• Capital budgeting with multifrequency cash flows, frequency-specific compounding, and multiple discount rates

Bank Master is available in house on DIGITAL and IBM mainframes or in time-shared form. An unlimited number of user-defined models are available for forecasting. For report writing, a variety of available reporting formats or the ability to generate design-customized reports is provided. A fully integrated graphics-writing package is an inherent part of the system.

This product is also available for $1,700/mo.

**Price:** $125,000  
**Product Support Available:** Yes  
**Contact:** David Gilbert  
(617) 273–5500  
STRATEGIC INFORMATION  
80 Blanchard Road  
Burlington, MA 01803

### Banking — General Applications

**Operating System:** VMS  
**Keywords:** • Banking • File management • General ledger

This total, commercial on-line banking system processes checking accounts, savings, loans, certificates of deposit, daily statement, and general ledger system. The system has spooling and complete daily backup procedures. The system interfaces to bank proof systems or, for smaller banks, has a batch entry system. Capabilities include:

• Full inquiry to all files.
• Checking with ready reserve or plus checking, automatic transfers from savings, optional trial balance, complete OD and NSF advice print, automatic service charge, and profit and loss customer reporting.
• Savings system with variable-interest calculation routines, demand statements, automatic transfer notices to checking, annual 1099 print, and all regular exception reporting.
• Loan system that includes transaction history for inquiry display with option of printing history ledgers.
• Complete accrual along with call statement reporting: interest projection report, aged delinquency, maturity tickler advice, and officer and bank rate analysis along with yields.
• Certificate of Deposit processing with variable-interest formulas, multiple certificate holder recap, and variable-interest crediting.
• Central file and asset/liability management.

The system is excellent for banks $5M through $500M in deposits.

A version of this product is available for the PDP-11 computer.

**Price:** $20,000 – $30,000

**Product Support Available:** Yes

**Contact:** R. Bud Brummer

(605) 343-7800

CUSTOM COMPUTER SERVICES, INC.
P.O. Box 1738
Rapid City, SD 57709

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**BANKPAK**

**Operating System:** VMS

**Keywords:** • Accounting • Banking • Credit • Report writer

BANKPAK is a commercial lending accounting system that encompasses both borrowing instruments and underlying collateral. Borrowing can be accomplished through revolving loans, term loans, and rate options. Individual collateral items of accounts receivable, inventory, equipment, real estate, general, and unsecured can be separately priced with line limits, advance percentages, ineligibles, and interest rates. Collateral can be assigned specifically to one or more borrowing instruments or shared by all borrowings. Also, non-income-producing commitments, such as letters of credit, can be accounted for.

BANKPAK is an on-line interactive system, menu driven, and easy to use. All report selections can be displayed on a CRT or printed through a variety of printer options. The system is compatible with DATATRIEVE. All updating is immediate and allows backdating of all monetary transactions. BANKPAK includes complete audit controls and automatic recovery.

BANKPAK's interest accrual function includes many outstanding features, such as 360/365(6)-day calculation, maximum/minimum interest rates, nonmonthly interest billings, minimum interest amounts, commitment fees, float days, automatic deferral, and recapture of interest based on payment schedules and/or maximum rates. Automatic interest adjustments are calculated and billed, based on backdated transactions.

Bank participation is another feature that is fully integrated with the flexible offerings of BANKPAK. Blended or blind participations can be accommodated with automatic principal and interest settlements.

**Price:** $55,000 – $90,000
Business Information System

Operating System: VMS
Keywords: • Accounting  • Financial analysis  • General ledger  • Payroll

This integrated financial package operates on inexpensive hardware and performs payroll, accounts receivable and billing, accounts payable, and general ledger functions. The system also prints financial statements. The system is applicable to organizations in the $3 million to $30 million range.

The system uses interactive processing. Operation can be local or via telephone communications. Personnel with no prior computer experience or training can use the system. English-language prompts are used exclusively.

The system provides an integrated data base for both financial and operations data. Reports with key management information on productivity, costs per unit, and other performance measures can be provided. The data base and software are available in single- and multiuser versions and have been designed to accommodate various kinds of growth. The system offers multicompany processing and automatic verification of data base integrity.

Custom-designed financial statements can be changed with no programming. Financial statements can include operations data as well as conventional financial information.

A high level of continuing maintenance and support are available, along with custom tailoring and other special software. Options are a report writer, to provide user-designed nonstandard reports, as well as integrated job cost accounting, order entry, and purchase order processing.

A version of this product is available for the PDP-11 computer.

Price: $9,000 +
Product Support Available: Yes
Contact: Janna McMillan
(617) 275–5810
BREUER & CO.
54 Middlesex Turnpike
Bedford, MA 01730
CALC–11/CALC–11 PLUS

Operating System: ULTRIX, UNIX, VMS
Keywords: • Decision support • Financial analysis
• Financial planning • Spreadsheets

The CALC–11 electronic spreadsheet is a 3-dimensional system using English commands. The maximum spreadsheet size is 32,767 rows by 32,767 columns and can consolidate an unlimited number of spreadsheets. File encryption, individual size column widths, 132-character display, and ASCII file interfacing are just a few of the features that make the CALC–11/CALC–11 PLUS system so versatile. The spreadsheet may be transferred and used across all the operating systems and hardware configurations. A 1-year warranty that includes telephone support on a toll-free number and software updates at a media charge only are included with the purchase price. Source code is also available.

A version of this product is available for the PDP–11 computer.

Price: $750 – $2,500
Product Support Available: Yes
Contact: Chuck Reed
(317) 872–7200
COMPUTER SYSTEMS CORP.
5540 Rock Hampton Court
Indianapolis, IN 46268

CALC (VT100 Accounting Calculator), Version II

Operating System: VMS
Keywords: • Accounting • Mathematics • Office systems
• Report writer

CALC is a multifunctioned accounting calculator designed to operate on the VT1xx-series terminals. CALC, featuring on-line help, provides the basic functions of a desk-top calculator, including hard-copy printout and accessible memory registers. The system has additional functions allowing the CRT to operate as if it were four calculators (strips). Those strips can be compared for validation of long sequences of entries.

On-line demonstrations are available. Demonstration tapes and user manuals can be purchased to preview the functioning of the product. User instruction and an installation guide are included.

A version of this product is available for the PDP–11 computer.

Price: $350
Product Support Available: Yes
Contact: Neal J. Anderson
(414) 784–8250
MCHUGH, FREEMAN AND ASSOCIATES, INC.
1135 Legion Drive
P.O. Box 454
Elm Grove, WI 53122

CATS (Contribution/Accounting Tracking System)

Operating System: VMS
Keywords: • Accounting • Education • Financial planning
• Word processing

CATS, a specialized program for nonprofit organizations, provides complete accounting functions that not only aid administration by producing management reports, but also increase income contributions through the unique interaction of accounting and word processing.

The program includes contribution tracking that provides:
• Donor statements by individual, zip code, or total membership
• Pledge reminders
• Instant donor account inquiry with printout
• Label printing in alpha or zip order
• Donor list with name and address in alpha or zip order
• Daily/weekly posting of contributions

CATS provides the following membership services:
• Biographic membership file that tracks member data such as birth dates, family data, blood type, committee status, music interest, sports interest, leadership interests, and activities involvement
• Sorting and printing of labels using membership data — alpha or zip order
• Sorting and printing of customized reports detailing membership data
• Sorting and interfacing with word processing for personalized mailings
• Printing of membership rosters

The program offers general accounting that will:
• Record income and expense disbursements and receipts
• Record monthly and year-to-date data
• Generate a balance sheet, a profit/loss statement, and an actual general ledger
• Generate accounts payable with automatic check writing
• Prepare accounts receivable with invoice and statement production
• Provide payroll with automatic check writing and W-2 forms production

A version of this product is available for the PDP–11 computer.

Price: $1,500 – $20,000
Product Support Available: Yes
Data*Model Spreadsheet Management System

Operating System: VMS
Keywords: • Decision support • Financial analysis
        • Simulation • Spreadsheets

Data*Model is used worldwide by small firms and Fortune 500 companies alike for consolidated budgeting, variance analysis, profit and cash planning, investment analysis, manpower planning, asset/liability management, liquidity analysis, currency conversion, and many other planning and analysis applications. Data*Model is ideal for any tedious, time-consuming task that would otherwise be done by hand using spreadsheets.

Data*Model is a powerful menu-driven tool for financial modeling, budgeting, and financial analysis. Each computerized spreadsheet may contain up to 30,000 rows and 500 columns. Built-in routines include amortization, depreciation, IROR, NPV, loss carryforward, and goal seeking. Complete if...then logic allows users to build decisions into their models. Unlimited numbers and levels of consolidation may be performed. Model development time and storage requirements are minimized because spreadsheets, data, logic, and report formats can be shared by many models.

Its built-in file interface routine allows Data*Model to interface easily with other systems such as WP and graphics and accounting systems, without custom programming.

A version of this product is available for the PDP-11 computer.

Price: $1,295 – $6,000
Product Support Available: Yes
Contact: John Jacobsen
         (206) 282–9777
         MINICOMPUTER MODELING, INC.
         1507 Queen Anne Avenue N., Suite B
         Seattle, WA 98109

DataCalc

Operating System: VMS
Keywords: • Financial analysis • Spreadsheet
DataCalc was designed for managers, financial analysts, executives, budget officers, and accountants — in fact, anyone who works with numbers. Written in DIBOL, DataCalc turns DIGITAL business computers into the personal tool needed by business professionals.

DataCalc is an electronic spreadsheet that lets you manipulate numbers as you would on any paper spreadsheet, but much faster and easier. Your VT100 or VT52 terminal becomes a window through which you view a portion of your spreadsheet. Type any number, description, or formula, and DataCalc will perform the calculation, display the results, store the spreadsheet for later revision, or print a hard copy of boardroom quality.

DataCalc allows you to develop spreadsheets on anything from fiscal planning to corporate consolidations, depreciation schedules, price schedules, or any assembly of numbers you need.

A version of this product is available for the PDP–11 computer.

**Price:** $2,000 – $10,000

**Product Support Available:** Yes

**Contact:**
Tom Muskiluke
(519) 893–4200
DIGITAL BUSINESS COMPUTERS
133 Manitou Drive
Kitchener, Ontario N2C 1L4
Canada

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**DECalc, Version 1.0**

**Operating System:** VMS

**Keywords:** • Accounting  • Financial analysis
• Programming tools  • Spreadsheets

VAX–11 DECalc is an interactive applications package for creating, editing, and manipulating the electronic equivalent of an accountant’s spreadsheet. VAX–11 DECalc executes in native mode under VAX/VMS and drives a VT100-series terminal. VAX–11 DECalc is self-teaching and requires little previous computer experience.

The VAX–11 DECalc spreadsheet consists of a rectangular grid. In each box, the user can enter one of the following:

• An alphanumeric label (up to 64 characters long)
• A numerical value up to 12 decimal digits or up to 12 significant decimal digits within a range of $0.29 \times 10^{-38}$ to $1.7 \times 10^{38}$
• A relationship, or mathematical expression that defines the value of the box as a function of the value of other boxes

The maximum theoretical size of the grid is 63 columns by 254 rows and is set as an installation parameter. The practical limit, however, depends on available memory and/or storage space. VAX–11 DECalc allows multiple grids to be stored and retrieved, but users can access only one grid at a time.
Upon entering DECcalc, the terminal display screen is divided into a "window" onto the grid and a set of reserved areas for messages, prompts, and other user interaction. The window displays a portion of the total grid. The current value of each box within the window is displayed. For boxes containing relationships, the resulting values are displayed.

VAX-11 DECcalc also provides commands for grid manipulation. During command input, the user is prompted for any options or sub-options. The user can stop at any point prior to completing entry of the command, leaving the grid unchanged.

Refer to SPD #25.79.0 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office
(see Introduction).

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**DIGICALC™**

**Operating System:** VMS

**Keywords:** • Accounting • Decision support

• Financial analysis • Spreadsheets

DIGICALC, the professional-strength electronic spreadsheet for financial/mathematical analysis, is designed exclusively for DIGITAL computers and combines the strengths of traditional financial modeling packages with the flexibility of the popular microcomputer CALC programs. Its more than 8,000 users include accountants, managers, engineers, executives, scientists, and others using VAX-11 and PDP-11 computers. Features include variable column width and up to 616 columns by 616 rows with no limitation on the use of constants, text, or equations. DIGICALC allows for up to 112 characters per cell position and boardroom-quality report generation. Annual support provides training, class credits, newsletter subscription, telephone problem response, and new-feature updates.

A version of this product is available for the PDP-11 computer.

**Price:** $650 – $6,000

**Product Support Available:** Yes

**Contact:** Allan Hay
(206) 881–2331
WHY SYSTEMS, INC.
16902 Redmond Way
Redmond, WA 98052
EMPIRE®, Version 3B

Operating System: VMS
Keywords: • Decision support • Financial analysis • Graphics
          • Report writer

EMPIRE is a decision support system that facilitates financial modeling, analysis, and reporting. The system provides the following features:

• A procedural modeling language that allows the user to define a problem as a column-and-row matrix (spreadsheet)
• A function library for finding financial, mathematical, and statistical values such as depreciation, rate of return, present value, loan payments, amortization, compounding, payback, averages, minimums, maximums, growth rates, and simple regression
• A data manager for entering and saving data, inquiries, and consolidations
• A report writer for documents customized to the user's specifications
• A graphics facility for the pictorial display of any information in the model, in black and white or color, including hard copy
• Interactive assumption analysis, including what-if sensitivity, target value (goal seeking), and impact analysis
• Risk analysis, in the form of Monte Carlo simulation, and data analysis and forecasting methods, including simple regression, multiple regression, exponential smoothing, moving averages, seasonal analysis, and ARIMA (Box-Jenkins) analysis

DIGITAL distributes this software product under license from Applied Data Research Inc.

Refer to SPD #A1.59.00 when requesting further information on this product from your local DIGITAL sales office.

EMPIRE® is a trademark of Applied Data Research Inc.

Price: $50,000
Product Support Available: No
Contact: Consult your local DIGITAL sales office (see Introduction).

Fedder Architects Time and Billing System

Operating System: ULTRIX, UNIX
Keywords: • Accounting • Accounts receivable • Architecture
          • Billing

The Fedder Architects Time and Billing System combines in a single integrated system the accounting applications needed to effectively and profitably run an architectural firm. The system includes time and expense recording, work-in-process accounting, staff productivity analysis, and billing and open-item accounts receivable.
The benefits provided are improved billing practices and collections, balanced staff assignments, and improved control over assignment deadlines. Entries are made to the system through time and expenses by employee, payment received, work-in-process adjustments (mark-ups and markdowns), and deferrals.

The system integrates with the following companion Fedder software systems: Accounts Payable/Expense Analysis, Payroll Checkwriting/Personnel Information System, and General Ledger/Financial Reporting.

A version of this product is available for the PDP–11 computer.

Price: Available upon request  
Product Support Available: Yes  
Contact: David E. Fedder  
(301) 561–3579  
FEDDER SOFTWARE, INC.  
P.O. Box 248  
Timonium, MD 21093

Fedder Purchasing System

Operating System: ULTRIX, UNIX  
Keywords: • Accounts receivable  • Billing  • Purchasing  
• Wholesale

The Fedder Purchasing System is a module that may be used with Fedder A/P and Fedder Inventory Control as a part of the complete integrated Fedder Foresight System. Special features include automated receiving, vendor performance analysis, and vendor invoice validation, which requires Accounts Payable.

A version of this product is available for the PDP–11 computer.

Price: Available upon request  
Product Support Available: Yes  
Contact: David E. Fedder  
(301) 561–3579  
FEDDER SOFTWARE, INC.  
P.O. Box 248  
Timonium, MD 21093

FINGRAPH™

Operating System: VMS  
Keywords: • Data base management  • Graphics  
• Information management  • Scheduling

FINGRAPH, developed by Fingraph Corporation, is a comprehensive and flexible graphic management information system for computer generation of graphic financial and operating reports. FINGRAPH
allows systematic graphic presentation of financial statements, disaggregation schedules, and operational performance data. Those formats provide for a consistent and standard hierarchy of charts for management and operating functions — a Graphic Management Information System (GMIS) for the organization.

The system can:
- Review more information more quickly by "seeing" it instead of reading it
- Graphically compare actual results to budget and/or forecast
- Understand "pictures" of the business and its operations more easily, thus facilitating better comprehension
- Focus on exceptions and understand underlying causes
- Get new charts whenever the data base is updated after the initial 1-time design and optional data base linkage is done

DIGITAL distributes this software product under license from Fingraph Corporation.

Refer to SPD #A0.42.00 when requesting further information on this product from your local DIGITAL sales office.

FINGRAPHTM is a trademark of Fingraph Corporation.

**Price:** $3,500 – $13,800

**Product Support Available:** No

**Contact:** Consult your local DIGITAL sales office

(see Introduction).

**FINPRO (Financial Projection Model)**

**Operating System:** VMS

**Keywords:** • Financial analysis  • Financial planning  
• Simulation

FINPRO predicts balance sheet and profit and loss data for up to 12 planning periods into the future. A period can be a week, a month, a quarter, or some other length of time. For example, the model can be used to project the following profit- and loss-related numbers: gross profit, net profit, operating expenses, administrative expenses, and interest expense and income. The following balance sheet items can be projected: cash balances, borrowing requirements, accounts receivable, and accounts payable.

The model can do the following:
- Project profits, cash flow, and cash requirements data necessary for loans
- Project sales, inventory, and labor requirements for meeting a goal of, for example, a 20% increase in profits over last year
- Project sales required for breakeven, 10% gross profit, and 30% gross profit, respectively
- Evaluate the impact of different pricing strategies on profitability
• Evaluate the impact on cash requirements of reducing the average age of accounts receivable

A version of this product is available for the PDP-11 computer.

**Price:** $1,000  
**Product Support Available:** Yes  
**Contact:** Stephen Hoiberg  
(617) 275–5810  
BREUER & CO.  
54 Middlesex Turnpike  
Bedford, MA 01730

**FINSYS–IMPRS Financial System**

**Operating System:** VMS  
**Keywords:**  
- Financial analysis  
- General ledger  
- Report writer

This menu-driven, password-protected system accommodates a mix of reporting periods (monthly, quarterly, and so on) and provides the following features:

- User-defined and controlled financial reporting  
- Multitude of input documents for data entry  
- Wide variety of income statements incorporated  
- Optional suppression of zero dollar amounts and underlining of total amounts  
- Account maintenance designed into menu  
- New year balance reestablished on demand  
- Detail entries available on a year-to-date basis  
- Extensive validation of account numbers, hash totals, and "limit tests"  
- Immediate input validation  
- Previous-month changes automatically adjust year-to-date totals  
- User ability to suppress any/all financial statement reports  
- Automatic interface to other major systems (A/P, P/R, and so on)  
- Unlimited chart of accounts allowed  
- Alphanumeric account numbers allowed  
- Distribution of single G/L amounts to multiple financial lines  
- Instant access to detail or accounts allowed  
- Division/department breakdowns within companies accommodated

A version of this product is available for the PDP-11 computer.

**Price:** $3,000  
**Product Support Available:** Yes  
**Contact:** Elvin E. Smith or Forrest E. Weddle  
(913) 782–8544  
RUF CORP.  
1533 E. Spruce  
Olathe, KS 66061
FLOWCalc

Operating System: VMS
Keywords: • Financial analysis • Financial planning
        • Information management • Spreadsheets

FLOWCalc, developed by The Software Workshop — General Research, is the spreadsheet simulator for the VAX, taking maximum advantage of the VAX architecture. The program is extremely efficient with respect to VAX CPU utilization and disk storage.

FLOWCalc is designed to run on almost any cursor-addressable terminal. On the VT100, you can enter most commands by just one or two keystrokes on the keypad. FLOWCalc provides an extensive on-line help facility, as well as extensive documentation, with a tutorial designed to carry the beginning user through all the main features of FLOWCalc.

In addition to the usual spreadsheet functions, FLOWCalc provides for worksheet encryption, up to four windows, variable individual column widths, several cell formats, delete, insert, move, copy of entire or partial cell, rows, columns, and blocks of cells. FLOWCalc also allows you to label cells and blocks of cells.

Other advanced features include sorting of rows or columns, read and write of ASCII files, command file execution, user-defined functions, and several mathematical, logical, and operational functions and string matching.

Price: $3,500
Product Support Available: Yes
Contact: Cheryl Pankratz
(714) 998-6041
MIDCOM CORP.
1940 N. Tustin Avenue, Suite 117
Orange, CA 92665

General Ledger and Financial Reporting

Operating System: VMS
Keywords: • Financial analysis • Financial planning
        • General ledger • Report writer

The system is designed around six general procedure modules — Journal Processing, Financial Statements, General Ledger Reports, File Maintenance, File Listings, and System Control. The system can minimize errors by checking the accuracy of data entered into the system before records are updated. These controls help reduce the amount of manual checking and reviewing of finished reports. The format and content of financial statements, provided through the use of parameter-driven files, give you unlimited reporting flexibility. Financial statements and general ledger reports can be generated for
any accounting period in the current year or prior years through the system's capability of storing all financial data in a data-driven transaction file. Various financial statement and general ledger report run-time options allow you to customize your reporting requirements without any special custom programming. The system can adjust prior periods without affecting the comparability of the current period on the financial statements. A detail general ledger that reflects all transactions processed during a fiscal year can be generated. The system provides for adding, changing, and deleting records as required, and the contents of all master files may be listed on request. A special code in each account's master record determines whether transactions for the account are to be posted in detail or in one summary record.

Exensive use of help messages along with a menu-oriented system ensure easy installation and operation of the system. Source code is provided — the programs are written in VAX-11 COBOL using structured coding techniques for easy maintenance and modifications. The system was designed and programmed specifically for the VAX/VMS architecture, resulting in an application that uses system resources efficiently. A free illustration manual is available upon request.

**Price:** $995

**Product Support Available:** Yes

**Contact:** Bob Davis  
(602) 957-4049

DMS, INC.  
3714 East Indian School Road  
Phoenix, AZ 85060

**Integrated Manufacturing and Financial System,**  
**Version 3.2**

**Operating System:** VMS

**Keywords:**  
- Accounts receivable  
- Billing  
- Inventory  
- Order entry

This system is designed for manufacturers who ship to customer order. Those manufacturers can be varied in their procedures and products. Some build partially to stock and others only for the job. Production can be based on a mix of customer forecast and backlog orders. Products can range from metalworking through electronics to parts, equipment, and much more. The system includes order entry/invoicing, quotations, bills of material/routing, inventory/purchasing, job cost/estimating, production planning, shop floor control, material requirements planning, all financials, word processing, and electronic spreadsheet. Applications can be run individually or integrated as a complete system. The system is fully supported with dem-
onstrations, training, warranty, documentation, telephone support, a continuing maintenance agreement, and dial-in support.

A version of this product is available for the PDP–11 computer.

**Price:** $15,000 – $25,000  
**Product Support Available:** Yes  
**Contact:** Arthur Martin, President  
(203) 677–6563  
COMPUTER COVENANT CORP.  
Integrated Manufacturing Systems  
790 Farmington Avenue  
Farmington, CT 06032

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**InterFad™**

**Operating System:** VMS  
**Keywords:**  
- Financial analysis  
- Query facilities  
- Report writer  
- Taxes

InterFad, a complete on-line interactive depreciation and fixed asset system, may be interfaced with the InterGL General Ledger and Financial Reporting System or used in a stand-alone environment. InterFad can handle any of eight depreciation methods and includes the ACRS laws. The system gives you the option of expensing or not depreciating an asset, and you can define fiscal periods and can depreciate an asset on any time period (monthly, quarterly, annually, and so on). The system can simultaneously keep track of two sets of records for each asset — one for IRS tax purposes and the other for book purposes.

Assets can be grouped or kept separate. You define asset locations and general ledger and expense accounts. When an asset is depreciated, the accounts are updated automatically, and a complete history report is produced on the desired assets, breaking down the depreciation for a given period of time and showing both IRS and book depreciation.

The system handles investment tax credit and recapture functions. Your investment tax credit is automatically calculated for you. If you sell an asset, the recapture amount is produced on a report that is available at any time. Also available at any time is an on-line inquiry function enabling you to check the status and book value of any asset and to show the amount of past depreciation, as well as information about the asset, including salvage value, date purchased, purchase price, investment tax credit amount, useful life, location, method, and G/L and expense account numbers.
Upon request, you can produce reports available in different forms and flexible enough to be run in many ways. The reports include an asset acquisition report that can be run for any given period of time, a depreciation report by location, an investment tax credit and recapture report, and an asset change report showing any changes that were made on an asset. The ability to project future amounts of depreciation allows you to see how much your assets would depreciate each year by using any of the eight methods of computing depreciation and for any useful life and purchase value.

A version of this product is available for the PDP–11 computer.

**Price:** $2,500  
**Product Support Available:** Yes  
**Contact:** Alexander J. Phillips, President  
(201) 256–7633  
INTERACTIVE SYSTEMS AND MANAGEMENT CORP.  
1500 Cardinal Drive  
Little Falls, NJ 07424

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**InvestMaster**

**Operating System:** VMS  
**Keywords:**  
- Accounting  
- Banking  
- Data base management  
- Decision support

InvestMaster facilitates cross-search and cross-reference on a variety of data bases simultaneously and automatically and can combine data from both internal and external sources. Because InvestMaster generates its own programs, an analyst with no programming knowledge can program the system to satisfy customized analytical and report-writing needs. After the user fills in forms on the screen, InvestMaster automatically writes the new computer program, which fulfills the stated requirement.

Combining data from multiple sources is a cumbersome task for microcomputer users. InvestMaster facilitates the integration and delivery of data from multiple large data bases in order to utilize fundamental, technical, and internal proprietary data in a single microcomputer application.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Doug Smith  
(617) 273–5500  
STRATEGIC INFORMATION  
80 Blanchard Road  
Burlington, MA 01803
Management Information System for Professional Service Firms

Operating System: VMS
Keywords: • Billing • Financial analysis • Payroll
• Project management

This project control system was designed specifically for engineering consulting and architectural firms, in which the need to monitor and control costs, revenue, and project performance on a "real-time" basis is critical. The mode of operation is interactive — data is input to the system, inquiry can occur, and reports are produced as required.

Labor costs are computed from employee time inputs. Other direct costs are also handled by the system. Information is maintained and displayed on a project, task, department, and/or activity basis. Comparison to budgets and calculation of earned revenue, variances, and actual multipliers are accomplished automatically, based on the contract type — cost plus, lump sum, fixed fee, percent of construction, cost plus fixed fee, or cost plus with upset limit. Prebilling reports and automated invoice routines for those contracts types are available from the integrated Billing Control System.

Reports and inquiries can be displayed on an organizational (departmental) and/or project management basis and can show complete detail, summary, or exception only.

The package consists of four modules: Project Control System, Billing Control System, Financial Control System, and Payroll System. The Project Control System interfaces with our interactive Financial Control and General Ledger systems to provide a complete integrated system for A & E firms of 50 to more than 1,000 employees and with many locations, divisions, and departments. The financial system and payroll function offer all the standard accounting functions, such as all normal books of original entry, subsidiary control and reporting in payables and receivables, and full financial statement generation.

Price: $25,000 +
Product Support Available: Yes
Contact: Chris Meyer, CDP
(813) 961–3902
BST CONSULTANTS, INC.
P.O. Box 23425
Tampa, FL 33623

MAPS/GL

Operating System: VMS
Keywords: • Decision support • Financial planning
• General ledger
MAPS/GL is a highly flexible, interactive, and user-controlled financial management/general ledger software package. MAPS/GL has a comprehensive array of general ledger accounting, financial control, and budget planning features. Also, MAPS/GL is integrated with a true decision support tool, MAPS/MODEL.

Designed by accountants, MAPS/GL not only satisfies today’s basic accounting and report delivery needs, but also goes beyond the requirements of technically sound, general ledger software. MAPS/GL can easily handle varied and changing information requirements in the years ahead.

**Price:** $22,500 – $30,000

**Product Support Available:** Yes

**Contact:**
Jack Brown  
(415) 856–1100  
ROSS SYSTEMS, INC.  
1860 Embarcadero Road  
Palo Alto, CA 94303

**MATHEASY**

**Operating System:** VMS

**Keywords:** • Banking • Credit • Retail

MATHEASY processes applications for credit and new accounts and can be used by banks, retailers, or any other credit grantor who processes loan or credit card applications. The system takes each application from data entry through the decision process and generates the appropriate letters, reports, and actions.

The system can be used with or without an existing credit scoring formula. Credit bureau reports are automatically received by the system through a dedicated phone line or an automatic-dialer modem. MATHEASY can use your scoring formula to automatically analyze those reports.

Approved accounts can be “handed off” to your existing accounts receivable system in a user-specified record layout. Additionally, tapes can be generated for driving a credit card embossing machine.

The user can monitor and track applications through each step of the process, altering or modifying the flow when necessary. Applications can be assigned special priorities when rapid expedition is required.

MATHTECH will customize the software, if necessary, to perform, for example, debt burden or cash flow analysis.

A version of this product is available for the PDP–11 computer.

**Price:** $65,000 – $110,000

**Product Support Available:** Yes
Multiplan® Electronic Worksheet

Operating System: ULTRIX, UNIX, VMS, XENIX
Keywords: • Financial planning • Sales and marketing • Simulation • Spreadsheets

This highly visual, easy-to-use, interactive electronic worksheet aids in financial planning and modeling for business or personal needs. The worksheet can be used to predict future financial needs and profitability by answering the user's what-if questions. Multiplan can also be used to perform iteration and sensitivity analysis to indicate a step-by-step approach to a targeting result. Multiplan is menu-driven, uses natural language commands, and has a thorough help facility. Maximum worksheet size is 63 columns by 255 rows. By using the UNIX® TERMCAP capability, Multiplan supports most cursor-addressable terminals. The worksheet is backed by SCO's comprehensive software warranty product support services.

Multiplan® is a registered trademark of Microsoft, Inc. *UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $495 – $2,000
Product Support Available: Yes
Contact: Marketing Department
(408) 425–7222
THE SANTA CRUZ OPERATION, INC.
500 Chestnut Street
Santa Cruz, CA 95060

NYPLAN

Operating System: VMS
Keywords: • Financial analysis • Graphics • Report writer • Spreadsheets

NYPLAN is an electronic spreadsheet and financial planning system that combines the convenient interaction of a screen-oriented calc package with the power of financial modeling. Ranging from comprehensive reporting to graphic analysis, NYPLAN provides financial statements, budgets, sales forecasts, pro forma financial statements, consolidated reports, and manpower charts.
NYPLAN supports both a hard-copy terminal mode and a special screen mode on most popular terminals. With the screen mode, any model can be entered and instantaneously displayed. The user can create the model in screen or hard-copy mode and alternate between models.

Graphs can be produced on a wide variety of devices, including video displays, printers, and plotters. Line charts and bar charts are available and can be produced in either two or three dimensions.

Other NYPLAN capabilities include a data base interface enabling receipt of data from other files, a report writer, and an on-line user's manual that can be accessed by typing HELP. The statistics package contains linear regression and risk analysis, and the financial package includes internal rate of return, present value, discounted cash flow, and depreciation. NYPLAN uses standard math rules, including exponentiation and parentheses. Models can be made to prompt for necessary information, and a job stream can be made instructing NYPLAN to perform a series of events.

A version of this product is available for the PDP–11 computer.

**Price:** $9,500 – $15,500

**Product Support Available:** Yes

**Contact:** John Enyedy
(408) 257–7700
NATIONAL INFORMATION SYSTEMS
20370 Town Center Lane
Cupertino, CA 95014

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**Plan Plus**

**Operating System:** VMS

**Keywords:** • Cost accounting • Financial analysis
  • Financial planning

Plan Plus is a system for cash flow forecasting, sales analysis, budget planning, investment analysis, product costing, engineering support costing, and cable television planning. The Plan Plus product is used in all types of industries and for multiple purposes.

A version of this product is available for the PDP–11 computer.

**Price:** $499 – $5,000

**Product Support Available:** Yes

**Contact:** M. Stewart
(44) 1–942–2282
PLAN PLUS LTD.
P.O. Box 327
London W44QD
United Kingdom
Portfolio Management

Operating System: VMS
Keywords: • Banking • Financial analysis
• Financial planning • Information management

KOCH offers a variety of sophisticated and thorough securities-trading packages designed for the corporate portfolio manager. Banks, insurance companies, pension plans, trusts, and corporations that manage their own portfolios and those of their clients will find these packages well suited to their environment. Each package will interface easily with existing general ledger, tax reporting (Form 1099), and client billing systems.

All packages run on most computer systems, support black and white or color terminals and printers, include extensive ad hoc report writing facilities, and are designed and written in proven and fully supported state-of-the-art software technology.

Bond Trading is an on-line package that supports coupon and discount securities; government, corporate, and municipal bonds; management for an unlimited number of portfolios; yields, discounts, durations, accretions, amortizations, 360/365 basis comparisons; and countless other calculations and projections. The package handles coupon notification, service fee billing, 1099, and G/L postings. Full “back office” accounting functions as well as support for traders’ decision making are included.

The Futures and Hedges package provides complete accounting and valuation for futures and cash and futures hedges.

A version of this product is available for the PDP-11 computer.

Price: $60,000 – $300,000
Product Support Available: Yes
Contact: Denis Hudson
(415) 567-1313
KOCH SYSTEMS CORP.
P.O. Box 2510
San Francisco, CA 94126

Professional Time Reporting

Operating System: MS/DOS, PICK, UNIX, XENIX
Keywords: • Billing • Project management • Report writer
• Scheduling

This program provides the following:
• Reports for projected versus actual expenditures for projects and budget categories within each project
• Employee utilization information showing percentages of available versus charged time
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- Project analysis of expenditures for various user-defined activity categories
- Tracking of charges to projects by hours and expense items
- Profitability reports on a project-by-project basis
- Maintenance and reporting of information relating to company costs, project charges, and client billings
- Screen display allowing immediate access to summary information for each project, including budgeted and actual labor and expenses

A version of this product is available for the PDP–11 computer.

Price:  $2,500
Product Support Available:  Yes
Contact:  Steve Thomas
          (713) 270–5218 or (800) 231–0062
          THE SOFTWARE EXPRESS, INC.
          10103 Fondren, Suite 220
          Houston, TX 77096

PROTRAC (Project Cost Tracking System)

Operating System:  VMS
Keywords:  • Accounts receivable   • Billing   • Cost accounting
            • Project management

PROTRAC is used to track costs, revenue, accounts receivable, and work in process on a job-by-job basis. Labor, materials, and subcontractor costs are categorized with a variety of means for allocating overhead. Automatic interfaces are provided with payroll, accounts payable, and accounts receivable.

Processing is performed for the job cost master file, cost allocation methods, accounts receivable status, and multioption reports — job cost, job summary, labor allocation and productivity, daily hours, job listing, and billing.

PROTRAL can fully integrate with the optional COSTRAC financial management package, which provides accounts payable, accounts receivable, payroll, and general ledger modules.

A version of this product is available for the PDP–11 computer.

Price:  $6,000 – $8,000 +
Product Support Available:  Yes
Contact:  Gene Thayer, P.E., Vice President
          (800) 368–4203
          TECHNICAL INFORMATION SYSTEMS, INC.
          116 W. Plume Street
          Norfolk, VA 23510
Saturn–Calc Electronic Worksheet

Operating System: VMS
Keywords: • Financial analysis • Sales and marketing • Spreadsheets

This program helps manage cash flow and improve sales reporting, forecasting, and business projections.

Application Development & Enhancements, Inc., is a New England distributor of software products manufactured by Mini-Computer Business Applications Inc. (MCBA) in Montrose, California.

Application Development & Enhancements, Inc. is a New England distributor of Saturn Systems in Minneapolis, MN.

A version of this product is available for the PDP–11 computer.

Price: $625 – $2,380
Product Support Available: Yes
Contact: Douglas Souza
(617) 893–0333
APPLICATION DEVELOPMENT & ENHANCEMENTS, INC.
130 Overland Road
Waltham, MA 02154

Supercomp–Twenty

Operating System: ULTRIX, UNIX, VMS
Keywords: • Decision support • Financial analysis • Financial planning • Spreadsheets

Supercomp-Twenty provides full spreadsheet modeling capabilities. It can handle anything from the simplest calculations to major planning and budgeting applications. The system includes prepackaged models; many built-in financial, mathematical, and statistical functions; and an on-line interactive HELP facility. Documentation includes a self-learning tutorial manual. Worksheet size is a 1,000 column by 1,000 row matrix.

A version of this product is available for the PDP–11 computer.

Price: $750 – $4,800
Product Support Available: Yes
Contact: Carl M. Dula
(201) 335–5600
PULSAR SYSTEMS, INC.
1259 Route 46, Bldg. #2
Parsippany, NJ 07054
TAB-M

Operating System: VMS
Keywords: • Accounting • Decision support
• Financial analysis • Financial planning

This high-frequency interest-sensitivity simulation and forecasting system accommodates the asset/liability management needs of financial institutions that have the data, managerial resources, and operational need to conduct dynamic gap analysis at less than 30-day intervals. The user may have as much line-item detail as desired, down to individual security groups, by responding to simple user prompts. TAB-M reprices variable-rate assets and liabilities.

This product is also available for $2,500/mo.

Price: $100,000
Product Support Available: Yes
Contact: David Gilbert
          (617) 273–5500
          STRATEGIC INFORMATION
          80 Blanchard Road
          Burlington, MA 01803

TABS

Operating System: VMS
Keywords: • Accounting • Banking • Decision support
• Financial analysis

This financial planning and asset/liability management system for financial intermediaries organizes, forecasts, and reports any financial intermediary’s operating information. No computer skills are required. By responding to prompts, each user is able to create one or more charts of accounts using the user’s nomenclature and account relationships. TABS provides the user with five forecasting options for each element in the chart of accounts, ranging from simple percentage increase to complete logical and algebraic relationships; links to external economic and financial variables; provides for roll-down and purchase of assets and liabilities; and transacts what-if analysis. The system contains interest rate and volume variance reporting, offers user-controlled report formats, and generates a highly detailed chart of accounts with maturity breakdowns, reinvestment scenarios, loan amortization, loan repricing, and forecasting relationships.

This product is also available for $1,800/mo.

Price: $55,000
Product Support Available: Yes
Contact: David Gilbert
          (617) 273–5500
STRATEGIC INFORMATION  
80 Blanchard Road  
Burlington, MA 01803

Tax Planner

Operating System: VMS  
Keywords:  • Accounting  • Financial analysis  • Taxes  
The Tax Planner may be used to project income taxes for 1983, 1984, and 1985, based on the applicable tax law in effect on July 1, 1982. In addition to the selection of the most favorable income tax method, the system calculates Form 4972 — special 10-year averaging method, self-employment tax, minimum taxes, and alternative minimum tax. Tax Planner automatically calculates taxable capital gains or losses, charitable contribution and medical expense limitations, marriage tax penalty deduction, nonrefundable credit, and penalty for underpayment of estimated tax.  
A version of this product is available for the PDP–11 computer.  
Price: $1,250  
Product Support Available: Yes  
Contact:  Bob Sprowls  
(904) 434–2685  
DIGITAL SYSTEMS OF FLORIDA, INC.  
114 E. Gregory Street  
Pensacola, FL 32501

TAXCALC (Federal Income Tax Package)

Operating System: VMS  
Keywords:  • Financial analysis  • Financial planning  • Simulation  • Taxes  
TAXCALC is a menu-driven federal income tax preparation assistance software package. It allows the user to interactively enter tax data and then automatically computes the federal tax obligation. TAXCALC allows the user to change or edit any line on any of the supported tax forms and automatically recalculates the federal tax obligation. This feature allows for flexible tax planning and tax estimation.  
TAXCALC uses a simple question-and-answer format with a facsimile of the federal tax forms for data entry. After the tax is computed, the user can direct TAXCALC to print a facsimile of the federal tax forms complete with the user’s data (answers), all totals and subtotals, and the federal tax obligation. TAXCALC will also print directly onto the 1040 form.
TAXCALC uses a simple operator’s menu from which the user gains access to the TAXCALC system via a name and password table. The menu is also used for access to all tax forms and other functions of the TAXCALC system.

TAXCALC offers complete data security for user tax data files via data encryption of all user files. Data files are automatically encoded upon entering or decoded upon leaving the TAXCALC system.

TAXCALC supports the following federal tax forms: Form 1040; Schedules A, B, C, D, E, and G; Form 2106; and Form 4562.

A version of this product is available for the PDP-11 computer.

Price: $200 – $500
Product Support Available: Yes
Contact: Kenneth Alan Presley, President
(502) 448–2719
COMPUTER INGENUITY CONSULTING
ASSOCIATES, INC.
4513 Flintlock Drive
Louisville, KY 40216

Unicalq 3-D Spreadsheet

Operating System: ULTRIX, UNIX, VMS
Keywords: • Decision support • Financial analysis • Security
Unicalq, a powerful 3-dimensional, virtual memory electronic spreadsheet, offers very large spreadsheet size yet is optimized for efficient time-sharing usage via dynamic memory allocation based on spreadsheet contents.

Special features include file encryption for security, on-line help for commands and syntax, and extended numeric, financial, logical, arithmetic, conditional, and operational functions.

A version of this product is available for the PDP-11 computer.

Price: $750 – $2,500
Product Support Available: Yes
Contact: Sam Bishop, Vice President, Sales
(312) 879–1008
UNIQ DIGITAL TECHNOLOGIES
28 S. Water Street
Batavia, IL 60510

ViewComp Electronic Spreadsheet

Operating System: ULTRIX, UNIX
Keywords: • Decision support • Financial analysis
• Financial planning • Spreadsheets
ViewComp, an electronic spreadsheet designed specifically for the UNIX* environment, offers all the capabilities expected of an electronic spreadsheet. In addition, the data it stores and uses is completely UNIX*-compatible.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** $500 – $800  
**Product Support Available:** Yes

**Contact:**  
Mark Pearson  
(212) 307–6800  
UNICORP SOFTWARE, INC.  
303 West 42nd Street  
New York, NY 10036

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**XSP Spreadsheet, Financial, and Statistical Analysis System**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:**  
- Data base management  
- Financial analysis  
- Spreadsheets  
- Statistics

The XSP spreadsheet is a sophisticated financial modeling and analysis tool that is fully integrated into the XED office systems package via the XED menu processor — including the data base and forms generator. The package handles 500 fields of information in either columnar or free-form modes and allows an unlimited amount of text to be inserted between fields or lines of the analysis, permitting direct integration of finished reports with word processing documents. The spreadsheet also permits multiple forms based on previous data and automatic update of fields from previous forms.

The finished document may be directly accessed by either the XED word processor or the XDA document assembler for further editing or document merging. The completed document may be printed on either draft- or letter-quality printers by direct selection from the print menu of the XED menu processor.

XED office systems programs are designed and coded for UNIX* Version 7, System III, System V, and Berkeley 4.1 and 4.2. The programs contain a terminal description file and a printer definition and proportional spacing increment table (both user definable) to provide maximum installation flexibility and efficiency in a multiuser environment. XED is loaded in the UNIX* multitasking operating system as a shared text file.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.
Price: Available upon request
Product Support Available: Yes
Contact: Ted Ferguson
        (818) 884–2000
        COMPUTER METHODS, LTD.
        P.O. Box 709
        Chatsworth, CA 91311
Games and Demos
DODGEM: A Maze Game

Operating System: VMS
Keywords: • Documentation • Real time
Memory required: 138,752 bytes, 271 pages.

DODGEM, a game similar to PACMAN games, takes advantage of the direct cursor addressing and graphic font available on VT100 and equivalent VDUs. The program runs in a real-time environment, so quick reactions and nimble fingers help enormously.

Instructions are displayed before and during play to let you devote all your attention to the screen.

The program supports "escape holes" at the side of the board (to move around at random), "zapping" parts of the board (to save yourself in emergencies), and reverse mode (where you do the chasing).

Three levels of play are catered for, from novice to expert, and a league table of the top 15 scores is maintained for each.

Health warning: This game is extremely addictive and is bad for your nerves.

Documentation is on magnetic media. DECUS number VAX–39.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

Empire

Operating System: VMS
Keywords: • Demos • Recreation

Empire is a strategy and tactics war game, pitting you against the computer. The game is played on a computer-generated map that contains land areas, sea areas, and cities. The object of the game is to eliminate the opponent by capturing cities and destroying the enemy forces. Cities once captured have production capability and can produce units such as armies, fighters, destroyers, submarines, or carriers for offense or defense. Of course, the computer is trying to crush your forces and take over the world, as are you.

Early in the game, exploration is most predominant, followed later by planned offensives and holding actions, until eventual victory or defeat.

Warning: Typical games can take as long as 10 hours, and some people find the game addictive. The program keeps the game state in a disk file, and a single game usually takes multiple terminal sessions. The .DOC file containing the instructions is correct and complete but is terse and lacks examples, which sometimes causes confusion in the first games.

Documentation is on magnetic media. DECUS number VAX–12.
Hornet (A Star Trek Game)

**Operating System:** VMS  
**Keywords:** • Demos • Recreation  
Memory required: Approximately 24K bytes.

Yet another version of Star Trek not unlike many of the versions in use, Hornet is written in Pascal and should serve as a moderately good example of structured programming. Many areas can be improved, and any young hackers should feel free to modify or rewrite the program at will. Run the program and it will ask you if you want help.

A VT52–compatible terminal should be run at 9,600 baud. This program is also distributed as DECUS No. 11–443.

The compiled program will run on VAX/VMS. Source is in VAX native Pascal and Swedish Pascal.

Documentation is on magnetic media. DECUS number VAX–11.

**Price:** $5 – $225  
**Product Support Available:** No  
**Contact:** DECUS (see Introduction)

MAZE

**Operating System:** VMS  
**Keywords:** • Demos • Recreation  
Memory required: Peak virtual pages approximately 171.

MAZE is written in PL/I and creates mazes of various sizes and shapes. The mazes are rectangular and have external start and end points. The user may specify the size of the maze, constraining points for the true path, and the number of false paths to be generated. Mazes can be generated in sizes ranging from trivial 2-by-2 mazes to monstrous ones filling many pages of standard line printer paper.

Documentation is on magnetic media. DECUS number VAX–8.

**Price:** $5 – $225  
**Product Support Available:** No  
**Contact:** DECUS (see Introduction)

MTREK

**Operating System:** VMS  
**Keywords:** • Demos • Real time
The game is very similar to the traditional Star-Trek game, with the following exceptions. First, the game involves one to eight players, each of whom has a terminal and a starship. Second, the game runs in real time as far as the players are concerned. For example, if you are going warp 8, you will continue to move regardless of your activity at the terminal, unless you are destroyed, hit something, run out of energy, or change your warp speed. Each player’s status and position as well as the scores of all players are displayed and continuously updated at each player’s terminal. (The updated rate is 2.5 times per second, but the source code is commented on where to change it if you wish to do so.) Third, there are no Klingons or Romulans to shoot down; instead, you shoot — or at least attempt to shoot — the other players.

Documentation is on magnetic media. DECUS number VAX–37.

**Price:** $5 – $225

**Product Support Available:** No

**Contact:** DECUS (see Introduction)

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**Pic-Pak: Computer Picture Collection**

**Operating System:** Independent

**Keywords:** • Graphics • Printing

Pic-Pak is a collection of picture files obtained from DIGITAL, M.I.T., and various other sources. The files are ASCII and need only be printed on any line printer for reproduction. Any machine that can handle ASCII code may be used. The files should be both machine and operating system–independent within that restriction.

To obtain the proper aspect ratio, the line printer should operate at 10 characters per horizontal inch and at 8 lines per vertical inch. If an LA120, LA34, or LA38 terminal is used to print the pictures, any of those printers may also be set at 16.5 characters per horizontal inch and at 12 lines per vertical inch for a smaller picture. DECUS number 11–422.

A version of this product is available for the PDP–11 computer.

**Price:** $5 – $225

**Product Support Available:** No

**Contact:** DECUS (see Introduction)

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**QUICKCHESS (Speed Chess Simulator)**

**Operating System:** VMS

**Keywords:** • Demos • Simulation

QUICKCHESS is a speed (timed) chess simulator program that allows two players to sit at different VT100 terminals and play speed chess. The board is drawn on each player’s screen in double-
width/double-height characters, with each player’s pieces at the bottom of the screen. The board squares are separated by graphic vertical and horizontal lines, and alternating squares are in reverse video for the light/dark diagonal perspective. Each player’s remaining game time in minutes:seconds is shown in the corners of the screen and is visually updated each second. The names of both players and their last moves are also shown in each corner.

Move input is via standard international algebraic notation. All moves are checked for legality, with any illegal move requiring reinput by the player. Upon input of a legal move, the boards are updated via direct cursor addressing; the player’s clock is stopped; an audible alarm sounds; and the player’s opponent’s clock is started. Play continues in this manner until one of the players runs out of time or loses the game in a normal manner.

All legal chess moves are allowed and are logged in a game log file (a different log file name is used for each run so all games may be saved) along with the player’s remaining time after each move.

A version of this product is available for the PDP-11 computer.

**Price:** $100 – $200

**Product Support Available:** Yes

**Contact:** Kenneth Alan Presley, President
(502) 448-2719
COMPUTER INGENUITY CONSULTING ASSOCIATES, INC.
4513 Flintlock Drive
Louisville, KY 40216

### Some Useful Command Files for VMS

**Operating System:** VMS

**Keywords:** ⋆ Demos ⋆ Recreation

Included in this collection of command files for lazy VMS users are procedures that remember the last file edited, compile and link or process files based on extension, control file deletions, and aid in listing 132-column files on VT100 and LA120 terminals. Additionally, log-in and log-out files that remember parameters (used by those procedures) across logouts are provided.

As a fun project, a program that generates random sayings from a source file has been provided, including a selection of sayings from Murphy’s Law. Typical use would be to produce a saying as part of the log-in message.

Documentation is on magnetic media. DECUS number VAX-18.

**Price:** $5 – $225

**Product Support Available:** No

**Contact:** DECUS (see Introduction)
Super Star Trek

Operating System: VMS
Keywords: • Demos • Recreation

This game, based on the popular television series “Star Trek,” is a game of search and destroy, with a command set of more than 25 English-language commands. Complete instructions are available during play via a HELP facility.

The game will execute using any terminal — hard copy or video. If, however, a VT100 is available, the program will enter a special display mode that displays and maintains status information on the screen.

The sources are not available through DECUS. The source embodies the complete solution to the game. It is the intention of the authors to keep the solution confidential.

Documentation is on magnetic media. DECUS number VAX–3.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

Vulcan

Operating System: VMS
Keywords: • Demos • Recreation

Vulcan is a chess game written in VAX MACRO. More specifically, the game was written in a set of structured programming macros included in the kit.

The evaluation module is essentially empty. The only evaluation strategy is one of board position. The internal board layout is a copy of the board in the SARGON microcomputer program. Most features are documented in the help file.

All object and exe files are supplied except one ISAM file that cannot be written on magtape (it is recreated at installation time).

Documentation is on magnetic media. DECUS number VAX–19.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)
Government
Housing Authority — Section 8

Operating System: VMS
Keywords: • Data entry • Property management • Real estate • Statistics

The Section 8 system is an on-line interactive system that replaces a tedious, error-prone manual undertaking with a simple, reliable system for automating a HUD Section 8 Rent Subsidy Program. The Section 8 system maintains tenant, landlord, and statistical information necessary to meet and exceed the federal government reporting standards placed on a Housing Authority agency. Screen-formatted data entry encourages user acceptance, decreases user training, and increases data integrity.

In addition to automating the clerical and reporting functions of a Housing Authority with a Section 8 program, the Section 8 system offers a consistency in accounting and in reporting in an otherwise volatile atmosphere in which an administrator’s job longevity can depend on the political fortunes of others.

Price: $9,000
Product Support Available: Yes
Contact: Terry K. Holder or Nathan I. Lieberman
(812) 479-6951
EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue, P.O. Box 2469
Evansville, IN 47714

Housing Authority Tenant Accounting

Operating System: VMS
Keywords: • Billing • Property management • Real estate • Statistics

The Tenant Accounting System is an on-line interactive system that automates the record keeping and reporting and drastically reduces the amount of handwork normally associated with public housing authority offices.

The record-keeping problems of public housing authorities, no matter what size, are virtually the same: massive amounts of paperwork, the need for enormous amounts of tenant and statistical information and accounting control, HUD reporting requirements, and information necessary to fulfill requests of other federal, state, and local agencies. The Tenant Accounting System automates those clerical and reporting functions while providing certain intangibles to this, and future, administrations: a continuity of accounting and a continuity of information.
Price: $18,000  
Product Support Available: Yes  
Contact: Terry K. Holder or Nathan I. Lieberman  
(812) 479–6951  
EVANSVILLE DATA PROCESSING CORP.  
1010 S. Weinbach Avenue, P.O. Box 2469  
Evansville, IN 47714

PREMISYS (Property Record Management Information System)

Operating System: VMS  
Keywords: • Property management • Real estate • Taxes  
PREMISYS is an ad valorem tax appraisal and billing system designed for municipalities.

This product is also available for $650/mo.

Price: $100,000  
Product Support Available: Yes  
Contact: Angelo Marino  
(617) 679–8100  
MUNICIPAL APPRAISAL SERVICE CORP.  
P.O. Box 551  
164 Bedford Street  
Fall River, MA 02722

Tax–11

Operating System: VMS  
Keywords: • Property management • Real estate • Taxes  
Tax–11 is a comprehensive interactive ad valorem (property) tax assessment and collection package. It is designed to provide on-line inquiry into taxpayer information and to provide flexibility in maintenance of taxpayer information, discount/penalty rates, property values, exemption values, and tax rates.

A version of this product is available for the PDP–11 computer.

Price: $10,000 – $16,900  
Product Support Available: Yes  
Contact: Ronald R. Kirchhoff  
(806) 293–4286  
KMK ENTERPRISES, INC.  
302 West 8th  
Plainview, TX 79072
Voter–11

Operating System: VMS
Keywords: • Information management • Recruiting
• Report writer

This comprehensive voter registration and reporting package is designed to provide on-line inquiry into voter information and to provide flexibility in maintenance of the file when used for selection of prospective jurors. Features include:
• Alphabetical and numerical listing of the master file
• Voter registration card generation
• Report of deleted/purged voters
• Random jury selection

A version of this product is available for the PDP–11 computer.

Price: $5,650 – $7,840
Product Support Available: Yes
Contact: Ronald R. Kirchhoff
(806) 293–4286
KMK ENTERPRISES, INC.
302 West 8th
Plainview, TX 79072
Health Care
Archival System

Operating System: VMS
Keywords: • Medical • Report writer • Statistics

The HDCV Archival System provides on-line computer access to historical patient information. Data is automatically extracted through the Patient Data Management (PDM) System into the Archival System, providing a complete master patient index (MPI). The Archival System speeds the registration process and provides a reference for the medical records department, retrospective statistical studies, and historical and cross-reference data to the accounting department to assist in debt collection.

Access to the archival master file can be by archive number, by patient name through an alphabetical cross-reference file, and by a "soundex" method that maps like-sounding names to the same index. A report generator module also allows each hospital to design its own reports and to print them according to its particular schedules.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Dr. Richard C. Howe, Director of Marketing
(804) 857–4551
HOSPITAL DATA CENTER OF VIRGINIA
962 Norfolk Square
Norfolk, VA 23502

Bacteriology System

Operating System: VMS
Keywords: • Data base management • Medical
• Report writer • Statistics

The HDCV Bacteriology Information System provides a computerized data management system for a hospital microbiology laboratory. The on-line system maintains all patient specimen information and produces many statistical reports. The system also provides interim reporting of specimen results, including drug sensitivities, a complete report of all bacteriology work for a patient upon discharge, a daily master log of all specimens, abnormal-results reporting, and instant 24-hour access to the bacteriology information stored on the computer. The Bacteriology System may be utilized simultaneously with the Laboratory, Blood Bank, Epidemiology, Pharmacy, and other medical systems available through HDCV.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Dr. Richard C. Howe, Director of Marketing
(804) 857-4551
HOSPITAL DATA CENTER OF VIRGINIA
962 Norfolk Square
Norfolk, VA 23502

Blood Bank System

Operating System: VMS
Keywords: • Data base management • Inventory • Medical
• Statistics

The HDCV Blood Bank System provides a computer-based method of maintaining and controlling data in a hospital blood bank. The system maintains on-line information that includes a complete blood product inventory, blood unit status, and disposition of blood derivatives, transfusions, reactions, atypical antibodies, and test results.

The Blood Bank System produces listings of short-dated units of blood, blood release information, and cross-match lists. The system interfaces with the HDCV Patient Data Management, Laboratory, and Pharmacy systems.

Price: Available upon request
Product Support Available: Yes
Contact: Dr. Richard C. Howe, Director of Marketing
(804) 857-4551
HOSPITAL DATA CENTER OF VIRGINIA
962 Norfolk Square
Norfolk, VA 23502

CARE/DM System

Operating System: VMS
Keywords: • Accounts receivable • Dental • Medical

CARE/DM is a medical and dental office automation system used interactively in the practice as a tool to capture, control, process, and analyze patient service information. Emphasis has been placed on accounts receivable management: service capture, billing, insurance forms preparation, and collection control. The primary design goal is to provide a single source of information entry with the automatic maintenance, application, and distribution of patient service information. Uniform processing procedures have been implemented to increase the accuracy, productivity, and effectiveness of administrative personnel.

The system includes patient information registration, patient billing, insurance processing, microfiche records/magnetic history, service recording, reporting, patient and room scheduling, recall-notice prepa-
ration, referral tracking, contract payment plans, collection tracking and follow-up, letter writing, dental processing, model and storage inventory, access control and help, mail messages, notices, and parameter selection to provide customization for all medical/dental specialties without programming changes.

CARE/DM's parameter-driven structure provides the flexibility needed for the multispecialty environment, with no limit on the number of physicians or patient accounts (subject only to the size and performance of the CPU and disk).

A version of this product is available for the PDP-11 computer.

**Price:** $15,000 – $35,000  
**Product Support Available:** Yes  
**Contact:** Kent M. Brost  
(217) 522-2273  
CARE INFORMATION SYSTEMS, INC.  
3009 S. Sixth Street  
Springfield, IL 62703

**Clini–CAL® Laboratory Information System**

**Operating System:** VMS  
**Keywords:**  
- Information management  
- Medical  
- Quality control  
- Statistics

The comprehensive turnkey Clini–CAL Laboratory Information System for both large and small clinical laboratories is written in FORTRAN and interfaces with all lab instruments and devices. Customized to meet a laboratory's specific needs, Clini–CAL computerizes data management, quality control, sample processing, and billing. The system can be used for clinical laboratory pathology, pulmonary function, and the pharmacy.

The system provides the following benefits:

- Improved patient care — reduced turnaround time for routine and stat tests
- Elimination of errors — legible, concise test requests generated
- Simplified statistical analysis — mean, standard deviation, and CVs for QC specimens calculated, as well as CAP workload statistics, histograms, and population studies over any time period
- Abnormal results identified — delta checks performed and abnormal, critical, and panic values flagged
- Elimination of misplaced, erroneous billings

A version of this product is available for the PDP-11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Allan G. Penny  
(617) 237-7055
SYSTEM ANALYSIS CORP.
1 Hollis Street
Wellesley, MA 02181

Clinic–Manager

Operating System: VMS
Keywords: • Accounting • Dental • Medical • Statistics

Clinic–Manager is fully integrated, interactive, and complete. The software was designed from the user’s viewpoint, and the package’s CRT screens and logic are simplistic in nature.

Software features include patient accounting and billing, claims, claim monitoring, practice statistics, appointments, medical records, general ledger, fee modeling, payroll, accounts payable, and supplies inventory.

Clinic–Manager is modular in design to enable users to begin with a base system and to add features as they mature.

A version of this product is available for the PDP–11 computer.

Price: $5,000 – $75,000
Product Support Available: Yes
Contact: Stan Larson
(405) 943–9818
EDP SYSTEMS, INC.
4900 N. Portland
Oklahoma City, OK 73112

COMPCARE (Comprehensive Care Centers)

Operating System: VMS
Keywords: • Billing • General ledger • Medical • Payroll

The COMPCARE system covers the entire range of patient history, billing (including third parties), payroll, general ledger, statistics, grant reporting, HHS reports, and so on. The system components are interactive, friendly, and complete — for use in-house or on our time-share system.

Price: $25,000 +
Product Support Available: Yes
Contact: Terry K. Holder or Nathan I. Lieberman
(812) 479–6951
EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
P.O. Box 2469
Evansville, IN 47714
DEChealth (DECmed Occupational Health System), Version 1.0

Operating System: VMS

Keywords:  • Employment  • Medical  • Mental health
  • Personnel

VAX–11 DEChealth integrates, analyzes, and reports employee and environmental surveillance data for industry. VAX–11 DEChealth allows access to vital medical, exposure, morbidity, mortality, work history, and demographic data in order to study the relationship between chronic and acute health impairment and exposure to specific toxic agents.

The system permits correlation over time of individual biologic responses with work area and specific agent exposures. That correlation provides the medical staff and the occupational health team with an early means of detection, treatment, intervention, and control of occupationally induced injury and illness.

VAX–11 DEChealth is made up of the following modules:

• Employee Module — Allows the identification and characterization of the employees in an occupational setting. The employee data base contains the employee name, age, sex, employee number, and so on. In addition, this module permits a site to specify supplementary items to complete the employee profile.

• Area Module — Defines the workplace to be identified in tracking employees and agents. The system does not require a particular method or technique in assigning those areas. The user site can select the method that best fits its goals and objectives. The definition of areas is performed through direct interaction with the system, so that new areas can be added or old ones made inactive. Basic area reports can be produced that summarize the information in the area files.

• Agents Module — Maintains a catalog of all chemicals, materials, and other substances used in the workplace. A variety of data items are kept for each agent in the Agent File, making this file a reference source of descriptive and emergency agent information.

The following optional modules are available:

• Health Services Module — Maintains a centralized data base of employee medical and exposure information. The input of medical history, clinic visits, and incident records is accomplished through direct user interaction. The system organizes this data and offers the medical provider a number of data presentations, based on the level of detail desired. The availability of complete, long-term medical data also permits summary information to be presented, cutting across groups of employees. These analysis reports can be used to study epidemiological hypotheses or to satisfy regulatory demands.
• Industrial Hygiene Module — Integrates the quantitative monitoring data from the workplace and the employee and area files. Additional data on industrial accidents and corrective actions taken or planned is also maintained by this module.

• Reporting Module — Provides reports summarizing the data found in the system files. The key aspect of these reports is their ability to correlate the data from different sources and to produce integrated data summaries and analyses.

Refer to SPD #25.78.0 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).

DECrad (DECmed Radiology System), Version 1.0

Operating System: VMS
Keywords: • Billing • Diagnostics • Medical • Scheduling

VAX–11 DECrad is an application system for data management within a diagnostic radiology department. The system provides diagnostic reports, billing information, scheduling, tracking, and statistical information in a usable, flexible format.

VAX–11 DECrad features the ability to register and track patients, to schedule examinations, and to create, edit, and process radiology reports. DECrad manages the tracking of radiology library materials, such as x-ray film folders.

VAX–11 DECrad is comprised of the following modules:

• Patient Registration — Permits the entry of patient demographics, such as name, date of birth, hospital number, and insurance information. For patients who are already registered in the system, only missing medical data or corrections need to be entered. Users on the system can access information and display it on a CRT or hard-copy terminal.

• Examination Scheduling — Allows the user to schedule radiological examinations. The user can specify particular scheduling parameters, or times and rooms can be assigned by the system. VAX–11 DECrad informs the user of and takes into consideration special factors, such as conflicting exams and patient preparation. The system produces all the forms necessary for the examination and prints bar code labels that can be attached to x-rays or to other forms for unique identification by a bar code reader. The system can request pulling of radiographic film folders from the library, to be used during the reading of diagnostic x-rays.
• Patient Tracking — Permits departmental personnel to monitor the flow of patients through the department, using prestored information about the length of examinations. Excessive examination delays are flagged, and work flow statistics are available to department managers.

• Film Library Management — Tracks the location of diagnostic materials stored in the department or in archival storage.

• Diagnostic Reporting — Includes a text processing subsystem for the entry and editing of diagnostic report information. Clerical staff use CRT terminals to enter dictated examination findings.

• Accounting — Maintains fee schedules for examinations performed in the department. Separate fee schedules are established for hospital and professional charges.

• Management Reports — Issues comprehensive management reports on system activities, as a whole or by departmental function. Those reports provide many arrangements of information about department activities for regulatory or utilization requirements.

Refer to SPD #25.77.01 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).

Dentalmate

Operating System: VMS
Keywords: • Accounts receivable • Billing • Dental • Insurance

Dentalmate is a complete receivables and billing system designed for a single-dentist practice or a multiple-dentist office and can interface into our integrated accounting package (G/L, A/P, payroll). The easy-to-use menu-driven software features interactive entry of charges, payments, and adjustments, with editing capabilities before posting. Account inquiry allows instant access for balances due. Statements and insurance claim forms can be printed either monthly or on demand.

Numerous management reports include unbilled, aged and selected account receivables, a delinquent ledger, a cash summary, and revenue and usage statistics. Additional features include an appointment scheduler, patient-recall notices, and mailing label printing.

Benefits derived from using Dentalmate are increased cash flow, reduction of overdue account receivables, less time spent on billing, and easier/faster access to patient information.

A version of this product is available for the PDP–11 computer.
Price: $5,200 – $8,200
Product Support Available: Yes
Contact: Armand Van Velthoven
(303) 574–8086
PROFESSIONAL COMPUTER SERVICES, INC.
2345 N. Academy Boulevard, Suite 209
Colorado Springs, CO 80909

Epidemiology System

Operating System: VMS
Keywords: • Biology • Data collection • Medical
• Report writer
The HDCV Epidemiology System organizes and analyzes nosocomial data collected by a hospital’s epidemiologist. This on-line system may be viewed as an extension of the HDCV Bacteriology System or can function as a stand-alone entity. Based on patient medical and descriptive data, reports can be generated that analyze nosocomial data so that potential problem areas may be identified in the hospital by their infection rate. This system provides a method for reviewing patient data associated with possible hospital-acquired infections. The Epidemiology System may be directly interfaced with the HDCV Bacteriology and Pharmacy systems.
Price: Available upon request
Product Support Available: Yes
Contact: Dr. Richard C. Howe, Director of Marketing
(804) 857–4551
HOSPITAL DATA CENTER OF VIRGINIA
962 Norfolk Square
Norfolk, VA 23502

Episodic Billing System

Operating System: VMS
Keywords: • Billing • Dental • Medical • Statistics
The on-line interactive Episodic Billing System is designed to perform billing functions and collection of statistics for offices that treat multiple entries of a patient into the system as separate charge items. The system is particularly useful if all charges for a patient are accumulated until the patient is discharged (from minutes to an indefinite period of time after start). A statement for services is prepared under a unique account number. If that person enters the system again for additional services, all billing and statistical information is treated as another unique case.

The system is suited for use in either a stand-alone operation or a time-sharing environment.
The programs occupy 2,600 blocks. Each account number in the patient master file requires two blocks, and each test in the test master file occupies one-half block.

A version of this product is available for the PDP–11 computer.

**Price:** $16,000  
**Product Support Available:** Yes  
**Contact:** Terry K. Holder or Nathan I. Lieberman  
(812) 479–6951  
EVANSVILLE DATA PROCESSING CORP.  
1010 S. Weinbach Avenue  
P.O. Box 2469  
Evansville, IN 47714

### Group Purchasing System

**Operating System:** VMS  
**Keywords:**  
• Accounts receivable  
• Inventory  
• Medical  
• Purchasing

The HDCV Group Purchasing System provides a purchasing service with on-line computer capabilities for ordering supplies. The system consists of the purchasing, contract analysis, and billing modules. The purchasing section generates an order with a computer- or hospital- assigned purchase order number. The purchasing module selects the vendor with the “best buy” for each product ordered. The contract analysis module permits the purchasing service to create files of contracts for related items whose prices have been renegotiated for a specified time period. Reports from this module enable the purchasing service to determine the amount due from vendors based on dollar volume of purchasing orders. Product listings provide cataloglike documents for referral by purchasing agent.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Dr. Richard C. Howe, Director of Marketing  
(804) 857–4551  
HOSPITAL DATA CENTER OF VIRGINIA  
962 Norfolk Square  
Norfolk, VA 23502

### InteRx™

**Operating System:** VMS  
**Keywords:**  
• Accounts receivable  
• Inventory  
• Pharmaceutical  
• Retail

InteRx is a complete on-line interactive retail pharmacy system with optional inventory, accounts receivable, and institutional modules.
Originally developed for the community pharmacy, the InteRx system has been expanded for use in nursing homes and hospitals.

Work is performed in an interactive environment at a CRT utilizing a full-screen format; that is, the user specifies the function — for example, "entry of an Rx" — and the CRT screen is filled with prompts at half intensity and entries for each prompt at full intensity. Patient profile information appears in the same fashion, making it easy for the user to distinguish between header and patient information.

InteRx is extremely flexible so that it can be set to meet each customer's needs rather than vice versa. Since many parts of the system are parameter driven, InteRx can be tailored to each user. InteRx eliminates the need to fill out third-party claim forms, makes rejected claims easy to correct, eliminates patient profile ledger cards, accurately prices prescriptions, and provides useful management reports. As an application area, the pharmacy is probably one of the best examples of how microcomputers and a complete software system can bring about a significant cost benefit and an improved operating environment in a defined medical and business area.

The features of InteRx provide:

- On-line patient profiles, including allergy and diagnosis; patient lookup by name or number; and simple procedures for changing and adding profile information
- Automatic refills by entering Rx number, automatic production of prescription labels and receipts, directions entered from MD's prescription in Latin and printed in English or Spanish, and precautionary warnings as part of Rx label
- Automatic third-party billing and resubmission of rejected claims, drug price updates, drug price inquiry, special pricing, and provision for compounded prescriptions
- Automatic checks for allowable number of refills, refill too soon, nonrefillable drugs, less than effective medications, drugs not covered (by plan), and interaction warnings
- Dispensing and receipts reports, operating statistics, and patient lists and profiles

The Institutional module of InteRx includes on-line patient admission functions, bed census reports, on-line creation and modification of physician orders, production of physician orders and medication sheets, and full and modified unit dose, drug utilization, and history reports.

A version of this product is available for the PDP-11 computer.

**Price:** $7,500 – $12,500

**Product Support Available:** Yes
Contact: Robert A. Palmer, Director of Marketing
(201) 256–7633
INTERACTIVE SYSTEMS AND MANAGEMENT CORP.
1500 Cardinal Drive
Little Falls, NJ 07424

Labels System

Operating System: VMS
Keywords:  • Data base management  • Data collection
            • Medical  • Printing

The HDCV Labels System provides a hospital with an on-line method of organizing both external and internal mailings. The system creates a data base of persons, hospital departments, or businesses, each of which belongs to one or more mailing lists. Address labels for each list of recipients of the mailing, specially formatted labels for internal mail, special messages or greetings, and complete directory listings may be produced. Labels and directories may be printed alphabetically, by zip code sequence, or by member number. Labels may also be printed for individual members, and the hospital may also build a table of cities and states to facilitate the data entry of addresses. Each hospital may produce labels and directories according to its own schedule.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Dr. Richard C. Howe, Director of Marketing
(804) 857–4551
HOSPITAL DATA CENTER OF VIRGINIA
962 Norfolk Square
Norfolk, VA 23502

Laboratory System

Operating System: VMS
Keywords:  • Biology  • Data collection  • Medical
            • Report writer

The HDCV Laboratory Information System provides hospital laboratories with control of daily lab test processing as well as internal and external reporting. The on-line system records all tests ordered, results, and comments; produces worksheets and labels; and can assign specimen numbers. The system includes numerous report capabilities and automatic client and/or physician billing. The quality control and preventive maintenance features monitor and regulate the quality control tests and preventive maintenance tasks in a hospital
laboratory. Interfacing of automated laboratory equipment to the system is also available. Numerous hospital-defined parameters are determined during generation of the laboratory system in order to tailor the package to an individual hospital.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Dr. Richard C. Howe, Director of Marketing  
(804) 857–4551  
HOSPITAL DATA CENTER OF VIRGINIA  
962 Norfolk Square  
Norfolk, VA 23502

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**Laundry Production and Control System**

**Operating System:** VMS  
**Keywords:**  
- Billing  
- Inventory  
- Medical  
- Property management

The HDCV Laundry Production and Control System provides a central hospital service with complete control of all laundry activities. The system maintains an account of material received by and delivered to each hospital and/or hospital section by the laundry. This system automatically charges for the quantity of processed and replaced items on a biweekly basis. Each hospital use area can receive clean laundry based on a schedule determined by a delivery category: standard, soil count, and weight after wash. A daily production report, used to load the laundry machines, and a daily delivery report, used to indicate items for delivery for each use area, are generated. Other biweekly and monthly reports are available for overall management of the laundry service.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Dr. Richard C. Howe, Director of Marketing  
(804) 857–4551  
HOSPITAL DATA CENTER OF VIRGINIA  
962 Norfolk Square  
Norfolk, VA 23502

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**MAPS (Medical Accounting Patient System)**

**Operating System:** VMS  
**Keywords:**  
- Accounting  
- Billing  
- Dental  
- Medical

MAPS offers timely reporting, accounting, and analyses for the single physician or clinic. Reports and analyses can be made by department, physician, location, current month, and year to date. Demo-
graphic information of patient and/or guarantors can be retrieved instantaneously. MAPS is a complete financial package that has interacting payroll, general ledger, and accounts payable and receivables.

The system can:
- Schedule appointments quickly and accurately
- Prepare insurance forms
- Reduce disallowed insurance claims through correct use of procedure codes
- Post to patient accounts, allowing for immediate payment of month-end billing
- Improve collection percentages by monitoring delinquent accounts and preparing stimulating notices
- Eliminate lost billings by accounting for all charge vouchers
- Improve patient care with less time devoted to clerical functions
- Improve patient relations by providing accurate and timely information regarding patient accounts

Each program produces daily, weekly, monthly, or year-end analysis reports.

A version of this product is available for the PDP–11 computer.

**Price:** $1,500 – $20,000

**Product Support Available:** Yes

**Contact:** Nancy Rogstabb  
(405) 942–3130  
MUCHMORE & WHITE MEDICAL ASSOCIATES  
3400 N.W. Expressway  
Oklahoma City, OK 73112

### Medical Records System

**Operating System:** VMS  
**Keywords:**  
- Data base management  
- Medical  
- Report writer  
- Statistics

The HDCV Medical Records System combines abstracting for medical records recording and abstracting of federally funded patients for the Professional Standards Review Organization (PSRO). This system features on-line data entry, batch processing of medical record information, and production of magnetic tapes for PSRO processing. The system interfaces with the HDCV Patient Data Management System (PDM) to automatically transfer patient information gathered to retroactively enter medical record information. All completed patient medical records are transmitted daily to a computer at HDCV. The batch computer is used to process the medical records information and to produce all medical record reports. To assist in meeting JCAH requirements, the system produces statistical data by physician, diagnosis, operation, patient indexes, service, death list, as well as reports on hospital-designated optional data.
Price: Available upon request
Product Support Available: Yes
Contact: Dr. Richard C. Howe, Director of Marketing
(804) 857–4551
HOSPITAL DATA CENTER OF VIRGINIA
962 Norfolk Square
Norfolk, VA 23502

Medicalmate

Operating System: VMS
Keywords: • Accounts receivable • Billing • Insurance
• Medical

Medicalmate is a complete receivables and billing system designed for a single-doctor practice or a multiple-doctor office and can interface into our integrated accounting package (G/L, A/P, payroll). The easy-to-use menu-driven software features interactive entry of charges, payments, and adjustments, with editing capabilities before posting. Account inquiry allows instant access for balances due. Statements and insurance claim forms can be printed either monthly or on demand.

Numerous management reports include unbilled, aged and selected account receivables, a delinquent ledger, a cash summary, and revenue and usage statistics. Additional features include an appointment scheduler, patient-recall notices, and mailing label printing.

Benefits derived from using Medicalmate are increased cash flow, reduction of overdue account receivables, less time spent on billing, and easier/faster access to patient information.

A version of this product is available for the PDP–11 computer.

Price: $5,200 – $8,200
Product Support Available: Yes
Contact: Armand Van Velthoven
(303) 574–8086
PROFESSIONAL COMPUTER SERVICES, INC.
2345 N. Academy Boulevard, Suite 209
Colorado Springs, CO 80909

MediCom®

Operating System: ULTRIX, UNIX
Keywords: • Dental • Medical • Scheduling
• Word processing

MediCom is a medical management system that can help run a physician’s office efficiently and accurately. MediCom keeps track of all medical codes (ICDA, CPT, and ADA), insurance, payments, recalls,
statements, G/L, family billing, and guarantor reference accounts. Patient history in a data base for notes, drug allergies, and reactions; passwords; open-item and balance-forward billing; credit and debit adjustment; inventory; and word processing make this a state-of-the-art package. It is written in RM/COBOL for flexibility and support from many different operating systems.

A version of this product is available for the PDP-11 computer.

**Price:** $2,000 – $5,250  
**Product Support Available:** Yes  
**Contact:** Mariann Lane  
(312) 931–1400  
ICS COMPUTERS, INC.  
35 Fountain Square Plaza, Suite 306  
Elgin, IL 60120

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**MIRAGE (Medical Informatics Report Writer and Applications Generator)**

**Operating System:** UNIX, VMS  
**Keywords:**  
- Data base management  
- Data dictionary  
- Data entry  
- File management

The MIRAGE information management system provides a mechanism for organizing and processing data from any application; MIRAGE builds a custom computer software system for your particular needs. MIRAGE consists of three parts:

- The data definition system allows you to define, in a matter of minutes, the information you want to enter into the computer.
- The general data entry layer uses your definitions to prompt you in error-free data entry, revision, and deletion.
- The report generator allows you to quickly specify what subsets of your information you want to retrieve and in a user-defined format.

You can change either data definitions or report definitions at any time, and you never need to learn a computer language to use the system.

A version of this product is available for the PDP-11 computer.

**Price:** $3,000  
**Product Support Available:** Yes  
**Contact:** Dr. Blaine Garfolo, President  
(216) 249–8353  
MEDICAL INFORMATICS  
12023 Lakeshore Boulevard  
Cleveland, OH 44108
Order Entry System

Operating System: VMS
Keywords: • Data base management • Medical • Order entry • Statistics

The HDCV Order Entry System provides interdepartmental communications to expedite and control nursing and ancillary services. Patient orders are placed electronically, using a wand/bar code, manual keyboard, or optional touch screen. Charges for the orders are automatically produced for the hospital billing system. The system is governed by a master control profile that is available only to key hospital personnel. Profile functions are used to define frequencies, charges, requisitions, and report formats. The system provides comprehensive lists of all departmental services that may be ordered and all services that may be charged. The Order Entry System provides instant access to patient information, a complete document of patient care, and an efficient means of placing patient orders throughout the hospital.

Price: Available upon request
Product Support Available: Yes
Contact: Dr. Richard C. Howe, Director of Marketing
(804) 857-4551
HOSPITAL DATA CENTER OF VIRGINIA
962 Norfolk Square
Norfolk, VA 23502

Paramedics Billing

Operating System: VMS
Keywords: • Accounts receivable • Billing • Insurance • Medical

Paramedics Billing is a simple-to-use, interactive, comprehensive, and complete method for charging and billing for paramedics or ambulance runs by private firms or governmental agencies. Included are integrated insurance filing, accounts receivables, statistics, aging, and so on.

Price: $8,000 +
Product Support Available: Yes
Contact: Terry K. Holder or Nathan I. Lieberman
(812) 479-6951
EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
P.O. Box 2469
Evansville, IN 47714
Pathology Billing

Operating System: VMS
Keywords: • Billing • Medical
Pathology Billing provides all the statistics, billings, and reporting required for laboratories that bill either to individual patients and/or to doctor or hospital groups. All are interactive, friendly, and complete — for use in-house or on our time-share system.

Price: $16,000
Product Support Available: Yes
Contact: Terry K. Holder or Nathan I. Lieberman
(812) 479–6951
EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
P.O. Box 2469
Evansville, IN 47714

Patient Accounting System

Operating System: VMS
Keywords: • Accounts payable • Dental • Medical
• Scheduling

The Promedics Patient Accounting System provides for all the functions of a medical or dental office, including audit trails, statement and insurance form generation, management reporting, accounts receivable, patient recall and scheduler, and electronic claim submission. Minimum hardware configuration of 10-megabyte storage provides for 7,500 patients and 75,000 transactions.

A version of this product is available for the PDP–11 computer.

Price: $6,000 – $25,000
Product Support Available: Yes
Contact: Robert Brehm
(415) 961–2401
PROMEDICS DATA CORP.
2432 Charleston Road
Mountain View, CA 94043

Patient Data Management System

Operating System: VMS
Keywords: • Data base management • Insurance • Medical
• Statistics

The HDCV Patient Data Management (PDM) System provides online control of patient registration and census functions, provides pertinent guarantor and insurance data used by the financial sys-
tems, and establishes a comprehensive data base used by other HDCV medical systems. All registration areas of a hospital may use this system to preadmit, register, transfer, and discharge patients. The PDM System also provides immediate bed availability inquiries, standard reports, and other statistical reports related to patient activity. A complete master patient index (MPI) is available to store user-defined historical patient information.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Dr. Richard C. Howe, Director of Marketing
(804) 857–4551

HOSPITAL DATA CENTER OF VIRGINIA
962 Norfolk Square
Norfolk, VA 23502

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**Pharmacy**

**Operating System:** VMS

**Keywords:** • Medical • Pharmacy

This package is designed for the retail pharmacy. The package includes patient profiles, drug interaction, and labeling.

A version of this product is available for the PDP–11 computer.

**Price:** $5,000

**Product Support Available:** Yes

**Contact:** Jon Springer, President
(617) 828–1529

WORLD–WIDE COMPUTER RESOURCES
127 Tolman Street
Canton, MA 02021

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**Pharmacy System**

**Operating System:** VMS

**Keywords:** • Data base management • Medical
  • Pharmaceutical • Statistics

The HDCV Pharmacy System provides a complete unit drug distribution system. The unit dose concept facilitates effective control of the management of medications by the pharmacist, more accurate documentation of the patient medication history for the physician, and more efficient administering of the medications by the nurse.

The Pharmacy System produces a daily medication profile for each patient. Upon request by the pharmacist, the computer prints labels for the medication orders. The system provides monthly drug usage statistics, based on doses of medications by drug, nursing unit, physician, and total hospital. In addition, the Pharmacy System automati-
cally generates charges for regularly scheduled patient medications and allows for entry of additional charges or credits as necessary. Numerous reports are available throughout the system.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Dr. Richard C. Howe, Director of Marketing  
(804) 857–4551  
HOSPITAL DATA CENTER OF VIRGINIA  
962 Norfolk Square  
Norfolk, VA 23502

### Questionnaire Analysis System

**Operating System:** VMS  
**Keywords:**  
- Data collection  
- Medical  
- Quality control  
- Statistics

The HDCV Questionnaire Analysis System provides a hospital with statistical information gathered from both patient and employee questionnaires. Individual hospital-designed questionnaires can be established on the system. The responses are entered directly into the system at computer terminals based within the hospital. This information is then organized and analyzed by the system to produce monthly reports. The basic report for a questionnaire contains the raw data to each question for the current month, past month, and year to date. Trends in the responses are indicated for hospital-defined time periods. Information from the HDCV Questionnaire Analysis System can contribute to identifying potential problem areas in a hospital.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Dr. Richard C. Howe, Director of Marketing  
(804) 857–4551  
HOSPITAL DATA CENTER OF VIRGINIA  
962 Norfolk Square  
Norfolk, VA 23502

### RADIO–OSCAR

**Operating System:** VMS  
**Keywords:**  
- Chemical  
- Inventory  
- Nuclear  
- Security

This on-line system for the control of radioactive chemical stores provides radiochemical laboratory managers with an accurate record of all current stock, together with a detailed usage history. The system is simple to use and operates by a series of question-and-answer sequences using a visual display unit and keyboard. Information is
retrieved from data files instantaneously for inspection on the VDU screen or may be printed out on a line printer. The total activity currently held in the stores is known at all times, and thus legal requirements can be accurately monitored.

Individual records are stored in the data base for each isotope, incorporating a reference code, description, and half-life or decay constant. Associated with each isotope are all the individual stock records for which the data base records a reference number, a description, additional reference data, units of measure, quantity on hand, specific activity at given date, purity information, and current computed activity derived from the quantity on hand. Also held for each stock item are up to 60 stock movements, which are dated and initialed and show the quantity and activity issued.

A version of this product is available for the PDP–11 computer.

**Price:** £3,000 – £6,000

**Product Support Available:** Yes

**Contact:**

R. A. Stock  
(+ 44) 734 342666
D. M. ENGLAND & PARTNERS LTD.  
24 High Street  
Twyford, Berkshire RG10 9AG  
England

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**RDB (Regenstrief™ Data Base Utility)**

**Operating System:** VMS

**Keywords:**  
• Data base management  
• File management  
• Pharmaceutical  
• Text editing/formatting

This package, developed by Regenstrief Institute for Health Care, 1001 West 10th Street, Indianapolis, Indiana 46202, creates, manages, and manipulates computer data files. RDB is a prerequisite for the Regenstrief Pharmacy system and works with data base files by editing, sorting, storing, and retrieving the files so that complex sequences can be defined and executed. The RDB Utility does the following:

• Packs information network file structures
• Provides an interface to the batch and spooling package
• Allows the pharmacy and the manager to develop new features without writing BASIC programs

DIGITAL distributes this software product under license from Regenstrief Institute for Health Care.

Refer to SPD #A0.11.00 when requesting further information on this product from your local DIGITAL sales office.
Regenstrief™ is a trademark of Regenstrief Institute for Health Care.

Price: $5,000
Product Support Available: No
Contact: Consult your local DIGITAL sales office (see Introduction).

RPS (Regenstrief™ Pharmacy System)

Operating System: VMS
Keywords: • Data collection  • File management
          • Pharmaceutical  • Report writer

RPS, developed by Regenstrief Institute for Health Care, 1001 West 10th Street, Indianapolis, Indiana 46202, is a data collection mechanism for the RDB Utility package and facilitates prescription processing with the following features:

• Accepts prescription orders
• Provides range checks to prevent excessive dosing
• Computes the amount of drug to dispense and the optional package size
• Generates prescription labels
• Maintains on-line profiles for the patient

Drugs can be identified by name or abbreviation and code. RPS accepts the instructions as written by the physician — for example, one tab T.I.D. — and translates it into layman's terms — for example, take one tablet three times a day.

RPS can be employed by inpatient and/or outpatient pharmacies. It assists many of the administrative and management tasks of the pharmacy, including pricing and maintenance of the pharmacy formulary file, patient registration file, active physician file, and generation of special reports, such as work load by the time of day.

DIGITAL distributes this software product under license from Regenstrief Institute for Health Care.

Refer to SPD #A0.12.00 when requesting further information on this product from your local DIGITAL sales office.

Regenstrief™ is a trademark of Regenstrief Institute for Health Care.

Price: $5,000
Product Support Available: No
Contact: Consult your local DIGITAL sales office (see Introduction).

Security System

Operating System: VMS
Keywords: • Data entry  • Medical  • Security  • Statistics
The on-line HDCV Security System protects both the patient and the hospital by controlling access to computer usage and patient information, tracking errors, and accumulating computer usage statistics. The Security System may be used with the HDCV Medical Records System or may function as a stand-alone system.

The security levels are created and edited by hospital administrative personnel. The system then assigns each employee a unique badge number that permits access only to specified systems and routines. A terminal lock-out feature provides an additional level of security to prevent unauthorized signing on. Unlocking a terminal requires the intervention of a supervisor or an administrator.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Dr. Richard C. Howe, Director of Marketing

(804) 957–4551

HOSPITAL DATA CENTER OF VIRGINIA

962 Norfolk Square

Norfolk, VA 23502

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**Social Services Statistical Reporting System**

**Operating System:** VMS

**Keywords:** • Billing • Government • Mental health • Statistics

This statistical reporting/tracking system, designed for social service agencies funded in whole or in part by outside agencies and client billing, consists of three modules: Client Intake/Statistical Reporting, Accounts Receivable/Client Billing, and Accounting. The system allows single entry of information on families, extended families, or multiperson groups. The system allows a client to be enrolled in multiple agency divisions, such as psychological counseling and crisis pregnancy, without duplication of agency records.

Caseworker assignments are integrated to produce reports including caseload count, cost analysis, and so forth. Agency reports to funding sources — for example, “United Way Summary of Agency Beneficiary Statistical Report” — thus eliminate manual case count. The Accounts Receivable/Client Billing section provides open-item or balance-forward client charges based on a sliding-scale fee based on annual income, a variable amount, a fixed amount based on type of service, or a no-charge. All detail is retained until the client is purged, thereby allowing tracking of a client's entire billing history, aging by client, caseworker, or agency division.

Statistical auditing reports listing case number, client name, and caseworker can be run to substantiate all statistical reports. All three modules are integrated into DIBS–11 G/L.
A version of this product is available for the PDP–11 computer.

**Price:** $7,000 – $10,000  
**Product Support Available:** Yes  
**Contact:** Jim Baker  
(404) 256–3067  
AMERICAN DIGITAL PRODUCTS CORP.  
5775–B Glenridge Drive N.E., Suite 320  
Atlanta, GA 30328

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**Spectrum**

**Operating System:** VMS  
**Keywords:** • Accounting • Billing • Inventory  
• Order entry

Spectrum is a powerful optical laboratory management system with the following capabilities: Rx order entry/invoicing and stock order entry/invoicing with automatic posting to accounts receivable, consequent Rx work ticket preparation, automatic optimal lens selection, Rx work-in-process reporting, statement preparation, aged receivables preparation, sales analysis, and inventory control.

A lab owner may also purchase General Ledger, Accounts Payable, and/or Payroll as combined features of a total system that can be operated by present employees, requires no previous computer experience, and is easy to use. SBG maintains a customer service organization for daily telephone consultation.

The lab work ticket preparation specifies the smallest diameter lens that will meet the technical requirements of the frame/prescription combination; tells the lab people what tools to use and how much prism to grind (based on lens-on-center blocking); automatically prepares a finished lens when the Rx powers are correct, along with the proper decentration for that Rx prism; and details finishing information, such as edger setting and pattern location. A turnaround and surfacing report permits comparison of daily, weekly, and monthly lab productivity, while a daily gross profit analysis keeps the lab owner aware of gross operating profit for complete financial control.

A version of this product is available for the PDP–11 computer.

**Price:** $24,500 – $250,000  
**Product Support Available:** Yes  
**Contact:** Carl R. Grady, Vice President, Marketing  
(608) 831–2262  
SYSTEMS BY GRABER  
2415 Parview Road, P.O. Box 328  
Middleton, WI 53562
Survey

Operating System: VMS
Keywords: • Data collection • Medical • Nuclear • Scientific

This survey records program provides a convenient method for recording and archiving radiological survey results. The data for each survey includes date and time, dose rates, survey instrument identification, location (building, elevation, room, position), air sample analysis results, surveyor, as well as a section for survey request information.

The menu-driven format allows easy file maintenance and report generation. The reports that are available include listings by location, type of survey, survey instrument, and activity level. File protection and backup are ensured by “1-button” archiving and operator password protection.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Robert Loesch
(203) 238–2351 ext. 352
CANBERRA INDUSTRIES, INC.
One State Street
Meriden, CT 06450

Utilization Review System

Operating System: VMS
Keywords: • Medical • Spreadsheets • Statistics

The HDCV Utilization Review System provides a hospital with complete control of the concurrent review of all patients. This on-line system maintains comprehensive PSRO data used in certifying each patient for admission and length of stay. Patient demographic information is obtained from the HDCV Patient Data Management System and is combined with diagnostic and operative information to determine length-of-stay data. Daily worksheets are available for the utilization review coordinator.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Dr. Richard C. Howe, Director of Marketing
(804) 857–4551
HOSPITAL DATA CENTER OF VIRGINIA
962 Norfolk Square
Norfolk, VA 23502
Information Management
ACCENT R

Operating System: VMS
Keywords: • Data base management • Decision support
• Programming tools • Report writer

ACCENT R is an implementation of a relational data base management system that also provides a complete development and control environment. This fourth-generation language makes immediate and direct access to data a reality for strategic planning, decision support, and information management. ACCENT R offers immediate syntax analysis, editing capability, and a complete set of debugging tools for fast development of management information systems.

The program provides both a query language and a programming language. With the nonprocedural query language, the user can selectively query the data base and produce ad hoc reports. The high-level structured programming language uses an approach that has already modeled the various components of data processing applications. Applications can be developed and tested in smaller modules, then tied together into a complete production system.

ACCENT R includes a quick report writer and a variety of interfaces. The quick report writer lets users design and produce customized reports without writing any program code. All code output by the report writer is immediately available to the user, so experienced programmers can edit a report writer-generated report program to meet a precise reporting need without starting from scratch.

The program interfaces to word processing and includes statistical analysis, financial modeling, electronic spreadsheet, and graphics systems. Only one data base need be maintained, central and accessible to all programs.

An optional host language is available. Applications written in COBOL, FORTRAN, or MACRO can easily be upgraded to take advantage of the capabilities of ACCENT R.

Price: $40,000 – $62,000
Product Support Available: Yes
Contact: John Enyedy
(408) 257-7700
NATIONAL INFORMATION SYSTEMS
20370 Town Center Lane
Cupertino, CA 95014

Action List

Operating System: VMS
Keywords: • Architecture • Civil engineering
• Project management • Scheduling
Action List is designed for use by project managers in expediting and progress chasing and for document control. It complements Project Software's forward-looking planning and cost control system, the Project Cost Model.

Action List is frequently used to establish schedules itemizing information outstanding, drawing requirements, or materials procurement programs. Those define what needs to be done, by whom, and when. Action List is then updated regularly and used for progress chasing, recording what has been done, and highlighting critical items needing action. Action List helps ensure that decisions are taken on time and that drawings, specifications, and other documents are completed and distributed as necessary when required.

Action List includes a flexible report writer that allows users to select what information is presented on reports.

A version of this product is available for the PDP-11 computer.

**Price:** £1,500 – £3,000

**Product Support Available:** Yes

**Contact:** Martin Barnes, Director
061-439 6639 or Telex: 666650
PROJECT SOFTWARE LIMITED
Foden Lane, Woodford
Stockport, Cheshire SK7 1PT
United Kingdom

### ADT–32

**Operating System:** VMS

**Keywords:**
- Data dictionary
- Data entry
- Query facilities
- Report writer

ADT–32 is an extremely end user-friendly data management system. It is menu driven and data dictionary-based for maximum flexibility and is based on RMS for compatibility and transportability. ADT–32 employs fourth-generation language and data management techniques and provides data entry, data maintenance, on-line inquiry and ad hoc report generation, as well as automatic screen generation.

ADT–32 is appropriate for almost all information management environments.

A version of this product is available for the PDP–11 computer.

**Price:** $795 – $12,000

**Product Support Available:** Yes

**Contact:** Randolph J. Reece
(303) 987–1001
INTERACTIVE SOFTWARE SYSTEMS INC.
P.O. Box 27466
Denver, CO 80227
AFMEP (Association Friendly Membership Processing)

Operating System: ULTRIX

Keywords:  • Financial analysis  • Query facilities  • Recruiting  
• Statistics

AFMEP was designed, developed, documented, and implemented for operation by membership personnel. The program is updated on a formatted screen and has the following menu-driven features:

• Daily cash reports (trial balance, certification, and final)
• Identification cards
• Renewal notices
• Address label selection and generation
• Membership and unrenewed membership listings
• Support for divisions and chapters
• Deferred income, rebate, and statistical reports (membership and transaction)
• Transaction list
• Ad hoc reporting
• Query

Different types of membership are supported, and rates are stored in a table to facilitate changes. Two rates can be stored and used, based on effective date.

The update program validates input as it is entered and provides help. A normal renewal requires the operator only to enter the member number and the amount paid.

Although flexible, the AFMEP system has controls built in to prevent problems. For example, the user cannot begin processing transactions for a new date until the previous cash has been balanced.

AFMEP also provides additional security with passwords that allow some users to only query the data base and permit other users to update or request reports.

A version of this product is available for the PDP–11 computer.

Price: $10,000 – $20,000

Product Support Available: Yes

Contact: Raymond G. Kennerly
(301) 441–1390
KENNERLY ASSOCIATES, INC.
6302 Merna Lane
Lanham, MD 20706
Ambase

Operating System: VMS
Keywords: • Data base management • Query facilities
         • Report writer

Ambase is a comprehensive, interactive, user-oriented data base management system and application development tool. Features include SCHEMA control, data access with simultaneous multiuser processing, and contention supported and handled by Ambase with application programmer intervention. In addition, Ambase includes report and screen-formatting code-generation tools and a powerful query facility.

A version of this product is available for the PDP–11 computer.

Price: $7,000 – $34,000
Product Support Available: Yes
Contact: Marketing Department
         (502) 491–9820 or 1–800–626–6268
         AMCOR COMPUTER CORP.
         1900 Plantside Drive
         Louisville, KY 40299

ARCHON: ADMS (Association Data Management System)

Operating System: VMS
Keywords: • Data base management • Library science
         • Recruiting • Word processing

ARCHON: ADMS keeps accurate records on membership management, meetings and conventions subscriptions, political action, and library management. The software combines data from different departments and gives new information, allows on-site customization, and shares data with other systems, such as financial, word processing, and fund raising, for automatically producing letters to members.

Information on this product is also available from Larry L. Eastland, Ph.D (703) 898–4494, QUODATA Corporation, McLean Office Centre, Suite 614, 6845 Elm Street, McLean, VA 22101.

A version of this product is available for the PDP–11 computer.

Price: $8,900
Product Support Available: Yes
Contact: Nancylou Rapp
         (203) 728–6777
         QUODATA CORPORATION
         266 Pearl Street
         Hartford, CT 06103
ARSAP (Resource Management and Chargeback System)

Operating System: VMS
Keywords: • Accounting • Billing • Project management
        • Scheduling

ARSAP produces resource management and billing reports that allow users to monitor system usage and charge for all resources used on the computer. Resource management reports necessary for planning, organizing, and controlling the computer in a multiuser, multi-task operating environment are provided to optimize work scheduling and system usage control. Billing reports that automatically distribute computer changes on a user, department, project, or client basis guarantee the recovery of computer costs for the purpose of internal accounting or for billing outside projects and clients.

ARSAP provides easy-to-read, accessible reports on terminal connect time, number of log-ons and log-offs, disk storage utilization, number of I/O requests, and CPU execution time. Those reports improve system and staff productivity, help plan for future system requirements, and justify any necessary system upgrades by accurately tracking resource usage.

Billing reports include summary and detailed usage and rate information. Detailed, numbered invoices provide complete itemized statements for each account by showing the resources used and the charges for the billing period. Rates can be set for individual accounts as well as to assign work shifts. Shift accounting allows different rates to be charged for premium time and slow periods, thus achieving optimum system usage.

The user can tailor reports to meet specific needs by selecting from 15 unique report formats and specifying any of 100 report variations. That flexibility provides the control needed for meeting current demands and predicting future requirements. The report formats are compatible among RSX–11M, RSX–11M–PLUS, RSTS/E, and VAX/VMS. No sysgen is needed for installation, and ARSAP takes only minutes to install.

A version of this product is available for the PDP–11 computer.

Price: $2,995 – $3,995
Product Support Available: Yes
Contact: Lewis L. Lovett, Sales Manager
         (301) 864–3700
         GEJAC, INC.
         P.O. Box 188
         Riverdale, MD 20737
AUTOPRO (Automatic Programming)

Operating System:  VMS
Keywords:  • Data base management  • Data dictionary
          • Programming tools  • Report writer

The AUTOPRO data base management system allows both experienced and inexperienced users to automatically generate comprehensive systems in a simple interactive terminal session. For complicated management information requirements, the user can generally use AUTOPRO to create a model of system requirements, including data base creation, data entry and file maintenance functions, and report generation. The professional programmer may then extend the model, using the facilities of AUTOPRO to eliminate most programming.

Many applications can be completed in one to four hours. The user defines data elements, using the Data Base Manager, and creates a screen to add, modify, and delete entries in the new data base, using the Screen Manager. The user can specify any number of screens for data base maintenance and inquiries. With the Report Writer, the user produces reports as needed. For word processing, the user moves information from the data base into the list processing option of the word processing system.

The Data Dictionary is the foundation for AUTOPRO. All data base creation and maintenance automatically update the data dictionary, ensuring accuracy and consistency of all data resources. The Data Dictionary supports application development for the Screen Manager, Report Generation, and Word Processing integration. The data base creation facilities are menu driven and include HELP facilities.

The Data Dictionary provides a centralized resource for your data, whether applications are developed through AUTOPRO, DIBOL, COBOL, or DATATRIEVE. This centralized facility provides control of all your corporate data, giving managers, secretaries, and application development staff easy access to those resources.

A version of this product is available for the PDP-11 computer.

Price:  $3,000 – $5,000
Product Support Available:  Yes
Contact:  E. Jackson Smith
          (301) 296–9032
          SMITH, ABBOTT, AND COMPANY, INC.
          300 E. Joppa Road
          Baltimore, MD 21204
BRS/SEARCH

Operating System: UNIX, VMS
Keywords: • Database management • Law • Library science
• Management

BRS/SEARCH is a full text information retrieval software package allowing access to text. Every word becomes an index term with complete Boolean and positional operators.

The package is used in all industries for R&D reports, card catalog systems, litigation support, bids and proposals, competitive marketing summaries, and so on.

The software features provide:
• Streamlined interactive dialog
• Standard Boolean operators, as well as special proximity operators, providing precise retrieval at the paragraph, sentence, or word level
• Full pattern matching, allowing right- and left-hand and embedded truncation capabilities, including truncation limiting
• Powerful paragraph qualification features, including postsearch qualification of search entries
• Special search commands that display words in the data base containing the specified stem and that accept paragraph qualification
• SAVESEARCH feature for storing search strategies for later recall
• Range searching of numeric or textual information, including the use of comparative operators, such as equal to, greater than, and less than operators
• Rapid browsing capability for on-line document display and selection, including an automatic display feature for a given range of documents
• Extensive print capabilities, including queuing for later display or remote printing
• Multiple field sorting of both on-line and queued output
• Total data base security system, including data base passwords and user privilege–level control
• Full text searching of multipage documents, including in-context results, within-document browsing, and word highlighting
• Numeric processing capability, combining free text searching and numeric processing, such as average or total, in a single operation

A version of this product is available for the PDP–11 computer.

Price: $5,000 – $30,000
Product Support Available: Yes
Contact: Software Department
(518) 783–1161 or (800) 235–1209
BRS
1200 Route 7
Latham, NY 12110
Calendar Management, Version 1.5

Operating System: VMS
Keywords: • Data base management • Documentation
• File management • Scheduling

Calendar Management software provides an automated time management system that allows users to maintain a personal calendar of workday activities, to schedule their appointments, to schedule meetings with other users of Calendar Management, and to maintain a tickler list. Each feature can be printed for a specified day or an entire week.

The features include appointment and meeting scheduling, attendance confirmation of a meeting, checking confirmations of other attendees, meeting cancellations, calendar view, a tickler file, and an on-line help facility.

Refer to SPD #A0.52.03 when requesting further information on this product from your local DIGITAL sales office.

Price: $1,500 – $4,000
Product Support Available: No
Contact: Consult your local DIGITAL sales office
(see Introduction).

CDD (Common Data Dictionary), Version 2.2

Operating System: VMS
Keywords: • Compilers • Data dictionary
• Language enhancers • Language processors

The VAX–11 CDD provides a single logical data dictionary for a VAX/VMS system containing definitions for VAX–11 COBOL, VAX–11 DATATRIEVE, VAX–11 BASIC, and VAX–11 DBMS. The CDD contains all VAX–11 DATATRIEVE definitions (records, domains, tables, procedures, and graphic plots) and the VAX–11 DBMS schema, storage schema, and subschema definitions. The CDD contains record definitions that VAX–11 COBOL and VAX–11 BASIC can optionally include at compile time. VAX–11 Common Data Dictionary is prerequisite software for both VAX–11 DBMS and VAX–11 DATATRIEVE. It must be installed prior to installing either VAX–11 DBMS or VAX–11 DATATRIEVE.

This logical dictionary is built from one or more physical dictionary files. The CDD maintains a hierarchical directory of the customer’s data descriptions within this dictionary.

The CDD provides security based on its hierarchical directory. Each directory and data description can have its own Access Control List. Each entry in the Access Control List specifies a class of user and the type of access allowed to the directory or data description. A user class is defined by selecting UIC, user name, password, and terminal class parameters.
Refer to SPD #25.53.05 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

### CLIO Database Management System (DBMS)

**Operating System:** VMS  
**Keywords:**  
- Data base management  
- Data conversion  
- Programming tools

In use at more than 200 installations worldwide, CLIO is a transportable DBMS for minicomputer and mainframe systems. CLIO supports a completely layered information organization, with concurrent on-line and batch data base access. CLIO includes host language interfaces for COBOL, PL/1, FORTRAN, and assembler programs. Its virtual space architecture provides unparalleled capabilities for data structuring, data base modification and growth, and data compression. CLIO's security facilities permit protection down to the field level. A comprehensive set of support tools, including a fully integrated data dictionary, report writer, query language, data manipulation language, and text editor, are provided. Transaction journalization and data base roll-back recovery facilities ensure data integrity across system or program restarts.

**Price:** $40,000 – $80,000  
**Product Support Available:** Yes  
**Contact:** George Finckenor  
(212) 696–3600  
ADVANCED COMPUTER TECHNIQUES  
16 East 32nd Street  
New York, NY 10016

### CYX Transaction Processing System

**Operating System:** VMS  
**Keywords:**  
- Communications  
- Data base management  
- Networking

This complete system creates an efficient environment for transaction processing. Designed for large-volume, multiuser, on-line applications, the system provides communications management for 3270-type BSC terminal networks and data base management for high on-line performance. The system features a layered architecture and modular design and supports a set of optional products, including IBM Reach Through, DECnet Reach Through, Report Writer, Security Control, Electronic Mailbox, Text Filing, Centralized Program Error Reporting, and Data File Maintenance.
CYX Transaction Processing manages data bases to the maximum limits of the hardware, can increase throughput by an average of 30% to 100% over general data base management systems, and provides duplicate recording, journaling, automatic transaction rollback, and full restart/recovery. CYX supports computer networking and distributed processing and allows batch processing, program development, and system maintenance functions to process simultaneously with on-line operations.

A version of this product is available for the PDP–11 computer.

**Price:** $30,000 - $45,000  
**Product Support Available:** Yes  
**Contact:** Johan Nik Kirkeng  
(612) 835-4884  
CYTROL, INC.  
4620 West 77th Street  
Edina, MN 55435

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**Data*Set**

**Operating System:** VMS  
**Keywords:**  
- Data base management  
- Data entry  
- Medical  
- Report writer

The Data*Set data base management system provides means to store and retrieve data. Data*Set lets you look at data, change it, or store it interactively. Data*Set provides tools that allow the user to select specific data records or fields. The system has sophisticated facilities for report generation and statistical analysis of selected data, as well as extensive facilities for data retrieval. In addition, you can add new records to a file, delete old ones, or modify existing ones to maintain an accurate, up-to-date file.

The Data*Set command language is simple to use; each command describes its function — for example, DISPLAY, LIST, and GO. An extensive HELP facility is also provided.

Data*Set carries out each command as you enter it and will prompt you when it is ready to receive another command. Data*Set is designed to detect user errors and to provide an understandable error message. Commands for retrieving and manipulating records let you select the record and data you want. You can access all the records in a file or only those meeting the selection criteria you specify. You can output or manipulate any field or combination of fields in a record.

Data*Set stores data in files in a packed form, with variable-length fields in variable-length records. This method uses a minimum amount of storage space and results in high efficiency. Options exist to convert Data*Set files to standard ASCII files and vice versa.

A version of this product is available for the PDP–11 computer.
DATATRIEVE, Version 2.0

Operating System: VMS
Keywords: • Data base management • Data collection
         • Data dictionary • Data entry

VAX–11 DATATRIEVE is a query and report system for the VAX/VMS operating system, providing a uniform access method for data stored by RMS and VAX–11 DBMS files on VAX/VMS. Using VAX–11 DATATRIEVE, a novice or an experienced user can retrieve or modify data without considering the underlying storage method or physical location.

VAX–11 DATATRIEVE presents information in several different formats. Information can be displayed as a report or as a simple table. Thus displayed, information can be printed on a hard-copy device. Information can also be displayed with user-defined VAX–11 FMS and VAX–11 TDMS forms or presented graphically on a VT125. Hard copy of the graphic display is available. DATATRIEVE also provides an efficient way to access information stored on other VAX/VMS systems linked by DECnet–VAX.

VAX–11 DATATRIEVE can be used interactively to retrieve, modify, store, or delete data, using a simple set of commands. Frequently used combinations of commands can be stored as named procedures and invoked by name. Programs written in other VAX languages can call VAX–11 DATATRIEVE, allowing them to be independent of underlying data storage methods and physical location.

VAX–11 DATATRIEVE is dictionary driven. All data descriptions are stored in and retrieved from the VAX–11 Common Data Dictionary (CDD). VAX–11 DATATRIEVE includes commands to store, examine, modify, and delete definitions in the CDD and can use definitions stored by other VAX layered products, such as the VAX–11 DBMS DDL (Data Definition Language).

Protection is handled by VAX–11 Common Data Dictionary. VAX–11 DATATRIEVE can access data only through definitions in the VAX–11 Common Data Dictionary. Locking the definition prevents the user from accessing the data. Access control can be based on name, login account, password, or terminal class (local, remote, or dial-up).
VAX-11 DATATRIEVE provides access to data on remote VAX nodes. When VAX-11 DATATRIEVE accesses data across a Phase III DECnet link to another VAX system, it uses the data definition from the dictionary on the system with the data. Processing is divided between the host and remote systems to minimize traffic over the communications link.

VAX-11 DATATRIEVE provides the novice user with a tutorial mode, called GUIDE mode. VAX-11 DATATRIEVE offers ADT, the Application Design Tool, for the more experienced user who wants to define data structures. ADT takes the user step by step through the definition of a domain based on an RMS file.

VAX-11 DATATRIEVE is a highly structured nonprocedural language that provides automatic access optimization, data type conversion, and data validation. Looping and control structures can be combined and nested to create complex, powerful commands.

VAX-11 DATATRIEVE stores the fixed attributes of each record in the record definition. In addition to COBOL-like attributes, DATATRIEVE accepts validation criteria, fields whose values are computed at run time, missing value expressions, and default values.

Refer to SPD #25.44.06 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

**DBMS (Data Base Management System), Version 2.0**

Operating System: VMS
Keywords: • Compilers • Data base management
• Data dictionary • Networking

VAX-11 DBMS is a multiuser general-purpose CODASYL-compliant data base management system. VAX-11 DBMS is used to access and administer data bases ranging in complexity from simple hierarchies to complex networks with multilevel relationships. It supports full concurrent access in a multiuser environment without compromising the integrity and security of the user's data bases. VAX-11 DBMS is based on the March 1981 Working Document of the ANSI Data Definition Language Committee.

Features include:
• Full concurrent access capabilities (storage, retrieval, update, and deletion) in a multiuser environment
• Record locking and journaling
• Automatic transaction and verb rollback
• Multiple database support
• Integration with VAX-11 Common Data Dictionary (CDD) facility
• Schema, Subschema, Storage Schema, and Security Schema Data Definition Languages (DDLs)
• FORTRAN Data Manipulation Language (FDML)
• High-level call interface for VAX languages that adhere to the VAX calling standard
• Automatic subschema definition extraction from the CDD for BASIC, BLISS, COBOL, DIBOL, MACRO, PASCAL, and PL/1 when using the high-level call interface
• Easy-to-use utility command language
• Interactive data base query utility (DBQ) with video display of subschema structure diagrams on VT100-compatible terminals
• On-line data base verification in concurrent, protected, and exclusive modes
• Off-line full and incremental data base backup and restore
• Ability to redo a sequence of committed transactions (roll forward)
• Initial load facility and unload and reload facilities for data base restructuring
• BATCH RETRIEVAL ready mode (data base snapshots) for increased concurrency in large retrieval applications
• Space area management (SPAM) pages, which improve data base free-space search performance
• Boolean record selection expression with index optimization on FIND and FETCH DML statements
• Data compression of data items and data base key (DBK) pointers
• Fragmented records, which allow large records to span multiple data base pages
• Simple restructuring without reloading a data base
• Sorted sets implemented with B-trees; prefix and suffix compression for sort keys

Refer to SPD #25.48.08 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

DMG/FLOW

Operating System: VMS
Keywords: • Graphics • Presentation aids • Report writer
• Text editing/formatting

DMG/FLOW is a software tool for graphically producing and editing tree-structured designs. Although directed primarily toward systems and program designers, DMG/FLOW is an excellent package for any-
one with a need to create, modify, and print diagrams that are based on tree structures — for example, functional system design, menu hierarchies, management and organization charts, data base design (tree only), and program design.

DMG/FLOW provides an easy-to-use editor that manipulates boxes on the screen of a VT100. Interim designs or alternatives can be stored on disk and recalled for later design sessions or reviews. Printing is straightforward and needs only standard DIGITAL printers with no special graphics capability. The hard-copy diagrams can be incorporated into the system documentation, eliminating tedious redrawing of working diagrams. (DMG/FLOW requires a VT100 with the AVO option. Selected terminals that emulate the VT100 with AVO may be used. No special printer is required, but some printers produce better-quality diagrams than others do. Contact DMG for advice in this area.)

Besides being easy to use and needing no special hardware, DMG/FLOW verifies design structures. It will not allow syntactical or other inconsistencies that might otherwise arise. Full 132-character width is supported, and DMG/FLOW provides the facility to link multipage diagrams with cross-page references. Header boxes maintain creation and revision dates for each page in diagram.

A version of this product is available for the PDP–11 computer.

Price: $1,500 – $2,000
Product Support Available: Yes
Contact: Ken Allsopp
(416) 225–7788
DIGITAL MANAGEMENT GROUP LTD.
4800 Yonge Street
Willowdale, Ontario M2N 6G5
Canada

Drawing Register

Operating System: VMS
Keywords: • Architecture • Civil engineering • Graphics
• Project management

Drawing Register allows a register to be maintained of all drawings produced and issued on a project. This project management computer system can produce a complete history of any drawing or group of drawings on request. It also permits a report to be produced of the current status and revision of each drawing so that the project management team can ensure that all organizations working on the project are using the latest issue of drawings.

Drawing Register contains a list of people and organizations that can receive drawings for a project. Each is given a reference code by the
user; therefore, to issue drawings, it is necessary only to enter the recipient’s code together with the drawings and quantities. The system produces a print delivery note that lists all the drawings required and accompanies the drawings to the recipient. The system can at any time report all the recipients of any drawing and, conversely, all the drawings issued to a recipient.

A version of this product is available for the PDP–11 computer.

**Price:** £1,500 – £3,000

**Product Support Available:** Yes

**Contact:** Martin Barnes, Director
061–439 6639 or Telex: 666650
PROJECT SOFTWARE LIMITED
Foden Lane, Woodford
Stockport, Cheshire SK7 1PT
United Kingdom

**DRS**

**Operating System:** VMS

**Keywords:** • Data base management • Inventory • Networking
• Query facilities

DRS is a data base and applications management system available in both interactive and batch environments. DRS consists of the following functional elements:

- The DRS nucleus provides a language of more than 100 commands that permit the user to define and modify the data base structure, load and update data, and perform queries, sorts, computations, and report generation. Data bases can consist of up to 64 record types related in complex networklike logical structures. As many as 1,000 fields can be defined with data types of integer, real number, data, logical, or text. Variable-length fields are supported and can range beyond 4,000 bytes in length.

- SIP, a screen input processor, is a high-level English-word programming language for the creation of screen displays that allow an end user to perform transaction-oriented queries and updates of a data base.

- RPW II, a report writer, generates extensive reporting from the data base and includes full computational facilities. Simple print statements position data anywhere on a page. Compute statements allow the calculation of new data values with arbitrarily complex arithmetic expressions, and summary statistics are automatically captured at control breaks.

- PLOT, a graphic element, allows DRS end users to generate files of data suitable for orthogonal plotting. Line plots, point plots, quadratic-fit plots, and user-defined forms are all possible.

- XBS, the host language interface, provides audit trailing/recovery, maintenance, and transaction processing.
A version of this product is available for the PDP-11 computer.

Price: $20,000 +

Product Support Available: Yes
Contact: Lud A. Worsham, President
(609) 799–4600
ADVANCED DATA MANAGEMENT
15–17 Main Street
Kingston, NJ 08528

**EasyEntry Forms Management and Data Entry System**

**Operating System:** VMS

**Keywords:** • Data entry • Forms management

EasyEntry is a full-screen forms management and data entry system. By allowing on-screen design and implementation of data entry applications, EasyEntry eliminates such time-consuming steps as forms layout, coding, compiling, and testing. Once forms are designed, they are ready to be completed, using a fill-in-the-blank technique. EasyEntry supports high-volume data entry on a variety of CRT terminals while imposing relatively low overhead.

EasyEntry provides a number of functions that may be performed on the input fields, including range and validity checks, arithmetic calculations, automatic duplication of fields, batch totals, and specification of additional attributes such as overpunch signs, left-zero fill, and dates. Other features include table look-up, error messages, field- and form-level help facilities, operator statistics, split-screening, program calling, and forms-chaining. EasyEntry supports special display attributes of terminals, such as bold, blinking, and color.

A version of this product is available for the PDP-11 computer.

Price: $995 – $4,400

Product Support Available: Yes
Contact: Elizabeth F. Epermanis
(919) 942–7801
APPLIED INFORMATION SYSTEMS, INC.
500 Eastowne Drive, Suite 207
Chapel Hill, NC 27514

**EnQuery (English Query System)**

**Operating System:** VMS

**Keywords:** • Data dictionary • Query facilities • Report writer

EnQuery, an English-language report writer for the VAX, is designed to accommodate nontechnical users. The user defines English names for the data names in files, then selects data for calculation,
totaling, print, or display. A special set-up procedure reads COBOL file descriptions to ease installation. Complex conditional statements can draw from several files at once. User-generated commands are stored on a menu for quick access. The user can embed literals, count number of occurrences, subtotal fields, and create temporary (internal) data names. Automatic formatting of print/display is provided, or the user may override. The user may sort data by one or more fields. No code generation or compilation is required. The program is available on UNIX* and PC-compatible systems and is RMS file compatible.

*UNIX is a trademark of AT&T Bell Laboratories.

Price: $6,000
Product Support Available: Yes
Contact: Brad Jensen
(800) 262-7276
DATAMATE CO.
4135 South 100th East Avenue, Suite 128
Tulsa, OK 74146

FCS–EPS

Operating System: VMS
Keywords: • Data base management • Financial analysis
• Graphics • Report writer

FCS–EPS is the multidimensional command module in which the user can combine logic with data to develop models and analyses quickly. Using the simplified FCS–EPS business English and high school math, nontechnical people can instruct the computer exactly as they would lay out information on a manual ledger sheet. The system contains a report-generation capability that allows users to rapidly develop working reports or boardroom-quality presentation reports.

FCS–EPS features are integrated into a single structure, extending the basic system simplicity with the following:
• More than 130 preprogrammed functions to make FCS–EPS productive immediately
• User-defined functions that allow the user to tailor FCS–EPS to his/her own needs
• Data entry features for flexible information update either interactively or by other computer programs
• Advanced planning system design features that allow the user to implement complex programming techniques without the need to know any computer language

FCS–EPS is a powerful analysis tool that allows the user to perform many kinds of analysis, forecasts, and econometric modeling, including what-if statistical and risk analyses and forecasting. Business
graphics may be specified interactively and displayed on a terminal or plotter in a variety of ways to show the real relationship between the numbers in a report. FCS–EPS effectively and automatically organizes internal and external data and incorporates a relational data base management system.

Added features are:
- Cross-sectional what-if analysis and reporting
- Flexible report generation
- Automatic currency conversion and inflation factoring
- Proportional allocation

Price: $25,000 – $53,000
Product Support Available: Yes
Contact: Susan Donovan
(603) 898–1800
EVALUATION AND PLANNING SYSTEMS
One Industrial Drive
Windham, NH 03087

FIRES (Flexible Information Reporting and Editing System)

Operating System: ULTRIX
Keywords: • Financial analysis • Report writer
• Text editing/formatting • Word processing

FIRES enables office personnel to easily produce reports and information. No technical training is required. Responses to simple English-language questions will lead anyone, step by step, through requests for the many reports and tabulations needed to satisfy management information requirements.

In minutes, any member of your office staff can request reports from any automated file. Your data files need no reformatting.

FIRES offers the following capabilities:
• Record selection (10 fields)
• Sequencing (5 levels)
• Automatic or specified page formatting and column titles
• Three lines of page headings and up to three lines of footnotes
• Totals, averages, percentages, and counts of occurrences
• Two- or 3-dimensional tables
• Arithmetic computations between fields
• Saved report requests for repetitive-type reports
• Early error detection of request prior to report creation

A version of this product is available for the PDP–11 computer.

Price: $10,000 – $20,000
Product Support Available: Yes
FIS (FMS Information System and Report Writer)

Operating System: VMS
Keywords: • Forms management • Programming tools
            • Query facilities • Report writer

The FIS Report Writer is a fast, efficient, and easy-to-use method of extracting information from the FMS-formatted files used within the manufacturing and distribution software application offered by NCA, Manus, and Transcomm.

The FIS features include the ability to access multiple files, an interactive user interface with intelligent defaults, the ability to back up and correct or change input, and on-line help. Extensive format control including custom headings; break logic; print masks, positions, and frequency; and sorting and totals that provide for maximum flexibility are provided.

The user can create command files with FIS so that all responses to a session may be saved. A save-selected recorder function puts the logical record numbers of selected data into a file for quick access. FIS allows for comparison, logical, and arithmetic operations.

A version of this product is available for the PDP–11 computer.

Price: $3,000 – $4,000
Product Support Available: Yes
Contact: Peter J. Avenali, Marketing Director
         (206) 284–4025
         PARK SOFTWARE
         P.O. Box 202, Northgate Station
         Seattle, WA 98125

Fundraiser

Operating System: MIIS
Keywords: • Data base management • Word processing

This program provides two categories of information:
• Fund raising — gift and pledge processing, word processing, campaign tracking, and name and address maintenance
• Membership — renewal billing, print member cards, and promotion analysis

A version of this product is available for the PDP–11 computer.
IDATM (Interactive Data Analysis and Forecasting System)

Operating System: VMS
Keywords: • Financial analysis • Financial planning
• Statistics

IDA is a general-purpose conversational statistical package that emphasizes the tools associated with regression analysis and related model-building techniques. IDA offers comprehensive statistical capabilities, including summary and 1-sample statistics, tabular analysis, probability calculations and simulations, regression analysis, and time-series analysis, including Box-Jenkins estimation and forecasting. In addition, the system has extensive data-handling facilities. IDA is virtually self-teaching, with proven business applications in forecasting sales or cash flow, operations and quality control, and inventory management. Elaborate error detection and recovery codes, internal help files and documentation, bivelevel prompts, and other features of IDA are designed specifically for the user's convenience. Applications for IDA include business management, trend analysis and forecasting, handling of seasonal data, and more.

Price: $3,000 – $6,000
Product Support Available: Yes
Contact: Susan Phelan
(312) 329–2400
SPSS INC.
444 North Michigan Avenue
Chicago, IL 60611

IMPRS

Operating System: VMS
Keywords: • Data base management • Language processors
• Programming tools • Query facilities

IMPRS is a relational data base software package that allows both technical and nontechnical users to establish and maintain relational data base systems, interactively generate sophisticated reports, and write fourth-generation high-level programs to support
application systems. IMPRS is designed to increase programming productivity through the use of a complete data manipulation language. IMPRS also supports several query language interface modules that allow nontechnical users to browse through the data base and quickly produce reports. IMPRS is fully documented and comes with a full complement of utility programs to support the data base and to provide additional flexibility to the user.

A version of this product is available for the PDP–11 computer.

**Price:** $1,000 – $20,000

**Product Support Available:** Yes

**Contact:** Elvin E. Smith or Forrest E. Weddle

(913) 782–8544

RUF CORP.

1533 E. Spruce

Olathe, KS 66061

**INDENT (Initial Data Entry)**

**Operating System:** VMS

**Keywords:** • Data base management • Data entry

• Forms management

INDENT is a set of FORTRAN computer programs designed to facilitate the initial entry of data from original documents. Data fields are entered from a user-defined form, in the order of their occurrence, and a record is produced with variables in any desired order to facilitate data processing. Fields common to all records in a file produced during a single session need be entered only once. Each variable field on the record may be independently right or left justified, and the remainder of the field is filled by a blank or character specified by the user.

INDENT runs in minimal space, allowing numerous data entry terminals to operate in the space usually required by a single editor. For example, on a PDP–11 computer with 64K memory running RT–11, INDENT will run in the foreground while the keypad editor (KED) runs or FORTRAN program development takes place in the background. INDENT is of additional value when large amounts of numeric data must be entered but the system editor requires the keypad for editing functions. INDENT frees the keypad for numeric input.

INDENT programs define output record format, allow format review prior to initiating a session, and accept and display data from the resulting files in their order of entry.

A version of this product is available for the PDP–11 computer.

**Price:** $600

**Product Support Available:** Yes
**Informix™**

**Operating System:** ULTRIX, UNITY, UNIX  
**Keywords:**  
- Database management  
- Forms management  
- Query facilities  
- Report writer

This relational database management system provides the powerful utilities needed to easily create, optimize, use, and maintain databases. The system provides for flexible and virtually unrestricted data base design. The data base and file sizes are limited only by physical storage constraints. Logical file placement is unrestricted, as is data base access from anywhere within the file system.

The system performs data management functions quickly and efficiently through the c-isam B+ tree-based access method. The system contains informer, an interactive query language for extracting information; creating and storing the results of arithmetic, logical, or aggregate operations; and performing global data management functions.

A nonprocedural report-writing language, ace™, is available for nontechnical personnel to extract, manipulate, and display data in a customized format.

Custom screen generation, data entry facilities, and query by forms capabilities are added by the facility perform™.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $12,000  
**Product Support Available:** Yes

**Contact:**  
Robert J. Macdonald  
(415) 424–1300  
RELATIONAL DATABASE SYSTEMS, INC.  
2471 E. Bayshore Road, Suite 600  
Palo Alto, CA 94303

**INMAGIC®**

**Operating System:** VMS  
**Keywords:**  
- Engineering  
- Law  
- Library science

INMAGIC, a text retrieval and indexing program featuring a built-in report generator, allows multiple users fast direct access to variable-
length records. Developed by Warner-Eddison Associates, Inc., information management consultants, INMAGIC manages text and bibliographic records. Written in FORTRAN, INMAGIC operates in both batch and interactive modes on systems for both minicomputers and micros. INMAGIC and related applications are easily learned by nontechnical users, who may create individual data bases on line. User-friendly prompts and help screens are available on line to assist the new user.

Data base records can contain numeric, textual, or calendar data in variable-length fields. Fields may have any number of subfields. Both full-term and individual keywords may be indexed for each indexed field. Unindexed fields may also be searched. Seven collating sequences, including Library of Congress classification, are available, and up to five sorts may be merged.

INMAGIC allows users to change their data whenever they want and to design their own data structures and report formats. On-line updating and addition of new records are standard features. INMAGIC offers sophisticated search capabilities via Boolean commands (AND, OR, NOT), ranges (from.. to.., equals, less than), truncation, exact or inexact matches, and text retrieval on words and wordstems. The user may combine several separate requests in one line, using INMAGIC’s nested Boolean capabilities; on-line display of indexes and data structure help target searches. Search results may be printed, displayed, or written to a system file, using standard or custom formats, stored and repeated at the user’s request. Specially designed record models and reports packages are available:

- **BIBLIO™** — information center and library management
- **INCASE™** — law office management, including litigation support
- **INDUSTRY™** — engineering office management

A version of this product is available for the PDP-11 computer.

**Price:** $7,500 – $13,500

**Product Support Available:** Yes

**Contact:** Madeline F. Miele  
(617) 661–8124  
INMAGIC INC.  
238 Broadway  
Cambridge, MA 02139

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**Job Cost Accounting**

**Operating System:** VMS

**Keywords:** • Cost accounting  • Payroll  • Project management  • Report writer
The Job Cost Accounting module tracks costs, open purchase orders, accounts receivable, work in process, and client payments. The module is designed primarily for professional services firms, government contractors, and manufacturers who need to track job costs. A detailed report with a line item for each charge, job summary, labor allocation and productivity, daily hours (certified payroll), and customer-designed reports is provided.

Job Cost Accounting features up to 1,000 subdivisions for each job to report costs by department, job phase, and so on; multiple methods for computing overhead and for determining billing rates; a variety of report versions, with multiple selection criteria for determining report contents; table-driven report formats that can, in many cases, be changed with no reprogramming; and a multiple hierarchy for subtotals.

Job Cost Accounting is available separately or as a part of an integrated package with payroll, accounts receivable, accounts payable, purchase order, and general ledger. Custom tailoring is available. Complete maintenance and support are available under contract. On-site installation and training, a bill of materials processor, and inventory control are optional.

A version of this product is available for the PDP–11 computer.

**Price:** $8,000 +

**Product Support Available:** Yes

**Contact:** Janna McMillan
(617) 275–5810
BREUER & CO.
54 Middlesex Turnpike
Bedford, MA 01730

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**KDSS (Key-to-Disk Data Entry System)**

**Operating System:** VMS

**Keywords:** • Data entry • Office systems

KDSS is a set of programs that permit a portion of the resources of a PDP–11 or a VAX to be used as a data entry system comparable in capabilities to the most advanced stand-alone multiterminal key-to-disk data entry systems. KDSS can run concurrently with other applications on the system and thus may be of particular interest to present or prospective RSTS/E, RSX–11M, or VMS users who have such key-to-disk data entry requirements in addition to the other applications they wish to run. KDSS data entry and verification take place under control of formats, written in a high-level declarative language, specifying screen layout, cursor positioning, field edits (an extensive set of intrafield, interfield, and interrecord edit capabilities is available), balancing and totaling, dup and autoincrement fields, and so on. KDSS also has output reformatting facilities, as well as
facilities permitting a supervisor to monitor the data entry process through batch status and operator status displays. The performance-critical portions of KDSS are implemented in assembly language as shared code.

A version of this product is available for the PDP-11 computer.

**Price:** $9,000  
**Product Support Available:** Yes  
**Contact:** Martha Schriefer  
(617) 861–0670  
EVANS GRIFFITHS & HART  
55 Waltham Street  
Lexington, MA 02173

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**Keyword Information Manager**

**Operating System:** VMS  
**Keywords:**  
- Data base management  
- Data dictionary  
- Personnel  
- Report writer

The Keyword Information Manager performs commonly needed information storage and retrieval functions. The package is oriented toward groups of information that can be accessed in any of several ways.

Keyword can be used in prospect management to maintain detailed information on customers and prospects and to retrieve data on only the prospects of interest at a particular time. Keyword can keep a variety of information on each of a number of current projects, along with historical data for past projects. Keyword can also maintain comprehensive personnel records.

Each Keyword information group can have various data fields — numeric, alphabetic, and others. Those fields may be defined and changed by the user. The user may use up to 1,800 characters to describe each group, along with a file text for each group of unlimited size. In addition, each information group may have several groups of up to 100 user-defined keywords, each of which can be used to access the group. Each information group may have up to several hundred numeric fields that can be used to access the group.

Reports, like the data base, can be tailored to your needs. You get only the information you want, in the format you want.

A version of this product is available for the PDP-11 computer.

**Price:** $4,000 +  
**Product Support Available:** Yes  
**Contact:** Janna McMillan  
(617) 275–5810
BREUER & CO.
54 Middlesex Turnpike
Bedford, MA 01730

LOCK

Operating System: VMS
Keywords: • Production control • Project management • Security

LOCK, a restricted menu facility, permits the security manager to limit each of a selected set of users to a menu of authorized programs.

A version of this product is available for the PDP–11 computer.

Price: $850
Product Support Available: Yes
Contact: Muriel King
(801) 224–5306
CLYDE DIGITAL SYSTEMS, INC.
3707 N. Canyon Road, Suite 3–E
Provo, UT 84604

MAPS/DB

Operating System: VMS
Keywords: • Data base management • Decision support • Management • Report writer

MAPS/DB provides fully integrated data management and retrieval capabilities, based on a relational data design that allows users to manipulate, store, and link data as desired. The features allow a user to create a data base with interactive update and maintenance procedures. Other features allow interactive inquiry and ad hoc report generation to provide access to your data. All the features use English language commands that allow non-data processing managers to create systems on their own.

A version of this product is available for the PDP–11 computer.

Price: $12,000 – $30,000
Product Support Available: Yes
Contact: Kevin Walsh
(415) 856–1100
ROSS SYSTEMS, INC.
1860 Embarcadero Road
Palo Alto, CA 94303
MDBS III — DDL/DMS: Full RTL Form

Operating System: UNIX, VMS
Keywords: • Data base management • Data dictionary
• Language enhancers • Microprocessor development

This extended-network DBMS for minis and micros allows simultaneous multiple user access. The data description language (DDL) allows the developer to specify the structure and contents of the data base. As well as supporting hierarchical, relational, and CODASYL network structures, the system employs a more sophisticated extended-network design, eliminating data redundancy and allowing simple description of even the most complex data relationships.

The data management system (DMS) carries out data manipulation language (DML) commands stated by an application developer. The MDBS DML is more powerful and easier to use than traditional DMLs. It allows data to be entered, retrieved, or modified from within any of numerous host languages. Integrated into the DDL/DMS are extensive automatic recovery and transaction logging (RTL) mechanisms. Unique among microcomputer software, these RTL mechanisms prevent data loss from media failures, power failures, and other abnormal system interruptions. Page image posting and transaction logging support rollback and selective recovery.

A version of this product is available for the PDP–11 computer.

Price: $8,400 +
Product Support Available: Yes

Contact: Micro Data Base Systems, Inc.
(312) 981–9200 or (800) 323–3629
MICRO DATA BASE SYSTEMS, INC.
Application Development Products
85 W. Algonquin Road, Suite 400
Arlington Heights, IL 60005

MEMSYS (Membership Management System)

Operating System: VMS
Keywords: • Accounts receivable • Billing • Personnel
• Report writer

MEMSYS helps associations keep track of their members, legislators, executives, and convention attendees. It keeps an easily retrievable record and history of transactions with each member. This system also functions as an accounts receivable and billing system, handles mass mailings, keeps track of voting records, and generates reports and newsletters. MEMSYS was designed to provide association executives and staff with accurate and timely information.

A version of this product is available for the PDP–11 computer.
Price: $5,000 – $10,000
Product Support Available: Yes
Contact: Cheryl Hammelman
(606) 233-9958
DWC COMPUTER SOLUTIONS, INC.
1642 N. Broadway
Lexington, KY 40504

Message Router for VMS, Version 1.0

Operating System: VMS
Keywords: • Communications • File transfer • Networking
• Text editing/formatting

Message Router for VMS is a store-and-forward message transport system that optimizes message delivery within a DECnet Phase III or Phase IV network. This software product runs on a properly configured VAX/VMS operating system that supports a DECnet Phase III or Phase IV network.

Message Router for VMS supports the existing Standards for Network Protocol, Interface and Formatting being developed for Message Handling Systems by the National Bureau of Standards (NBS). The Message Router for VMS software logs the progress of messages within the network and informs the sending application if undeliverable.

Message Router for VMS requires application programs, called User Agents or Gateways (UA/G), that will:
• Format and display messages
• Interact with Message Router for VMS in a “posting protocol” to send messages or in a “delivery protocol” to receive messages
• Convert a received message from Message Router for VMS standard format into the required application format
• Convert a sending application format into the Message Router standard format

Message Router for VMS documentation guides users in developing their own User Agents/Gateways. In addition, the VMSMAIL Gateway is included with Message Router for VMS to enable users to access the VMS Personal Mail Utility.

Refer to SPD #26.33.00 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).
Mistress "Plus"

Operating System: UNIX, VMS
Keywords: • Data base management • Programming tools
          • Query facilities • Report writer

Mistress "Plus" offers all the power of the Mistress Relational Database Management System, along with the flexibility and convenience of M-Writer, the report generator with complete output flexibility, and M-Vision, the full-screen interface that allows data manipulation via single-key operation. With Mistress "Plus," the end user and the DP professional are both guaranteed increased productivity through the use of a matched system.

A version of this product is available for the PDP-11 computer.

Price: $3,375 – $13,500
Product Support Available: Yes
Contact: Doran R. Foeller, Sales Representative
         (416) 922-1743
         RHODNIUS INC.
         10 St. Mary Street, Suite 320
         Toronto, Ontario M4Y 1P9
         Canada

Mistress Relational Database Management System

Operating System: UNIX, VMS
Keywords: • Data base management • Graphics
          • Query facilities • Text editing/formatting

Mistress, the fully relational data base management system for UNIX*, features the Structured Query Language for the end user as well as standard programming interfaces to the C language for the DP professional. Advanced concepts include variable-length character fields, dynamic storage allocation, and B+ tree indexing. Mistress has been designed exclusively for the UNIX* environment and is written in C language.

Using SQL commands, the user can create or drop tables and indices, display data bases or tables, and select, delete, update, insert, and sort data in tables. Mistress classifies information, using a variety of data types, including date, character, dollar, integer, float, and text (variable-length character). Mistress provides easy-to-use commands, on-line help, meaningful error messages, and a built-in editor. The system asks for data interactively, prompting for each field value and checking for input errors.

Mistress has three interfaces to the C programming language, an interface to the UNIX* shell, and optional interfaces to other high-
level languages. Multiple concurrent users are supported with complete data integrity. Mistress dynamically maintains B+ tree indices to ensure faster record retrieval. Efficient bulk loading and unloading of data from standard files provide compatibility with large main-frame installations.

Mistress’s innovations provide the superior software solution for data base, information systems, office automation, local networking, color graphics, and CAD/CAM applications.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** $850 – $20,000

**Product Support Available:** Yes

**Contact:** Doran R. Foeller, Sales Representative
(416) 922–1743
RHODNIUS INC.
10 St. Mary Street
Toronto, Ontario M4Y 1P9
Canada

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**Mistress/32**

**Operating System:** UNIX, VMS

**Keywords:** • Data base management • File management
  • Programming tools • Report writer

Mistress/32, the advanced relational data base management system for extended addressing UNIX* products, features enhanced capabilities for security, recovery, and data integrity, as well as a fully integrated report writer and screen interface.

The Mistress/32 product has a dynamic application generation tool, M–Builder. M–Builder is a full-screen, interactive editor designed to create screens for M–Vision. That editor allows users to create and to easily make major modifications to M–Vision screens by drawing on the terminal display, thereby eliminating the need to experiment with row and column numbers. Attractive displays can be made using line graphics and terminal video features such as reverse video, highlighting, and underlining. M–Builder screens created on one terminal can be reproduced on other terminal types, since M–Builder uses the “termcap” data base of terminal capabilities.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Doran R. Foeller, Sales Representative
(416) 922–1743
MMS (Micrographics Management System)

**Operating System:** VMS

**Keywords:**
- Documentation
- File management
- Forms management
- Query facilities

MMS is a fully office-oriented, user-friendly, screen-formatted data entry and computer-assisted retrieval (CAR) system for indexing and automatic retrieval of microfilm. The system includes a complete data entry subsystem that optionally allows documents to be indexed into the computer directly from microfilm reader/printers or from cameras. Retrieval can be entirely automated, depending on the microfilm equipment used. Retrieval is accomplished through a sophisticated but easy-to-use query-by-example fill-in-the-blanks design that provides the ability to refine, sort, and transmit hit lists.

Retention schedules and management reports, including "Search" statistics, are an integral part of the system. The software is designed specifically to reduce keystrokes significantly, while providing powerful editing of all data to ensure accuracy. The software can interface directly with DIGITAL's ALL-IN-1 office automation package. No-keying CAR is possible with this interface module. Existing data files can be output to microfilm (COM) and retrieved, all automatically under software control.

The software includes the interface software for almost all the leading microfilm reader/printer manufacturers (Minolta, Kodak, and so on). In addition to roll film, fiche, aperture cards, and hard copy can be retrieved automatically or semiautomatically, depending on the manufacturer selected.

A version of this product is available for the PDP–11 computer.

**Price:** $10,000 – $25,000

**Product Support Available:** Yes

**Contact:** John H. Wright
  (305) 652–1710

FLORIDA COMPUTER, INC.
99 N.W. 183rd Street, Suite 126
N. Miami, FL 33169
NDDBS (N-Dimensional Data Base System)

Operating System: VMS
Keywords:  • Data base management  • Data conversion
  • File management  • Mathematics

NDDBS provides for the storage and retrieval of multidimensional data. NDDBS implements a mathematical concept known as Generalized Balanced Ternary (GBT) to create an N-dimensional space, structured as a hierarchy of aggregates. NDDBS was developed mainly as a tool for investigating the GBT concept and its applications potential. NDDBS provides the standard data base operations of storage, retrieval, update, and delete, as well as N-dimensional algebraic operations. As an experimental software system, NDDBS has proved very successful in working with NASA meteorological data. NDDBS offers the user a basis for exploring the application of the GBT concept to multidimensional data base systems.

GBT is a higher-dimensional analog of the 1-dimensional system known as balanced ternary. GBT structures space so that data can be aggregated. An automated system can then examine the general content of the data without looking at the detail. GBT also provides such an automated system with a rapid manner of deciding which data points are close to each other in the structured space. Thus, multidimensional data can be easily stored so that natural clustering occurs. GBT not only is a method for representing space, but also provides a data base addressing scheme. Further, GBT offers an algebraic system that operates on those addresses for easy movement from one data base location to another.

Price: $1,125
Product Support Available: No
Contact: Customer Support Department
(404) 542–3265
NASA'S COMPUTER SOFTWARE MGT. AND INFO. CENTER
University of Georgia
112 Barrow Hall
Athens, GA 30602

OMNIBASE

Operating System: VMS
Keywords:  • File management  • Forms management
  • Pre- and postprocessors  • Query facilities

OMNIBASE is a complete VAX/VMS end-user software interface to the Britton-Lee, Inc., series of Intelligent Database Machine (IDM) back-end relational data base processors. The OMNIBASE software, coupled with the IDM, addresses the needs of VAX users in a multiuser, multitasking environment, where data base processing consumes significant system resources.
The primary OMNIBASE software is the VAX personality package, which contains three major components:

- The Frontender, a set of front-end tools that support session logging, user buffer editing with arbitrary choice of VAX editor, an on-line help facility, and user command definition facility
- The Reporter, an interactive report writer facility that permits very general formatting of outputs without compilation or execution
- The Parser, a major section of software that translates user queries into elementary sets of back-end processor commands and formats the final output to the user

An OMNIBASE utilities package contains easy-to-use Database Administrator tools for backup and recovery, authorizing users of OMNIBASE for extracting useful system status information. FORTRAN and COBOL Embedded Query Language preprocessors allow the user to embed interactive query-language code into the host language for easy-to-maintain code with easy data base access.

**Price:** $15,000 – $30,000
**Product Support Available:** Yes
**Contact:** Dr. Larry L. Pfeifer
(805) 683–3771
SIGNAL TECHNOLOGY, INC.
5951 Encina Road
Goleta, CA 93117

**ORACLE® Relational Data Base Management System**

**Operating System:** ULTRIX, UNIX, VMS
**Keywords:**  Data base management  Data dictionary  Data entry  Report writer

ORACLE, available for mainframes, minis, and microcomputers, is currently installed at more than 350 sites worldwide. The system is implemented for a wide variety of DBMS applications, including medical research, government, education, financial management and accounting, project management and control in manufacturing, and engineering research and development.

ORACLE is designed for networking and distributed data base capability and is highly portable (source language is C) across computer systems. Features include the SQL PLUS nonprocedural data language, a fully integrated data dictionary, an interactive screen facility, a report writer, and other application development tools for all levels of users, as well as transaction journal and data base maintenance utilities.

A version of this product is available for the PDP–11 computer.
Price: $600 – $96,000
Product Support Available: Yes
Contact: Robin Tygh
(415) 854–7350
ORACLE CORP.
2710 Sand Hill Road
Menlo Park, CA 94025

P–STAT®

Operating System: ULTRIX, UNIX
Keywords: • Data base management • Decision support
• File management • Statistics

P–STAT is a versatile, integrated software package used for data management, data display, cross-tabulation, and statistical analysis. P–STAT offers the user a fully interactive and user-friendly command language that is both powerful and easy to learn. An internal P–STAT editor enables the user to correct errors immediately and continue command execution. P–STAT may also be used in batch mode.

Double-precision numeric values are assumed unless single precision is specified. P–STAT supports alphanumeric data. Each character variable in a file may be up to 999 characters in length.

P–STAT has extensive capabilities, enabling the user to create new variables, recode existing variables, select cases, and aggregate across subgroups within a file. There is a comprehensive set of arithmetic functions, such as square root, log, and so forth. Character functions include CONTAINS, SUBSTRING, and LENGTH.

Many P–STAT files may be active during a P–STAT session. The commands include JOIN, CONCAT, COLLATE, RANK, SORT, UPDATE, SEPARATE, INTERLEAVE, and TRANSPOSE.

P–STAT offers a variety of statistical operations, including analysis of variance, correlation, discriminant and factor analysis, exploratory data analysis, matrix operations, regression analysis, and a number of descriptive statistics such as chi-square, measurements of skewness, and so forth.

The data display includes plots, histograms, cross-tabulation, and report writing. The new EDA command has box plots, stem and leaf plots, rootograms, and so on. Displays may be modified interactively without having to access the original data files.

A macro facility that permits a series of commands to be executed within a single statement is supported. Macros can be nested, and character string substitution is permitted. Macros may call macros.
P-STAT is used internationally by government, commercial, and educational installations. Typical applications include market research, personnel administration, system performance analysis, quality assurance, and clinical trials.

A version of this product is available for the PDP-11 computer.

**Price:** $1,500 – $8,000  
**Product Support Available:** Yes  
**Contact:** Sebbie Buhler  
(609) 924–9100  
P-STAT, INC.  
P.O. Box AH  
Princeton, NJ 08542

**PDP-11 DATATRIEVE/VAX, Version 2.6**

**Operating System:** VMS  
**Keywords:**  
- Data base management  
- Query facilities  
- Report writer  
- Text editing/formatting

PDP-11 DATATRIEVE/VAX is an interactive query report generation and data maintenance system that runs under the VAX/VMS operating system in compatibility mode. This self-teaching system requires little previous computer experience for the user to take full advantage of its capabilities.

DATATRIEVE accesses data contained in disk files of sequential, indexed, or relative organization and provides facilities for selective data retrieval, sorting, formatting, updating, and report generation without the need for programming overhead.

Record and domain (file) definitions entered in DATATRIEVE are stored in data dictionaries shared by DATATRIEVE users. The dictionaries can be used to store frequently used sequences of commands to be recalled and processed later. Additional commands are provided to list the contents of the data dictionary, to delete entries, and to control access to individual entries in the data dictionary. A dictionary compression utility is available to clean up the data dictionary index file.

DATATRIEVE enables the user to define domains that cross RMS file definitions and subset record definitions. DATATRIEVE provides an Application Design Tool (ADT) to assist the novice user in creating domain and record definitions. The ADT uses an interactive dialog technique to guide the user through the data definition process and creates an indirect command file that is then processed to update the DATATRIEVE data dictionary.

The DATATRIEVE report writer provides easy-to-use commands to control the following report functions:

- Report name, date, and page numbering
• Page width and length specification
• Detail line specification
• Multiple control break specification with automatic totalizing at any level
• Multiple report sections

DATATRIEVE report commands can be freely intermixed with other DATATRIEVE commands.

DATATRIEVE uses simple English-language-like commands for data retrieval, modification, and display. Prompting is automatic for both command and data entry.

Refer to SPD #25.14.11 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
        (see Introduction).

personal informix™

Operating System: ULTRIX, UNIX
Keywords: • Data base management  • Data entry
          • File management  • Forms management

This data base product is both friendly and designed to grow with you and your business. The system provides quick and meaningful access to phone lists, mailing lists, calendars, financial records — just about any information you need to manage.

When you begin using the system, orderly menus and friendly prompts lead you through all procedures. With more experience, however, you can bypass the menus, performing your work rapidly and with few keystrokes.

Commands to perform any function are always in full view, and help is only a keystroke away. You can quickly review reference information or step-by-step instructions whenever you need assistance; just press the help key on your terminal to display a help menu.

The system will design a screen for you, automatically. You can use the screen for data entry and inquiry immediately or tailor it to meet your requirements. Sometimes it's important that you see your information in a specific way. You can design screens that look like your existing, paper forms. Or you can be creative, developing new forms.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Robert J. Macdonald
        (415) 424–1300
RELATIONAL DATABASE SYSTEMS, INC.
2471 East Bayshore Road, Suite 600
Palo Alto, CA 94303

/rdb™ (Relational Data Base Management System)

Operating System: ULTRIX, UNIX
Keywords: • Data base management • Data dictionary
• File management • Programming tools

This relational data base management system is easy to use and is inexpensive, portable, and powerful. It is a truly UNIX*-style system. You can create a table as a flat UNIX* ASCII file with a text editor. The table only needs tabs between columns and column names on the first line. Then all the 50+ shell-level and pipeable programs can manipulate the files without the overhead of schema, data dictionaries, or fixed-length records.

The /rdb system is fully relational. You can project columns, select rows, join tables, compute, sort, union, and so on, and do reports, mailing labels, form letters, cashflow, validate, and so forth.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $500
Product Support Available: Yes
Contact: Rod Manis
(512) 346–9318
MULTINATIONAL SOFTWARE, INC.
P.O. Box 5344
Austin, TX 78763

REFLEX

Operating System: VMS
Keywords: • Data base management • Data dictionary
• Forms management

REFLEX is a relational processing system for data retrieval, manipulation, and display. One or several views of data may be presented on the screen. The system is based on natural, language-like programming, handles simple and complex queries, is menu driven, and can be used on any terminal.

A version of this product is available for the PDP–11 computer.

Price: $6,500 – $9,000
Product Support Available: Yes
RGF (Report Generating Facility)

**Operating System:** VMS  
**Keywords:** • Decision support • Report writer

This general-purpose software package is designed to provide customized management information. RGF is table driven to achieve a broad range of inquiry and report capability specific to a given installation without program modification. The basic features are:

• Generation of reports from selected data contained in sets of list files of any given record format  
• Inquiry against data contained in list files of varying record format

A version of this product is available for the PDP–11 computer.

**Price:** $2,400  
**Product Support Available:** Yes  
**Contact:** Muriel King  
(801) 224–5306  
CLYDE DIGITAL SYSTEMS, INC.  
3707 N. Canyon Road, Suite 3–E  
Provo, UT 84604

RIM5 (Relational Information Management Data Base System)

**Operating System:** VMS  
**Keywords:** • Data base management • Engineering • Scientific

RIM5, a general-purpose data base management system suitable for a wide range of data processing applications, contains several features that make the system particularly useful to people working in scientific and engineering areas. RIM5’s command language offers the user direct on-line or batch access to information retained in the data base. RIM5 is intended to be a fully relational DBMS, with data stored in tables instead of in hierarchical or network relations. As new applications arise, the RIM5 data base can be easily modified, allowing the DBMS to change as needs change.

In the RIM5 data base system, data is stored in a 2-dimensional table termed a relation. The table contains attributes of the relation and data occurrences. The relations and their attributes are defined as
the schema of the database. A full selection of RIM5 commands
permits the user to create, update, and query the database. The data
base structure is defined in terms of attributes, relations, constraints
(rules), and passwords. Data in the RIM5 data base may be of fixed or
variable length of the following types: text, integer, real, double pre-
cision, vectors (integer, real, double precision), and matrices (integer,
real, double precision). The RIM5 user can easily load new relations,
modify the data base, or modify the schema.

The RIM5 program is designed as a stand-alone system and can be
executed in a menu mode or a command mode. In the menu mode, the
user is prompted for the inputs required to create, update, and query
the data base. In the command mode, RIM5 commands are directly
input by the user. An extensive on-line help facility is available to
both the new and experienced user. RIM5 can also be interfaced with
any application program that is written in a language capable of
calling FORTRAN routines.

Price: $2,800
Product Support Available: No
Contact: Customer Support Department
(404) 542-3265
NASA'S COMPUTER SOFTWARE MGT. AND INFO.
CENTER
University of Georgia
112 Barrow Hall
Athens, GA 30602

RMF (Resource Management Facility)

Operating System: VMS
Keywords: • Billing  • Cost accounting
         • Data base management  • Statistics

RMF is a software package used by data processing management to
bill time-sharing customers for system resources. Raw usage statist-
ics are automatically converted into dollar units. Additional charges
may be entered manually. RMF also monitors the system and per-
forms an automatic file backup (optional).

RMF was designed for use by both commercial service bureaus and
in-house, time-sharing installations that provide services to "customers" within the organization. In addition to providing overhead infor-
mation and allocating operating costs to internal time-sharing users,
RMS is used to ensure that computer resources are equitably distrib-
uted among competing departments.

A version of this product is available for the PDP–11 computer.
Price: $5,800
Product Support Available: Yes
RTFILE™

Operating System: VMS
Keywords: • Data base management • Data dictionary
         • Programming tools • Query facilities

RTFILE is a menu-driven, forms-oriented data base management system that allows users to perform a variety of data processing tasks, including list processing, with a minimum of training. RTFILE also offers a high degree of flexibility throughout most of its functions, which enables users to add, delete, and/or modify fields, indexes, records, reports, sorts, queries, and calculations.

A version of this product is available for the PDP–11 computer.

Price: $1,500 – $9,500
Product Support Available: Yes
Contact: Judith C. Mangels
         (301) 654–9120
         CONTEL INFORMATION SYSTEMS
         4330 East West Highway, Suite 200
         Bethesda, MD 20814

SAS®

Operating System: VMS
Keywords: • Data base management • Programming tools
         • Report writer • Statistics

The basic program product in the SAS system provides data retrieval and management, programming, and statistical and reporting capabilities, including line printer graphics. More than 75 easy-to-use procedures allow users to obtain results quickly, while applications programmers can take advantage of a full complement of programming tools, including the new SAS macro facility. The base SAS product is used for such diverse applications as capacity planning, market research, and quality control.

Price: Available upon request
Product Support Available: Yes
Contact: Jeanne E. Newsom
         (919) 467–8000
         SAS INSTITUTE INC.
         P.O. Box 8000
         Cary, NC 27511
SCSS™ Conversational System

Operating System: VMS
Keywords: • File management • Statistics

SCSS conversational computing gives quick responses to data analysis queries, and the statistical capabilities provide accurate output, both logically formatted and fully labeled. No previous data analysis or computing experience is required, since SCSS is virtually self-teaching. On-line help facilities and user-selected prompts give a system tutorial, complemented by a training module in cassette and slides that explain both fundamentals of data analysis and SCSS features. Used in market research, quality assurance audit analysis, and education and government reporting, SCSS provides many powerful statistical capabilities, including univariate statistics, cross-tabulations, t-tests, breakdown, scatter plots, correlations, regression, factor analysis, and more. An efficient system for exploratory data analysis and file management options, SCSS provides for generation of new variables and recode or revision of existing variables; sample, selection, and weighting of specific cases; and a comprehensive set of data transformations. SCSS will also interface with the SPSS® Data Analysis System for sharing of data and files.

Price: $3,000 – $8,000
Product Support Available: Yes
Contact: Susan Phelan
(312) 329-2400
SPSS INC.
444 North Michigan Avenue
Chicago, IL 60611

SEED Data Base Management System

Operating System: VMS
Keywords: • Data base management • Data dictionary
• Decision support • Graphics

SEED is an advanced, comprehensive dictionary-driven data base management system that is easy and efficient to use. The SEED elements are designed to provide straightforward relational concepts and practical, efficient CODASYL methods.

The SEED Data Base Management System consists of two packages:
1. SEED Application Development
   - SEED KERNEL consists of CODASYL-compliant data description and data manipulation languages plus utilities to help measure and improve performance. The SEED KERNEL improves data base performance, giving you a choice of methods for storing information and for representing the relationships among records. Thus, you can select the physical design that is
most efficient for your applications environment and tune that design to keep it performing optimally.

KERNEL is designed to reduce costs by reducing input/output requirements. Because KERNEL provides hashing access and unlimited levels of hierarchy, you can enter the data base at the precise record occurrence you want (calc method). Another method (via) permits clustering those records — on the same storage page, if possible — to minimize access costs. With KERNEL, you can specify the location mode for each record type in your data base.

The SEED KERNEL stores data efficiently, minimizing the memory requirements for storing and manipulating your data base. Thus, it will cost less to maintain and may be accessed more quickly.

- **GARDEN** is an interactive data manipulation language that serves as an applications development tool. A programmer or data base administrator can update or verify the contents of the data base or can test the validity of a program procedure without having to write a host language program.

- **SPROUT**, an intelligent file converter, is a batch processor for loading or unloading the data base. SPROUT lets you easily convert existing sequential files to a data base or vice versa. Thus, SPROUT simplifies data conversion while permitting the data base contents still to be used by older programs without recompilation.

- **VISTA**, a screen formatter and editor, is a screen-oriented applications development tool that lets you produce menu-based data entry and retrieval applications quickly and easily. VISTA operates on a wide variety of video terminals.

2. Decision Support System Option

- **HARVEST** is an easy-to-use query language that provides a relationallike interface to a SEED data base. HARVEST automatically navigates the data base to locate and retrieve information and can create temporary variables, test for conditions, compute totals and averages, and perform other calculations.

- **BLOOM** is a nonprocedural report writer that produces detailed, attractive output given just a few simple instructions. Users can specify page formats without concern for the mechanisms of locating the data and can store and reuse such formats as desired. Like HARVEST, BLOOM can also perform calculations on information as it is being retrieved and reported.

- **RAINBOW** is a managerial color graphics facility that automatically selects the best format for displaying the output of a HARVEST query. With RAINBOW you do not have to be a programmer or an artist to generate a "picture worth a thousand words." You need not concern yourself with scales, labels,
colors, or even the type of graph. RAINBOW automatically handles those details. Yet if you want to change a RAINBOW decision, the MENU facility allows you to do so easily and quickly.

A version of this product is available for the PDP–11 computer.

**Price:** $15,000 – $95,000

**Product Support Available:** Yes

**Contact:** Brenda McPherson, Sales/Marketing Administrator

(215) 668–0880

SEED SOFTWARE/UNITED INFORMATION SERVICES, INC.

Two Bala Plaza, Suite 300

Bala Cynwyd, PA 190041541

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**Sequitur**

**Operating System:** MS/DOS, ULTRIX, VMS

**Keywords:** • Data base management • Forms management

• Text editing/formatting • Word processing

Sequitur is a relational data base management system with integrated word processing that allows interactive data editing. Sequitur provides a visual method of specifying selections, sorts, joins, and other relational commands and provides data manipulation without programming. Sequitur includes a form generator with complete merge capabilities for form letters and mail list management and a report writer.

The system is designed to maximize flexibility and ease of use and can manage up to 1,024 columns (fields, attributes) in a data base. Each column is variable length and stores only what you enter. You can index an unlimited number of columns to speed searches, sorts, selections, and joins. These indexes are updated during data input.

Sequitur’s report function includes counts, totals, subtotals, max, min, and average within nested groups. Interactive, visual commands, integrated word processing, and reports are provided in one easy-to-use package.

**Price:** $795 – $12,000

**Product Support Available:** Yes

**Contact:** James Maddocks

(415) 540–5000

PACIFIC SOFTWARE MANUFACTURING CO.

2608 8th Street

Berkeley, CA 94710
Sequitur Program Development Kit

Operating System: MS/DOS, ULTRIX, VMS
Keywords: • Data base management • Programming tools
          • Text editing/formatting • Word processing

The Sequitur Program Development Kit works with Sequitur, a relational data base management system with integrated word processing. The kit provides applications programmers with a consistent set of tools for creating and manipulating Sequitur data bases from a computer program.

The Sequitur Program Development Kit is a library of C-routines from which applications developers may choose to use specialized software to supplement Sequitur's capabilities. The tools provided are comprehensive enough to build self-sufficient applications that use Sequitur's data structures.

Price: $600 – $8,000
Product Support Available: Yes
Contact: James Maddocks
         (415) 540–5000
         PACIFIC SOFTWARE MANUFACTURING CO.
         2608 8th Street
         Berkeley, CA 94710

SIR/DBMS

Operating System: ULTRIX, VMS
Keywords: • Data base management • Report writer
          • Statistics

SIR/DBMS is a comprehensive, high-performance, relational data base management system. A single, coherent, and easy-to-learn language allows the user to describe the data base, provide for complete data quality control, and handle any kind of logical data structure — relational, hierarchical, or network.

The retrieval facility lets the user:
• Produce simple or complex reports with automatic labels and subtotals.
• Perform simple statistical analyses, including descriptive statistics, frequency tables, histograms, and x-y printer plots.
• Produce camera-ready, tabular data displays with automatic titles. Table cells can contain means, medians, minimums, maximums, standard deviations, percentages, and quartiles.
• Interface directly (through the automatic production of system files) with several major statistical packages — BMDP, SAS, and SPSS.

The system can be installed and running in less than an hour, because no operating system modifications are required.
SIR/DBMS runs identically on a wide range of mainframes, minis, and micros. In addition, SIR/DBMS data bases can be easily transported from one computer to another.

Related modules include:

- SIR/HOST — Host Language Interface to SIR/DBMS data bases
- SIR/FORMS — Screen-oriented data entry and retrieval system
- SIR/SQL+ — Relational query language processor

The system has been successfully applied to such diverse fields as clinical trials, contract administration, cancer research, criminology, virology, market research, pharmaceutical research, oceanography, epidemiology, sociological studies, econometrics, computer performance analysis, census data analysis, and many others.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:**
Director of Sales
(312) 475–2314
SIR, INC.
820 Davis Street, P.O. Box 1404
Evanston, IL 60204

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**SIR/FORMS**

**Operating System:** ULTRIX, VMS

**Keywords:**
- Data base management
- Data dictionary
- Data entry
- Forms management

SIR/FORMS, a completely integrated system for interactive screen-oriented data entry and retrieval, lets you enter, retrieve, delete, or modify data in a SIR/DBMS data base. SIR/FORMS uses the data base schema (data dictionary) for automatic screen design, extensive data quality control, and help texts for operator assistance.

Applications can be implemented quickly. The default menus and screens provided by SIR/FORMS (with a single command) can be easily tailored to meet the needs of a specific application.

Operators can learn to use SIR/FORMS in minutes. No programming is required to run the system.

The program runs on the full range of computers that support SIR/DBMS and is configured for a wide variety of terminals. Additional terminal types are easily added.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:**
Director of Sales
(312) 475–2314
SIR, INC.
820 Davis Street
P.O. Box 1404
Evanston, IL 60204
SIR/SQL+

**Operating System:** ULTRIX, VMS  
**Keywords:**  
- Data base management  
- Query facilities

SIR/SQL+ is an interactive relational query system that lets users of SIR/DBMS interrogate their data bases, using English-language commands. SIR/SQL+ queries search the data base and automatically display the information requested.

The full power and user-friendliness of SQL (IBM’s Structured Query Language) are incorporated and extended. In addition to providing the full SQL language, SIR/SQL+ can take advantage of the existing structure of the data to perform retrievals much more efficiently than other relational systems. Frequently used queries can be saved as part of the data base.

SIR/SQL+ is equipped with a highly interactive display processor for developing fully formatted reports quickly and with a minimum of effort.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:**  
Director of Sales  
(312) 475–2314  
SIR, INC.  
820 Davis Street  
P.O. Box 1404  
Evanston, IL 60204

SLIB (Software Librarian Facility)

**Operating System:** VMS  
**Keywords:**  
- Data dictionary  
- Documentation  
- Project management

SLIB is a software package that assists organizations that produce and maintain a medium to large number of programs and related documents. SLIB is used to organize, document, maintain, and control the software library.

SLIB provides the basic structure for organizing a group of BASIC–PLUS programs into a library. Four levels of categorization are used. The highest-level category is called a system. The next level is called a facility; the third, a function; and the fourth, a part or program.

SLIB provides the following management information: contents of the software library, current status of all library programs (assigned/completed/withdrawn), development and maintenance history of programs, level of library activity over time periods (by programmer or project), and library consistency reports.
A version of this product is available for the PDP–11 computer.

**Price:** $4,300  
**Product Support Available:** Yes  
**Contact:** Muriel King  
(801) 224–5306  
CLYDE DIGITAL SYSTEMS, INC.  
3707 N. Canyon Road, Suite 3–E  
Provo, UT 84604

### SMARTSTAR

**Operating System:** VMS  
**Keywords:** File management, Forms management, Query facilities, Report writer

The SMARTSTAR family offers:
- SMARTDESIGN, a user tool for the videoactive design and specification of data records, field attributes, and forms layout, with automatic creation of VAX RMS files
- SMARTQUERY, a fourth-generation program that allows the sophisticated query, entry, editing, and deletion of data records viewed through multiple windows (up to 31) or scrolled forms (up to 400 lines)
- SMARTCALL, a programmer's interface to the SMARTSTAR tools via a run-time library, accessible from any VAX host language
- REQUEST, an integrated report and query system consisting of a nonprocedural interactive query language and general report writer

**Price:** $2,500 – $4,200  
**Product Support Available:** Yes  
**Contact:** Dr. Larry L. Pfeifer  
(805) 683–3771  
SIGNAL TECHNOLOGY, INC.  
5951 Encina Road  
Goleta, CA 93117

### SPIRE Data Base Management System

**Operating System:** VMS  
**Keywords:** Data base management, Query facilities, Security

SPIRE is based on a relational model of data bases. User interaction with the SPIRE DBMS via a CRT or hard-copy terminal provides for the easy and timely access to the user's data while still allowing a full range of retrieval and manipulative capabilities. The SPIRE DBMS will readily accommodate both the new user who knows very little about data base management and the more sophisticated user
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who can operate at a lower level in the system. The SPIRE system includes a supervisor, which uses a password security procedure to limit user access to the system, to data files, and to various commands.

The SPIRE DBMS includes a user-friendly query language known as Query-By-Example (QBE). QBE provides a "user-specific view" in a user-friendly environment along with data retrieval and manipulative capabilities. Through the QBE language, the user interacts with the SPIRE DBMS as though examining and manipulating a set of tables. That is achieved by allowing each user to develop a template for a set of data in terms of the user "view." The important characteristic of the template, as far as the user is concerned, is that it is in a record layout form. QBE allows each user to have a different "view" of a common set of data. Further, the user may "view" a data base as containing records that are made up of parts of explicit data base records of transformations of explicit data base records such as a subset of the existing range of values in a given field. QBE also includes two functions; one sums the contents of a numeric field for "data records" satisfying selection criteria, and the other counts the number of "data records" that satisfy a selection criteria.

Price: $3,775
Product Support Available: No
Contact: Customer Support Department
(404) 542-3265
NASA'S COMPUTER SOFTWARE MGT. AND INFO. CENTER
University of Georgia
112 Barrow Hall
Athens, GA 30602

SPSS® Data Analysis System

Operating System: VMS
Keywords: • Data base management • Report writer • Statistics

SPSS is an integrated data analysis and statistical reporting tool with applications in business, government and nonprofit organizations, and education. With a full set of documentation, SPSS is easy to learn and flexible to use. A complete range of statistics is available in SPSS: cross-tabulations, aggregations, ANOVA, MANOVA, non-parametric tests, frequency distributions, discriminant, factor analysis, and more. The powerful report generator can list cases, compute summary statistics, and produce customized, camera-ready output. Applications for SPSS include analysis of survey data in marketing research, management of personnel records, reporting in government agencies, monitoring of sales activity as it relates to other operations in business, matching admissions data with scholastic performance...
in education, maintaining current customer records in virtually any industry, and others.

**Price:** $3,000 – $8,000

**Product Support Available:** Yes

**Contact:** Susan Phelan  
(312) 329–2400  
SPSS INC.  
444 North Michigan Avenue  
Chicago, IL 60611

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**SPSS–X Information Analysis System™**

**Operating System:** VMS

**Keywords:**  
- Data base management  
- File management  
- Report writer  
- Statistics

The SPSS–X system organizes, summarizes, and displays data. A powerful yet flexible system to manage data, maintain files, compute statistics, and format reports from analysis results, SPSS–X has applications in business management, market research, engineering tests, government reports, analysis of U.S. Bureau of the Census Data, education, and research. With the ability to read nested or hierarchical files, SPSS–X can define and manipulate long string variables, perform conditional data transformations, and handle an expanded list of numeric functions. A flexible USERPROC facility allows users to write their own procedures into SPSS–X and to take full advantage of its data and file-management techniques. SPSS–X also has an import/export feature that lets SPSS–X sites share access to information held in portable data files; SPSS–X will transport data and data-dictionary information across machine types.

The SPSS–X system interfaces directly with the VAX DATATRIEVE DBMS, making all DATATRIEVE data available to the full range of SPSS–X statistical procedures: MANOVA, Box–Jenkins, cluster analysis, probit/logit, FACTOR, regression, hierarchical log linear, and more.

**Price:** $3,000 – $8,000

**Product Support Available:** Yes

**Contact:** Susan Phelan  
(312) 329–2400  
SPSS INC.  
444 North Michigan Avenue  
Chicago, IL 60611
TAM (Terminal Access Module)

Operating System: VMS
Keywords: • Data entry • Forms management
• Programming tools

TAM, a transaction processing front end, provides a wide range of capabilities for handling data entry, inquiry, and update at CRT terminals. The details of the interaction (screen layout, prompting text, field edits, cursor positioning, and so on) at the CRT are specified by formats, which are sets of statements in a high-level, declarative language. The formats are compiled into a library and are then executed under application program control. TAM contains an extensive set of support facilities for creating, modifying, and testing formats.

Applications communicate with TAM via the large-message, send/receive facilities of RSTS/E or with the send/receive and dynamically mapped shared-region facilities of RSX–11M. A transaction-processing application program would, as required, send messages to TAM saying, in effect, "execute format x at terminal n and return the record of data collected." The critical-performance portions of TAM are implemented in PDP–11 assembly language as shared code.

Under VMS, the TAM format-execution code consists of a set of procedures, called using standard VAX/VMS conventions, which are linked with the user program image. The TAM VAX–11 MACRO procedures are position-independent and are supplied as a shareable image.

A version of this product is available for the PDP–11 computer.

Price: $6,000
Product Support Available: Yes
Contact: Martha Schriefer
(617) 861–0670
EVANS GRIFFITHS & HART
55 Waltham Street
Lexington, MA 02173

TOPMAN (Total Planning and Management)

Operating System: VMS
Keywords: • Graphics • Project management • Report writer
• Scheduling

TOPMAN is a project management system designed to relieve project and functional managers of time-consuming planning and record-keeping tasks. Calendar-based graphic and printed reports help managers control projects. Great flexibility and a variety of reports are available for project, division, subdivision, or multiproject networking.
Information Management

- Initial planning: Project staff sets up a plan including an activity list, start dates or dependence on other activities, span times, estimated resources required, milestones, and department or individual responsibility assignments.
- TOPMAN generates Gantt (bar) chart plots to show activity descriptions, span times, critical path, dependencies, milestones, and responsibility assignments. Budgeted resource data is displayed in distributed or cumulative graphic plots and printer reports.
- Updating: Work progress, resource expenditures, exception reporting criteria, and/or plan amendments are entered by the user.

TOPMAN generates bar charts, graphic plots, and printer reports to reflect work achieved in activities, probable complete dates, recalculate critical path, resources expended, dollars required to complete, earned value, cost trend, cost variance, and exception report. Straightforward and easily understood reports relieve managers from distracting details that interfere with their primary task of managing.

Combined with our Interactive TOPMAN Preprocessor (ITP), TOPMAN is very user-friendly. ITP displays a series of prompts or questions to step the user through the process of building the project into a planned schedule and budget. As work proceeds and costs are incurred, the prompts lead the user through updating and replanning cycles so that the project managers can always be on top of the project.

A version of this product is available for the PDP–11 computer.

Price: $15,000 – $25,000
Product Support Available: Yes
Contact: G. H. Marlow, President
(215) 348–1200
Applied Management Methods, Inc.
201 N. Broad Street
Doyelston, PA 18901

Trouble Ticket Reporting System

Operating System: VMS
Keywords: Maintenance • Statistics • Telecommunications

The Trouble Ticket Reporting System allows complete control and monitoring of troubles from the time they are reported, as they are tested and dispatched, until they are cleared. This system maintains statistics and provides reports for repairs that have been completed. Each company can determine how many months of information to retain in history for reporting purposes, using its own acronyms, codes, and customer setup. Most criteria and display fields are user defined. The trouble report can be printed at any location determined by the operator during dispatching. Statistics, including indexes, percentages, and elapsed time to clear, are updated monthly.
Uncleared trouble reports in the system can be accessed through an inquiry function for monitoring status. Access to information can be through any field on the trouble ticket, including equipment assignment, dispatch information, status, and the trouble, found, and cause descriptions for the trouble.

Reports can be set up to run on request or automatically with changes to standard reports or new reports developed easily on line.

Each customer or premise trouble history is kept in summary and in detail in both this system and Customer Service Inquiry.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Bob Morse  
(206) 456–3535  
ALLIED DATA  
P.O. Box 2406  
Olympia, WA 98507

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**Unibase Relational Network Database**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:**  
- Data base management  
- Data entry  
- Query facilities  
- Report writer

Incorporating the latest in software generation tools and relational database hardware, Unibase Relational Database is the ideal database for companies with more than one UNIX*-based VAX computer that should draw information from a reliable data base. The special relational processor relieves the host computer from burdensome DBMS tasks and provides exceptional relational DBMS transaction throughout. Unibase includes a large collection of application generation programs: a data entry package, a menu handler, query by forms, an interactive query language, and a report writer. The screens and help available make this powerful data base approachable to new or naive users.

Networking capabilities allow 64 computers and up to 4,096 users to access a single data base. Transactions may be logged for audit, and backups may be performed while the system is active.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Sam Bishop, Vice President, Sales  
(312) 879–1008
UNIQ DIGITAL TECHNOLOGIES
28 S. Water Street
Batavia, IL 60510

Unify Relational Database Management System

Operating System: UNIX, VMS
Keywords: • Data base management  • Data dictionary
        • Programming tools  • Query facilities

The Unify Relational Database System provides a complete spectrum
of powerful fourth-generation application development facilities. Its
UNIX* operation results in outstanding performance. Nonprocedural
software tools allow simplified development and maintenance of ef-
effective, efficient applications. Users can also create their own appli-
cations.

Included in Unify are the SQL relational query language, query by
forms, an interactive data entry package, an interactive data dictio-
nary, a report writer, and a menu handler.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price:  Available upon request
Product Support Available:  Yes
Contact:  Sam Bishop, Vice President, Sales
          (312) 879–1008
          UNIQ DIGITAL TECHNOLOGIES
          28 S. Water Street
          Batavia, IL 60510

VAX–11/PROVUE, Version 2.0

Operating System: VMS
Keywords: • Data conversion  • Graphics  • Maintenance
        • Process control

VAX–11/PROVUE is an intelligent multiple display control system
for VAX/VMS systems allowing both Local and Remote Display Sta-
tions. This complete package of hardware and software enables the
user to build up pictures and to control their display to reflect the
status of any part of the process. That display control can be effected
by the user’s application programs or from any of the associated sys-
tem keyboards. Facilities are built into PROVUE to allow an opera-
tor to interact with the application system to acknowledge messages
and input data to control the user process being monitored and dis-
played.
The system includes the following components:

- **Interactive System Build** — Enables the user to define subsystem parameters and configurations.
- **Picture Build and Editing System** — Allows pictures to be built and converted to the form necessary for use within the PROVUE Dynamic System.
- **Communications** — Dispatches and controls all messages between tasks and remote cluster controllers.
- **PROVUE Dynamic System** — Contains the software that controls the display and updating of pictures according to messages received from the user application system or by commands typed at the keyboard. Additionally, the PROVUE Dynamic System allows other input typed at the keyboard to be communicated to the user application system.
- **System Start Up** — Starts up a PROVUE Dynamic System and automatically builds up an internal status of the complete system, activating the component tasks.
- **Cluster Controller Reset** — Resets the status of the PROVUE subsystem HOST pertaining to that cluster when it comes back on line.
- **Down-Line Loader** — Comprises host and slave components that allow a new remote PROVUE cluster software system to be down-line loaded onto a TU58 cartridge for subsequent use. Optionally, the cartridge can be rebooted when the complete system has been loaded.

Refer to SPD #25.84.1 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office
(see Introduction).

### Vision

**Operating System:** VMS

**Keywords:**
- Data base management
- Graphics
- Project management
- Simulation

Vision is a complete stand-alone or distributed interactive project management information system. Designed for non-EDP personnel, the system requires no programming knowledge or commands; function keys and formatted screens make VISION easy to learn and easy to use. Vision's multiuser, multifunctional capability means that reports and plots can be processed while users perform other tasks, such as data entry and modification.

**Price:** $30,000 – $115,000

**Product Support Available:** Yes
XDE (Data Entry and Edit System)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Data entry • Data management
• Forms management • Text editing/formatting

The XDE data entry and edit system is comprised of two major programs that are selectable from the XED menu processor: the XFG form generator program for creating forms and the XDE data entry/edit program for building a data base. Pure data entry is done key to disk in a manner conceptually similar to standard keypunch operations. The package is further enhanced with printing utilities that allow formatted data to be printed with or without background text.

XFG allows the user to create a form template and to define the parameters for its use. Definitions include operator entry, computer entry, entry from a list, entry from calculations — cross-field, numerical, or character string — format masking, character masking, key field, key field prompt, blanked fields, operator or supervisor override, and verification by dual-entry, sight, range, or list matching.

XDE allows record creation, update, modification, and printing and provides spreadsheet capabilities. Each record may contain up to 500 fields, and each field may contain up to 50 characters of data; there is no limit to the number of records per file. The XDE system provides a bridge for passing information between large data base management systems and the XED word processor. The system can also be used as a user-friendly front end for the data base manager by creating data entry forms that are easily understood.

XED office system programs are designed and coded for UNIX* Version 7, System III, System V, and Berkeley 4.1 and 4.2 to provide maximum installation flexibility and efficiency in a multiuser environment.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: Available upon request

Product Support Available: Yes

Contact: Ted Ferguson
(818) 884–2000
COMPUTER METHODS, LTD.
P.O. Box 709
Chatsworth, CA 91311
XPlan Plus

Operating System: VMS
Keywords: • Data base management • Decision support
          • Financial planning • Spreadsheets

This spreadsheet program, far more powerful than other spreadsheet products, is used in all markets for spreadsheet applications. XPlan can handle from 350 items to 50,000 items and can produce typed reports. It is limited to BASIC–PLUS and VAX/VMS BASIC.

A version of this product is available for the PDP–11 computer.
Price: $399 – $499
Product Support Available: Yes
Contact: M. Stewart
         (441) 942–2282
         XPLAN CORP.
         P.O. Box 327
         London, W44QD
         England

XSH (Menu Processor/User Interface)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Development tools • File management
          • Programming tools

The XSH menu processing system provides a menu-driven shell-like interface between the user and the UNIX* operating system. XSH is tree-structured and recursive, with no restrictions on the number of menu levels. The menu processor allows the creation, deletion, and manipulation of UNIX* directories and files, provides for vertical market integration of other program modules, and can be installed as the log-in shell to assist the inexperienced UNIX* user in using the power of the system.

Standard interfaces included are hooks into all the XED office system modules, including the XED word processing system, the programmer’s editor, forms generator, data entry and financial analysis, printer/spooler system, electronic mail, and document assembly. The menu processor also permits interactive UNIX* shell commands.

XED office system programs are designed and coded for UNIX* Version 7, System III, System V, and Berkeley 4.1 and 4.2. Care has been taken to provide maximum installation flexibility and efficiency in a multiuser environment.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.
Price: Available upon request
Product Support Available: Yes
Contact: Ted Ferguson
(818) 884–2000
COMPUTER METHODS, LTD.
P.O. Box 709
Chatsworth, CA 91311
Insurance Agency Package

Operating System: VMS
Keywords: • Accounting • Accounts payable
        • Accounts receivable • General ledger

This comprehensive system is designed specifically for the small- to medium-size insurance agency. The package handles the complete accounts receivable, accounts payable, and general ledger requirements of the agent, together with premium, commission, and sales analysis reports.

A version of this product is available for the PDP–11 computer.

Price: $5,000
Product Support Available: Yes
Contact: Nigel Harris
        (613) 829–8888
        HARRIS COMPUTER SYSTEMS
        16 Credit Union Way
        Nepean, Ontario K2H 8R6
        Canada
Law

RULES FOR TEACHERS — 1915

1. Not to get married.
2. Not to keep company with men.
3. To be home between the hours of 8 P.M. and 6 A.M. unless in attendance at a school function.
4. Not to loiter downtown in ice cream stores.
5. Not to leave town at any time without permission of the chairman of the board.
6. Not to smoke cigarettes.
7. Not to get in a carriage or automobile with any man, except her father or brother.
8. Not to dress in bright colors.
9. Not to dye her hair.
10. To wear at least two petticoats.
11. Not to wear dresses more than two inches above the ankle.
12. To keep the schoolroom neat and clean: (a) sweep the floor at least once daily; (b) scrub the floor at least once weekly with hot water and soap; (c) clean the blackboards at least once daily; (d) start the fire at 7 A.M. so the room will be warm by 8 A.M.
**bcSADMSYSTEM™**

**Operating System:** VMS  
**Keywords:** • Accounting  • Billing  • General ledger  
• Scheduling

This program handles fee schedule billing at both the client and file levels. From one to seven hourly rates can be set up for each file. For any file, timekeepers may charge a special rate different from the normal rate charged to the client.

The program also has automatic cycle billing for each file (quarterly, annually, and so on) plus minimum dollar billing. Minimum dollar billing allows you to enter any dollar amount so that the system will automatically include for billing all files with unbilled fees that exceed this dollar amount. The on-demand billing feature allows the automatic printing of bills for selected files or for all files of a selected file type, client, or billing attorney.

The software automatically processes rate changes for selected matters, clients, and timekeepers. The effective date of the change is entered to determine which entries are to be charged at the old and new rates.

The program also has unlimited billing narrative and more than 20 billing statement formats. A summary can be printed on each bill, including the names of each person on the bill, the total hours, and the hourly rate charged by each person.

A reversal feature allows quick and easy corrections and the reprinting of bills. Statistics are automatically updated to reflect changes made to a bill. Each bill has three optional sections, which are used to print needed information on a bill — for example, claim number, policy number, name of insured, date of loss, and so on.

A client adjuster diary is used to track the contact dates, entertainment dollars spent, and the number of files received from each adjuster of a carrier. The information is printed on the Client Adjuster Report.

Comprehensive management and productivity reports with divisions by office and department can be generated. Along with billing statistics, the billing register indicates if a file was billed out of cycle and prints the total dollars that should have been billed for a file but were not.

All client-related reports group the offices of multiple-office clients together. The reports offer separate totals for each office of a client plus combined totals for all offices.

The software offers screen display of the most recent administrative and financial data for selected files, timekeepers, and clients.

Calendar reports, including activities by office, timekeeper, and activity type (depositions, vacations, and so on) may be generated. Any
date range can be chosen. The day (Monday, Tuesday, and so on) is printed along with the calendar date.

A version of this product is available for the PDP–11 computer.

**Price:** $6,000 – $10,000

**Product Support Available:** Yes

**Contact:** Richard Bosler, Partner
(213) 956–3214

BOSLER–CLINE SYSTEMS
741 South Street
Glendale, CA 91202

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**DDM–11 (Due-Date Monitor)**

**Operating System:** VMS

**Keywords:** • Personnel • Project management • Scheduling

This is a multilevel approach to the management of a work load as it is distributed over a staff. The closed-loop DDM–11 system allows the assignment of tasks to individuals along with the due or critical date associated with the event. DDM–11 allows the creation of cataloged and noncataloged descriptions of repetitive or recurring tasks and permits entries to be entered as permanent or nonpermanent. Year-end rollover and mass loading are supported. Assigning and responsible producers, coded tasks as well as manually input task descriptions, client/manager maintenance, including telephone numbers, and specific date calculations are supported. The loop is closed by using the event reconciliation feature — marking the event as having been accomplished, by whom, and on what date. Complete historical and archival storage capabilities, along with historical reporting for tracking and audit purposes, are also supported. Many types of reporting are available, including by producer, by client, and by task. Multiple restrictions can be placed on report generation, allowing the user to tailor a report to his/her requirements. Late reports and elapsed-time-to-completion reporting are also supported.

Although developed by a CPA firm for public accounting and legal firms, the DDM–11 can be used effectively for project management, controlling service contracts for equipment, and for any other type of management setting in which events must be performed by individuals by specific dates.

A version of this product is available for the PDP–11 computer.

**Price:** $995 – $1,995

**Product Support Available:** Yes

**Contact:** C. Lee Cates
(615) 523–0553

DORROUGH & PARKS
530 Gay Street, Suite 204
Knoxville, TN 37902
Fedder Legal Time and Billing System

Operating System: ULTRIX, UNIX
Keywords: • Accounts receivable • Billing • Financial analysis • General ledger

The Fedder Legal Time and Billing System, a complete professional practice management system for law firms, provides for the entry of time and expenses, billing, cash receipts, writeups, and writedowns and includes multiple billing rates. Reports contain work in process by partner, staff productivity analysis, invoices, statements, aging by partner, and analysis by type of service.

A companion docket control system is available to monitor filings and so forth. The Fedder Accounts Payable and General Ledger systems combine to provide escrow account control and schedules.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: David E. Fedder
          (301) 561–3579
          FEDDER SOFTWARE, INC.
          P.O. Box 248
          Timonium, MD 21093

General Ledger

Operating System: VMS
Keywords: • Accounting • General ledger

The General Ledger package enables law firms to computerize the necessary accounting books and records normally prepared manually. The system provides all financial statements, such as a trial balance sheet, general ledger, comparative balance sheet, income statements, expense statements, and statements of partners’ capital expenses.

The General Ledger package interfaces to the Management Program 1000 timekeeping and billing system. That integration between the two systems allows the general ledger to be easily maintained, with little duplication of effort.

A version of this product is available for the PDP–11 computer.

Price: $5,000
Product Support Available: Yes
Contact: Suzanne Gunnells
          (215) 825–7500
          COMPUTE–R–SYSTEMS, INC.
          5165 Campus Drive
          Plymouth Meeting, PA 19462
INCASE™ (Information Management System)

Operating System: VMS
Keywords: • Decision support • Information management
INCASE is designed to automate control of information that is too laborious to maintain manually. The system allows the user to custom-design the data base — and make system changes even after the data has been entered — and to create and modify specialized report formats. INCASE enables the user to search any field of the data base easily and quickly, via powerful retrieval commands.

INCASE is used in the law firm environment in areas such as litigation support, work product retrieval, docket control, and library management.

A version of this product is available for the PDP–11 computer.

Price: $11,500 – $26,000
Product Support Available: Yes
Contact: Suzanne Gunnells
(215) 825–7500
COMPUTE–R–SYSTEMS, INC.
5165 Campus Drive
Plymouth Meeting, PA 19462

Law Office Management System

Operating System: VMS
Keywords: • Accounting • Billing • Financial management
• Recruiting

This fully integrated accounting system provides client billing and expense accounting, accounts receivable, accounts payable, automatic checkwriter, general ledger, trust and fiduciary accounting, and personal account statements. Other DP applications for the law office include docket control, a search and retrieval system, fixed asset control, personnel leave, and associate recruiting.

A version of this product is available for the PDP–11 computer.

Price: $5,000 – $25,000
Product Support Available: Yes
Contact: Carolyn Burnenton, Marketing Manager
(301) 652–2802
BEERS & ASSOCIATES, INC.
7910 Woodmont Avenue
Bethesda, MD 20814
Legal and Accounting System

Operating System: VMS
Keywords: • Accounts payable • Billing • Scheduling
         • Word processing

This system, designed for a single or multigroup firm of lawyers, records and accumulates the lawyer’s time on a case-by-case basis for billing and reporting purposes. Some functions include:

• Input time from lawyers’ time slips. Entry includes the lawyer, client, case, time involved, type case (probate, tax, and so forth), and free-text description of service rendered. Each lawyer’s standard fee is built in but can be overridden on each entry.
• Client billings, produced on a case-by-case basis, include lawyers’ time and expenses.
• Complete word processing capability and accounting, including general ledger, accounts payable, and payroll.

Available reports are Current Month Billing, Accounts Receivable Aged Account, Billings in Suspense, Average Rate per Hour Billed versus Hours Incurred, and Billings by Case Type.

A version of this product is available for the PDP–11 computer.

Price: $1,500 – $20,000
Product Support Available: Yes
Contact: Chuck Dollarhide
         (405) 236–8541
         MILLER, DOLLARHIDE, DAWSON & SHAW
         1212 Colcord Building
         Oklahoma City, OK 73102

Legal Data LOFT System (Law Office of the Future – Today)

Operating System: VMS
Keywords: • Accounts receivable • General ledger
         • Project management • Word processing

The LOFT system has programs for the following functions:

• Time and disbursement recording allows for unlimited narrative as well as a dictionary of abbreviations that can be used anywhere in the text for “shorthand typing”; but when a prebill or final bill is printed, abbreviations are translated. An abbreviation may be from one to four characters long and may represent a phrase up to 240 characters long.
• Various formats for final bills with unlimited narrative, complete detail entry by entry, or paragraph format.
• Ability to transfer time/disbursement entries from one client/case to another, with complete audit trails — transfer cases from one client to another, as well as the ability to merge cases.
• Maintain complete historic accounts receivable with all detail.
• Ability to "unbill" bills, edit, and rebill, leaving audit trail.
• Integrated accounts/payable, client accounting, and general ledger, with automatic check writing. The general ledger has complete narrative.
• Conflict-of-interest checking maintains regular alpha look-up file as well as a compacted alpha file, stripping out the vowels.
• Payroll system, presently with more than 500 users.
• Word processing — OEM for MASS-11 (MicroSystems Engineering)

A version of this product is available for the PDP-11 computer.

Price: $5,000 – $35,000
Product Support Available: Yes
Contact: Leon M. Padell
(617) 426-1040
LEGAL DATA SYSTEMS, INC.
50 Franklin Street
Boston, MA 02110

Legal Management System

Operating System: UNIX, VMS
Keywords: • Accounts payable  • Accounts receivable
          • Billing  • Management

The Legal Management System offers specialized legal time billing, accounts receivable, and management report programs designed for small- and medium-size law firms. Features include unlimited timeslip narrative, multiple statement formats, trust and/or retainer modules, and optional finance charge. This table-driven package is tailored to specific needs of firms. The PDP-11 system also tracks receipts by lawyer and area of practice, as well as the associated billings.

The system contains an annual enhancement program that responds to the changing requirements of firms and their clients. An outstanding training program for the administrator as well as the operator is offered along with the annual user meetings.

A version of this product is available for the PDP-11 computer.

Price: $2,500 – $19,000
Product Support Available: Yes
Contact: Marc Alexander, National Sales Manager
(503) 641-8100
ALPINE DATASYSTEMS, INC.
8043 SW Cirrus Drive
Beaverton, OR 97005
Legal Time and Billing System

**Operating System:** VMS

**Keywords:** Accounts receivable  • Billing  
Financial analysis  • Report writer

This system applies reported time and expenses to appropriate client matters and monitors accounts receivable. The system provides comprehensive financial and management reports, including productivity analyses; revenue reports by attorney, client, and matter type; aged accounts receivable; and value of unbilled time and unbilled advanced costs.

As many as five rates are stored for each attorney. Further, special rates can be applied for any client or matter.

The billing process is highly flexible, flagging statements due by frequency, threshold dollar amount, or by discretion. Bills can be generated by attorney, by client, or by matter. Inquiry, edit, and final bills are produced by the system. The bill format will display as many as 1,200 characters of explanatory notes for each time and expense entry. The system calculates tax for those states that tax personal services.

Complete audit trails are created. In addition to the integral accounts receivable function, the system will interface with other accounting modules, such as general ledger.

A version of this product is available for the PDP-11 computer.

**Price:** $20,000

**Product Support Available:** Yes

**Contact:** Ralph S. Trigg, Jr.  
(505) 842-1247  
AUTOMATED OFFICE SYSTEMS, INC.  
P.O. Box 100  
Albuquerque, NM 87103

Management Program 1000®

**Operating System:** VMS

**Keywords:** Accounting  • Billing

Management Program 1000 is a set of programs offering efficiency, flexibility, and convenience to law firms in the area of financial accounting. The software tracks unbilled time, unbilled disbursements, and accounts receivable information. A comprehensive set of reports, in a wide variety of formats and sequences, is designed to manage unbilled inventory and accounts receivable and to automate the billing process. Management reports show profitability by type of law, attorney performance and utilization, analysis of billing efficiency and provide exception reporting.
Additional features of the package include a bill formatter program, which produces customized client bills, and a ReportWriter program, which generates customized reports. In addition, an automatic transfer routine for unbilled time and disbursements and a Status Inquiry program enhance system flexibility.

Other options to the in-house system include word processing, litigation support, docket control, conflict-of-interest check, and general ledger.

A version of this product is available for the PDP–11 computer.

**Price:** $32,000  
**Product Support Available:** Yes  
**Contact:** Suzanne Gunnells  
(215) 825–7500  
COMPUTE–R–SYSTEMS, INC.  
5165 Campus Drive  
Plymouth Meeting, PA 19462
Library Science
Basis Technical Library

Operating System: VMS
Keywords: • Query facilities • Security

Basis Technical Library provides a turnkey approach to automate the library functions of the Information Center within an organization. Immediately after purchase, Battelle provides support to tailor the turnkey package to meet the customer’s requirements. End-user staff are trained to be self-sufficient, requiring little or no assistance from the Computer Center Staff.

The features of the Technical Library include on-line catalog access by keywords to author, title, publisher, and subject via menu-driven or direct search approach; circulation control driven on line through bar coding and light pens or through terminal input; book reservation and memo generation; acquisitions control showing purchase orders and current status; book processing done on line or off-loaded from MARC tapes with formatting capabilities for either full or partial display; serial controls that merge multiple functions, such as check-in, claiming, routing, and ordering; and several security types and levels.

The Basis Technical Library lets users define new applications and begin loading data within a few days. No computer programming is required for most implementations.

Price: $42,000
Product Support Available: Yes
Contact: Basis Coordinator
(614) 424–5524
BATTELLE SOFTWARE PRODUCTS CENTER
505 King Avenue
Columbus, OH 43201

BiblioTech Library Software System

Operating System: VMS
Keywords: • Data base management • Forms management
• Information management • Report writer

This family of computer software modules designed for the company library or information center supports the management, clerical, and intellectual efforts that are part of operating a vital research library. BiblioTech is based on DRS (Data Retrieval System). Librarians use DRS, a mature and reliable data base management system, with BiblioTech for information retrieval and management.

The BiblioTech Library Software System, a complete and fully integrated library system, is modular, and most modules can be used alone or in conjunction with other modules — a benefit for the library that has limited needs now but may expand later. The modules in-
teract using a single data base. Data entered in any one of the mod-
ules updates the files and data in the other modules. The full set of
modules eliminates the need for redundancy in capturing and in stor-
ing the information that may be needed for any acquisition, storage,
or retrieval operation. Basic BiblioTech consists of three modules:
catalog update, authority update, and a browsing module serving as
an on-line catalog. Additional modules for circulation and periodicals
control are available.

The basic BiblioTech system allows the user to enter bibliographic
information when material is being ordered. The system prints order
forms, and items on order are automatically available for searching,
with the status displayed in the Browsing module. The system tracks
department charges, cost of material, and the person requesting the
material.

The library data base can be updated interactively or in batch mode.
BiblioTech Browsing, an on-line full-text search and retrieval system
including full Boolean searching techniques and powerful ad hoc re-
porting capability using 19 basic commands, provides an easy search
capability for the library user. Through menu options, the user scans
indexes, eliminating the need for a card catalog.

BiblioTech provides support for the on-line catalog, quality indexing
and abstracting for better retrieval, a more timely catalog and
indexes, better current awareness services, a better-managed collec-
tion, and full Boolean search capabilities to information resources
and to fields of data in the data base. For the technical or company
library with diverse and unique information resources that need to be
in a single data base, this system provides a simple and cost-
effective solution.

A version of this product is available for the PDP–11 computer.

**Price:** $15,000 – $31,000

**Product Support Available:** Yes

**Contact:** Lynda W. Moulton

(617) 897–7163

COMSTOW INFORMATION SERVICES

302 Boxboro Road

Stow, MA 01775

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**DocuSearch Full Text-Retrieval System**

**Operating System:** VMS

**Keywords:** • Data base management • Query facilities

• Report writer • Research

DocuSearch is a rapid text-retrieval system that stores the full text
of any length document. As many as 33,000 documents per data base
can be stored on the PDP–11 series; VAX storage is virtually unlim-
ited. When the data base is built by DocuSearch, a dictionary is automatically created. The dictionary is used to quickly complete searches without the need to process the actual text of the documents.

DocuSearch accurately performs searches on occurrences of a single word or complex strings, such as "word A and/or word B," root word inquiries, phrase, and proximity searches. In addition to free-form text, DocuSearch allows fixed-format fields that can be used for selection, sorting, and tabular reports.

DocuSearch produces a list of the documents meeting search criteria. The user decides which documents to review. DocuSearch browses smoothly through the documents, both forward and backward, traveling from one document to another on command. DocuSearch highlights search words as they appear in the document. Selected documents can be reviewed on the CRT screen, then printed if a hard copy is required.

A version of this product is available for the PDP–11 computer.

Price: $14,500
Product Support Available: Yes
Contact: Ralph S. Trigg, Jr.
(505) 842–1274
AUTOMATED OFFICE SYSTEMS, INC.
P.O. Box 100
Albuquerque, NM 87103

**Everhart/Hoffing RSX Collection**

**Operating System:** VMS

**Keywords:**
- Disk utilities
- Games and demos
- Programming tools

This is a collection of useful and interesting utilities, subroutines, and games for use with RSX–11M. The software is generally documented in README and .HLP files and is intended for use by experienced programmers.

The collection includes a utility to list BRU tapes (BRUDIR), a high-speed magtape to disk/disk to magtape reproduction program that uses disk container files (BIGTPC), an updated version of DDT22, multifile virtual disk support, a maze game, and assorted other software.

No guarantees are made as to the completeness, usability, or quality of the programs on this tape. The material has not been checked or reviewed by DECUS, and documentation may or may not be included.

Documentation is on magnetic media. DECUS number 11–SP–34.
A version of this product is available for the PDP–11 computer.

**Price:** $5 – $225

**Product Support Available:** No

**Contact:** DECUS (see Introduction)

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**Library Tape 1**

**Operating System:** VMS  
**Keywords:**  
- Documentation  
- File management

The VAX Library Tape 1 contains programs from VAX–1 through VAX–21.

SPICE2 (VAX–6) is included on this tape. The U.S. government export regulations prohibit distribution of this program outside the United States without export licenses.

Documentation is on magnetic media. A manual includes the documentation not available on the magnetic media. DECUS number VAX–LIB–1.

**Price:** $5 – $225

**Product Support Available:** No

**Contact:** DECUS (see Introduction)

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**Library Tape 2**

**Operating System:** VMS  
**Keywords:**  
- Documentation


Documentation is on magnetic media. DECUS number VAX–LIB–2.

**Price:** $5 – $225

**Product Support Available:** No

**Contact:** DECUS (see Introduction)

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**Medianet**

**Operating System:** VMS  
**Keywords:**  
- Communications  
- Office systems  
- Report writer  
- Scheduling

Medianet is a media management/distribution system for individual and interlinked libraries and performs resource booking, pick lists and shipping labels, reports, intranetwork communications, and client notices and messages functions.

The system features:

- On-line interactive reservations, updates, and information displays
• Optimized machine usage by user-controlled deferred batch processing of reports and notices
• Direct computer-to-typesetter catalog option
• Comprehensive electronic mail communication system
• Table-driven shipping modes, holidays, transit delays, and so on

Medianet's powerful report writer enables the user to customize standard reports by choosing sorts, page, paragraph and total breaks, print variables, and record selection.

Price: $20,000

Product Support Available: Yes

Contact: Robert Brown
(902) 429–3175
Dymaxion Research Ltd.
Box 1053, Armadale Station
Halifax, Nova Scotia B3L 4L5
Canada

ULISYS

Operating System: VMS

Keywords: • Database management • Purchasing
• Report writer

ULISYS, a turnkey management information system for libraries, consists of a set of complex computer programs and computer hardware. The program includes all relevant software for the creation, maintenance, backup, and recovery of all files, which combine to form the ULISYS data base.

Circulation control consists of the following functions: check out/check in, fines management, holds (reserves) management, message storage and retrieval, interbranch/interlibrary loans, activity status reporting, reserve book room, search, subject and name authority files, recall, and information and referral.

ULISYS includes on-line public access, with comprehensive instructions to assist inexperienced users in locating sought-after material.

The system is also available on a “software-only” basis.

A version of this product is available for the PDP–11 computer.

Price: Available upon request

Product Support Available: Yes

Contact: J. A. Speight, President
(604) 926–7421
Universal Library Systems
205–1571 Bellevue
West Vancouver, British Columbia V7V 1A6
Canada
Management
D–PICT/B (Business Graphics)

Operating System: VMS
Keywords: • Financial analysis • Graphics • Office systems • Presentation aids

D–PICT/B is a functionally rich English-language menu-driven business charting system designed for the first-time user and equally suitable in a graphics production department. The system is intended for management or clerical personnel without specialized training. The package is fully documented and provides a self-paced, self-teaching approach to the use of business graphics in any industry.

The user needs to specify only three items in order to create a graph — the type of graph required, the name of the data table, and the column of data to be used. Other specifications, such as scaling, layout, legends, and annotations, will be entered automatically by the system, according to the contents of the selected data table. Or the user may make highly detailed specifications of almost every aspect of a graph or chart, in order to display data with optimum clarity, impact, or emphasis.

Once created, a graph's parameter values are stored in a specification file, which may be used to create the same style of graph with new data. To create a different style of graph, an existing specification file may be used — only required changes need be made.

Up to 10 specification files may be used simultaneously, each defining a different graph. Multiple graphs may be displayed together. A few keystrokes will send the graphic display for output to any of a wide variety of hard-copy devices.

Price: $9,500
Product Support Available: Yes
Contact: Brian Diamond
(416) 441–4163
DATAPLOTTING SERVICES, INC.
225 Duncan Mill Road
Don Mills, Ontario M3B 3K9
Canada

DISKUSE (Disk Usage Statistics)

Operating System: VMS
Keywords: • Billing • Disk utilities • Statistics

DISKUSE and its associated command file SPACECHKCK allow the accumulation of user disk usage statistics. The command procedure SPACECHKCK is run as a batch job every day at midnight and generates the data file from which DISKUSE, when run, generates usage statistics by user name and account.

Documentation is on magnetic media. DECUS number VAX–33.
Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

FINAR (Financial Analysis and Reporting System)

Operating System: VMS
Keywords: • Financial analysis • Financial planning
   • Simulation • Spreadsheets

FINAR is a financial modeling system designed for use by business professionals to perform financial analysis and planning. FINAR is as simple to use as an electronic spreadsheet yet contains many advanced features. FINAR is especially efficient and easy to use in automating budgets in which the detail is maintained at cost center level, then consolidated to several levels for reporting and analysis. FINAR includes the standard financial functions such as discounted cash flow, net present value, the full range of depreciation routines, internal rate of return, and so on. Data may be accessed from an existing data base or another model. FINAR includes an on-line tutor that includes 10 terminal learning sessions. Telephone support is available.

A version of this product is available for the PDP-11 computer.

Price: $995 – $9,800
Product Support Available: Yes
Contact: Jim Hotze
   (713) 664–1172
   FINAR SYSTEMS LTD.
   6101 Southwest Freeway, Suite 406
   Houston, TX 77057

FINGRAPH

Operating System: VMS
Keywords: • Decision support • Financial analysis • Graphics
   • Manufacturing

FINGRAPH, a visual management support system, provides instant graphic pictures of your business performance. With FINGRAPH, key business trends and relationships can be communicated companywide in visual forms understandable by people at all levels of the organization. The FINGRAPH system lets you define and present financial statements, schedules, and operational data in standardized graphic formats. Using FINGRAPH’s sequence of charts, you can search deep into your data and acquire a better understanding of your ongoing business opportunities and problems. As data changes over time, FINGRAPH generates new information as you update your data base, in the same standard style and scale for direct one-to-one comparison.
The graphic formats produced by the system are based on the research of Irwin M. Jarett, Ph.D., C.P.A. Standard computer graphic techniques use the mind’s ability to remember visual patterns and to recognize changes in those patterns as they occur. The consistent presentation of patterns permits the busy executive to review massive amounts of information quickly, accurately, and with a better understanding of the relative importance of each business activity. Trends and relationships can be quickly seen and communicated with FINGRAPH.

FINGRAPH applications are numerous. The system presents financial results, quality-control data, spreadsheet analysis data, manufacturing data, marketing data, or any other performance data. With the use of DIGITAL’s DATATRIEVE or other report writers and FINGRAPH’s linkage module, virtually any type of data can be easily extracted from user application files and formatted for FINGRAPH’s immediate use.

A version of this product is available for the PDP–11 computer.

**Price:**  $2,200 – $11,300

**Product Support Available:** Yes

**Contact:** Mark Hoffman, Vice President
(217) 793–0884
FINGRAPH CORP.
960 Clock Tower Drive
Springfield, IL 62704

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**HABITAT® Application Development Environment, Version 2.0**

**Operating System:** VMS

**Keywords:** • Data base management • Graphics

HABITAT is a sophisticated interactive application development environment totally integrated with DIGITAL’s VAX/VMS. HABITAT, a set of processes running under VMS, eases, simplifies, and facilitates the creation of large, complex scientific and engineering applications. In addition, it complements and extends VMS for use in supervisory real-time applications. The HABITAT subsystems are:

• PHOENIX: Relational, real-time data base manager
• EASEL: Interactive, color graphics picture editor
• RAPPORT: Man-machine communications interpreter
• Software development utilities
• System management utilities

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Larry Tuttle, HABITAT Marketing Manager
(206) 885–5077
Key Conversational Planning System

Operating System: VMS
Keywords: • Inventory • Process control • Scheduling
• Simulation

This system embodies linear programming, simulation, and nonlinear programming. Key is completely interactive, letting the user project time forward, optimize based on future conditions, make conditional changes, and reoptimize.

Key is the only interactive simulating and optimizing system in the industry. Major areas of application are logistics, scheduling, blending, raw material selection, process optimization, purchase and sales option selection, and inventory tracking.

The Inventory Exploitation options allow a user to track tank compositions, volumes, and costs through time to compute best inventory allocation for blending, shipping, receiving, and processing.

Key has 100- to 500-row LP solving capability, a matrix generator, and a report writer, as well as the ability to simulate process change impacts on downstream inventory through time. Scrolling of data tables and reports is standard. Interactive data changing and data entry speed the solution process.

A version of this product is available for the PDP-11 computer.

Price: $23,750 – $32,000

Product Support Available: Yes

Contact: W. G. Welter
(713) 373–1905
ADVANCED MANAGEMENT TECHNOLOGIES
Box 71
Cypress, TX 77429

L/P (Labor Performance)

Operating System: VMS
Keywords: • Employment • Labor • Payroll • Statistics

L/P is a vital tool for identifying productivity problems and improving labor utilization. The program permits easy, efficient entry, tracking, editing, and reporting of employee labor performance statistics and earnings. The accuracy of data posted to MCBA’s Payroll package is effectively monitored through L/P.
The package accesses all features through convenient menus, allows reports to be optionally spooled for display or later printing, provides for multiple companies, and controls access to data with a security system. L/P provides for centralized data entry of labor transactions. Labor can be broken out into direct and indirect status. The program generates payroll attendance records for use in calculating payroll and provides for incentive pay. L/P supports clock card entry and editing and prints the Labor Performance Report, showing an analysis of each employee’s and foreman’s performance and productivity. The program reports on salaried employees as well as on incentive earnings, supports crew labor reporting, and provides for the entry of regular, overtime, and doubletime wages.

L/P interfaces with MCBA’s Payroll (PR), Shop Floor Control (SFC), Job Costing (J/C), Standard Product Routing (SPR), and Inventory Management (I/M) packages.

A version of this product is available for the PDP–11 computer.

**Price:** $2,500 – $4,000

**Product Support Available:** Yes

**Contact:**

Sales Representative  
(818) 957–2900  
MCBA, INC.  
2441 Honolulu Avenue  
Montrose, CA 91020

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**LP (Linear Programming)**

**Operating System:** VMS

**Keywords:**  
- Decision support  
- Distribution  
- Mathematics  
- Simulation

LP performs a mathematical programming function (analysis) on a given matrix of data. LP allows the use of <, =, > constraints and outputs a message to the user of a feasible, infeasible, or unbounded solution. LP permits a matrix of up to 5,000 variables and solves a wide range of business and engineering problems, including product mix, scheduling, distribution, forecasting, marketing, government efficiency, and production planning.

A version of this product is available for the PDP–11 computer.

**Price:** $4,200

**Product Support Available:** Yes

**Contact:**

Jon Prescott  
(707) 446–8139  
J & S ASSOCIATES  
130 Palisades Court  
Vacaville, CA 95688
MANEX (Manpower Expenditure Recording)

Operating System: VMS
Keywords: • Billing • Cost accounting • Employment
• Personnel

MANEX provides control and analysis of manhours booked to projects and overheads within a company or department. This project management computer system can be applied in any project- or cost center-oriented organization.

The principal input document is a weekly timesheet prepared by each person. A range of reports can be generated, giving the weekly and cumulative manhour totals by project, overhead, section, activity, and staff agency. In addition, project billing and department costing reports can be produced.

MANEX is an easy-to-use interactive system containing many online data checks to minimize errors. It contains an integral backup program to provide file security and passwords to restrict access to sensitive information.

The MANEX coding scheme can be tailored to codes already in use as part of an implementation charge.

A version of this product is available for the PDP-11 computer.

Price: £1,500 – £3,000
Product Support Available: Yes
Contact: Martin Barnes, Director
061-439 6639 or Telex: 666650
PROJECT SOFTWARE LTD.
Foden Lane, Woodford
Stockport, Cheshire SK7 1PT
United Kingdom

MAPPS (Management and Project Planning System)

Operating System: UNIX, VMS
Keywords: • Construction • Engineering
• Facilities management • Project management

MAPPS is a management and planning control tool. Input has been simplified for user ease, and output is extensive and user controlled. The program features user-friendly operating procedures. A central feature of the system is the extensive control that the user has over the output reports. A unique Select-Sort-Report procedure gives the manager total flexibility with respect to both the content and the format of all reports.

The program permits use of more than 27 attributes for selecting data and sorts output in more than 26 ways for use in more than 28
report formats. Complete user control over the selection and structuring of reports gives this program unlimited flexibility for the decision-making manager. Great success in both use and reporting has been achieved by users with little prior networking experience.

The user can specify problem size and variables to permit efficient utilization of disk storage space. The program analyzes any arrow or precedence network of up to 32,000 activities. Activities can be scheduled for any number of work days per week (1 to 7); the day of the week that the activity starts and stops can also be specified. Multiple calendars are permitted. The use of precedence networking permits lag scheduling, which simplifies event scheduling. The system also features event data constraints of “Not Later Than,” “Not Earlier Than,” or “On” user-specified dates. The program can schedule up to 8,000 project days. The user may specify an unlimited number of holidays.

The program permits cost specification per activity, with reports on both estimated and actual values. With field reports based on updated information, the system can be used to provide a variety of management reports comparing initial information to upgraded actual information. A full audit trial of all changes and up to 14 pages of text are part of every update.

The system has an optional utility with complete screen and plotter graphics. Cash flow plots, resource usage plots, and network logic can be displayed on the screen, on the printer, or on the plotter. The plotter produces multicolored plots.

A version of this product is available for the PDP–11 computer.

Price: $65,000
Product Support Available: Yes
Contact: Neal B. Mitchell III
(617) 366–0800
STRUCTURAL PROGRAMMING, INC.
2000 West Park Drive
Westboro, MA 01581

MARK III Management System

Operating System: VMS
Keywords: • Financial planning • Graphics
• Project management • Scheduling

MARK III is a comprehensive project management planning, scheduling, and cost control system. Principal outputs include MARK III Schedule Charts and MARK III Resource Graphs, both of which are computer-generated and plotter-produced. Each output is easy to read and may be custom-tailored to meet practically any customer need. Comprehensive and complete project planning is simplified,
timely, and accurate. Detailed or summary schedules, resource allocations, and financial requirements are quickly developed and automatically interrelated. Schedule progress, resource consumption, cost commitment or expenditure, earned value, and variance from plan are computer-tracked and automatically highlighted. Schedule inputs and plotter outputs are highly flexible. Through MARK III "direct use," managers are able to work dynamically with all key program variables.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes

**Contact:** F. Kavanagh  
(818) 782–2900  
PROGRAM CONTROL CORP.  
7120 Hayvenhurst Avenue  
Van Nuys, CA 91406

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**Membership**

**Operating System:** VMS  
**Keywords:**  
• Data base management  
• Query facilities  
• Recruiting  
• Report writer

This highly flexible membership system permits each organization to develop a system appropriate to its own needs. The system combines routine membership requirements with the latest word and data processing technologies, permitting easy access to data and providing for the dynamic data processing needs of the organization. Because of the variations among membership organizations, the tools provided quickly customize features needed for membership. The system includes data base management, membership mailing lists, dues accounting, conferences and annual meetings, exhibition management, and word processing.

No longer do you have to ignore entry and display screens planned for other requirements. Furthermore, if new requirements occur after system installation, it is not necessary to call for programming assistance. The system can be expanded by adding new data elements to the data dictionary.

Each time new data elements are added or changed, the data base management system automatically adjusts the files. Existing data entry and display screens are edited in minutes, permitting immediate access to new information. Similarly, existing reports can be edited quickly.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $5,000  
**Product Support Available:** Yes
Mini-DYNAMO

Operating System: ULTRIX, UNIX, VMS
Keywords: • Compilers • Decision support • Energy
• Simulation

DYNAMO is a continuous simulation language that has been extensively used in the modeling of industrial, social, economic, and engineering systems. Mini-DYNAMO is designed to provide all the basic DYNAMO features. The language is easy to learn and therefore quite useful in educational environments.

Model construction is simplified through several DYNAMO features. Equations may appear in any order to facilitate documentation; commonly used functions are built in; debugging is simplified through extensive error checking with clear error messages; and the RERUN capability permits repeated simulations, each with different parameters, without recompiling.

Mini-DYNAMO is available on magnetic tape or, for PDP-11V03s, MINCs, or similar LSI-11-based systems, on floppy disks.

Educators interested in applications of DYNAMO at the high school or college level may be interested in related publications available from the vendor.

A version of this product is available for the PDP-11 computer.

Price: $1,500 – $3,000
Product Support Available: Yes
Contact: D. Ross Hunter
(617) 864–8880
PUGH–ROBERTS ASSOCIATES, INC.
Five Lee Street
Cambridge, MA 02139

MIS (Management Information System)

Operating System: VMS
Keywords: • Data base management • Nuclear
• Project management • Security

MIS was developed at the NASA Johnson Space Center to provide an automated system for project management. MIS development objectives include:
• A simple system that allows for the rapid and accurate update and review of the status of any active task within the project
• The ability to store and update desired management-level data and to manipulate the data for display
• The ability to display the information in order to conduct status meetings with many participants
• To provide a network among remote users, enabling them to exchange and review information
• To provide an access-limiting security system around the data base

NASA has found that a disciplined goal-oriented program is an effective approach in meeting launch dates. In building a data base to support a goal-oriented program, the project schedule becomes the focal point around which all other information revolves — cost, open items, problems, and narrative status. MIS provides just such a schedule-centered information system. The design of the MIS system hinges on the Tektronix 4027 colorgraphic display terminal and its form fill-out capability. User interface with the MIS data base is through a series of forms, including a technical assessment form; an event planning form; a milestone schedule form with 6-month, 1-, 2-, or 4-year schedule displays; a project cost/funding status form; a cost-trend chart form; and a miscellaneous form for maintaining in the data base information that is not covered by one of the other forms.

Price: $810

Product Support Available: No

Contact: Customer Support Department
(404) 542–3265
NASA'S COMPUTER SOFTWARE MGT. AND INFO. CENTER
University of Georgia
112 Barrow Hall
Athens, GA 30602

MOSAIC

Operating System: VMS

Keywords: • Financial analysis • Financial planning
• Inventory • Statistics

MOSAIC is a package designed to provide low-cost, easy-to-use access to a powerful set of routines for statistical and econometric analysis. Intended primarily as a tool for analysis and forecasting of time series data, the system enables the user to perform the following types of operations: basic data manipulation and transformation — a complete set of arithmetic, logical, and basic transformation operators is available; data management — file creation, updating, and retrieval operations; regression analysis; seasonal adjustment; Box-Jenkins univariate and transfer function modeling; plotting; and report generation. The package features a completely free format and
English-language syntax command structure with maximum use of
defaults. For the Box-Jenkins routines, a single command will gen-
erate a complete univariate or transfer function model and forecast.
Similar simplicity and power are available for other subsystems of
the package. Timesharing is available.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Andrea Grimm
(613) 238–4831
INFORMETRICA LTD.
P.O. Box 828, Station B
Ottawa, Ontario K1P 5P9
Canada

**PAC I®**

**Operating System:** VMS

**Keywords:** • Project management • Scheduling • Simulation

PAC I is an interactive, PERT/CPM–oriented system. The two main
functions of this system are planning (simulation) and management
(control). The planning function permits the planner to simulate new
situations, changes, and updates rapidly and without altering the
master project file. The management function permits rapid updat-
ing with progress, cost, and scheduling information. With PAC I, the
project manager can analyze various courses of action before work
begins and as work proceeds, respond to unexpected developments
with new schedules. The system can be used to plan an entire project,
activities of the project in a certain category or department, activities
within a specified time window, and in other ways. Progress informa-
tion can be reported in any cycle. The system is easy to use; a planner
has total flexibility, and information can be gathered and adjusted at
any time. The first year of maintenance is included in the purchase
or lease. PAC I can be installed in ten minutes, and the user can
start product planning after one day's training. PAC I requires 32K
minimum memory.

A version of this product is available for the PDP–11 computer.

**Price:** $9,750

**Product Support Available:** Yes

**Contact:** Lawrence M. Light
(215) 265–1550
AGS MANAGEMENT SYSTEMS, INC.
320 Walnut Street
Philadelphia, PA 19106
PAC II™

Operating System: OS/DOS, VMS
Keywords:  • Graphics  • Project management  • Report writer  • Simulation

This second-generation project management system offers a computer-assisted total project management tool, with both a project planning module and a project monitoring or tracking module. The system features are resource scheduling with full resource leveling, budgeting, cost accounting, simulation, tracking, and historical profiling.

The Planning module supports simulation capability with critical path analysis, resource loading, interproject networking, and full resource accountability. The Planning module operates in a pure simulation mode, using the updated data file for what-if planning and simulation, as a budgeting tool for a year or longer, or as an automatic replanner of ongoing work efforts. The system can schedule and allocate resources (both real and simulated), develop starting and ending dates for projects under consideration, and show the relationship of projects or the effect of one project on another. Input to the Planning module is simple and straightforward but can easily accommodate the most sophisticated project planning techniques.

The Control module offers easy-to-use turnaround documents for input and permits the accounting of progress and status to each activity within a project. That updating then allows status and projection reports to be produced and thus gives the user full project and resource tracking capabilities. Standard system procedures permit easy yet sophisticated exception-reporting capabilities based on schedule and budget variances. That same feature permits output to be minimized when only specific departments, divisions, or projects need review. The amount of output can be further minimized by use of the supplemental report writer.

Price:  $42,000
Product Support Available:  Yes
Contact:  Lawrence M. Light
          (215) 265-1550
          AGS MANAGEMENT SYSTEMS, INC.
          320 Walnut Street
          Philadelphia, PA 19106

PAC III™

Operating System: OS/DOS, VMS
Keywords:  • Graphics  • Networking  • Project management  • Report writer
This sophisticated network processor and automated project management software system can combine cost, time, and resource factors into a comprehensive management planning aid that will forecast when each activity will be completed, how, and at what cost. PAC III will also guide the project manager through even the most complex multitask project, so that manpower, equipment, material, and money resources are easily managed and efficiently used. PAC III uses PERT and CPM techniques, and it accepts input in arrow or precedence notation. The calendar can schedule daily activities, so users can plan and schedule with great precision, and the PAC III scheduling period can extend to any number of years. The system can make distinctions among the various resource types, relate different availability patterns to the individual resources, and permit automatic activity alignment. The reports generated by PAC III give management access to output relating to past, present, and future cost, resource, and schedule factors. Options include color plotter graphics, management graphics, and earned-value capability. Eight days of training are included.

**Price:** $56,000  
**Product Support Available:** Yes  
**Contact:** Lawrence M. Light  
(215) 265–1550  
AGS MANAGEMENT SYSTEMS, INC.  
320 Walnut Street  
Philadelphia, PA 19106

### Parts Inventory System

**Operating System:** VMS  
**Keywords:**  
- Inventory  
- Maintenance  
- Materials handling  
- Purchasing  

This system provides a tool for controlling quantities of parts that may be used in equipment maintenance and repair. The system provides reports of current inventory, low-stock items, and low-stock items by vendor. The system also supports many other useful functions.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $5,000  
**Product Support Available:** Yes  
**Contact:** Ralph M. Flanders, President  
(615) 966–6832  
CUSTOM COMPUTER SOFTWARE, INC.  
1108 Woodshire Drive  
Knoxville, TN 37922
PREMINI

Operating System: VMS
Keywords: • Engineering • Project management • Scheduling
PREMINI is a powerful and comprehensive critical path–based project management tool that is applicable to almost any important and/or high-visibility/high-risk project in virtually any industry.

PREMINI performs all normal critical path calculations with single or multiple calendar specifications. Hourly time units can be specified for maintenance, outage, or commissioning projects. Free Float can be automatically slipped to improve scheduling or cash flow results under user control. The features and algorithms of PREMINI are particularly effective in the resource-constrained scheduling mode; for example, resources need not be allocated uniformly over an activity duration but may be specified in a complex form.

A versatile report generator is provided. With the program's extensive capabilities and provision of most standard activity reports, users can easily and quickly write their own reports and also modify the standard reports. The report generator not only provides the customary activity listings but also produces bar charts (and listings) of up to 216 characters in width. Graphics options include a variety of user-definable bar charts and network logic diagrams.

A recent enhancement permits the user to define input screens for PREMINI, including the specification of such attributes as field names, defaults, and on-line help text.

Price: $36,000 – $56,000
Product Support Available: Yes
Contact: Jack Way
(416) 488–3088
K & H COMPUTER SYSTEMS (CANADA) LTD.
Box 371, Station K
Toronto, Ontario M4P 2G7
Canada

PROFITKEY® Job Shop System

Operating System: ULTRIX, UNIX
Keywords: • Employment • Personnel • Production control • Scheduling
The PROFITKEY Job Shop System is a proven management tool that provides the user with the up-to-date information needed to more effectively plan, schedule, and control the manufacturing resources to achieve better efficiency and higher profits.

PROFITKEY is a highly interactive, easy-to-use system that is designed to be installed and used by a job shop without requiring addi-
tional personnel. No computer expertise is required to implement and operate the system. From small job shops to major machine shops, PROFITKEY has provided the solution to delivery problems, shop floor control, and company productivity.

PROFITKEY is designed in modular fashion to meet the unique requirements of each user. The modular design brings a complete information system within economic reach of smaller companies and allows the user to expand in a planned and orderly fashion.

A version of this product is available for the PDP–11 computer.

**Price:** $6,000 – $24,000
**Product Support Available:** Yes
**Contact:** W. W. Dockins  
(305) 743–7400  
KEY SYSTEMS, INC.  
Box 1319  
Marathon, FL 33050

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**Project Control and Accounting**

**Operating System:** VMS  
**Keywords:**  
• Accounting  
• Billing  
• Programming tools  
• Project management

With the Project Accounting package, developed by ISE, Inc., a user needs only a single user name but will still be able to bill work to multiple project accounts. The project billed may be changed any number of times during a log-in session. All work done, including batch jobs, subprocesses, and print jobs, will be charged to the project in effect when the corresponding command was issued. All computer time and other usage are reported by project; at the end of the month, a statement detailing who billed work to each project and in what amounts is produced. Users not participating in a project are not affected by the system and will not be billed on a project basis.

All project activity is controlled from a project management account. That account can authorize selected users to become members of a project. Only members of a project can bill work to that project or access information about it. The project manager can add or remove users from the project on line at any time. An example of a VAX/VMS Project log-in sequence follows:

Username: SMITH;r Password: (secret);r Project: TEST34X;r

**Price:** $1,800
**Product Support Available:** Yes
**Contact:** Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue, Suite 117  
Orange, CA 92665
Purchase and Supply Control

**Operating System:** VMS

**Keywords:** • Distribution • Inventory • Manufacturing
• Purchasing

This system controls the purchasing and stock replenishment for manufacturing and distribution companies. The largest military aircraft manufacturer in Europe uses the system to control an annual spend in excess of $2 billion. PDP–11 and VAX versions are available to suit a wide range of companies.

A version of this product is available for the PDP–11 computer.

**Price:** $20,000 – $100,000

**Product Support Available:** Yes

**Contact:**
Dr. E. A. Haworth
01 248 7100
M.C.S.
3, Wynnslay Grove, Fallowfield
Manchester
United Kingdom

QDMS (Quodata Data Management System)

**Operating System:** VMS

**Keywords:** • Data base management • Education
• Information management • Report writer

QDMS allows instant access to vital information by anyone, at minimal cost. Not so much a solution as a tool, QDMS is the result of many years of experience integrating the needs of users with computer power to produce solutions that are efficient and easy to use. New insights on data manipulation and programming techniques produce a comprehensive information management system that is flexible and reliable. Features include minimum hardware cost, instant reports, generalized report generator, multikey and update, English-language dialog, video screen creation, global updating, online or batch control, flexible data entry, fast sort, validity checking, linked file data structure, field-by-field protection, and multiple data types.

A version of this product is available for the PDP–11 computer.

**Price:** $19,500

**Product Support Available:** Yes

**Contact:**
Nancylou Rapp
(203) 728–6777
QUODATA CORP.
266 Pearl Street
Hartford, CT 06103
RISKAN1/RISKAN2

Operating System: VMS
Keywords: • Decision support • Financial planning
• Simulation • Statistics

RISKAN1 provides a business executive with simulation capabilities and analytical information about strategic planning and/or inventory planning. Specifically, the program allows the business executive to analyze and/or compute the expected risk of a proposed product line diversification or company acquisition in terms of the size of the market, the size of the company’s investment commitment, and a perceived level of competition — either none or an estimated market share of each competitor — before and after the proposed business venture. The decision maker can also look at manufacturing concerns such as material planning or machining operations in a quality-control sense. The output of the analysis may include an estimate of the numerical risk involved, accompanied by an appropriate recommendation about whether to diversify, and various risk profiles for additional information.

Using this business planning tool, the executive can input a data file and simulate different what-if hypotheses concerning, for example, the chances of a successful new-product introduction in a highly competitive marketplace or how the chance of success in a specific market varies with the number of competitors or market share. Graphical output is available to illustrate in an analytical fashion some such relationships. RISKAN1 allows the business executive to simulate the decision-making process under conditions of uncertainty.

In addition, RISKAN2 provides detailed risk analyses for standard spreadsheet-type accounting (financial analyses), including risk profiles.

A version of this product is available for the PDP-11 computer.

Price: $5,000 – $7,500
Product Support Available: Yes
Contact: Jon Prescott
(707) 446–8139
J & S ASSOCIATES
130 Palisades Court
Vacaville, CA 95688

SDBM (Stand-Alone Data Base Management)

Operating System: VMS
Keywords: • Data base management • Diagnostics

SDBM is a simple, economical data base management package that is flexible in application and sound in design. SDBM is composed of basic, powerful programs and is capable of everything from data base
construction to specialized maintenance function. SDBM also has an extensive error detection and recovery capability.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Muriel King  
(801) 224–5306  
CLYDE DIGITAL SYSTEMS, INC.  
3707 N. Canyon Road, Suite 3–E  
Provo, UT 84604

### SIBYL/RUNNER Interactive Forecasting System

**Operating System:** VMS  
**Keywords:**  
- Decision support  
- Financial planning  
- Query facilities  
- Statistics

This comprehensive package of programs for time-series analysis and forecasting consists of 20 time-series techniques and provides these essential forecasting functions: screening of alternative forecasting techniques and identification of methodologies most appropriate for a given situation and application of individual methodologies to a specific forecasting problem.

SIBYL/RUNNER reads raw data from a file or from data typed in at a terminal and performs a preliminary analysis of the data. Available analytical techniques include autocorrelation analysis, cyclical identification, and moving average transformations.

The user can, however, override the suggestions and apply any of the 20 available forecasting techniques. Those include Box-Jenkins; classical and Census II Seasonal Decomposition; generalized adaptive filtering; Harrison’s harmonic smoothing; time-series multiple regression; exponential smoothing; comparison and combination of the results obtained from the application of different forecasting methods; data management, such as file creation, file editing, transformation of variables, and graphing; single and linear moving averages; curve fitting; and trend analysis.

The results obtained from applying those forecasting methods are summarized and reported to aid the forecaster in evaluating alternative techniques. The user can review and correct for cyclical patterns in the data with manual overrides to the final forecast.

A version of this product is available for the PDP–11 computer.  
**Price:** $1,000 – $15,000  
**Product Support Available:** Yes
SIMSYS (Simulation System)

Operating System: VMS
Keywords:  • Financial analysis  • Financial planning
          • Simulation  • Statistics

SIMSYS is a system of comprehensive computer programs and files designed to assist in the development and use of econometric models. It is based on the experience of building and using several large econometric models.

SIMSYS can provide comprehensive data management facilities; econometric modeling language elements; model checking and debugging; utilization of computer resources for both large and small models, with annual, quarterly, monthly, or even weekly periodicity; analysis and comparison of solutions; an integrated approach to all phases of model building and use; and management of the modeling process by persons who are economics experts.

Price: Available upon request
Product Support Available: Yes
Contact: Andrea Grimm
         (613) 238–4831
         INFORMETRICA LTD.
         P.O. Box 828, Station B
         Ottawa, Ontario K1P 5P9
         Canada

VUE

Operating System: VMS
Keywords:  • Cost accounting  • Data entry  • Graphics
           • Project management

VUE is an interactive project management system that provides a convenient tool for planning and managing complex projects. VUE performs critical path analysis for projects with up to 3,000 activities and tracks scheduled resources and costs. VUE performs very well in environments where multiple on- and/or off-site users need program access. The menu-driven user interface allows easy data entry, modification, and report selection. Reporting is done on CRTs, printers, or optional graphics plotters.
The VUE system is self-teaching and easy to install. Reports include schedules, progress to date, current work to be accomplished, bar charts, cost and resource accounting, network precedence diagrams, activity time analysis, predecessors, and calendar specifications. The network precedence diagram is clearly, graphically visualized. The VUE Bar Chart and Precedence Network Diagram reports can be printed on a line printer or 132-column terminal or directed to plotter devices such as CalComp. Extra-cost options include plotter graphics output and multiproject capability. VUE can be used in construction, engineering, research, computer systems planning, custom manufacturing, and so on.

A version of this product is available for the PDP–11 computer.

Price: $5,000 – $23,500

Product Support Available: Yes

Contact:
Scott Carpenter
(408) 257–7700

NATIONAL INFORMATION SYSTEMS, INC.
20370 Town Center Lane, Suite 130
Cupertino, CA 95014
Manufacturing
AIM (Automated Industrial Monitoring)

Operating System: VMS

Keywords: • Data collection • Energy • Facilities management • Process control

AIM is a set of real-time data acquisition and control programs used for automating industrial processes. AIM is a supervisory and control system that scans, alarms, logs, and provides closed-loop control of the industrial process.

The system is defined by using a fill-in-the-blanks language that specifies plant inputs, control outputs, and any special calculations and logic procedures. The package uses color graphic displays and operator keyboard consoles to allow plant operator control and easy access to plant data. Optional software packages are available to further enhance AIM’s capabilities.

For users requiring special applications, AIM provides FORTRAN subroutines to access the complete data base, thus allowing interaction with standard processing. Since AIM makes no modification to the operating systems, benefits are realized by its upward compatibility to DIGITAL’s current operating system level.

A version of this product is available for the PDP-11 computer.

Price: $36,000 – $40,000

Product Support Available: Yes

Contact: G. D. Newman
(713) 789–8880
BILES & ASSOCIATES
7207 Regency Square, Suite 250
Houston, TX 77036

AIM Batch (Automated Industrial Monitoring)

Operating System: VMS

Keywords: • Chemical • Data collection • Process control • Real time

AIM Batch is a real-time logic processor used to monitor and control batch or semicontinuous industrial processes. AIM Batch is a supervisory and control system that scans, alarms, logs, and provides closed-loop control of the process.

AIM Batch uses a simple fill-in-the-blanks language and CRT-prompted communications to allow nonprogrammer process engineers to easily define and modify batch sequences and recipes. The system uses color graphic displays and operator keyboard consoles to allow plant operator control and access to plant data. Optional software packages are available to further enhance AIM Batch’s capabilities.
For users requiring special applications, AIM Batch provides FORTRAN subroutines to access the complete data base, thus allowing interaction with standard processing. Since AIM Batch makes no modification to the operating systems, benefits are realized by its upward compatibility to DIGITAL's current operating system level.

A version of this product is available for the PDP–11 computer.

**Price:** $45,000 – $50,000  
**Product Support Available:** Yes  
**Contact:** G. D. Newman  
(713) 789–8880  
BILES & ASSOCIATES  
7207 Regency Square, Suite 250  
Houston, TX 77036

### Allen-Bradley Translator Software

**Operating System:** VMS  
**Keywords:** • Programming tools • Translators

Allen-Bradley Translator Software provides users of Allen-Bradley programmable controllers with a means of documenting programmable controller logic by merging explanatory text comments with ladder diagram displays. Complete cross-reference listings, identification of data table contents, alphanumeric sortings of mnemonics, and graphic representations of I/O usage are also included with each product. When used with NET Communication Software, the user can upload and download programmable controller programs over the Allen-Bradley Data Highway.

A version of this product is available for the PDP–11 computer.

**Price:** $5,000 – $12,000  
**Product Support Available:** Yes  
**Contact:** Jim Shanley, Senior Product Engineer  
(216) 449–6700 ext. 3866  
ALLEN-BRADLEY CO.  
747 Alpha Drive  
Highland Heights, OH 44143

### APPS/2 (Automatic Part Programming System, Version 2)

**Operating System:** VMS  
**Keywords:** • CAD/CAM • Data entry • Programming tools  
• Shop floor control

APPS/2 is designed to greatly simplify the preparation of part programs for NC and CNC machine tools. The core system uses input from a digitizer to define the geometry of complex contour shapes.
That set of basic geometric data is then smoothed and analyzed by the system software to determine the arc and straight-line components of the shape. A postprocessor translates the arcs and straight lines into the command format that will drive the desired machine tool. Any 2-dimensional cutting operation is a potential application.

Although developed primarily to deal efficiently with contoured non-dimensioned shapes, APPS/2 also digitizes straight lines, arcs, and skips by specifying endpoints rather than by tracing. That form of entry is called point-to-point mode. A third mode provides for the direct keyboard entry of data when dimensions are well defined. All three entry modes may be used interchangeably on a single piece.

Software ($15,000) includes one postprocessor and is maintained free for one year, including updates. In general, the digitizer and the digitizer interface board are purchased with the software package.

A version of this product is available for the PDP–11 computer.

**Price:** $15,000 – $31,500

**Product Support Available:** Yes

**Contact:** Robert P. Whitten, President
(617) 655–6610
ALDEN COMPUTER SYSTEMS CORP.
27 Strathmore Road
Natick, MA 01760

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**AWRAP (Automatic Wire Wrapping)**

**Operating System:** VMS

**Keywords:** • CAD/CAM • Electrical

AWRAP is an interactive program for the preparation of control tapes for use on the Gardner Denver 14FV and 14FS Fully Automatic Wire Wrapping Machines. AWRAP is menu-driven and easy to use, and an individual needs no prior experience with computers to achieve successful results.

The storing of standard board geometry in a master file and the format of data entry are compatible with the program WWRAP for semiautomatic wire wrapping machines. Powerful editing facilities are also available. Data may be entered via the VDU keyboard or, alternatively, interfaced with existing CAD programs.

The program's special features include level assign; programmable dressing fingers; automatic and manual pallet shift; wire routing using routing points, channels, or "nogo" areas; wire grouping and sorting; inch/metric conversion; wrap count; and wire usage.

The programming language is FORTRAN.

A version of this product is available for the PDP–11 computer.

**Price:** £15,000

**Product Support Available:** Yes
Base MRP (Base Material Requirements Planning)

Operating System: VMS
Keywords: • Materials handling • Production control
• Scheduling

Base MRP is an "introductory" MRP incorporating the essentials, leaving the advanced functions to MCBA's Full MRP. Base MRP was designed by users but coded, tested, and documented by MCBA. The system is simple to use and understand, so that the user can be accountable for its results, and it integrates fully with MCBA's manufacturing packages, which themselves fully integrate to MCBA's latest state-of-the-art accounting packages.

Until now, small manufacturers could not afford MRP because of the large computer system required to run it. Base MRP provides the functions required by a small- to medium-size manufacturer on an affordable computer configuration.

Base MRP with Master Production Scheduling provides the vehicle to answer such questions as: What products should be produced? In what quantity? By what date? The system maintains the results in the form of production schedules for all end items. Quantities of all raw materials, components, and subassemblies below the end-item level and the timing required to support the master production schedule are determined by the Material Requirements Planning portion of Base MRP.

Base MRP requires MCBA's Inventory Management (I/M) and Bill of Material Processor (BOMP). Customer Order Processing (COP) is not required but is highly recommended. The bucketless Base MRP system includes the following capabilities:
• Provides master production scheduling, a daily calendar, and an extremely fast regeneration algorithm
• Supports time-phased requirements generation for all levels of the user's product structures
• Computes when and in what quantities component parts are required
• Predicts component part shortages/overages
• Supports min/multi/max order modifications
• Allows on-line initiation and report selection
• Interfaces to other MCBA application packages
• Supports multicompanies and password security
416 Manufacturing

A version of this product is available for the PDP–11 computer.

**Price:** $2,500 – $4,000

**Product Support Available:** Yes

**Contact:** Sales Representative
(818) 957–2900
MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

**BEDAT–11 Factory/Shop Data Collection**

**Operating System:** VMS

**Keywords:** • Data collection  • Process control
• Production control  • Shop floor control

BEDAT–11, a unique data acquisition system, is designed to fill the human interface demands of widely dispersed control and communication in machine and process control, energy management, inventory control, factory data collection in serial production, and order production systems. The heart of the system is the multifunction industrial terminal TB–21. Because of the interface flexibility, appearance, size, and functionality, the TB–21 can be used as a terminal as well as a console or control center for instrument and small systems.

The industrial terminal TB–21 is part of a new generation of terminals using 16-bit microprocessor technology. Full utilization of modern technology occurs in decentralizing functions to the terminal. Therefore, integration into existing shop floor and manufacturing control systems may be done with minimal organizational changes.

A version of this product is available for the PDP–11 computer.

**Price:** $2,050 – $2,850

**Product Support Available:** Yes

**Contact:** Robert L. Hirtle, Office Manager
(904) 433–7578
ATS DATA PROCESSING, INC.
1101 North 9th Avenue
Pensacola, FL 32501

**BOMP–11 (Bill of Material Processor)**

**Operating System:** VMS

**Keywords:** • Bill of materials  • Inventory  • Maintenance
• Project management

The BOMP–11 system organizes and maintains a central information system linking product structure records with master (inventory-type) records. Single and multilevel explosion and implosion op-
tions are provided, enabling the operator to produce listings that may be directed to the CRT or the line printer. BOMP–11 provides for full file maintenance of master and product structure records, along with audit trails of all maintenance transactions.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** John T. Rasted  
(203) 265–2226  
SOFTWARE DYNAMICS, INC.  
1000 Yale Avenue  
P.O. Box 500  
Wallingford, CT 06492

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**BOMP (Bill of Material Processor)**

**Operating System:** VMS

**Keywords:** • Bill of materials  • Materials handling

BOMP is a multilevel bill of materials processor and one of the key elements to a successful manufacturing system. BOMP includes the following capabilities:

• Allows full product structure maintenance and fast sort of the product structure file

• Provides for user-controlled product structure file reorganization

• Allows user-assigned sequence of components and permits specification of components' attaching operation

• Supports quantity per parent to four decimals

• Permits specification of scrap/shrinkage

• Supports obsolete bills, forecasted/planning bills, and modular bills

• Prints/displays the following reports: single-level bill of materials, single-level where-used, indented bill of materials, indented where-used, and summarized bill of materials

• Interfaces to six other MCBA application packages

• Supports security system and multicompany capabilities

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $4,500

**Product Support Available:** Yes

**Contact:** Sales Representative  
(818) 957–2900  
MCBA, INC.  
2441 Honolulu Avenue  
Montrose, CA 91020
BOMS (Bill of Materials System)

Operating System: VMS
Keywords: • Bill of materials • Inventory • Materials handling
BOMS is one of several modules developed by White Hat to assist firms in accurately controlling the manufacturing process. BOMS is a comprehensive multilevel bill of material system designed as an optional feature of the White Hat Inventory Management and Control System (IMCS). Parent and component items are referenced by their item keys as identified in Inventory's Item Master File. Operating in a conversational, interactive mode, the user maintains bill of material component lists from which BOMS automatically structures the where-used component lists.

A version of this product is available for the PDP-11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: John M. Montgomery
(617) 933–3780
WHITE HAT SYSTEMS, INC.
331 Montvale Avenue
Woburn, MA 01801

CBS (Cut-Bun-Sew Garment Manufacturing System)

Operating System: VMS
Keywords: • Inventory • Process control • Production control • Shop floor control
CBS is a multiterminal multitasking garment manufacturing system consisting of five major systems interfaced to provide production control and fabric status for the cut and sew operator. The five systems, designed to be installed individually and as a totally integrated package, interface with other accounting, order entry, inventory, and payroll systems.

• The Cut System module is designed for fast, accurate entry of a cutting order. The design of the system, allowing both menu inquiry and printed reports of cuts entered by cut number and cut status, will satisfy the intent of the cutting order. This system also provides your production control with timely and accurate data, leading to more efficient use of plant capacity.
• The Fabric System module maintains a constant status of fabric received, issued, cut, on order, available to issue, and on hand by manufacturer, description, design, and color. Information is available through menu inquiry.
• The Style Standardization System module, the heart of the procedure, provides the manufacturer with a standard method of manu-
Manufacturing 419

facturing a particular item. The module allows the entry and formulation of time study and engineering data for each operation necessary to manufacture an item. Menu inquiry of the style master file and various reports provide you with data allowing you to control costs. One of the most useful reports generated by this system is the Direct Labor Report by Style.

- The Marker System module allows you to keep an active inventory of each marker in house by style and model.
- The Bundle System module allows your production control to input the request from the spread and cut department for bundle tickets by category and special instruction.

Options for CBS include:

- Piece Pay System
- Standard to Actual Production
- Actual Salary Paid vs Production Salary Achieved
- Machine Down Time
- Quality Control vs Production Efficiency
- Marker Efficiency

Other optional modules are General Ledger, Accounts Payable, Accounts Receivable, Inventory Control, Order Entry/Invoicing, and Payroll.

A version of this product is available for the PDP-11 computer.

Price: $10,000 – $12,500

Product Support Available: Yes

Contact: Jim Baker, President
(404) 256–3067

AMERICAN DIGITAL PRODUCTS CORP.
5775B Glenridge Drive, Suite 320
Atlanta, GA 30083

CMR21 Host Utility, Version 1.0

Operating System: VMS

Keywords: * Communications  * Device drivers/handlers
           * Programming tools  * Project management

The CMR21 Host Utility is a library of RSX–11/VMS utility programs that serve as tools to assist users of CMR21 distributed industrial control processors in configuring and supporting networks of CMR21 units.

Use of the utility is optional and is not a requirement for operation of the CMR21. However, in applications in which large numbers of CMR21 processors are distributed over a wide area, the utility provides a convenient set of nonprivileged executable tasks to determine network configuration and to access individual processors in the network.
The CMR21 Host Utility is VAX/VMS and PDP-11/RSX-11 compatible. It supports both mapped and unmapped memory configurations and is distributed in Files-11 format.

Refer to SPD #30.39.00 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP-11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office

(see Introduction).

**COMPACT II — Series 300 and 400**

**Operating System:** VMS

**Keywords:** • CAD/CAM • Industrial • Pre- and postprocessors

• Programming tools

COMPACT II provides minicomputer-based, universal numerical control (NC) programming systems for point-to-point and multiaxis contouring applications on mills, machining centers (3-, 4-, or 5-axis), drills, lathes (including 4-axis), punches, flame cutters, and EDM machines. Machine links are available from a library of more than 4,000 links to convert COMPACT II programs to the unique codes used by specific machine tools and controls. Part program processing is performed on an interactive basis, enabling the programmer to process and debug programs conversationally while on line. Optional interactive graphics capabilities aid part program development and proveout. COMPACT II interfaces with all popular CAD/CAM systems.

Series 400 offers capabilities for more sophisticated programming applications and allows simultaneous COMPACT II programming and processing by several users.

A version of this product is available for the PDP-11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Ronnie L. Barnes, Director of Marketing

(313) 995–6000

MANUFACTURING DATA SYSTEMS INC.

4251 Plymouth Road

P.O. Box 986

Ann Arbor, MI 48106
COP (Customer Order Processing)

Operating System: VMS
Keywords: • Billing • Distribution • Order entry
• Warehousing

COP provides 2-pass customer order entry with separate billing, can integrate with MCBA's manufacturing system, and has many features that will interest a distributor. COP includes the following capabilities:

• Allows on-line entry and editing of customer orders and/or credit memos, allocation of line items at entry time, and credit check and availability check at entry time
• Accepts order and/or line-item discounts at entry time
• Handles back orders automatically
• Supports distribution from multiple warehouse locations
• Allows selective and partial billing
• Supports a 10-character zip code
• Accepts multiple prices per line item and mass price change
• Allows product category account maintenance
• Collects sales history automatically and prints sales history reports on request
• Prints the Products Sold by Customer and Customers by Products Sold reports
• Accepts multiple discounts per customer on a product line basis as well as trade discounts per product
• Interfaces to five other MCBA application packages
• Supports security system and multicompany capabilities

A version of this product is available for the PDP-11 computer.

Price: $3,000 – $4,500
Product Support Available: Yes
Contact: Sales Representative
(818) 957-2900
MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

DNC–11 (Direct Numerical Control Package)

Operating System: VMS
Keywords: • CAD/CAM • Materials handling • Process control
• Shop floor control

DNC–11 is a part program distribution system for the manufacturing market, providing a direct link between the CAD/CAM environment and numerically controlled (NC/CNC) machines on the shop floor. DNC–11 does away with the current method of generating NC programs on paper tapes that are then manually transported to the NC/CNC machine level. The result is faster design to production and elimination of most problems encountered with paper tapes.
The system runs under RSX-11M and VMS and can comprise two or three levels:

- **Host system:** For part program storage, command interpretation, logging, communication with remote mainframes, and optionally for CAD/CAM or program development.
- **Subsystem:** For program distribution; in smaller applications, this software can run on the host system.
- **Machine connection level:** Three methods are possible.

**BTR technique (Behind Tape Reader):** The paper tape reader on the NC/CNC machine is replaced by a microprocessor-based BTR interface available from DIGITAL. Firmware emulates the tape reader to control the machine. Connection is via optically isolated parallel port and utilizes an error-free communication protocol.

**CTE Terminal:** Based on the VT103 or RT103, this terminal provides for local storage and editing of part programs as well as machine feeding control. Connection is via serial line to the BTR interface.

**Direct communication:** For CNC machines that have an error-free protocol implemented.

A version of this product is available for the PDP-11 computer.

**Price:** $15,000  
**Product Support Available:** Yes  
**Contact:** Consult your local European DIGITAL sales office or call 49-89-95910.

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**Fedder Bill of Materials and Materials Requirements Planning Systems**

**Operating System:** ULTRIX, UNIX  
**Keywords:** • Bill of materials • Financial analysis  
• Materials handling • Purchasing

The Fedder Bill of Materials processor can operate stand alone or as part of the Integrated Fedder Manufacturing Management System. The system has nine levels of explosion and provides for materials requirements planning for 24 future periods.

A version of this product is available for the PDP-11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** David E. Fedder  
(301) 561-3579  
FEDDER SOFTWARE, INC.  
P.O. Box 248  
Timonium, MD 21093
FINCON (Financial Control System)

Operating System: VMS
Keywords: • Accounting • Inventory • Order entry
• Real time

FINCON is a real-time system designed to be fully integrated into any of the modules of IMPCON (Production Control/Manufacturing), if desired. FINCON contains sales, purchase, and nominal ledgers, as well as optional sales order entry and stock control modules. FINCON can be installed on a modular basis. Additionally, interfacing to PAYSOLVE (Payroll) will be available.

A version of this product is available for the PDP–11 computer.

Price: £3,000 – £12,000
Product Support Available: Yes
Contact: M. J. Bradley, Sales and Marketing Manager
0905 53335
STAVELEY COMPUTING
Blackpole Road
Worcester WR3 8TH
United Kingdom

FMRP (Full Material Requirements Planning)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Materials handling

MCBA's Full Material Requirements Planning provides all the features of Base MRP, as well as highlights exceptions, recommends shop order releases, supports multiple-order policies, provides pegging, recommends purchase order releases, accommodates what-if operations, and is the key to successfully implementing manufacturing resource planning.

Application Development and Enhancements, Inc., is a New England distributor of software products manufactured by Mini-Computer Business Applications, Inc. (MCBA), in Montrose, California.

A version of this product is available for the PDP–11 computer.

Price: $2,000 – $6,000
Product Support Available: Yes
Contact: Douglas Souza
(617) 893–0333
APPLICATION DEVELOPMENT AND ENHANCEMENTS, INC.
130 Overland Road
Waltham, MA 02154
H–BOMM

**Operating System:** ULTRIX, UNIX

**Keywords:** • Bill of materials • Engineering
  • Materials handling • Report writer

H–BOMM, Helmsman's bills of material management system, provides a product structure management tool for planning, control, and decision making. Its features and spreadsheet capabilities make H–BOMM the ideal what-if planning tool. H–BOMM integrates with other Helmsman products to form a material requirements planning package, H–MRP.

As the nucleus of Helmsman's material requirements planning system, H–BOMM supports a complete and classic dependent-demand MRP system, a system for small manufacturers.

As a desktop computer tool linked to a large-scale computer, H–BOMM can receive and operate on portions of a company's product structure data base. H–BOMM users can perform complex operations not available on a large computer system, and no programming skills are required.

Operating on a micro, H–BOMM exceeds the features and functions of mainframe and minicomputer software. With the support of H–CHAMP and operating in a work station connected with a mainframe, H–BOMM is the manufacturing and engineering manager's equivalent of the financial manager's spreadsheet tool.

A version of this product is available for the PDP–11 computer.

**Price:** $1,495

**Product Support Available:** Yes

**Contact:** Lew Silverstein
  (408) 246–8300
  HELMSMAN SYSTEMS, INC.
  1030 So. Winchester #205
  San Jose, CA 95128

H–BUY

**Operating System:** ULTRIX, UNIX

**Keywords:** • Financial analysis • Process control • Purchasing
  • Report writer

H–BUY, an on-line interactive system, provides purchasing and receiving management for manufacturing operations. H–BUY integrates with other Helmsman products to form a material requirements planning package, H–MRP.

H–BUY's Purchasing function group enters, tracks, and controls open purchase orders and provides on-line status and historical information. Reducing your buyer's clerical effort gives him or her more
time to control the cost and adverse variance of material and to evaluate the delivery performance of the vendor. By treating purchased material as “good parts on hand” only when it has passed inspection and is in stores, the Purchasing group more accurately monitors the arrival and quality of vendor items. A user-controlled report generator is included in the function group.

The Vendor function group establishes and controls the vendor-to-part relationship. By tracking the vendor’s history and commitments, the group of programs establishes which vendors best meet your organization’s needs.

A well-run Receiving function immediately increases the cash flow because it more efficiently controls vendors, regulates the flow of material, and raises the level of service.

The Receiving function group tracks and controls material and provides on-line status and historical information. By matching purchase order and receiving information, the system ensures that you pay only for good material in the quantity you want. Because the system flags back-ordered material, expedition begins as soon as needed material arrives.

A version of this product is available for the PDP–11 computer.

Price: $2,495
Product Support Available: Yes
Contact: Lew Silverstein
(408) 246–8300
HELMSMAN SYSTEMS, INC.
1030 So. Winchester #205
San Jose, CA 95128

H–MAKE

Operating System: ULTRIX, UNIX
Keywords: • Process control • Production control
• Project management • Shop floor control

H–MAKE, an on-line interactive system, provides work-in-process management for manufacturing operations. It integrates with other Helmsman products to form a material requirements planning package, H–MRP.

Work-in-process tracking is the cornerstone of closed-loop MRP. H–MAKE allows production and production control to make the decisions, to set the priorities, and to meet the order schedules. Reliable, consistent performance to schedules directly influences lower investment in finished goods inventory and better customer service.

The Work Order function group enters, tracks, and updates work orders; provides on-line work-in-process status information; and includes a user-controlled report generator, tied to work order number
or part number. Paperwork packets are generated, including kit pull lists, for each job. The system ties back-order item detail to work order and makes the information available on line. Delays and splits are possible. Work orders are tied to and controlled by due date.

The Work Center and Route function groups establish and update work center and routing information. The Route group provides a report generator that ties work center to work order information. Those reports give the shop supervisor an information base for close-in scheduling and dispatching.

Flexible, quick-reaction production control planning requires you to perform what-if simulated kit pulls. The Kitting function group has two what-if simulated kit pull tools that let you answer the question “Can this kit or set of kits be pulled now?”

A version of this product is available for the PDP–11 computer.

**Price:** $2,495

**Product Support Available:** Yes

**Contact:** Lew Silverstein  
(408) 246–8300

HELMSMAN SYSTEMS, INC.  
1030 So. Winchester #205  
San Jose, CA 95128

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**H–MRP**

**Operating System:** ULTRIX, UNIX

**Keywords:**  
- Bill of materials  
- Inventory  
- Purchasing  
- Shop floor control

H–MRP, a material requirements planning package, incorporates the classic MRP concepts. H–MRP is an on-line, dependent-demand, transaction-driven, net-change system. The H–MRP package includes H–CHAMP, applications environment; H–BOMM, bills of material manager; H–STORE, inventory management and stores; H–MAKE, work-in-process management; H–BUY, purchasing and receiving; H–PLAN, master schedule and planner controls; and MRP. The operational speed and the human interface of the H–MRP package are especially impressive.

H–MRP integrates with other suppliers’ application software packages supporting the needs of manufacturing company users. For instance, the H–CHAMP tools can be used to integrate the H–MRP modules with presently installed accounting or sales and forecasting packages.

H–MRP runs on the de facto standard operating systems for 8080/8085/Z80, 8086/8088, Z8000, and 68000 families of hardware.

A version of this product is available for the PDP–11 computer.
Price: $9,995  
Product Support Available: Yes  
Contact: Lew Silverstein  
(408) 246–8300  
HELMSMAN SYSTEMS, INC.  
1030 So. Winchester #205  
San Jose, CA 95128

H–PLAN

Operating System: ULTRIX, UNIX  
Keywords:  
• Materials handling  
• Process control  
• Production control  
• Scheduling

H–PLAN is an on-line interactive system providing master schedule and planner controls and MRP for manufacturing operations. The system integrates with other Helmsman products to form a material requirements planning package, H–MRP.

The manufacturing organization’s objective is to work as a team, implementing management’s strategic plan. H–PLAN helps communicate the company’s plan to all levels of the organization. Everyone operates from the same information base, with the same priorities.

The Material Requirements Planning function group provides the time-phased, net requirements for each item; it compares independent demand from the master schedule and dependent demand from the BOM explosion to the on-hand inventories and open purchase and work order status. This group also enables you to control MRP rules. Choose between regenerative or true transaction-driven net change rules. An on-line MRP inquiry initiates a single-level MRP updated display for that item for current information. The MRP is “full-pegging.” The MRP function group also includes what-if simulation, a powerful tool for making management decisions.

The Master Schedule is management’s strategic statement of future product requirements; it affects customer order service and inventory investment levels. This group drives the MRP System with product requirements by date, quantity, and configuration. The group compares forecast and sales order information to the production plan and recommends where to adjust the master schedule. Included is a rapid-response, rough-cut capacity planning tool, in addition to top-down, what-if simulation.

The Planner Control function group enhances system effectiveness by apportioning and delegating system activities to designated individuals for appropriate action. This group enables you to control all aspects of the inventory rules that affect each of the parts in the system data base. You can choose order point or MRP control, internal and safety lead time, safety stock, and order quantity rules. The group includes an extensive user-controlled report generator.
A version of this product is available for the PDP–11 computer.

Price: $3,495

Product Support Available: Yes

Contact: Lew Silverstein
(408) 246–8300
HELMSMAN SYSTEMS, INC.
1030 So. Winchester #205
San Jose, CA 95128

H–STORE

Operating System: ULTRIX, UNIX

Keywords: • Accounting  • Inventory  • Materials handling
          • Report writer

H–STORE, an on-line interactive system, provides inventory and stores management for manufacturing operations. The system integrates with other Helmsman products to form a material requirements planning package, H–MRP.

The Stores group provides a perpetual on-line inventory record, maintained by those individuals responsible for the items. You can trace data base transactions to the source document and to the responsible operator. The system includes a user-controlled report generator.

The Charge Number and Month-End function groups provide inventory and WIP transaction interfaces to the financial and accounting functions and detail and summarize the current month’s system transactions. The references to source documents and operators help management review and edit this information before transferring it to the general ledger accounts. Dual tracking and a user-controlled report generator are included.

The Back Order function group tracks and reports back-order status and issues and includes a user-controlled report generator. By flagging relevant inquiries and reports, the system helps to expedite back orders, both at the vendor’s plant and in house.

The Cycle Count function group statistically measures stores accuracy and continually adjusts physical to book inventory.

The Physical Inventory function group controls the source documents for the classic, audited, and physical inventories and processes the approved physical-to-book inventory adjustments that follow.

The Planner Control group provides history-oriented inventory control, item classification, lot size, EOQ, safety stock, and order point. Those functions do not depend on bills of material or material requirements planning. The function group also includes a user-controlled report generator.

A version of this product is available for the PDP–11 computer.
Price: $3,495
Product Support Available: Yes
Contact: Lew Silverstein
(408) 246–8300
HELMSMAN SYSTEMS, INC.
1030 So. Winchester #205
San Jose, CA 95128

**ILS–11 (Interactive Layout Software)**

**Operating System:** VMS  
**Keywords:**  
- CAD/CAM  
- Graphics  
- Metals  
- Shop floor control

This CAD/CAM interactive graphics design system is for fabricated metal products on all machine tools and machining centers, both CAM controlled and N/C controlled on DNC to remote machine tools with I–CAM capability for Group Technology networking.

A version of this product is available for the PDP–11 computer.

Price: $10,000 – $50,000
Product Support Available: Yes
Contact: John A. Villano
(203) 575–9300
CAM–APT, INC.
166 Railroad Hill Street
Waterbury, CT 06708

**I/M (Inventory Management)**

**Operating System:** VMS  
**Keywords:**  
- Distribution  
- Inventory  
- Report writer

This comprehensive, stand-alone inventory management tool is applicable to both manufacturing and distribution inventories. The application does the following:

- Allows multiple inventory locations, stocked and nonstocked items, warehouse transfers and issues and receipts, and purchase order entry, editing, and tracking
- Prints the ABC Analysis Report with optional update and the Usage Exceptions Report, comparing actual to forecast
- Provides physical inventory tag support and cycle counting support
- Prints the Inventory Stock Status and the Reordering Advice reports
- Interfaces to seven other MCBA application packages
- Supports security system and multicompany capabilities
The special functions of I/M allow the user to clear item month-to-date fields and recalculate several averaged fields, clear item month-to-date fields only, clear item year-to-date fields, or evaluate LIFO inventory and cost roll over. A version of this product is available for the PDP-11 computer.

**Price:** $3,000 – $4,500  
**Product Support Available:** Yes  
**Contact:** Sales Representative  
(818) 957–2900  
MCBA, INC.  
2441 Honolulu Avenue  
Montrose, CA 91029

### IMCS (Interactive Manufacturing Control Systems)

**Operating System:** VMS  
**Keywords:**  
- Facilities management  
- Inventory  
- Scheduling  
- Shop floor control

IMCS is an interactive manufacturing control system offering current status, planning, and inventory control information. IMCS consists of six integrated systems:

- Interactive Inventory Management System, which maintains current information on inventory, manufacturing orders, purchase orders, and material allocations
- Interactive Manufacturing Standards System, which supports the creation, maintenance, and reporting requirements for bills of material and routings
- Interactive Material Requirements Planning System, which explodes the master schedule into its component requirements and calculates net available inventory and open orders
- Interactive Shop Floor Control System, which gathers necessary information for control of work flow over a short period of time
- Interactive Purchasing System, which provides the control for purchasing, receiving, and inspection, as well as the interface to the accounts payable system
- Interactive Capacity Planning System, which provides a planning facility for long-range capacity needs

A version of this product is available for the PDP-11 computer.

**Price:** $30,000 +  
**Product Support Available:** Yes  
**Contact:** David C. Lang, CPIM  
(513) 761–0132  
INTERACTIVE INFORMATION SYSTEMS  
10 Knollcrest Drive  
Cincinnati, OH 45237
IMCS (Inventory Management and Control System)

Operating System: VMS
Keywords: • Cost accounting • Distribution • Inventory
          • Materials handling

IMCS, one of several modules developed by White Hat to assist firms in accurately controlling the manufacturing process, concentrates on the proper accounting of inventory. IMCS identifies all raw material, work in process, and finished-goods items. A 21-character alphanumeric item number is supported. In addition, secondary part numbers and a 35-character descriptive field are maintained. Transactions are processed via multiple on-line terminals with operator prompting or through interfaces from other systems (for example, order processing, purchasing management, or shop floor control).

Standard reporting capabilities also include inventory master lists, stock status, ABC analysis, reorder exceptions, cost impact analysis, and cycle count lists. An optional Bill of Material subsystem is available and allows for extensive parent and component accounting, as well as complete costing capability.

IMCS also interfaces with the White Hat general ledger system.

A version of this product is available for the PDP-11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: John M. Montgomery
         (617) 933-3780
         WHITE HAT SYSTEMS, INC.
         331 Montvale Avenue
         Woburn, MA 01801

IMPCON (Inventory Management and Production Control System)

Operating System: VMS
Keywords: • Bill of materials • Inventory • Production control
          • Purchasing

This completely integrated real-time inventory management and production control system offers full facilities for manufacturers. The system can be integrated into any of the modules of FINCON (Financial Control), if desired. IMPCON offers parts control, stock location control, movements inwards/outwards, purchase ordering and control, work orders, costing, bills of material, material requirements planning, work in progress, and production planning/forecasting. The system can be installed on a modular basis. Additionally, interfacing to PAYSOLVE (Payroll) will be available.

A version of this product is available for the PDP-11 computer.
INMAN (Integrated Manufacturing System)

Operating System: ULTRIX
Keywords: • Bill of materials • Inventory • Production control
• Shop floor control

INMAN provides management with timely and accurate information to plan, monitor, and control manufacturing operations. INMAN enables small- to medium-size manufacturers to run on an easy-to-operate supermicrocomputer. The system is comprised of seven modules, each of which provides a comprehensive set of information tools for the manufacturing environment. The seven modules are for cost accounting, inventory management, material requirement planning, bill of material, product costing, bill of labor, shop floor control, and capacity requirements planning.

The INMAN software takes advantage of state-of-the-art advances in software and hardware. INMAN uses a central data base system, providing power and flexibility. The user can create ad hoc reports from the data base, and the modules of the system interact as if they were one. The modules can also be purchased individually.

INMAN has been developed on a 68000-based UNIX* system. Supported hardware includes the Pixel 100/AP, manufactured by Instrumentation Laboratory of Lexington, MA. INMAN is designed for a multiuser environment and borrows most of its features from packages that were created for mainframes.

*UNIX is a trademark of AT&T Bell Laboratories.

Price: $6,000 – $8,000
Product Support Available: Yes
Contact: Michael F. Bagley
(207) 283–0156
INTELLIGENT BUSINESS SYSTEMS, INC.
P.O. Box 638
Saco, ME 04072
Inventory Control

Operating System: VMS
Keywords: • Inventory • Materials handling
• Production control • Report writer

This inventory control module may be operated as part of the integrated Business Information System to track material from production forecast through purchasing, receiving, incoming test and inspection, multiple stockrooms, multiple stages of work in process, test and inspection, finished products, and shipment to customers. The module may be integrated to one or more other Breuer & Co. modules — Purchasing, Sales Order Processing, Bill-of-Materials, Job Cost Accounting, and General Ledger. Alternatively, it may be operated independently of other software.

Integrated with Bill-of-Materials, the production forecast capability can be used to generate purchase requisitions. Reports include inventory status, stockout/pending shortages, material requirements based on production forecast, product commitments based on customer sales orders, receiving and “on order” reports, inventory valuation, shipping reports, and transaction reports with receipts, issues, transfers, adjustments, and so on.

A version of this product is available for the PDP–11 computer.

Price: $6,000
Product Support Available: No
Contact: Janna McMillan
(617) 275–5810
BREUER & CO.
54 Middlesex Turnpike
Bedford, MA 01730

Inventory Control

Operating System: ULTRIX, UNIX
Keywords: • Inventory • Materials handling • Order entry
• Report writer

The Inventory Control system tracks materials through three stages — raw materials, subassemblies, and finished goods. A vendor file and vendor costs are maintained for each raw material. Subassembly and finished goods costs are updated when prices of related raw materials change. Minimum reorder points are used to print a report for ordering raw materials. Production of subassemblies and finished goods relieves raw materials for the proper amounts. When inventory items are ordered, another report tells when raw materials orders are due and which orders are late.
The system is written in C language and uses the public domain Ingres data base written by the University of California at Berkeley. Binary and source codes are available for UNIX* Berkeley 4.1 and 4.2. The source code is available for all others.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.

**Price:** $1,500 – $10,000

**Product Support Available:** Yes

**Contact:** Fred Potthoff
(612) 941–9470
FARGO ELECTRONIC SERVICES, INC.
7150 Shady Oak Road
Eden Prairie, MN 55344

**Inventory Management**

**Operating System:** MS/DOS, PICK, UNIX, XENIX

**Keywords:** Inventory  Order entry  Purchasing  Warehousing

This program provides the following:

- Automatic interface to the Accounts Receivable system
- Invoices, credit memos, and picking tickets generated as needed
- Inventory quantity on-hand figures updated as stock is increased or depleted
- Multiwarehouse and companywide tracking
- Automatic recalculation of average cost of inventory items when new receivings entered
- Comprehensive inventory master file: quantity on hand, receipts, transfers in and out, returns, sales quantity, physical adjustments, committed quantity, on-order, and dollar sales and cost of sales
- Automatic rollover on effective date for new pricing
- Virtually unlimited price class coding at both inventory-item level and customer-classing level
- On-demand printing of multiple price lists
- Back-order information by item and customer
- On-demand report of cash value of present inventory
- On-demand sales analysis by product category, customer name or type, salesperson, or state
- Purchasing advice reports based on reorder level and quantity, including lead times and cycle turnover data
- Stock status and history report and stock status inquiry
- Same-as, alternate, and complementary items
- Packing lists by picking sequence

A version of this product is available for the PDP-11 computer.

**Price:** $600

**Product Support Available:** Yes
Contact: Steve Thomas  
(713) 270–5218 or (800) 231–0062 
THE SOFTWARE EXPRESS, INC.  
10103 Fondren, Suite 220  
Houston, TX 77096

**ISAP (Interactive Wire List Preparation)**

Operating System: VMS  
Keywords: • CAD/CAM • Data conversion • Electrical  
• Electronic

This CAD/CAM package, developed by Advanced Computer Concepts Inc., converts schematic diagrams and assembly layouts to programming data for wire wrap machines and reports supporting your design effort. Libraries of devices, schematics, and assembly layouts are interactively prepared and merged to develop the wire wrap data. Continued use expands your device and data libraries and reduces custom data entry. Extensive reports and error messages ensure trouble-free development of prototype and production wire wrap boards. ISAP eliminates the time-consuming and error-prone intermediate wire lists, coding sheets, and so on, and optimizes the wire wrap machine data for the most efficient wiring.

Price: $4,000  
Product Support Available: Yes  
Contact: Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue, Suite 117  
Orange, CA 92665

**J/C (Job Costing)**

Operating System: UNIX, VMS  
Keywords: • Accounts payable • Cost accounting  
• Project management • Security

This stand-alone package is a complete job costing system providing accurate cost reporting and comprehensive variance analysis. J/C includes interactive entry and editing of labor and material tickets. In addition, J/C:

• Supports standards or estimates for variance analysis  
• Provides a job cost analysis report by job, department, work center, part, and operation  
• Prints a variance analysis report — including rate, yield, performance, and quantity breakdowns for labor, material, and subcontracting
Manufacturing

- Allocates fixed and variable overhead
- Provides security and multicompny support
- Interfaces to five other MCBA packages

The following special functions are provided: job copy, job cost master file, general ledger interface, accounts payable interface, and cost table defaults maintenance.

A version of this product is available for the PDP–11 computer.

**Price:** $2,500 – $4,000

**Product Support Available:** Yes

**Contact:** Sales Representative
(818) 957–2900
MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

Job Shop Management System

**Operating System:** VMS

**Keywords:** • Accounting • Metals • Production control
• Shop floor control

The interactive White Hat Manufacturing Spectrum Job Shop Management System is designed for specialty, make-to-order shops. Modules included are Quoting and Estimating, Machine Loading, Inventory Control, Order Entry, Work-in-Process, and Shop Floor Control. A complete financial system, including General Ledger, Accounts Payable, Accounts Receivable, Purchasing, and Payroll, is also included.

The system retains extensive quote history information and permits the automatic creation of a job from a previous quote.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** John M. Montgomery
(617) 933–3780
WHITE HAT SYSTEMS, INC.
331 Montvale Avenue
Woburn, MA 01801

LABDAT (Labor and Data Collection)

**Operating System:** VMS

**Keywords:** • Data collection • Personnel • Real time
• Report writer

LABDAT is offered as an integrated product with IMCS, IIS's interactive manufacturing control system, or as a stand-alone labor and data collection system that could front-end other manufacturing systems.
packages. This package consists of three stand-alone modules: human resources management, a time and attendance module, and shift and labor reporting.

**Price:** $25,000 +

**Product Support Available:** Yes

**Contact:** David C. Lang, CPIM
(513) 761–0132

INTERACTIVE INFORMATION SYSTEMS
10 Knollcrest Drive
Cincinnati, OH 45237

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**LINBAL**

**Operating System:** VMS

**Keywords:** • CAD/CAM • Production control
• Shop floor control • Simulation

This weighted average line balancing program provides the optimum time balance between assembly station workloads and the number of operators for a production line. This program, which provides a practical approach to line balancing, is applicable for all manufacturing industries with assembly lines. The program handles single or multiproducts and options, as well as multiple operator assembly stations. A precedence diagram need not be prepared. An existing line setup can be used as a starting point for the simulation of the line balance. The program can be tailored to suit specific application needs. A prerequisite for the program is to have time standards stored in the MOST Computer Systems data base.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Kjell B. Zandin or Mary T. Coughlin
(412) 963–8100

H. B. MAYNARD & CO.
235 Alpha Drive
Pittsburgh, PA 15238

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**M–Net™ (Manufacturing Network)**

**Operating System:** VMS

**Keywords:** • Data collection • Networking • Production control
• Shop floor control

M–Net is a layered network designed for the manufacturing environment. Sales to date have been in the IC or integrated circuit manufacturing area, including IC test houses and volume IC consumers. M–Net enables the user to interconnect makes and types of production and test equipment into a comprehensive network without the
need to purchase and to maintain levels of proprietary, noncompatible networks. The equipment need not be in the same location to use M–Net.

The need to collect data from different design, fabrication, and test equipment is paramount in the integrated circuit industry. Valuable engineering labor and turnaround time are saved, ultimately leading to greater productivity, higher yields, greater quality control, and lower cost.

M–Net has been designed and developed to provide real-time data collection, analysis, control, and display, rather than trying to adapt an existing business system to meet production needs.

The key features provide:
- Support for a variety of equipment from many vendors
- Centralized test program control and updating
- Flexible, easy, nondisruptive modification of network configuration
- In-house expertise to modify and to customize the system
- Field upgradable to interface with new shop floor systems as older equipment is phased out

A version of this product is available for the PDP–11 computer.

**Price:** $25,000 – $45,000

**Product Support Available:** Yes

**Contact:** Girish Shah  
(602) 622–7707  
INTERNATIONAL ELECTRONICS  
1518 E. Broadway  
Tucson, AZ 85719

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**Machining Data Program**

**Operating System:** VMS  
**Keywords:**  
- CAD/CAM  
- Materials handling  
- Production control  
- Shop floor control

This program provides optimal speeds and feeds for machine operations, such as drilling, milling, turning, and grinding. The recommended feeds and speeds are based on part material, part dimensions, tool material, machine type, machine condition, and available horsepower.

**Price:** $10,000 – $15,000

**Product Support Available:** Yes

**Contact:** Kjell B. Zandin or Mary T. Coughlin  
(412) 963–8100  
H. B. MAYNARD & COMPANY  
235 Alpha Drive  
Pittsburgh, PA 15238
MANMAN/MFG

Operating System: VMS
Keywords: • Bill of materials • Inventory • Production control
• Shop floor control


Price: $60,000
Product Support Available: Yes
Contact: Carol Singh, Corporate Communications Coordinator
(415) 969–4442 ext. 4152
ASK COMPUTER SYSTEMS INC.
730 Distel Drive
Los Altos, CA 94022

Manufacturing System

Operating System: VMS
Keywords: • Operations • Process control • Production control
• Simulation

The Manufacturing System is a combination of interrelated subsystems that, when combined, emulates the operating procedures of a manufacturing plant. This emulation allows a plant to smoothly convert to the automated system. Subsystem interaction among departments is accomplished automatically. The capability also exists for a consolidation of many operating plants upward for division or corporate reporting.

The system can be used by subsystem or as a whole. The system is not industry specific and therefore can be easily adapted to virtually any manufacturing environment.

Price: $13,500 – $60,000
Product Support Available: Yes
Contact: Henry C. Gaylor
(412) 355–8523
PITTSBURGH NATIONAL BANK
Fifth Avenue and Wood Street
Pittsburgh, PA 15222
MAP/1™ (Modeling and Analysis Program)

Operating System: VMS
Keywords: • Engineering • Operations • Process control
• Simulation

MAP/1 is a simulation-based modeling and analysis program used to design and evaluate batch manufacturing systems (discrete event). MAP/1 is for use in manufacturing and engineering industries. The system has a manufacturing orientation and can model complex manufacturing systems. Models can be built quickly. The user-friendly system requires only a short learning time, and no programming is required. Comprehensive output reports are produced.

Price: $15,000
Product Support Available: Yes
Contact: Thomas L. Howell
(800) 428–7636
PRITSKER & ASSOCIATES, INC.
P.O. Box 2413
West Lafayette, IN 47906

MCS–3 (Manufacturing Control System)

Operating System: UNIX, XENIX
Keywords: • Bill of materials • Inventory
• Materials handling • Order entry

MCS–3 is a completely integrated inventory control, material requirements planning system designed to run on both 8- and 16-bit microcomputers. MCS–3, a redesigned and enhanced version of the MCS–2 system released in 1980, is written in Ryan McFarland COBOL and will run on most microcomputers and operating systems.

A version of this product is available for the PDP–11 computer.

Price: $750 – $2,900
Product Support Available: Yes
Contact: Rick L. Jeffrey
(614) 895–0738
MICRO MANUFACTURING SYSTEMS
2550 Corporate Exchange Drive, Suite 109
Columbus, OH 43229

MDT (Multiwire Design Technology)

Operating System: UNIX, VMS
Keywords: • CAD/CAM • Electronic • Mechanical engineering

Multiwire is a high-density, easily modifiable wired interconnection technology used extensively for complex and high-speed circuit
boards. MDT is a software package for designing multiwire circuit boards and is available under license from PCK Technology.

MDT provides CAD tools for design input data preparation from a schematic and a component layout, controlled automatic interconnection routing, and manufacturing data verification for new designs. The system also provides CAD tools for rapid modification of existing designs. Manufacturing (design output) data can be sent to one of the licensed manufacturing centers throughout the world, or the associated manufacturing technology can be licensed from PCK. The design turnaround time, from schematic to production-ready data, can be on the order of days.

The distribution package comprises 232 FORTRAN source modules and 20 MACRO–11 source modules. The design system is generated from this package and provides 73 executable tasks and 14 general batch procedures and utilities. The system requires 3.5 megabytes of on-line disk storage. An additional 1.5 megabytes are required if the distribution source is to be maintained on line.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Bernard Hayduk  
(516) 454-4466  
PCK TECHNOLOGY DIVISION  
322 South Service Road L.I.E.  
Melville, NY 11747

**MICS (Manufacturing Information Control System)**

**Operating System:** VMS  
**Keywords:** • Bill of materials  
• Facilities management  
• Inventory  
• Production control

MICS uses a data base consisting of integrated master files, such as a structure file with bills of materials, an operation file with routing and operation time information, a production cost center file with rate information, a projection file with projected quantities for 12 months, a master manufacturing schedule file, and a shop calendar for 3½ years. A user can build a data base on line with those files. The software provides entrance into any file record either on the screen or in hard copy.

MICS consists of the following modules:

• The Bill-of-Material module permits the user to view on line the components of any product, single or indented explosions for desired quantities of the parent product, on-line explosions or implosions on the screen, start/stop date of components in effect, extended component quantities on indented explosion, reference num-
ber between indented explosion, and numeric analysis reports for cross-reference.

- The Inventory Control module maintains inventory for up to 99 warehouses and has facilities for a variety of inventory analysis reports. The inventory database maintains finished goods, assemblies, subassemblies, raw materials, and purchased and spare parts. This module also serves as the interface with the accounting and management information system package.

- The Production Control module, the largest module in the MICS package, enables the user to begin with a quotation or open a job directly and to cancel or accept a quotation. An accepted quotation instantly becomes an open job. The work order provides the material picking slip, routing, and suggested start/due date. A powerful inquiry facility shows work in process on the screen or in hard copy.

- The Cost Control module provides an on-line cost inquiry that provides standard cost versus actual cost information. The automatic standard cost calculation recalculates the cost of every finished good and assembly.

- The Requirements Planning module helps users plan for raw materials and purchased parts for three to five years, as well as the number of people in the plant and the number of machines or shifts.

- The Capacity Planning module sets up for every production center weekly time buckets with the planned number of hours. Each open job will automatically allocate hours needed for job operations.

- The Machine Control module retains historical information about machine repairs for an unlimited time. After the machine preventive-maintenance schedule is loaded, the system automatically prints the work orders, provides reports, and forecasts spare parts and labor for the desired future period.

- The Purchase Order module permits the user to create a purchase order manually or automatically. The system selects all the products with below-minimum quantity and suggests what to order in multiples of economic order quantity.

**Price:** $2,000 – $12,000  
**Product Support Available:** No  
**Contact:** Frank Ciacci  
(416) 475–5155  
SYSTEM DYNAMICS CORP.  
151 Esna Park Drive  
Markham, Ontario L3R 3B1  
Canada
MMM (Manufacturing Material Management System)

Operating System: VMS

Keywords: • Bill of materials • Inventory
• Materials handling • Purchasing

This system allows you to balance customer service, inventory levels, and production costs. This comprehensive manufacturing information and control system can be installed quickly and economically for a wide variety of manufacturing environments. A series of on-line interactive programs provide control of purchase parts, subassemblies, and finished goods used in the manufacturing process, as well as a multilevel bill of materials required to manufacture a product. Also included is a where-used capability to aid in tracking parts.

The system also processes work orders. Work orders provide summary requirements for purchase parts and subassemblies, spot shortages relating to a group of loaded work orders, time-phased kit shortages, perpetual inventory control on a gross requirements basis, and time-phased purchase order control.

Standard material, labor, and burden costs can be maintained for each item. Changes in costs can be reflected throughout the structure through simple transaction input during the maintenance routine. A major advantage of the data base structure is the ability to install the system without the cost information and to add cost data at a later date.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Jerry Baker, President
(312) 956–1053
BAKCO DATA, INC.
85 W. Algonquin Road, Suite 190
Arlington Heights, IL 60005

MOST Computer Systems

Operating System: VMS

Keywords: • Data base management • Production control
• Shop floor control

These systems provide work measurement and standards-setting programs for manual labor in manufacturing. The five operating levels are methods and workplace data development, filing and retrieval for data management, application of time standards, data update and maintenance, and documentation. The standards generated by the program can be easily interfaced to other CAM modules. Optional modules are available in machining, welding, line balancing, routing, and labor reporting.
A version of this product is available for the PDP–11 computer.

**Price:** $55,000 – $82,500

**Product Support Available:** Yes

**Contact:** Mary T. Coughlin or Kjell B. Zandin  
(412) 963–8100  
H. B. MAYNARD & COMPANY  
235 Alpha Drive  
Pittsburgh, PA 15238

**MRP (Material Requirements Planning System)**

**Operating System:** VMS  
**Keywords:** • Distribution • Materials handling • Purchasing

MRP can perform as both a net change and a regenerative material requirements planning system. The time-phased logic of the system is designed to assist management in determining manufactured and purchase material requirements. Both net change and regenerative functions are designed to satisfy product demands, expressed as master schedule items, customer orders, or other user-defined requirements. System logic will determine the proper component to end-item levels. MRP will provide a simulation of what effect the manufacturing plan has on current inventory supply. The system projects what shortages will occur and provides recommended or “planned” order suggestions to prevent their occurrence. As part of a modular manufacturing system, the White Hat MRP System is designed to be installed with the White Hat Inventory Management and Control System (IMCS), Purchasing Management System (PMS), Order Processing and Sales Analysis (OPSA), Shop Floor Control (SFC), and Bill of Materials System (BOMS). Reporting output can be either in user-defined, horizontal bucket format or displayed in a vertical, bucketless approach. On-line pegging and exception message display features provide powerful tools in materials problem resolution.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** John M. Montgomery  
(617) 933–3780  
WHITE HAT SYSTEMS, INC.  
331 Montvale Avenue  
Woburn, MA 01801

**MRP/Inventory**

**Operating System:** VMS  
**Keywords:** • Bill of materials • Cost accounting • Inventory  
• Report writer
This complete, proven MRP/Inventory system has been carefully engineered to provide optimum satisfaction to all users, from the controller to the keyboard operator. The system is ideal for manufacturers of mixed duty/duty-free products.

The features provide:
- Tracking of inventory movement from order through assembly to finished product
- Transfer of parts between jobs
- Standard cost accounting for all transactions
- On-line display of 20 or more levels of implosion or explosion of part or subassembly

Additional features include maintenance of inventory quantities and costs by job number within part, as well as by part, which is especially useful if costs for the same part vary between jobs. The system is highly interactive while maintaining tight controls and detailed audit trails. A high-level report writer generates reports from the data base, audit trails, or both. A brief (1-minute) session enables the user to initiate reports with user-specified sorts, page breaks, titles, selects, and totals.

**Price:** $20,000

**Product Support Available:** Yes

**Contact:** Robert Brown  
(902) 429-3175  
DYMAXION RESEARCH LTD.  
Box 1053, Armdale Station  
Halifax, Nova Scotia B3L 4L5  
Canada

### MTS–100

**Operating System:** VMS  
**Keywords:**  
- Process control  
- Production control  
- Quality control  
- Shop floor control

MTS–100 is an engineering and manufacturing evaluation and control system for industries that manufacture semiconductors, printed circuit boards, and complete integrated electronic products. The system assists in all phases of engineering and manufacturing in the process, cost, equipment, production, and factory control and in yield improvement.

The features of this relational data base system include:
- Complete production scheduling, planning, and control capabilities, with plan-variance reporting and action recommendations
- Floor inventory tied to direct usage and material movement and bottlenecks reported for people and equipment, based on generated standards and real-time situations
• Complete cost planning and control capabilities for direct and indirect labor and material
• Extremely powerful process control and engineering capabilities and handling of several levels of data: in-wafer, wafer-to-wafer, lot to lot, or components, boards, subassemblies, and so on
• The ability to define all data, units, scale multiplier, and valid and specification limits plus the provision for performing calculations on data and treating the calculated values as original data
• Comparisons of data against internally generated standards for cycle times, costs, equipment uptimes, scrap and rework rate, and yields and reporting on any out-of-control or out-of-specification situations, with material disposition feedback
• Easy selection and reporting of data plus powerful statistical analysis capabilities
• Provision for machine interfaces for data gathering and equipment control
• The ability to easily define and install custom versions of the system and ease of user modification and expansion

A version of this product is available for the PDP-11 computer.

**Price:** $35,000 – $175,000

**Product Support Available:** Yes

**Contact:** Brian Taylor  
(617) 263–3408

MICROPRODUCT TECHNOLOGY SOFTWARE, INC.  
945 Concord Street  
Framingham, MA 01701

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**Multicapp Process Planning/Classification and Coding**

**Operating System:** VMS  
**Keywords:** • Bill of materials • CAD/CAM • Electronics  
• Inventory

Multicapp is a production-proven computer-assisted process planning system, designed for easy use by process planners and others involved in manufacturing. This on-line system for retrieval, maintenance, and standardization of process planning information includes detailed part information, routing information, and manufacturing instructions. Multicapp can be integrated with a company’s existing MRP system or other CAD/CAM applications.

Included within the standard Multicapp package is the Multiclass Classification and Coding system, a flexible software system that allows the user to create and use multiple group technology classification and coding structures. Multiclass comes with a code for machined and sheet metal parts; other applications include tooling, assemblies, electronics, and electromechanical parts, as well as in-
house or preexisting code structures. Multiclass makes the Multicapp Process Planning system useable by a wide variety of functions in the manufacturing environment.

The Multiclass Code Number is the key that allows the process planner to retrieve process plans for parts that are the same as or similar to the one on which the process planner is working. This code number can also provide the information necessary for a group technology approach to manufacturing standardization.

Additional modules that expand the usefulness of Multicapp include Automated Time Standards (ATS), Tool Tracking and Inventory, Mass Update, and Cost Calculation.

A version of this product is available for the PDP–11 computer.

**Price:** $85,125 – $110,125
**Product Support Available:** Yes
**Contact:** Luann Ebert
(617) 890–4030
ORGANIZATION FOR INDUSTRIAL RESEARCH, INC.
240 Bear Hill Road
Waltham, MA 02154

**Multiclass Design Retrieval System**

**Operating System:** VMS
**Keywords:** • CAD/CAM • Electronics • Graphics • Purchasing

This system provides an interface among classification and coding, group technology, and computer graphics. The system expands the usefulness of computer graphics systems by making it possible to quickly and easily retrieve design and manufacturing information on a computer graphics terminal.

More specifically, the Multiclass Design Retrieval System provides a means of identifying and retrieving existing parts that are the same as or similar to new parts in design, based on shape and manufacturing characteristics. Key to the system is the Multiclass Classification and Coding module, a highly flexible software system that allows the user to build and use up to nine code structures, including codes for machined and sheet metal parts, assemblies, electronics, purchased parts, and tooling. Thus, the Multiclass Design Retrieval System can be used by many functions in the design and manufacturing environment.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request
**Product Support Available:** Yes
**Contact:** Luann Ebert
(617) 890–4030
Multigroup Group Technology Analysis

Operating System: VMS
Keywords: • CAD/CAM • Electronics • Engineering
• Process control

The Multigroup series of analytical and reporting programs provide the information necessary to standardize and optimize a user's CAD/CAM operations. Multigroup also provides a means of realizing mass-production economies and efficiencies in batch environments. The system groups similar parts into families for more efficient treatment in design and production. Specific benefits of Multigroup analysis include standardized routings, optimal machine tool usage and arrangement, manufacturing and design standards, reduced rework and scrap rates, and minimized throughput time.

Included within the Multigroup package is the Multiclass Classification and Coding system, which provides the structure that enables Multigroup to work with multiple code structures, such as for machined and sheet metal parts, tooling, assemblies, electronics, and electromechanical parts, as well as in-house or preexisting code systems.

A version of this product is available for the PDP–11 computer.

Price: $91,600 – $146,000
Product Support Available: Yes
Contact: Luann Ebert
(617) 890–4030
ORGANIZATION FOR INDUSTRIAL RESEARCH, INC.
240 Bear Hill Road
Waltham, MA 02154

NICAM III (Numeridex Integrated Computer-Aided Manufacturing)

Operating System: VMS
Keywords: • CAD/CAM • Engineering • Graphics • Metals

NICAM III is an advanced NC/CNC programming system containing an automated formatter, advanced machine define capability, automatic tooling, motion, and other advanced control logic. NICAM III applies to the computer-aided manufacturing metalworking industry.

The system is easy to use and flexible to accommodate first-time NC programmers with the help file of 44 fixed definitions. More ad-
vanced NC programmers will appreciate the free-formatting option of the Numerical Control System (NCTS) geometry. Both methods of programming provide rapid response time combined with immediate graphics verification. Both color and monochrome interactive graphics are offered with the system, along with optional business software.

The system is supported through software maintenance and comprehensive easy-to-read user-oriented manuals. NICAM III can interface with most CAD/CAM systems to provide manufacturing engineers with a system that can accept a design database file and process the information into NC machine-usable data (punched tape) or Direct Numerical Control (DNC) interface.

A version of this product is available for the PDP–11 computer.

Price: $20,000 – $35,000
Product Support Available: Yes
Contact: Mike Donnelly
(312) 541–8840
NUMERIDEX INC.
P.O. Box 11000
Wheeling, IL 60090

**NUFORM Level I**

**Operating System:** VMS  
**Keywords:**  
- CAD/CAM  
- Pre- and postprocessors  
- Shop floor control

NUFORM Level I is a comprehensive system for preparing tapes and control data for N/C tools used in the 2½-axis mode. This mode is generally used for 3-, 4-, and 5-axis machining centers with two axes in continuous and simultaneous motion and all other axes in a positioning mode only, except for ramp cuts, and so on. The same philosophy and the same input handle 3-, 4-, and 5-axis machining centers, 2- and 4-axis lathes, point-to-point, punch presses, grinders, wire elox, flame cutters, and lasers. For example, the user does not have to learn a different system for lathes or punch presses, and so on.

The input to the NUFORM system is brief parameterized all-numeric input, which eliminates the heavy syntax and other troublesome characteristics of the alphanumeric systems and drastically reduces programming time and computer running time. The NUFORM system handles the full spectrum of geometrics, methods, and machining operations.

The system consists of a universal processor and postprocessors.

Available with NUFORM Level I are the following plot programs:

- Plot of coordinates used in defining the part
- Cutter center line plots in XY, XZ, YZ, including tool size and position plot for drill cycles
• Isometric and perspective plots
• Lathe and punch press plots
• Unfolding plot for machining centers with rotary tables

A version of this product is available for the PDP–11 computer.

Price: $6,000

Product Support Available: Yes

Contact: A. S. Thomas
(617) 329–9200
A. S. THOMAS, INC.
355 Providence Highway
Westwood, MA 02090

**NUFORM Level II**

Operating System: VMS

Keywords: • CAD/CAM • Pre- and postprocessors
• Shop floor control • Simulation

NUFORM Level II provides the user with an interactive design tool for complex geometries. The system handles 3-dimensional contouring where three, four, or five axes may move simultaneously and continuously. The 3-dimensional plot capability permits the user to view the object at any desired orientation. The system is applicable to sculptured surfaces, such as airfoils, swarfing, and all 3-dimensional complex geometries (dies, molds, patterns, and so forth). The system has the full capability of blending surfaces and orienting the tool axis to any desired attitude with respect to the surface or surfaces.

The system consists of a universal processor and a postprocessor.

A version of this product is available for the PDP–11 computer.

Price: Available upon request

Product Support Available: Yes

Contact: A. S. Thomas
(617) 329–9200
A. S. THOMAS, INC.
355 Providence Highway
Westwood, MA 02090

**OPSA (Order Processing and Sales Analysis System)**

Operating System: VMS

Keywords: • Billing • Distribution • Order entry
• Sales and marketing

This comprehensive interactive order processing system is designed to satisfy the majority of on-line order processing requirements. It is
integrated with White Hat's Inventory Management and Accounts Receivable systems, thereby allowing on-line customer verification and credit checking. Billing and shipping information is retrieved, along with customer cash discount terms, applicable product-line discounts, and sales tax information, to be used in pricing order line items. Orders may be released, modified, rescheduled, or canceled through on-line updating procedures. The system supports full or partial shipments, with multiple-order releases based on line-item shipment dates. Line information is provided to sales analysis for product and customer reporting. During order preparation, product and price data is accessed to provide pertinent ordering information for each product. Standard reporting capabilities include order status reporting, invoices, customer sales and product sales reports, product/price master list, picking sheets, and a backlog reporting module.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** John M. Montgomery
(617) 933–3780

WHITE HAT SYSTEMS, INC.
331 Montvale Avenue
Woburn, MA 01801

**PIOS (Production and Inventory Optimization System)**

**Operating System:** VMS

**Keywords:** • Bill of materials • Inventory • Production control • Shop floor control

PIOS, an on-line interactive manufacturing control system with daily net change and regenerative MRP, is comprised of eight major modules — bill of materials, inventory control, material requirements planning, shop floor control, master production scheduling, purchasing management system, cost management system, and customer order entry. The modules can be used stand-alone or integrated to provide a complete closed-loop system. That flexibility allows users to implement PIOS modules according to their individual needs. Both single- and multiplant versions are available.

User-friendly PIOS is installed using the VAX/DBMS data base and VAX communications monitor. PIOS is designed and programmed in "native" data base mode for maximum efficiency and throughput.

PIOS is fully documented. The documentation includes the *Data Base Description* and *Installation Guide* system reference manuals and a management guide and handbook for each module. In addition, in-house customer training is available.
Price: $25,000 – $250,000
Product Support Available: Yes
Contact: Ray Gaddis or L. Anne Carney
        (214) 980-0647
        RATH & STRONG SYSTEMS PRODUCTS, INC.
        14901 Quorum Drive, Suite 600
        Dallas, TX 75240

PMIS (Plant Management Information System)

Operating System: VMS
Keywords: Accounting  Maintenance
          Property management  Purchasing

PMIS is an on-line system that provides all plant responsibility areas with the information necessary to improve productivity. The information now available is as follows:

- Maintenance — bill of material, work order histories, equipment histories, preventive maintenance and repair work order scheduling, and materials and manpower availability for planning
- Purchasing and inventory control — reorder messages and information, stock-out messages, lead times/vendors, expediting, perpetual counting, and issue histories
- Stores — issues and receipts, identification by class/subclass and by manufacturer’s part number, inquiry by where used, and picking slips
- Accounting — complete costing of materials and labor assets budgeting; cost reports for operations, administration, and maintenance; fixed assets and capital project control; control of payment of invoices; preissue of material and spare parts; preventive maintenance work orders; reorder, stock-out, and expedite messages; and requests for perpetual counting of inventory

PMIS can be adapted to circumstances prevailing in a particular plant. Since PMIS is modular, a client need not purchase all the functions.

PMIS is available as a turnkey system consisting of operating system software, application software, installation, training and documentation, ongoing system support, and computer hardware.

A license to run PMIS software may also be purchased. This option includes application software, installation, training, and documentation.

A version of this product is available for the PDP-11 computer.

Price: $105,000
Product Support Available: Yes
Contact: George K. Fleming, President
        (807) 622-5480
G. K. FLEMING & ASSOCIATES LTD.
1118 Roland Street
Thunder Bay, Ontario P7B 5M4
Canada

PMS (Purchasing Management System)

Operating System: VMS
Keywords: Distribution • Inventory • Purchasing

This interactive purchasing and receiving system is one of the modules in the White Hat MRP II manufacturing management system. PMS is integrated with the Inventory (IMCS), MRP, and Accounts Payables (APS) products. Both stocked and nonstocked line items are supported, and receipts are posted directly to inventory. A wide variety of user-defined transactions are available, and material may be tracked as returned for credit, returned for replacement, scrapped, in MRB, in QC, or accepted. Purchase orders and change orders are printed. Stocked items are validated to inventory when entered.

Both pay-to and multiple purchasing vendors are supported in the vendor master file, which is shared with Accounts Payable. Reporting includes a wide variety of status, reorder, and follow-up reports.

Price: Available upon request
Product Support Available: Yes
Contact: John M. Montgomery
(617) 933–3780
WHITE HAT SYSTEMS, INC.
331 Montvale Avenue
Woburn, MA 01801

PMST (Preventive Maintenance Scheduling and Tracking System)

Operating System: VMS
Keywords: Maintenance • Scheduling

PMST provides a tool to ensure that preventive maintenance is scheduled for a large number of pieces of equipment at correct time intervals. The system also provides status reports of preventive maintenance currently scheduled and documentation of completed preventive maintenance. The system also supports many other useful functions.

A version of this product is available for the PDP-11 computer.

Price: $4,000 – $7,000
Product Support Available: Yes
Contact: Ralph M. Flanders, President
(615) 966–6832
P/O (Purchase Order and Receiving)

Operating System: VMS
Keywords: • Distribution • Purchasing

P/O is a vital function to distribution companies as well as to many manufacturing companies, as some production problems are created by late deliveries from vendors and by rejection of critical deliveries due to poor quality.

P/O helps ensure that the correct quantity and quality of material are available when needed and wanted. Improved methods of vendor analysis help reduce shortages as well as the delivery of off-standard material.

One of P/O's major benefits is better use of the buyer's time. The semiclerical activities that often consume much time — searching for a copy of an order, trying to discover if a delivery was received, for example — are reduced or eliminated. The buyer thus spends more time seeking a better price while maintaining reliable sources of supply. From purchase orders placed, the cash requirements for accounts payable can be developed.

The coordination function performed by Receiving significantly reduces the overall time from receiving to stores. Critical material can be delivered to the correct designation much more quickly. Where documents or information is missing, P/O provides extensive information to help identify the receipt.

P/O, which requires MCBA's Inventory Management (I/M) and Accounts Payable (A/P), includes the following capabilities:

- Allows on-line entry and editing of purchase orders and entry of receipts
- Supports blanket purchase orders and scheduled receipts reporting
- Prints purchase orders
- Provides powerful vendor analysis and on-line cash requirements inquiry
- Allows the user to report rejects at receipt time
- Notifies the user when early shipments and over/under shipments occur
- Supports multiple vendors per item
- Allows for preentered table-driven notes and manually entered notes for each purchase order and/or line item
- Interfaces to three other MCBA application packages
- Supports multicompanies and password security

A version of this product is available for the PDP-11 computer.
Price: $3,000 – $4,500
Product Support Available: Yes
Contact: Sales Representative  
(818) 957–2900  
MCBA, INC.  
2441 Honolulu Avenue  
Montrose, CA 91020

PROFIT II

Operating System: VMS
Keywords: • Accounting  • Cost accounting  • Inventory  
• Payroll

The PROFIT manufacturing system is a modular, on-line, interactive, and completely integrated manufacturing control, costing, and planning system. The suggested sequence for installing the PROFIT system is as follows:

• Phase I: Control your manufacturing operation — inventory analysis, physical inventory, customer billing, work orders, labor reporting, material reporting, routings, net material requirements, multilevel bill of materials, and system control

• Phase II: Cost your manufacturing operation — sales order processing, sales analysis, customer service, purchase order processing, inventory average costing, payroll processing, work order costing, work order budget reporting, and same as except for routings

• PHASE III: Plan your manufacturing operation — financial planning, master scheduling, material requirements planning, capacity requirements planning, same as except for bill of materials, and new-product estimating

In most companies the accounting applications — accounts receivable, accounts payable, general ledger, asset accounting, statement printing, budget printing, and schedule printing — may be installed at any time and therefore are not included in any specific phase. Since the system is modular, you may choose different applications within a phase for your installation.

A version of this product is available for the PDP–11 computer.

Price: $10,000 – $100,000
Product Support Available: Yes
Contact: David E. Capel, Vice President  
(415) 930–9932  
COMPUTER SYSTEMS DEVELOPMENT, INC.  
140 Mayhew Way, Suite 700  
Pleasant Hill, CA 94523
PROFITKEY® Manufacturing Control System

Operating System: ULTRIX, UNIX
Keywords: • Inventory • Order entry • Production control
• Scheduling

PROFITKEY gives chief executive officers and their staffs the tools required to plan and control company efficiency, thus maximizing profits. This on-line interactive system will help your company reduce inventory and overtime and increase cash flow, customer service, and direct labor output. PROFITKEY provides the tools for master scheduling, materials requirements planning, shop floor control, and purchasing and the supporting financial and accounting functions.

PROFITKEY is a transaction-driven, user-oriented system that provides the following exclusive displays:

• The MASTER SCHEDULER'S WORKBENCH® display provides the tools to develop and change the master schedules, forecasts, and planning bills as required.
• The PLANNER'S WORKBENCH® display provides the tools to firm, release, and reschedule orders and to inquire for the status of any requirement, order, item, or bill of material.
• The DISPATCHER'S WORKBENCH® display provides the tools to inquire and update operations, routings, and work center loads.
• The PURCHASING WORKBENCH® display provides the tools to inquire and update purchasing and vendor information.

PROFITKEY will run on any hard disk system using Ryan McFarland COBOL, including microcomputers.

A version of this product is available for the PDP-11 computer.

Price: $6,000 – $32,000
Product Support Available: Yes
Contact: W. W. Dockins
(305) 743–7400
KEY SYSTEMS, INC.
P.O. Box 1319
Marathon, FL 33050

Purchase Order Processing

Operating System: VMS
Keywords: • Accounting • Information management
• Inventory • Purchasing

This module processes purchase orders for mailing, tracks open commitments, records material receipts, and prints a variety of reports, including open P.O. summary, expediting, receiving, and cash requirements. The module can be operated independently or as part of a fully integrated system, interfacing automatically with one or more
of accounts payable (for matching invoices to purchase orders and reducing open commitments), inventory control (to increase inventory when material receipts are recorded and to show material on order on inventory reports), and job cost (to reflect open commitments and/or material receipts on job cost reports). Operation is fully interactive, with reports and video screen displays available on demand.

A version of this product is available for the PDP–11 computer.

**Price:** $4,000  
**Product Support Available:** Yes  
**Contact:** Janna McMillan  
(617) 275–5810  
BREUER & CO.  
54 Middlesex Turnpike  
Bedford, MA 01730

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**QMS PROGRAMS™**

**Operating System:** VMS  
**Keywords:** • Quality control • Statistics

QMS PROGRAMS, an integrated set of computer program modules that manage quality-control information, provide for the on-line collection, documentation, storage, reporting, and analysis of quality test and inspection results. Unique features include the PROTOCOL dialog allowing users to custom tailor any number of QC applications within a single system; data entry from a variety of devices, including a compatible automatic screen generation module, EZDATA; interactive reporting and/or statistical analysis capabilities in a variety of user-controlled formats; on-line help messages; simulation capabilities that allow what-if games with new-product startups; and built-in graphics.

A version of this product is available for the PDP–11 computer.

**Price:** $8,000 – $45,000  
**Product Support Available:** Yes  
**Contact:** John Sivertson  
(609) 924–7904  
JOHN A. KEANE AND ASSOCIATES  
20 Nassau Street  
Princeton, NJ 08540

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**SFC (Shop Floor Control)**

**Operating System:** VMS  
**Keywords:** • Report writer • Scheduling • Security  
• Shop floor control
This stand-alone application is a comprehensive and practical shop floor tool used for the creation and monitoring of shop orders and related shop floor activity. In addition to interactive entry and editing of shop orders, SFC:

- Supports "shop bills" and "shop routings"
- Provides operation-level controls; forward, backward, and manual scheduling of shop orders down to the operation level; capacity requirements planning; and exception reporting to highlight problem areas in the shop
- Records scrap and rejects
- Accommodates shop notes
- Records and accumulates actual material used and labor hours expended
- Prints a dispatch list
- Allows multiple shop orders to be directly connected to a job
- Supports a daily calendar in month-day-year format cross-referenced to shop days
- Interfaces to six other packages in MCBA's manufacturing system
- Supports security and multicompany capabilities

A version of this product is available for the PDP-11 computer.

**Price:** $4,000 – $6,000

**Product Support Available:** Yes

**Contact:**
Sales Representative
(818) 957–2900
MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

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**SFC (Shop Floor Control and Job Costing System)**

**Operating System:** VMS

**Keywords:**
- Cost accounting
- Production control
- Scheduling
- Shop floor control

SFC is a comprehensive interactive system capable of routing, costing, and load determination. By maintaining files for customers, work centers, employees, and routings, the system enables the production department to record, analyze, and manage shop floor activity. Shop orders are entered via an on-line terminal with operator prompting. Transactions are entered against operations within a job, enabling the user to track the flow of the job through the shop floor.

A variety of transaction types permits distinguishing between setup and run operations and standard and rework activity. Variances from setup and run-time estimates are calculated and used to com-
pute the efficiency of both employees and work centers. Rejects and rework transactions are reported. Job Shop Control determines the shop load for up to 13 weeks and provides information concerning load hours by work center to assist in scheduling. Reports are generated, including a full set of master file lists, open job listings, job cost analysis, shop load and work center schedule reports, and a weekly report package consisting of direct labor analysis, work center utilization, and reject/scrap analysis.

A version of this product is available for the PDP–11 computer.

Price: Available upon request

Product Support Available: Yes

Contact: John M. Montgomery
(617) 933–3780
WHITE HAT SYSTEMS, INC.
331 Montvale Avenue
Woburn, MA 01801

SPC (Standard Product Costing)

Operating System: VMS

Keywords:  • Cost accounting  • Purchasing

SPC is an interactive, comprehensive tool that accurately maintains standard or estimated costs for both manufacturing and accounting management and keeps up-to-date current costs for all products, parts, and services provided by a company. Those costs are used by management for planning and budgeting to maximize profits. Deviations of current costs from planned objectives are identified for management attention. Since SPC is integrated with MCBA's Inventory Management and Standard Product Routing packages, labor and material figures are automatically kept consistent. SPC provides the following capabilities:

• Speeds installation by creating the initial cost master file automatically from the item master file
• Maintains two sets of costs: beginning-of-the-year cost projections (standard) and up-to-date (current) costs
• Maintains value-added costs at each level of the bill of material and accumulates costs from lower levels of the bill of material
• Separates both standard and current costs into material, labor, fixed burden, and variable burden
• Handles multiple departments and work centers with flexible, user-defined tables to define overhead, labor grades, locations, job and cost types, and various status codes
• Calculates labor for each operation for each item, using the standard routing
• Uses the current bill of material to build up costs for user-selected items
• Provides costed bill of material reports in single-level, indented, and summarized formats
• Provides critical ratios such as gross margin percentages and cost variances
• Facilitates what-if cost analysis
• Highlights current purchase prices deviating from the standard material costs on the Purchase Price Variance Report
• Replaces standard costs with current costs for all or selected items
• Interfaces to four other MCBA packages
• Supports multiple companies and password security

A version of this product is available for the PDP–11 computer.

**Price:** $2,500 – $4,000
**Product Support Available:** Yes
**Contact:** Sales Representative
(818) 957–2900
MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

**Spider II Manufacturing Planning and Control System**

**Operating System:** UNIX, VMS
**Keywords:** • Cost accounting • Inventory • Production control
• Shop floor control

Spider II is a fully interactive closed-loop manufacturing control system encompassing production planning, production control, material planning, material control, and cost control. The system's modular approach allows the user to purchase only the applications required. Spider II can also expand into a fully integrated accounting and manufacturing system.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request
**Product Support Available:** Yes
**Contact:** Sam Bishop, Vice President, Sales
(312) 879–1008
UNIQ DIGITAL TECHNOLOGIES
143 First Street
Batavia, IL 60510

**SPR (Standard Product Routing)**

**Operating System:** VMS
**Keywords:** • Maintenance • Process control
• Production control • Report writer
SPR, the MCBA Manufacturing System application package that handles the creation, maintenance, and reporting of data describing operations, tools, and notes used in standard product manufacturing, is sometimes referred to as the bills of labor package. SPR is oriented toward small- to medium-size repetitive manufacturers (make-to-stock/assemble-to-order); small- to medium-size job shops (make-to-order/engineer-to-order) will also find it useful for repetitive jobs.

SPR is efficiently designed, taking advantage of space-saving techniques, such as general routings and specific routings. General routings are subsets of operations, tools, and notes that are common to more than one product. Specific routings identify complete sets of operations, tools, and notes used in a product's manufacture. In SPR, several products or items can use the same routing. Specific routings are complete routings (the route or path a shop order travels when being manufactured) and can incorporate general routings.

SPR accesses all features easily, via menus, and includes the following capabilities:

- Allows interactive entry and editing of routing data — operations, tools, notes, and pointers to general routings — and provides for alternate routings
- Maintains labor standards at the operation level
- Supports "same-as-except" routings — a way of easily creating a new routing by copying another — and allows routings to be copied into a shop order in MCBA's shop floor control package
- Supports many operation types, including productive (most common), setup, move, rework, and so on
- Provides routings for multiple locations per item, tooling information control, and standardization of multiusage operations
- Facilitates higher accuracy of standards by allowing user-specified location of the decimal point in critical fields
- Supports the user in tailoring standard hours, allowing per piece, per 10 pieces, per 100 pieces, and so on, or n pieces per hour
- Stores notes by operation, which can be used for operational instructions
- Prints routing sheets, routing summary sheets, and the general routing usage report
- Interfaces to four other packages in MCBA’s Manufacturing System
- Supports multicompanies and password security

A version of this product is available for the PDP-11 computer.

**Price:** $1,500 – $2,500

**Product Support Available:** Yes

**Contact:** Sales Representative

(818) 957–2900

MCBA, INC.

2441 Honolulu Avenue

Montrose, CA 91020
TEC Manufacturing Systems

Operating System: UNIX, VMS
Keywords: • Bill of materials  • Financial management  
• Inventory  • Production control

TEC supplies manufacturing and financial systems for discrete manufacturers and job shops. TEC’s proprietary software automates the following functions: accounts payable, accounts receivable, bill of materials, general ledger, inventory control, material planning scheduling, materials requirements planning, order entry/invoicing, payroll, production control, purchasing, and sales analysis. The modular, online, and fully integrated TEC manufacturing system is sophisticated yet easy to use.

ENGLISH, TEC’s data retrieval language, allows the user to ask questions of the system and to obtain instant answers either on a terminal display or on a printer. Also available is a prospect tracking system that maintains information on customers and prospects.

A version of this product is available for the PDP-11 computer.

Price: $3,000 – $8,000
Product Support Available: Yes
Contact: S. A. Levine  
(617) 964–3890  
TEC COMPUTER SYSTEMS, INC.  
30 Tower Road  
Newton, MA 02164

TIP (Tankage Inventory and Yields Programs)

Operating System: VMS
Keywords: • Chemical  • Inventory  • Petroleum  
• Report writer

TIP is an interactive inventory, transfer accounting, and yield system for refiners and petrochemical companies. TIP provides inventory, yields, and transfer accounting reports within minutes.

Data entry is error-checked at entry time to provide inventory reports at the rate of 3 seconds per tank and transfer reports at the rate of 13 seconds per transfer, entry time included.

For a 100-tank refinery, the total process takes about 25 minutes a day. Using the optional AID report writer, nonprogrammers can design and run custom reports with two hours of training.

A version of this product is available for the PDP-11 computer.

Price: $10,000 – $14,000
Product Support Available: Yes
Contact: W. G. Welter  
(713) 373–1905
ADVANCED MANAGEMENT TECHNOLOGIES
Box 71
Cypress, TX 77429

VMCS (VAX Manufacturing Control System),
Version 1.0

**Operating System:** VMS
**Keywords:** • Bill of materials • Inventory
• Materials handling • Order entry

VMCS is an interactive inventory/shop floor control application consisting of three integrated modules. All modules include a transaction journaling feature that allows for the restoration of data and that incorporates on-line transactions and hard-copy reports.

• Inventory Management System (IMS) Module — Maintains current information on inventory, work in process, purchase orders, and allocations for job orders and provides complete transaction detail on all update transactions

• IMS Reports — Inventory Status by Item, Allocation Detail by Part, Allocation Detail by Order, Order Status, Order Summary by Part, Order Summary by Order, Backorder/Shortage, Inventory Reorder, Inventory Cycle Count, Inventory Status, Inventory Basic Reference, Open Order Status, Open Order Detail, Material Requisition, Job Order Release, Allocation Action, Job Order Costing, and Simulation of Material Availability

• Manufacturing Standards Data Base (MSDB) Module — Supports the creation, maintenance, and reporting requirements for bills of material and master shop routings


• The Shop Floor Control (SFC) Module — Provides the ability to control the execution of the manufacturing plan

Refer to SPD #25.70.0 when requesting further information on this product from your local DIGITAL sales office.

**Price:** $9,000 – $23,900

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office
(see Introduction).
Welding Arc Time Program

Operating System: VMS
Keywords: • CAD/CAM • Production control
• Shop floor control

This program provides welding arc times for manual, semiautomatic, and automatic welding processes. The program calculates the welding process time, based on the geometry of the joint and the electrode characteristics. The program also calculates the frequency of electrode change.

Price: $9,000
Product Support Available: Yes
Contact: Kjell B. Zandin or Mary T. Coughlin
(412) 963–8100
H. B. MAYNARD & COMPANY
235 Alpha Drive
Pittsburgh, PA 15238

WWRAP (Wire Wrapping)

Operating System: VMS
Keywords: • CAD/CAM • Electrical

WWRAP is a general-purpose fully interactive program for the production of control tapes for semiautomatic wire wrapping machines. Wiring board geometry is entered via the VDU keyboard, and standard boards and individual connectors that are in constant use are stored in a master file and may be called up whenever required. Data in either string or from/to format can be input directly from a schematic drawing, thus permitting errors to be detected as they are entered. Alternatively, existing CAD programs can be interfaced directly with the wire wrapping program. Editing facilities are available that permit changes to data and wiring procedures to be effected quickly. New control tapes are then produced.

Special features include single- and twisted-pair wiring; level assign; point-to-point, right angle, or specially routed wiring, using routing points, channels or “nogo” areas; area routing; wire grouping and sorting; wrap count; inch/metric conversion; and wire usage.

A version of this product is available for the PDP–11 computer.

Price: £12,500
Product Support Available: Yes
Contact: K. E. Cole
(0905) 53335
STAVELEY COMPUTING CENTRE
Blackpole Road
Worcester WR3 8TH
England
Media
Assembly Sheet

Operating System: VMS
Keywords: • Documentation • Printing
   • Text editing/formatting

Writers and editors of manuals, books, proposals, and any other typeset document need to produce an assembly sheet for their printer. The program interactively asks questions about the document and then produces a file of a completed assembly sheet. The program will handle a document up to 1,000 pages. Features include sequential or chapter-oriented page numbers, parts, tabs, index, appendix, glossary, roman-numbered front matter, notes, and self-mailers.

Customization is available.

Price: $500
Product Support Available: Yes
Contact: Ed Steinfeld
        (603) 889–8224
        EXCEPTIONAL SOFTWARE
        31 Richman Road
        Hudson, NH 03051

BASIS Newspaper Library

Operating System: VMS
Keywords: • Programming tools • Query facilities • Research
   • Text editing/formatting

BASIS Newspaper Library, an interactive on-line information storage and retrieval system possessing superior text-searching capabilities, is extremely user-oriented, making it easy for nonprogrammers to use its capabilities.

The functions of BASIS Newspaper Library include term and phrase searching via inverted indexes and variable-length data elements and records; remote access from bureaus by reporters or in-house on line; elimination of marking, clipping, filing, or manual searching by library staff; greater control over indexing strategies; a centralized data base that can be leased to outside sources for revenue; an easy-to-use query language; free-text and keyword indexing; the ability to locate clippings and photographs; several security types and levels; on-line editing; sort options; and full article display on either the terminal or hard-copy printout.

BASIS Newspaper Library allows the user to define new applications and begin loading data within a few days. No computer programming is required by the user for most implementations, saving programming expenses and making BASIS Newspaper Library a flexible, useful tool.
Price: $80,200
Product Support Available: Yes
Contact: BASIS Coordinator
(614) 424–5524
BATTELLE SOFTWARE PRODUCTS CENTER
505 King Avenue
Columbus, OH 43201

**CJ/Advertising™**

Operating System: VMS
Keywords: • Accounting • Billing • Presentation aids • Report writer
CJ/Advertising is an on-line menu-driven data base-oriented advertising and contract management system with complete on-line ad rating and comprehensive accounts receivable and reporting capabilities. Features include ad/insertion order entry (up to 99 per ad order); on-line account/corporate contract cross-reference; complete comparative daily lineage reporting; ad rating and pricing for all space/rate categories, preprints, and advertising types (includes future rate entries); ad/insertion tracking and dummying by either single or multiple categories of criteria; future ad list and reservation manifest on request; automatic interface to ANPA Layout–80 Dummying System; full contract management with automatic renewal; automatic classified interface with transient ad billing on expiration and cash receipts capability; and open-item or balance-forward accounts receivable, invoicing, cash receipts, age analysis, and sales distribution.

Price: $28,000 – $62,000
Product Support Available: Yes
Contact: Dave Sloan
(813) 251–1077
COLLIER–JACKSON, INC.
P.O. Box 25546
Tampa, FL 33622

**CJ/Circulation™**

Operating System: VMS
Keywords: • Accounting • Billing • Data base management • Information management
This comprehensive circulation information system provides the full range of subscriber service and distribution functions for the newspaper industry. Features include complete subscriber maintenance and service; route status, routing, maintenance, and accounting; full PBM processing, billing, and mailing labels; maintenance of carrier...
information and accounts, draw history adjustments, and current and future draws; press run processing and press predictions, flexible truck manifests, bundle labels, zoned inserts, and nonsubscriber delivery of target market coverage publications; and full carrier accounting, billing, bonding, and receivables reporting. All functions are integrated into one data base, eliminating any batch interfacing among the various modules.

Price: $45,000 – $80,000
Product Support Available: Yes
Contact: Dave Sloan
(813) 251–1077
COLLIER–JACKSON, INC.
P.O. Box 25546
Tampa, FL 33622

CMS (Cable Television Management System)

Operating System: VMS
Keywords: • Billing • Broadcasting • Data base management • Telecommunications

This on-line interactive system for cable television system operators is built around a Subscriber Master File to which subscribers may be added, changed, deleted, or listed. A Subscriber List may be obtained in total or on a selected basis — type of service, installment date, paid-through date, method of payment, and geographic location.

The system capabilities include an alphabetical listing of subscribers, automatic assessment of monthly and yearly charges for any number of basic or pay TV services, bank draft preparation for each bank for bank draft subscribers, interactive entry and editing of new charges and payments, printing of past-due notices for delinquent subscribers, generation of statements for selected subscribers, account status on video terminal and obtaining a printed copy upon request, printing of welcome letters and subscriber account cards upon request, and tracking converter serial numbers by subscriber.

The system generates reports and a charge/payment register by late charges, disconnect, street, daily cash receipts, weekly, and installer's productivity. The system also interfaces with addressable converters and taps manufactured by a number of major suppliers to the cable television industry, including Jerrold, Scientific-Atlanta, and Control Com.

A version of this product is available for the PDP–11 computer.

Price: $15,000 +
Product Support Available: Yes
Contact: Larry Edwards, President
(803) 292–0840
DataTimes

Operating System: VMS
Keywords: • Data base management • Information management
         • Library science • Research

DataTimes is the access to the computer library files of newspapers. Publishers use this data base for revenue production by allowing commercial access, both corporate and individual, on a fee basis. The data base contains current and historical data on news, sports, legislation, and publicly held companies.

Price: $1,500 – $20,000
Product Support Available: Yes
Contact: Bob Farquhar
         (405) 321-3212
         THE OKLAHOMA PUBLISHING CO.
         500 North Broadway
         Oklahoma City, OK 73125

DECset Document Management System,
Version 1.0

Operating System: VMS
Keywords: • File management • Printing
         • Text editing/formatting • Text management

DECset, a VAX/VMS layered application software system for the development and execution of text processing, provides a reliable, high-performance environment for concurrent inputting, editing, composing, and typesetting of text. In addition, DECset provides a comprehensive set of tools for the development of complex text processing applications. DECset interfaces to a number of industry-standard photocomposers made by major typesetter vendors.

System elements include:
• Intelligent terminal and software
• High-performance editor
• Data base manager
• Translator
• Command language
• Composition
• Photocomposition device drivers
• WPS input
• Protection
• On-line user aids
Refer to SPD #25.63.0 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

### HASP + VMS

**Operating System:** VMS  
**Keywords:** File transfer, Networking, Telecommunications

HASP + is a software package that allows both UNIBUS and Q–BUS VAX running VMS to emulate a multileaving HASP workstation — for example, the IBM 360 model 20 workstation. HASP + allows communications with most mainframes and networks when run in remote mode and will communicate with other workstations when run in central mode. HASP + uses standard DIGITAL interface devices and can be run by an operator or in a complete hands-off environment. Autodial is supported, and prototype code is provided for a wide range of special applications.

**Price:** $5,500  
**Product Support Available:** Yes  
**Contact:** Virginia Snodgrass  
(503) 687–2520  
DATANEX, INC.  
P.O. Box 1728  
Eugene, OR 97440

### PUBCOM

**Operating System:** VMS  
**Keywords:** Database management, Data entry, Inventory, Warehousing

PUBCOM provides a single data base for both products (books, periodicals, and other media) and addresses (customers, salespersons, vendors, and employees). Users may select modules to perform order entry, invoicing, inventory control, warehouse control, payroll, cost accounting, catalog preparation, standing-order and subscription processing, mail lists, accounts receivable, accounts payable, general ledger, royalty accounting, and customer service.

Access to the system is via cathode ray tube (CRT) or hard-copy printer terminals. Those devices may be in-house and/or remote from the central computer facility. In addition, the warehouse module uses on-line weigh scales to receive and identify products and to validate outgoing shipments.
Output from the system includes CRT, hard copy, or magnetic tape. Those devices can be in-house or remote.

A powerful advantage of PUBCOM is that at least two years of transaction history is on line at all times to answer customer service questions and to allow management analysis and reporting. Access to any transaction is nearly instantaneous.

One of the unique features of PUBCOM is that mnemonic abbreviations are used instead of traditional computer coding to represent products, names and addresses, and specifications such as shipping methods and customer classifications. The result is extremely brief, fast, and accurate order input. In addition, all requests for information by the terminal are backed up by two levels of explanation that can be summoned by typing ? or ??. Training is therefore easy and learner-paced. All documentation is kept current and at the user's fingertips.

A version of this product is available for the PDP–11 computer.

**Price:** $10,000 – $100,000

**Product Support Available:** Yes

**Contact:**
Marc Comstock  
(617) 685–3306  
DEVICE DEVELOPMENT CORP.  
5 South Union Street  
Lawrence, MA 01843

**Scribe II**

**Operating System:** VMS  
**Keywords:** • Data base management • Financial analysis  
• Order entry • Report writer

This full-featured subscription fulfillment system (in-house, turnkey) for publishers of journals, magazines, and newsletters can handle from 5,000 to more than 500,000 subscribers and features on-line order processing; subscriber service; marketing, accounting, postal, and circulation audit (ABC.BPA) reports; automatic renewal notices and invoices; inventory control; back issue, reprint, and book order processing; promotional campaign tracking; list management; demographic and sales analyses; and mailing labels.

A version of this product is available for the PDP–11 computer.

**Price:** $75,000 – $350,000

**Product Support Available:** Yes

**Contact:**
Daniel P. O'Brien  
(617) 482–4866  
SCRIBE DATA SYSTEMS  
222 Third Street  
Cambridge, MA 02142
Storm Center

Operating System: VMS
Keywords: • Broadcasting • Report writer • Security

The RCS Storm Center System organizes your severe-weather announcements for school and business closings and can handle 4,000 organizations. Storm Center prints reports by geographical area, opening time, and type of school or business. Storm Center remembers the "kill time" of each entry and ensures security by individual passwords. Storm Center prints mailing labels for your use in contacting the businesses and schools in your coverage area.

Whatever the cause — earthquake, flood, heatwave, or winter storm — Storm Center enables you to keep track of quick-breaking closing or late-opening announcements for schools, businesses, and public or private transportation services.

A version of this product is available for the PDP-11 computer.

Price: $2,000
Product Support Available: Yes
Contact: Joe Lane
(201) 567–3263
RADIO COMPUTING SERVICES
177 N. Dean Street, Penthouse Suite
Englewood, NJ 07631

Subscription Control System

Operating System: VMS
Keywords: • Billing • Data base management • Report writer

This system provides a comprehensive circulation fulfillment and management system for magazine publishers with circulations of 20,000 to 500,000.

The package is an interactive menu and form-driven system that allows the circulation department to maintain an up-to-date subscriber/subscription data base; prepare invoices, mailing labels, renewal notices, and special promotions; and obtain a variety of management reports.

A version of this product is available for the PDP-11 computer.

Price: $25,000
Product Support Available: Yes
Contact: Douglas J. Ross, President
(613) 548–4355
ANDYNE COMPUTING LIMITED
P.O. Box 1496
221 King Street East
Kingston, Ontario K7L 5C7
Canada
Natural Resources
D–PICT/CONTOUR

Operating System: VMS
Keywords: • Energy • Engineering • Graphics • Petroleum

This widely used system creates high-quality graphics representations of contours from many types of data. More than 50 parameters can be altered to change the appearance of a contour map. However, most of those parameters have default values that rarely need changing. D–PICT/CONTOUR features up to six contour levels, including dotted and dashed contours, pen selection for various line widths and colors, control of label positioning and orientation, contour blanking, and more.

The contouring program takes in a uniform grid of data and traces the path of the contours through this grid. Therefore, the first step with most data is to create a uniform grid, using one of the two basic gridding methods. If the data occurs along lines, the Line Gridding program can be used. This method is best suited to data such as airborne and ground geophysical data.

D–PICT/CONTOUR can be adapted to a specific graphics display device or can be device independent. The device-independent version allows graphic output on more than 100 types of graphics devices — screens and plotters.

CONTOUR is written in FORTRAN 77.

Price: $10,000
Product Support Available: Yes
Contact: Brian Diamond
(416) 441–4163
DATAPLOTTING SERVICES, INC.
225 Duncan Mill Road
Don Mills, Ontario M3B 3K9
Canada

ELAS (Earth Resources Laboratory Applications Software)

Operating System: VMS
Keywords: • Aeronautics/aerospace • Graphics • Research • Scientific

ELAS is a geo-based information system designed for analyzing and processing digital imagery data. ELAS was developed mainly to process remotely sensed scanner data, especially the multispectral data acquired by the various NASA Landsat satellites. In addition to Landsat multispectral data, the ELAS system will support the processing of other data, such as aircraft-acquired scanner data, the Return Beam Vidicon (RBV) data from Landsat satellites, digitized to-
pographic data, and numerous other ancillary data, such as soil types and rainfall information, that can be stored in digitized form. As an integrated image-processing and data base maintenance system, ELAS offers the user of remotely sensed data a wide range of easy-to-use capabilities in the areas of land cover analysis.

The ELAS system is structured in terms of an operating subsystem and a collection of application modules. The operating system handles all the required input/output functions, system control functions, and the swapping in and out of applications modules as they are needed. The versatile operating subsystem and the available application modules allow the user to perform a wide range of land cover analyses, as well as data base construction and manipulation.

The available ELAS capabilities include derivation of training statistics; classification of data, using a maximum likelihood scheme; registration of an image to an image; numerous image data display capabilities; manipulations with polygons that define areas within the data; implementation on a point-by-point basis of algorithms coded in a programmable calculator-type instruction set; and the regression, correlation, and other statistical analysis of the multivariate data sets. The ELAS system is also structured such that new applications modules can be easily integrated into the system.

Price: $3,775
Product Support Available: No
Contact: Customer Support Department
(404) 542-3265
NASA’S COMPUTER SOFTWARE MGT. AND INFO. CENTER
University of Georgia
112 Barrow Hall
Athens, GA 30602

IPAS/100

Operating System: VMS
Keywords: • Accounting • Energy • General ledger
• Petroleum

The IPAS/100 is a thorough, yet easy-to-use set of computerized accounting tools designed for the growing single or multicompany oil producer. The system is designed to operate in batch and/or on-line mode and features journal entry, general ledger, budgeting, joint interest billing, vendor payables, purchaser input, revenue distribution, windfall profit tax, land management, asset reporting, and general-purpose subsystems.

The integration of the IPAS/100 allows data input only once to be accessed throughout the system, providing information required for effective processing and reporting to each subsystem.
A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Robert H. Black  
(405) 636–1587  
PETROLEUM SOFTWARE SYSTEMS, INC.  
8265 S. Walker  
Oklahoma City, OK 73139

### MAPSS–MAGIC (Management and Analysis of Geographic Characteristics Information)

**Operating System:** VMS  
**Keywords:** Data management, Graphics, Mapping, Scientific

MAPSS–MAGIC organizes information by orthogonal patterns, a concept of location logic common in everyday life. The rectangular-block pattern of many city streets is a well-known example of orthogonal relations, as are many common games that use a grid-cell arrangement — chess, checkers, and crossword puzzles, for example. Each of these grids is clearly a data management system that organizes and presents information related to a particular series of attributes. Therefore, each data array is an orthogonal map or plan showing relationships of selected points at a specific time. As information changes through time or as new or different data is obtained, the patterns change but only in relation to the original orthogonal base.

Attribute-coincidence mapping (ACM) is one of the more powerful tools used by geologists when they compare map data from diverse sources with a series of transparent overlays. On the other hand, computer-assisted ACM, particularly with MAPSS–MAGIC, enables the same geologists to consider, evaluate, and replot or store for later retrieval many more kinds of data with less effort, and line printer copy of ACM is readily available for preliminary editing, if desired.

Exploration for mineral, energy, and water resources requires the acquisition, compilation, and evaluation of many kinds of information from the earth-science disciplines: geology, geochemistry, and geophysics. Types of data that can be treated by MAPSS–MAGIC include geologic map patterns, specific resource information, airborne geophysical data, gravity data, drill-hole records, remote-sensing information, and geochemical analyses.

In addition to its use in a broad variety of geologic resource problems, MAPSS–MAGIC is effective in land-use planning, including the identification of problem areas in land-use conflict. MAPSS–MAGIC software programs are also applicable for environmental pollution studies, including the calculation and display of atmospheric-plume
dispersion patterns and ground water percolation models. The versatility of MAPSS-MAGIC is demonstrated by the fact that recalculation, update, and redisplay of those models can be done in minutes.

A version of this product is available for the PDP-11 computer.

**Price:** $25,000 – $35,000

**Product Support Available:** Yes

**Contact:** Howard A. Price, Jr., President
(615) 584–3713 or (615) 457–6975
MAPSS, INC.
20 Argonne Plaza, Suite 123
Oak Ridge, TN 37830

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**Mastercontrol**

**Operating System:** VMS

**Keywords:** • Data collection • Diagnostics • Process control • Production control

Mastercontrol provides data acquisition, monitoring, and control facilities for industrial processes. Functions include display and logging of status, event messages, display of mimic diagrams, histograms and trends, alarm annunciation and acknowledgment, control initiation, diagnostics, and maintenance aids. Mastercontrol is suitable for flow-control applications such as water distribution and gas and oil pipeline controls.

A version of this product is available for the PDP-11 computer.

**Price:** $40,000 – $80,000

**Product Support Available:** Yes

**Contact:** Bob Wisniewski, Manager, Advanced Systems
(212) 599–0828
LOGICA INC.
666 Third Avenue
New York, NY 10017
Office Systems
ABLEpayroll — Interactive

Operating System: VMS
Keywords: • Payroll
ABLEpayroll is an on-line interactive system for the reliable and accurate computation, printing, and reporting of payroll. ABLEpayroll supports multioffices and multistates. Screen-formatted entry encourages user acceptance and data integrity. A full complement of reports to meet both management and government requirements is generated, but the features that set ABLEpayroll apart from other payroll systems are those things that do not meet the eye. For example, payroll in a new quarter cannot be run until the 941 information from the previous quarter has been printed and cleared. Various tests are performed to ensure that all employees are reported on a state quarterly form. An employee with year-to-date earnings cannot be deleted. The user is given the option of controlling whether other earnings are taxable or nontaxable; if taxable, the system will pay overtime due based on a "new" average hourly rate as is prescribed by the Federal Wage and Hour Law. The system allows an unlimited number of deductions. A menu selection is provided so the user can maintain FICA rates, U.C. rates, SDI rates, page size, form size, and check kind without programmer assistance.

Price: $5,000
Product Support Available: Yes
Contact: Terry K. Holder or Nathan I. Lieberman
(812) 479–6951
EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
P.O. Box 2469
Evansville, IN 47714

ALL–IN–1 Office Menu, Version 1.2

Operating System: VMS
Keywords: • Forms management • Scheduling • Spreadsheets • Word processing
ALL–IN–1 Office Menu provides the office system applications of electronic mail; document processing; desk management, including calendar and calculation; and forms development. ALL–IN–1 Office Menu consists of a flow control facility, application interfaces, and Form Driver (FDV):
• The flow control facility allows a user at a VT100 terminal to select from a menu of options and move from one application to another.
• The application interfaces provide menu-driven access to applications. Those menus can be modified to meet the needs of the user.
• The Forms Development application provides the ability to add customized applications to the standard office system applications pro-
vided with ALL-IN-1 Office Menu. FMS forms are used to provide the following functions: menus, data entry, record search, text file search, VMS DCL command file parameter entry, and arithmetic calculations.

Refer to SPD #25.81.1 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office
(see Introduction).

### ALP (Address List Processor)

**Operating System:** VMS

**Keywords:**
- Data collection
- Forms management
- Recruiting
- Text editing/formatting

ALP performs on-line screen entry list maintenance and envelope/label production and features list creation, address entry, duplicate-entry detection, and list extraction. Each list is created with an identifier and 12 data fields. Additional data fields and their edit characteristics can be defined for each list. ALP’s benefits include easy maintenance of large mailing lists, automatic elimination of duplicates on command, and choice of subsets of list based on user-selected data fields.

Address records can be entered via keyboard to a formatted screen or from lists supplied on magtape. Individual field editing is performed, including state abbreviation and zip code validation checking. Canadian and foreign addresses are accepted.

Lists may be removed to tape or separate files for backup. Address records may be individually updated, deleted, or displayed.

Labels can be printed 1-, 2-, 3-, or 4-up Cheshire or self-adhesive on any width larger than three inches. Envelopes may also be printed.

ALP creates a word processing list file for production of personalized letters.

A version of this product is available for the PDP-11 computer.

**Price:** $1,995

**Product Support Available:** Yes

**Contact:** Neal J. Anderson, Senior Product Specialist
(414) 784–8250

MCHUGH, FREEMAN AND ASSOCIATES, INC.
1135 Legion Drive, P.O. Box 454
Elm Grove, WI 53122
BDS (Bank Disbursements System)

Operating System: VMS
Keywords: * Accounts payable * Banking * Billing
 * Purchasing

BDS, written in BASIC, facilitates the payment of vendor invoices in a banking institution by providing improved efficiency over the bill payment operation. Information entered into the BDS System is edit checked for more accurate bill payment. Additionally, a complete audit trail is provided of all checks processed.

All checks are printed on continuous forms, using high-speed printers. The printed checks are designed to fit standard window envelopes.

Vendor names, addresses, and general ledger numbers are stored in files, allowing the operator to enter only a short code for the complete name, address, and G/L number. All data entered is checked for accuracy and displayed for a second visual check.

All accounting entries are produced on a journal report detailing each entry by G/L number. Additionally, accounting entries are coded with cost centers to allow for cost allocation.

Posting to the bank’s general ledger can be in detail or in summary by G/L totals based on the accounting journal report. A complete audit trail is provided, indicating all data entered to the system.

All programs are controlled by two levels of passwords. Programs can be executed only from a menu.

A version of this product is available for the PDP–11 computer.

Price: $3,000 – $5,000
Product Support Available: Yes
Contact: Salvatore Cangialosi, President
 (212) 449–4608
PRIME ASSOCIATES, INC.
38 Paerdegat 7 Street
Brooklyn, NY 11236

Bridge/86

Operating System: ULTRIX, UNIX, VMS
Keywords: * File management * Personal computing * Printing
 * Programming tools

The Bridge/86 system is used primarily in office automation projects and for software development.

Virtual microcomputing is available at every terminal attached to the mini. Thus, users may move to an LP/M, MSDOS, or p-System environment that is tightly linked to other users. File storage, print-
ing backup, and so forth, are done at the host machine, yet the user
sees a normal microcomputer environment. Thus, the system mana-
ger may provide personal computing as an option to current system
users, without purchasing separate units.

A version of this product is available for the PDP–11 computer.

**Price:** $500 – $7,500

**Product Support Available:** Yes

**Contact:** Deryk Van Brundt
(415) 841–9594

VIRTUAL MICROSYSYEMS
2150 Shattuck Avenue #720
Berkeley, CA 94704

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**Date*Book**

**Operating System:** VMS

**Keywords:** • Scheduling

Date*Book, a time and calendar management system, maintains an
appointment calendar for each user, automatically schedules meet-
ings, and reminds each person, through the use of a tickler file, about
upcoming events.

A version of this product is available for the PDP–11 computer.

**Price:** $500 – $5,000

**Product Support Available:** Yes

**Contact:** Donald Rubin, President
(301) 982–1818

SYSTEMS ENGINEERING TECHNOLOGY INC.
10676 High Beam Court
Columbia, MD 21044

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**DECmail, Version 2.1**

**Operating System:** VMS

**Keywords:** • Networking • Telecommunications
• Text editing/formatting • Word processing

VAX–11 DECmail is a stand-alone mail and filing system that runs
under the VAX/VMS operating system. VAX–11 DECmail features
include the ability to create, edit, send, and process messages on a
single VAX computer system. VAX–11 DECmail also provides the
ability to store, search, and retrieve messages held in system-pro-
vided or user-created folders. VAX–11 DECmail memos and
VAX/VMS (RMS) files can be moved between VAX–11 DECmail and
the RMS file system.
Multiple stand-alone VAX/VMS systems running VAX–11 DECmail, Version 2.1, can exchange mail if each VAX/VMS system is configured with DECnet Phase III or Phase IV and Message Router. Both DECnet and Message Router are separately orderable and require a binary license for each VAX/VMS system.

Included in VAX–11 DECmail is a self-paced computer-based instruction (CBI) course to introduce new users to the DECmail application and to provide instruction on the basic functions of the product.

VAX–11 DECmail consists of a command interface, an editor, and a filing system.

The command interface offers two modes of operation:
- Menu mode — for the new or infrequent user
- Command mode — for the experienced user

Command mode allows the user to issue the same instructions that are available in menu mode but in a faster, abbreviated manner. Both modes offer extensive help facilities; explanations and directions are available for all menu items, menu item options, and command prompts.

Refer to SPD #25.64.03 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request
**Product Support Available:** Yes
**Contact:** Consult your local DIGITAL sales office (see Introduction).

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**DECspell Verifier/Corrector, Version 1.0**

**Operating System:** VMS  
**Keywords:**  
- Debugging  
- Quality control  
- Text editing/formatting  
- Word processing

This spelling verification and correction utility can automatically scan text documents or files and detect spelling errors. It can also offer a list of suggestions from which the user can select the correctly spelled word for substitution.

VAX–11 DECspell is offered with either an American English or a British English Lexicon. As an extra option, VAX–11 DECspell Verifier/Corrector may be upgraded to allow users to verify documents against either of those lexicons.

VAX–11 DECspell comprises:
- The Verifier/Corrector or Verifier Utility, which allows the interactive verification and correction of the spelling of user documents.
- A personal dictionary formatter utility, which allows users to maintain their own dictionaries. Personal and shared dictionaries
are sequential ASCII files and thus can be edited. This utility provides the additional capability of sorting words into alphanumeric order and formatting dictionaries so that they can be printed.

- The lexicon data bases.

Refer to SPD #26.34.00 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office (see Introduction).

**DIGItex Word Processing System**

**Operating System:** VMS  
**Keywords:** - Graphics  - Spreadsheets  - Text editing/formatting  - Word processing

DIGItex is a powerful word processing system available as a single-user version or as large multiuser systems. DIGItex supports the creation and maintenance of address and hyphenation files; administration of documents and standard text; creation and modification of text, using the comprehensive text editor; list processings, including text from standard text and address files; and print modules for Qume, Diablo, Olivetti, and DIGITAL printers.

In addition, DIGItex interfaces to the following program packages to support full implementation of an office automation strategy:

- **DIGIspread**, a fully integrated electronic spreadsheet calculator that facilitates combining textual data and tabular data in one document.
- **DIGIretrieve**, a system for retrieving documents, memos, reports, and correspondence in a user-defined filing system.
- **DIGIMail**, a message-switching and distribution package available in networks consisting of Professional 300s, PDP–11s, and/or VAXs. Features include password protection, transmission and receipt of messages, use of distribution lists, an electronic file system, and a message retrieval system.
- **DIGIspell**, a spelling checker and dictionary that is user expandable to learn user unique terminology.
- **MEMO–11**, a calendar system for appointment or conference scheduling in 15-, 30-, or 60-minute increments and automatic visual or audio reminder of approved schedules.
- **TELTEX–11**, a telex system for automatic transmission and receiving of telex messages. A document created by DIGItex may be immediately used as a telex message; telex messages may be received around the clock in unattended mode; and automatic dialing and answering facilities are provided.

A version of this product is available for the PDP–11 computer.
486 Office Systems

Price: $3,500 – $14,450
Product Support Available: Yes
Contact: Robert L. Hirtle, Office Manager
(904) 433–7578
ATS DATA PROCESSING, INC.
1101 North 9th Avenue
Pensacola, FL 32501

Dreams

Operating System: VMS
Keywords: • Documentation • Electronic • Networking
• Text editing/formatting

Dreams is an electronic mail system that has been installed in a wide range of business and academic environments. Development of new capabilities is a continuing process, with support and updates available for the Dreams user community. Dreams has been one of the pilot project mail systems in the developing EDUCOM-sponsored Mailnet network linking college electronic mail systems. Thus, easy accessibility to the network is ensured with Dreams.

The current version of Dreams is compatible with DECnet for message transmission to distant nodes and with MAILNET. EDT, DECDword, WORD–11, TECO, or other editors can be invoked, with a smooth transition to and from the editor. A flexible method for accessing and maintaining multiple mail files is provided. Subjects for mail files as well as individual messages are available. Unread messages can be retracted and recovery made of the last deleted message. Dreams can specify times as well as dates in relative or absolute form to control message appearance or expiration or to narrow selection criteria. Dreams is fully compatible with Batch, thereby opening up a world of possibilities for keeping abreast of unattended operations and for implementing a repetitive reminder system based on day of the week or other longer intervals. Dreams provides message acknowledgment of receipt or expiration of messages.

In addition, the system manager may assign defaults for accounts, projects, and the entire system, including the assignment of certain privileges. Messages may be sent to names, nicknames, or groups and may be scanned, replied to, forwarded, or stored for later appearance. New, old, priority, or suppressed messages are available for each mail file. Messages are automatically routed.

A version of this product is available for the PDP–11 computer.

Price: $1,500 – $5,000
Product Support Available: Yes
Contact: Thomas W. Burtnett, Director
(717) 245–1256
DCXX SOFTWARE SERVICES
Dickinson College Computer Center
Carlisle, PA 17013

EXECmail

Operating System: VMS
Keywords: • Electronic • Text editing/formatting
• Word processing

EXECmail is a high-performance electronic mail software package that encourages correct communication skills and helps the user complete each of his/her communication cycles. Communications in a series are linked, and earlier messages can be reviewed with a few simple keystrokes.

EXECmail is an easy-to-use menu-driven system with single-key commands, offering detailed help prompting. Written in native macro assembly language, using systems programming techniques, EXECmail is fast and efficient. Only one disk block per message is required, so the system will not be clogged.

Messages of any length, documents, and files are transferred at electronic speed. EXECmail can be used to relay text, graphics, binary programs, documents, and computer files.

Features include use of an in-basket, pending-basket, out-basket, and wastebasket. The user receives an alert of new mail when he/she logs on to the system. Message status can be seen at a glance. Messages can be sent to individuals or groups.

DECnet-compatible EXECmail is available with the full-featured, sophisticated CT*OS Word Processor built in for creating and reading documents.

A version of this product is available for the PDP-11 computer.

Price: $13,500 – $18,000
Product Support Available: Yes
Contact: Sally Jensen, Marketing Director
(213) 461–6688
EXECUTIVE SOFTWARE, INC.
5537 Tuxedo Terrace
Los Angeles, CA 90068

FASTRAN

Operating System: VMS
Keywords: • Accounts payable • Banking • Communications
• Telecommunications
Office Systems

FASTRAN automates funds transfer and wire-room processing for financial institutions. The system includes interfaces to FEDWIRE, BANKWIRE, CHIPS, SWIFT, Telex, and TWX. The functions are communications, message routing, test wording, risk control, payment processing, and advice generation.

A version of this product is available for the PDP-11 computer.

**Price:** $50,000 – $100,000

**Product Support Available:** Yes

**Contact:** Richard C. Thurber, Vice President, Finance Systems  
212) 943–4575  
LOGICA INC.  
20 Exchange Place  
New York, NY 10005

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FinalWord

**Operating System:** UNIX, VMS, VENIX

**Keywords:**  
- Documentation  
- Text editing/formatting  
- Word processing

FinalWord is a full-screen editor and text formatting package that runs on the VENIX operating system. The package runs on the Professional 350, PDP-11, and VAX computer systems.

As an editor, FinalWord is easy to learn for beginners but has extensive features for advanced users. Menus are available when needed but are transparent to speedy users. The user can define function keys — for example, delete and save or find a file. Several files can be edited and displayed at once. Global search and query keys allow for rapid movement and editing within the text.

With FinalWord formatting, chapter headings, footnotes, subsections, appendixes, and indexes are numbered and positioned automatically. The layout and formatting commands can be embedded in the text or in separate files. FinalWord can justify text with true proportional spacing, print boldface and underline text, and use special fonts if available on the user’s printer. The formatted text can be previewed on the screen and saved in a file to be printed immediately or at a later time.

FinalWord supports a wide variety of terminals and printers.

A version of this product is available for the PDP-11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Business Software  
(617) 661–1230  
VENTURCOM INC.  
215 First Street  
Cambridge, MA 02142
Handle Business Graphics

**Operating System:** ULTRIX, UNIX  
**Keywords:** • Graphics • Presentation aids • Printing

Handle Business Graphics is a fully interactive package for generating powerful business graphic drawings. Drawings can be moved from page to page as documents are enlarged or shortened. Multiple drawings are allowed in any text document.

Pie, line, and bar charts (stacked or grouped) can be generated from either raw data or a Handle Calc model. Handle Business Graphics also allows for one to four plots within a drawing. Any graph can be displayed within a Handle writer document and printed with the document on a letter-quality or dot matrix printer. Or, the space can be saved and the graph plotted on the document with a color plotter. In every case, the correct size of the plot is "remembered" by Handle Writer and correctly drawn in.

A version of this product is available for the PDP–11 computer.

**Price:** $295  
**Product Support Available:** Yes

**Contact:** Karan Kauppila  
(916) 583–7283  
HANDLE CORP.  
P.O. Box 7018  
Tahoe City, CA 95730

Handle Calc

**Operating System:** ULTRIX, UNIX  
**Keywords:** • Financial planning • Mathematics • Spreadsheets  
• Statistics

Handle Calc/Math produces electronic spreadsheets and provides a comprehensive interactive math package. Users can produce virtual spreadsheets, user-defined columns, sorting, execute file, worksheet consolidation, and formatting.

Handle Calc can also generate pie and bar charts from any Handle Calc model by using Handle Graphics. Windowing and title locks are additional features.

Handle Calc/Math is fully interactive with Handle Writer, Handle Graphics, and Handle List. The package enables the user to insert and do mathematical calculations inside a Handle Writer document and is completely function key driven.

A version of this product is available for the PDP–11 computer.

**Price:** $395  
**Product Support Available:** Yes
Handle List

Operating System: ULTRIX, UNIX
Keywords: • File management • File transfer
          • Forms management • Telecommunications

Handle List permits user-defined data bases of information. Simple forms fill-in templates are used to streamline information into the data bases. Information can be selectively sorted and merged within letters, lists, and so on. List processing, telemarketing, and any type of information management are quickly and easily generated with Handle List. As with all Handle products, Handle List is completely function key driven and fully integrated with other Handle products.

A version of this product is available for the PDP–11 computer.

Price: $240
Product Support Available: Yes
Contact: Karan Kauppila
         (916) 583–7283
         HANDLE CORP.
         P.O. Box 7018
         Tahoe City, CA 95730

Handle Spell

Operating System: ULTRIX, UNIX
Keywords: • Text editing/formatting • Word processing

Handle Spell offers automatic spelling checking and correction and features an 80,000-word dictionary and user-defined spelling dictionary with Handle’s unique phrase-recall option. Handle Spell-Proof offers allows the user to correct misspelled words with the correct word by using simple keystroke commands.

A version of this product is available for the PDP–11 computer.

Price: $125
Product Support Available: Yes
Contact: Karan Kauppila
         (916) 583–7283
         HANDLE CORP.
         P.O. Box 7018
         Tahoe City, CA 95730
Handle Writer

Operating System: ULTRIX, UNIX
Keywords: • File management  • Report writer
                • Text editing/formatting  • Word processing

Handle Writer is a comprehensive word processor and filing system. In addition to word processing, the system supports mail merge, document indexing, cataloging, and archive cataloging.

Handle offers complete password security controls that limit access to the system entirely or only on selected documents. Mail boxes, interoffice memos, and corporate reading files offer the user office automation features in a word processor that can be accessed by single-keystroke commands.

Handle Writer maintains complete catalogs and archive catalogs of all documents created. Documents can be indexed (filed) under multiple subject titles. An operator can also selectively ask for only his or her documents to be displayed from the catalog or for all unsecured documents to be displayed.

Detailed user profiles are a step-by-step computer-prompted use or style sheet. Easy question-and-answer sessions prompt the user to configure the work being done at each terminal, define who is at that terminal, passwords, default printers, preferred formats, and menu selections.

In addition, Handle Writer's import/export capabilities allow it to read system files or UNIX* mail files and to create Handle documents. Handle Writer also can export any document to system files or to a UNIX* mail box.

When bundled with Handle Graphics, Handle Writer enables the user to include in text business graphics, printed either on a dot matrix printer or on a color graphics plotter. Drawings of any size can be placed inside a document and can be viewed in exact form, using Handle's proof mode.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.

Price: $595
Product Support Available: Yes
Contact: Karan Kauppila
              (916) 583–7283
              HANDLE CORP.
              P.O. Box 7018
              Tahoe City, CA 95730
Horizon Software System™

Operating System: UNIX, VMS
Keywords: Decision support Personal computing Spreadsheets Word processing

The Horizon Software System is a fully integrated UNIX*-based office automation system encompassing Horizon WordProcessing™ and Horizon Spreadsheet.™ Horizon runs readily on various UNIX* and UNIX* look-alike systems. The Horizon user needs a UNIX* system, a visual display unit running at a minimum of 4,800 baud, and a system printer.

The Horizon system provides “what-you-see-is-what-you-get” word processing with many powerful editing and formatting features, including on-screen right justification centering, indentation, alignment, and underlining. The results of commands are shown on the screen as the commands are executed.

Most business documents can be written with the formatting commands built into the full-screen text editor. Embedded dot commands provide simple access to more powerful formatting commands. Horizon dot commands may be displayed on screen before a document is printed.

Horizon WordProcessing is available in French, German, and Swiss language versions as well as in English.

The Horizon Spreadsheet employs virtual memory to allow full use of the 256-cell “electronic work surface.” Powerful built-in functions include date arithmetic, complex scientific calculations, and complex financial calculations, precise to 17 digits.

The clear multiline menu makes it easy to consolidate spreadsheets or to extract data from subordinate spreadsheets. Formatting options, including left and right justification, dollars, dates, and decimal-place selection can be displayed in multiple windows with fixed fitting. The Horizon Spreadsheet works with any 24 x 80, 24 x 132, or 66 x 80 display and is fully integrated.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $595 – $2,395
Product Support Available: Yes
Contact: Alison Baker
(415) 543–1199
HORIZON SOFTWARE SYSTEMS, INC.
#4 China Basin Building
185 Berry Street, Suite 4825
San Francisco, CA 94107
IB Graph

Operating System: VMS
Keywords: • Decision support • Documentation • Graphics • Report writer

The IB Graph software system puts business graphics within reach of your entire staff. IB Graph is a menu-driven system that allows users to produce different types of pie, bar, and line graphs. For example, IB Graph can produce horizontal and vertical bar graphs, floating bars, and bars with depth. Users may explode any number of segments of a pie. Shaded line graphs are possible.

Data is easily captured. Data may be either entered by the operator or captured from your existing data bases through our menu-based system. Thus, no new code needs to be written to convert data for plotting.

IB Graph supports a wide range of plotting devices: VT125s, VT240, VT241, TEK4105s, LA34s, LA100s, Printronix Line Printers (LXY/11 and LXY/21), and Hewlett-Packard Plotters with an HPGL or HPIB interface.

A version of this product is available for the PDP–11 computer.
Price: $3,000 – $9,500
Product Support Available: Yes
Contact: Eric Moothart, Software Marketing Director
(714) 970–1515
DATA PROCESSING DESIGN, INC.
1400 North Brasher Street
Anaheim, CA 92807

ICT (International Cable Testing System)

Operating System: VMS
Keywords: • Banking • Report writer • Security • Telecommunications

ICT is a turnkey software package that completely automates the testing function while improving accuracy, control, security, and efficiency. The system can store all test key tables, fixed numbers, and incoming and outgoing consecutive numbers for all banks entered in the system; all transaction information is stored within the ICT System, thus eliminating the need for manual logs. To help eliminate errors and their penalty costs, the ICT System will alert the testing clerk of duplicated incoming consecutive numbers and incorrect tests. Additionally, a telex is prepared by the ICT System for all missing incoming consecutive numbers.

Reports are produced daily, indicating all test transactions, incorrect and duplicate tests, and missing consecutive numbers. That feature
aids in the management of the testing area, which traditionally has had few management controls. As the calculation of all tests is automatic and operator input is both minimal and checked for errors, the accuracy of this system will far surpass other methods. In addition, the time required to test daily messages is substantially reduced. Storage space within a testing department will be increased by removing actual test key files.

Approximately 1,000 banks can be stored on the ICT System.

A version of this product is available for the PDP–11 computer.

**Price:** $5,000 – $10,000

**Product Support Available:** Yes

**Contact:** Salvatore Cangialosi, President
(212) 449–4608
PRIME ASSOCIATES, INC.
38 Paerdegat 7 Street
Brooklyn, NY 11236

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**InfoMail™**

**Operating System:** ULTRIX, VMS

**Keywords:**  
- Forms management  
- Information management  
- Telecommunications

This computer-based electronic mail system combines electronic mail capability, information management, and communications. The system provides an electronic "office" for each user, complete with an inbox, desk top, wastebasket, forms, and files. Any terminal connected to the computer running InfoMail is the doorway to your electronic office. Since InfoMail delivers mail to a person, not a location, you can enter your InfoMail office from anywhere. Your outgoing mail will be delivered almost instantly, and the messages in your in-box will be neatly summarized for you each time you begin an InfoMail session.

Using InfoMail, you can manage your messages and other documents to any degree of precision by creating and using forms and files. You can edit your documents with a full-screen editor, query InfoMail for documents stored in your files, and forward or reply to messages you have received. Working in an InfoMail office, you can process information quickly and easily.

**Price:** $20,000

**Product Support Available:** Yes

**Contact:** S. Taylor, InfoMail Product Manager
(617) 497–2517
BBN COMMUNICATIONS
70 Fawcett Street
Cambridge, MA 02238
InterText™

Operating System: VMS

Keywords: • Data entry • Pre- and postprocessors
          • Text editing/formatting • Word processing

InterText is a complete word and text processing system that has been designed for use on standard CRT terminals. For terminals with advanced video options, InterText can be used in a more sophisticated environment for full in-line, on-line screen editing, using its altermode option. InterText has been designed so that variable names can be embedded in the texts that are written. The user can fill in those variables when the texts are printed. Special preprocessors and scans can be defined that will derive the values to be printed from any data base that coexists on the same disks with InterText.

As with any word processing system, InterText may be considered to be a smart typewriter. The system can be used to write, edit, and print any type of text (letters, memoranda, and reports, for example). Typing in text for the first time is referred to as creating a text file. Once a text file has been created and edited, it may be printed in a formatted version. InterText accomplishes that by interpreting formatting controls that have been set in the text and those that are defined by the user at the time of printing.

Text creating and editing are accomplished on line. The features include print (display) existing text, insert lines of text, delete lines of text, change a line or all lines of text, duplicate lines of text within or from another text file, create (set) tabs for the text file, kill (delete) a complete text file, list all files, and quit (exit from) the edit mode.

Within a text file, formatting commands allow centering text, writing in formatted and unformatted modes, indenting, new-page definition, and new-line and/or paragraph spacing.

Using the altermode editing option, the user can display the text on the screen as it will print and can edit it completely as it is displayed. Editing in this mode is accomplished by moving the cursor to the place in the text where the change is to be made, typing the change, and indicating when the change is complete. The system then redispays the new or modified text. The altermode option contains most if not all of the features of the special word processing packages that require special input terminals, but does so using a standard CRT and direct cursor-addressing features.

The user may print text by itself, in a stream with other text files, or by using InterText’s special processor option. At each printing, the user is requested to indicate the text file(s) to be printed, what spacing (between lines) is required, the number of copies to be printed, and the margins to be used. If the special processor option is used, the user also specifies which processor is to be used, and the system will select the output on the basis of that processor, filling in variable data as it proceeds.
A version of this product is available for the PDP–11 computer.

**Price:** $2,500

**Product Support Available:** Yes

**Contact:** Alexander J. Phillips, President
(201) 256–7633
INTERACTIVE SYSTEMS AND MANAGEMENT CORP.
1500 Cardinal Drive
Little Falls, NJ 07424

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**LABELS (The Mailing List System)**

**Operating System:** VMS

**Keywords:** • Data base management • File management

LABELS is an on-line interactive system for developing, maintaining, and printing a mailing list and/or mailing labels. An individual master file record contains the customary fields for company name, first name, last name, two address lines, city, state, a 5- or 9-digit zip code, and phone number. A 2-character field for a geographic region code, five 2-character fields for category codes, and five 2-character fields for specialty codes are optional.

In creating a mailing list, the user has the option of choosing all, or up to nine, categories, and all, or up to nine, specialty codes, plus a specific geographic region or all regions. The system will then give a record count listed by the first three digits of the zip code and gives the user the option of deleting certain zip codes from the listing. The system then gives the user the option of creating multiple listings per addressee and produces a user-named output file. The system also contains a menu option exclusively for determining the record count per zip code of the entire master file.

The system offers three types of numbering systems. Output is on 3-across, 3½" x 1" labels.

**Price:** $2,250

**Product Support Available:** Yes

**Contact:** Terry K. Holder or Nathan I. Lieberman
(812) 479–6951
EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
P.O. Box 2469
Evansville, IN 47714

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**LEX–11**

**Operating System:** MS/DOS, ULTRIX, UNIX, VMS

**Keywords:** • Forms management • Report writer
• Text editing/formatting • Word processing
LEX–11 is an integrated word and list processing software package with office automation and data management facilities.

LEX–11 offers full-screen editing, single-keystroke functions, menu customization, forms creation and recall, multiple-column text entry, cut-and-paste functions, a calculator, ASCII-formatted files, and no embedded codes.

Options include an on-line training guide, a 90,000-word spelling checker, and a desk diary.

A version of this product is available for the PDP–11 computer.

Price: $550 – $7,500
Product Support Available: Yes
Contact: Mercia Dickman, Marketing Director
         (617) 443–5106
         EEC SYSTEMS, INC.
         327/E Boston Post Road
         Sudbury, MA 01776

Mail System

Operating System: ULTRIX, UNIX
Keywords:  • Data collection  • Management  • Report writer
           • Text editing/formatting

Mail System, an easy-to-use name and address system, can code addresses to do selective mailings. Extensive search and retrieval capabilities exist on any field, and labels can be produced for mailings, in addition to a wide range of reports.

The system is written in C language and uses the public domain Ingres data base written by the University of California at Berkeley. Binary and source codes are available for UNIX* Berkeley 4.1 and 4.2. The source code is available for all others.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $1,000 – $5,000
Product Support Available: Yes
Contact: Fred Potthoff
         (612) 941–9470
         FARGO ELECTRONIC SERVICES, INC.
         7150 Shady Oak Road
         Eden Prairie, MN 55344
MATRIX Transaction Exchange

Operating System: VMS

Keywords: Decision support  Education
• Telecommunications  Text editing/formatting

MATRIX, which was awarded the 1983 Outstanding Information Technology Award by the Association of Information Managers, is an enhanced, friendly, menu-based computer conferencing system with advanced electronic communications features, such as sophisticated text conferencing with unlimited conferences, unlimited discussions, and unlimited personal memo areas. MATRIX also provides on-line help and instruction, a bulletin board, a directory, and electronic mail. MATRIX is available for either purchase or timesharing.

MATRIX offers more than 200 user functions and more than 60 specific management functions for the system operator, conference manager, and discussion leader. Each of those menu-based functions is designed to fit within the management structure. In addition, a wide range of management reports and accounting functions is available to all levels, including the MATRIX user.

The following is a partial list of computer conferencing system features:

• On-line meeting and management conferencing features: Desk-to-desk access is provided to text (data) files simultaneously by different persons located in many locations, many-to-many communications with special areas for electronic meetings and discussions.

• Personal notepad and work areas: Each user has private secure (password-protected) files or memo areas that are kept on line for ease of use. Notes or memos can be sent to other conferees, to conference discussions, or to the bulletin board.

• On-line bulletin board: Systemwide access by all participants for company notices, policy procedures, and other activities.

• Status and tracking functions: Information about current mail, comments, and new items added to the system is provided.

• Management reports and directories: Reports about mail and conference activity are available to the user, such as a directory of conferences and members located throughout the system.

• Electronic mail/messaging: One-to-one messaging, including new-message announcements, filing, renaming, editing, and forwarding, is provided.

A version of this product is available for the PDP–11 computer.

Price: $10,000

Product Support Available: Yes

Contact: W. Keith Evans, Vice President, Sales and Marketing
(303) 444–8877
ITC CORP.
1877 Broadway
Boulder, CO 80302
MUSE Word Processing Software

Operating System: ULTRIX, UNIX, VMS
Keywords: • Mathematics  • Text editing/formatting
• Word processing

MUSE, also known as WordMARC, provides office-grade word processing on all DIGITAL computers, including the DECsystem–10, DECSYSTEM–20, VAX, PDP–11, PRO 350, and Rainbow. Thus, MARC is the only word processing vendor to provide identical support for the entire DIGITAL family. Documents created on one computer can easily be sent over DECNET to another computer for further editing or printing.

The MUSE software package features all the functions commonly found in the most prominent word processing systems on the market today. MUSE Version 4 features a spelling checker that provides capabilities unmatched by any other word processing package. Documents are checked against four dictionaries: the most-common-word dictionary (300 words), a user directory dictionary, a site-specific dictionary, and the MARC main dictionary (57,000 words). After the spelling check, MUSE interactively presents the document with the errors identified for correction. The user directory dictionary can be automatically updated during that session.

Other features in MUSE Version 4 include improvements to allow interactive pagination, an abbreviation glossary, quick-skip cursor, boldface typing, column move, copy and erase, multiple-line headers and footers, and cursor-controlled document selection and deletion. All those features are directed at increasing productivity by improving ease of use.

Organizations engaged in heavy technical typing with the need for multilevel equations find MUSE very user friendly. Each character line can be expanded to 13 levels on the screen, allowing the user to see up to 6 levels of superscript and 6 levels of subscript in addition to the base line. MUSE handles alternate character sets on the terminal screen, so Greek/math characters can easily be combined with standard characters to create complex equations.

A version of this product is available for the PDP–11 computer.

Price: $595 – $12,500
Product Support Available: Yes
Contact: Bob Brock
(415) 326–1971
MARC SOFTWARE INTERNATIONAL, INC.
260 Sheridan Avenue, Suite 200
Palo Alto, CA 94306
Net

Operating System: UNIX, VMS
Keywords:  • Data base management  • File management
            • Information management  • Scheduling

Net is a personal filing system that allows an individual to interactively create and manipulate a small data base of information ("small" precluding a large corporate data base). For example, within a Net data base, the user could keep names and addresses, lists of suppliers, appointment books, records of meetings or correspondence, haunt lists, and so on.

The program permits data to be organized in a simple list structure (sorted if requested). Data relations are expressed primarily by a hierarchical arrangement of the data. However, the hierarchical ordering can be augmented by "links" between nodes. Those links allow general networks of data nodes to be formed.

Searching the data base is possible in several modes, including browsing, literal match, and phonetic match. Searches can be limited in scope or be made global on the data base. Repeat searches allow traversal of the data base to select the correct item without reentry of a complete search command.

A formatted dump of the data base may be sent to a printer or a file. The user controls the level of recursion within the data base. Sub-nodes may be moved within the data base and may be dumped and reloaded into other data bases.

A version of this product is available for the PDP–11 computer.

Price:  $500
Product Support Available:  Yes
Contact:  Douglas J. Ross, President
          (613) 548–4355
          ANDYNE COMPUTING LTD.
          P.O. Box 1496
          221 King Street East
          Kingston, Ontario K7L 5C7
          Canada

Officeman

Operating System: VMS
Keywords:  • File management  • Forms management
            • Scheduling  • Word processing

This integrated electronic office system includes word processing, electronic mail, forms and memoranda generation, personal and corporate filing and retrieval, calendars, check lists, appointments and
resource scheduling, and other key management, professional, and secretarial applications. The system can be interfaced with existing/planned data processing applications and with external systems such as telex, word processors, personal computers, and so on. Current installed systems include oil exploration and production, national telecommunications authority, manufacturing, and educational establishments.

A version of this product is available for the PDP–11 computer.

**Price:** $10,000 – $75,000  
**Product Support Available:** Yes  
**Contact:** Dr. C. V. D. Forrington  
0242 42115  
CORPORATE BUSINESS SYSTEMS LTD.  
Jessop House, 30 Cambray Place  
Cheltenham, Glos GL50 1JP  
United Kingdom

**Officeware**

**Operating System:** ULTRIX, UNIX  
**Keywords:**  
• Forms management  
• Graphics  
• Spreadsheets  
• Word processing

Officeware is an integrated office automation system that provides all the essential components for effective automation of the modern office. Implemented around highly intelligent workstations, Officeware provides the writing, planning, forms management, graphics display, personal, and networking requirements of executives, knowledge workers, and production personnel. The workstation may be linked to a UNIX*-based host processor and other Officeware workstations in a local area network.

Because all Officeware components were designed as an integral part of the entire system, the approach is consistent and comprehensive and provides continuity and ease of switching between functions. Self-explanatory function keys maintain the same meaning from function to function, and the ease of switching from one facility to another further enhances the product’s operational strengths.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** $1,200  
**Product Support Available:** Yes  
**Contact:** Tony Parkhill  
(415) 680–7800  
CENTURY ANALYSIS, INC.  
114 Center Avenue  
Pacheco, CA 94553
PARS (Professional Accounts Receivable System)

Operating System: VMS

Keywords: • Accounts receivable • Billing • Scheduling
• Taxes

ABLEPARS is an on-line interactive time analysis and billing system particularly useful in professional organizations such as CPA firms, law firms, and so on, where client billing is directly related to the time an individual spends performing a certain service. But because the system accumulates employees' hours under a certain work code, at a certain standard rate, and for a specific client/job, it is adaptable to a wide variety of purposes.

ABLEPARS supports the automatic billing of up to 999 standard, recurring charges as well as charges via an invoice. Comparison of the year-to-date billable charges and year-to-date billings reports can be an extremely valuable tool in decisions involving retainer fees and billing in general. ABLEPARS gives the professional the option of billing as the services are rendered or spreading the billing over several billing periods. ABLEPARS can be implemented by itself or integrated with other systems. The system has many user-controlled options and does not require a programmer for modification in a time-share environment. Screen-formatted entry encourages user acceptance, decreases operator training time, and ensures data integrity.

Price: $5,000

Product Support Available: Yes

Contact: Terry K. Holder or Nathan I. Lieberman
(812) 479–6951

EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
P.O. Box 2469
Evansville, IN 47714

PER–FORM™ (Personalized Form Letters)

Operating System: VMS

Keywords: • Documentation • Text editing/ formatting

PER–FORM, an on-line package used for the development of personalized form letters, interfaces a user's mailing list with a user's letter developed with the RSTS/E utility RUNOFF, creating a personalized letter. PER–FORM allows up to nine different personalized fill-ins within the body of the letter and prints the personalized envelope.

PER–FORM will do nothing that a good word processing system could not do, and even less. But many individuals and firms find word processing impractical because of the size and frequency of their mailings. PER–FORM fills that niche. PER–FORM is an afford-
able, practical software complement for any company or firm with a RSTS/E-based system.

**Price:** $800

**Product Support Available:** Yes

**Contact:** Terry K. Holder or Nathan I. Lieberman  
(812) 479–6951  
EVANSVILLE DATA PROCESSING CORP.  
1010 S. Weinbach Avenue  
P.O. Box 2469  
Evansville, IN 47714

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**RNI (WRDPRO — Word Processing/Text Editing)**

**Operating System:** VMS  
**Keywords:** • Documentation  • Text editing/formatting  
RNI is a utility designed to add the flexibility of IMPRS file handling to word processing. Text, format and control of pagination, titling, margin justification, and so on, are determined with simple commands. The user can prepare textual material using any/all data built with IMPRS.

A version of this product is available for the PDP–11 computer.

**Price:** $1,500

**Product Support Available:** Yes

**Contact:** Elvin E. Smith or Forrest E. Weddle  
(913) 782–8544  
RUF CORP.  
1533 E. Spruce  
Olathe, KS 66061

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**Saturn Word Processing**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:** • Documentation  • Text editing/formatting  
• Word processing  

This program creates and edits documents, creates forms and mailing lists, and performs list processing.

Application Development & Enhancements, Inc., is a New England distributor of Saturn Systems in Minneapolis, MN.

A version of this product is available for the PDP–11 computer.

**Price:** $2,000 – $6,000

**Product Support Available:** Yes

**Contact:** Douglas Souza  
(617) 893–0333
Smart Mailer, Version 1.0

Operating System: VMS
Keywords: • Data entry • Forms management • Printing • Sales and marketing

The VAX-11 Smart Mailer software is an application used to create and maintain mailing lists of names and addresses and to generate address labels. Mailing lists contain packed addresses with up to 327 characters, each composed of a name, three address lines — city/town, state/country, zip code — two separate identifiers, a counter, a comment, and up to six user-defined categories. Each mailing list can have associated sublists — all addresses from a mailing list that meet user-defined requirements. The sublist definitions are named and stored with the mailing list, but the sublist addresses are extracted each time they are referenced, to conserve space and to ensure that the addresses are up to date. Each mailing list can be set up differently. For example, a list can have different types of address identifiers and have different validations performed on address information.

Mailing lists can be created and maintained by adding, removing, and changing individual address entries. Any or all addresses, category definitions, or sublist definitions can be displayed on a video screen. Full addresses, category definitions, and sublist definitions can be printed or written to a disk file. Any mailing list or sublist can be printed on a variety of labels. A standard list document file can be generated for use with DIGITAL word processing systems to produce personalized letters.

Refer to SPD #26.19.00 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).

Sofgram

Operating System: IDRIS, ULTRIX, UNIX
Keywords: • Government • Manufacturing • Service industries • Telecommunications
SofGram, a total electronic mail package, is a menu-driven system that allows a user to create, send, and receive messages over the Telex, TWX, and DDD networks. The system organizes and files your messages, gives you access to on-line data bases, and informs you when you receive messages. SofGram maintains a data base of everyone to whom you send messages. That data base can be easily organized for mass mailings.

A version of this product is available for the PDP–11 computer.

Price: $500

Product Support Available: Yes

Contact: Mike Heffler
(201) 447–3901
SOFTEST
555 Goffle Road
Ridgewood, NJ 07450

**TXTSYS (Text System for Technical Manuscript Preparation)**

Operating System: VMS

Keywords: • Documentation • Pre- and postprocessors • Programming tools • Text editing/formatting

This collection of software tools combines with DECUS RUNOFF (RNO) to form a comprehensive text processing system for technical manuscript preparation on PDP–11 and VAX–11 computers with NEC Spinwriters and Technical Math type thimbles. The tools consist of the following:

- **TXT**, an RNO technical manuscript preprocessor to facilitate use of the super-/subscripting and alternate character set features of the Spinwriter/TM/TR thimble combination
- **RNO**, DECUS RUNOFF, now modified to pass TXT control sequences transparently to its fill/justification computations (this is Version M02.4, DECUS No. 11–530)
- **MP**, a macro preprocessor, and TXTSYS.H, Text System macros, to define sequences of TXT/RNO commands as new commands to make document entry easier and to selectively include portions of text from other files within a document
- **EQU**, a utility to extract just the equations from a document, into a file that will yield an annotated, formatted text, to speed debugging of equations
- **QIO** (RSX–11M/VMS)/SP: (RT–11), programs to handle output of the often very long sequences of control characters to the Spinwriter
Office Systems

- **DOC**, the Text System control program, to coordinate and automate processing by the Text System components EQU, MP, TXT, RNO, and QIO/SP:

  DOC provides a uniform command interface to the Text System components for RT–11, RSX–11M, and VMS.

  All sources and full documentation on each component are provided, including a detailed manual on TXT, which is written in MACRO–11 (as are RNO, QIO, and SP:) and is commented to be easily adapted to other output devices. DOC, EQU, and MP are written in DECUS C; task/save images are provided in case DECUS C is not available.

  A version of this product is available for the PDP–11 computer.

  **Price:** $200
  **Product Support Available:** Yes
  **Contact:** Dan Dill  
  (617) 353–4277  
  BOSTON UNIVERSITY  
  Chemistry Department  
  675 Commonwealth Avenue  
  Boston, MA 02215

Uniplex™ Word Processing System

**Operating System:** ULTRIX, UNIX  
**Keywords:**  
- Personal computing  
- Text editing/formatting  
- Text management  
- Word processing

Uniplex, a comprehensive, easy-to-use, menu-driven word processing system, is the cornerstone of an automated office. The user interface can be easily tailored to meet user requirements. This reconfigurability includes the menu system, the keystrokes used to edit documents, and the messages displayed. The menu system can provide full access to UNIX* commands and utilities or to user application programs.

A multilevel help facility assists both the novice and the experienced user, and the Interactive Spell Checker can be used to check for spelling errors. Powerful document editing commands and versatile document formatting are also provided, along with a facility to merge text from other files into a document. Fully formatted documents can be previewed on line before printing. Uniplex documents are standard UNIX* ASCII files and can be accessed by other editors or programs. Using the UNIX* TERMCAP capability, Uniplex can operate with almost any standard terminal and take advantage of special function and cursor keys. Uniplex is backed by SCO's comprehensive software warranty and product support services.

Uniplex™ is a trademark of Redwood Bureau Services, Ltd. *UNIX is a trademark of AT&T Bell Laboratories.
A version of this product is available for the PDP–11 computer.

**Price:** $595 – $2,000  
**Product Support Available:** Yes  
**Contact:** Marketing Department  
(408) 425–7222  
THE SANTA CRUZ OPERATION, INC.  
500 Chestnut Street  
Santa Cruz, CA 95060

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**VC**

**Operating System:** ULTRIX, UNIX  
**Keywords:**  
- Cost accounting  
- Decision support  
- Financial analysis  
- Spreadsheets

VC is a spreadsheet package that provides a worksheet of 1,000 rows by 32,000 columns. Calculations may use the normal math operators plus a set of extended functions. All calculations are ordered, ensuring correct recalculation when any data value is changed. Data values can be fetched from external processes. Spreadsheets may be saved in either text or binary form, and multiple sheets may be merged. The package uses TERMcap for complete terminal independence.

Also included is extensive on-line help, an interactive tutorial to introduce the new user to VC, and a quick-reference guide.

A version of this product is available for the PDP–11 computer.

**Price:** $149  
**Product Support Available:** Yes  
**Contact:** William J. Ezell  
(603) 883–9300  
SOFTWARE INNOVATIONS, INC.  
440 Amherst Street  
Nashua, NH 03063

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**VF**

**Operating System:** ULTRIX, UNIX  
**Keywords:**  
- Data entry  
- Forms management  
- Query facilities

VF is a forms-oriented screen management package for use under the UNIX* operating system. The package allows entry, retrieval, and modification of data organized in standard UNIX* record format. VF provides access to UNIX* for forms so that external programs may be used to validate or provide data.
Data files are simple UNIX* files and can be processed by standard UNIX* commands. Form definition files, which can also be processed by VF, define record presentation on a display screen and validation criteria for data fields.

By use of the TERMCP package from the University of California at Berkeley, more than 150 kinds of CRT terminals are supported.

VF offers both an informative user interface for novices or casual users and a concise interface for experienced users.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.

**Price:** $249

**Product Support Available:** Yes

**Contact:** David R. Dick

(603) 883–9300

SOFTWARE INNOVATIONS, INC.

440 Amherst Street

Nashua, NH 03063

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**VOX (VAX Office Exchange)**

**Operating System:** VMS

**Keywords:** • Data base management • Graphics • Spreadsheets

• Word processing

VOX is an easy-to-use, menu-driven office automation system that integrates data base, word processing, graphics, and spreadsheet software products. The system extends the capabilities of those products by supporting the transfer of information from one product to another.

VOX, designed to be used by businesspeople having no programming or technical experience, has two primary features. It first provides a menu format that groups the choices of individual products onto a single screen. The user chooses which of the products to work by typing a 1-letter command. Second, VOX allows the user to "exchange" information among the different software packages. Information existing in one product does not have to be reentered to be used in another. For example, spreadsheet information can be transferred into word processing documents without having to create a hard copy and retype the spreadsheet in the new document.

VOX also includes several office management aids. Those include a desk calculator, a personal time manager, and a facility for managing files.

**Price:** $2,000 – $15,000

**Product Support Available:** Yes

**Contact:** Larry Wood

(401) 847–7260
WORD–11

Operating System: VMS
Keywords: • Data dictionary • Diagnostics • Documentation
• Word processing

WORD–11 is a multiuser word processing system designed specifically to run on a wide family of DIGITAL operating systems, including RSTS/E, RSX–11M, RSX–11M+, VAX/VMS, and P/OS. WORD–11 has acquired a proven record of effectiveness and reliability, with more than 1,000 installations worldwide.

WORD–11's hierarchical menu structure facilitates ease of use, and the labeled keys make it easy to learn. WORD–11 enables users to create and edit documents on line, print those documents on hard-copy output devices, and maintain an index of documents on disk. Advanced features include queued printing system, list processing, and spelling error detection.

The WORD–11 Editor allows users to display a document on the screen, including bolding and underlining, and to use editing keys to move through the text — deleting, underlining, bolding, paging, and changing margins quickly and easily. Additional editing features include automatic footnoting, table of contents and index generation, and column features.

List Processing permits the user to mass-produce a document but still include personalized information. Spelling Error Detection includes a dictionary provided by Data Processing Design, as well as the capability to add words or create multiple user-defined dictionaries.

A version of this product is available for the PDP–11 computer.

Price: $595 – $9,500
Product Support Available: Yes
Contact: Eric L. Moothart, Software Marketing Director
(714) 970–1515
DATA PROCESSING DESIGN, INC.
1400 North Brasher Street
Anaheim, CA 92807

WORD-to-WORD

Operating System: VMS
Keywords: • Data conversion • File transfer
• Text editing/formatting • Word processing
This software system converts WPS/8 (DECmate Word Processing) documents to CT*OS Word Processing documents, and vice versa, retaining the document format of the original. Using WORD-to-WORD, an end user with DECmate can edit a CT*OS document, and a CT*OS user with a VAX or a PRO 350 can edit a DECmate document.

The system is designed to be used by businesspeople having no programming or technical experience. The user selects conversion options by typing 1-letter commands.

**Price:** $2,000

**Product Support Available:** Yes

**Contact:** Larry Wood  
(401) 847–7260  
AQUIDNECK DATA CORP.  
Box 99, 999 W. Main Road  
Middletown, RI 02840

### XED Word Processing System

**Operating System:** UTRIX, UNIX, VMS  
**Keywords:** • Information management  
• Text editing/formatting  
• Word processing

The XED Word Processing System is a sophisticated general-purpose word processor designed for maximum flexibility and operator convenience. Minimum memorization of commands is required, and all commands may be accessed by either function keys or optional menus. The word processor also features a tree-structured, recursive menu processor that can access related XED office system software for form generation, data entry, document management, and user-defined programs. Complete file management utilities are provided by menu selections.

Features include multiple spooler drivers and printer daemons for either draft printers or fully proportional letter-quality printers, balance sheet mathematic functions with decimal tab editing functions, an embedded interactive spelling checker with a systemwide dictionary and user-defined local dictionaries, and automatic paragraph numbering and outlining, automatic footnoting, phrase glossary, paragraph glossary, and a floating text-variable form letter merge program.

The word processor is completely interfaced with other office systems manufactured by Computer Methods, Ltd. For example, the XSP spreadsheet program can be invoked while editing a document; the results of the spreadsheet calculations on the screen will be saved as part of the document.
XED office system programs are designed and coded for UNIX* Version 7, System III, System V, and Berkeley 4.1 and 4.2 and contain a terminal description file and a printer definition and proportional spacing increment table (both user definable) to provide maximum installation flexibility and efficiency in a multiuser environment. XED is loaded in the UNIX* multitasking operating system as a shared text file.

Computer Methods, Ltd., provides training, an operator's reference and installation manuals, as well as a command summary and a manual for the XED menu processor.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Ted Ferguson  
(818) 884–2000  
COMPUTER METHODS, LTD.  
P.O. Box 709  
Chatsworth, CA 91311
Personal Computing
THE BRIDGE™

Operating System: VMS

Keywords: • Data conversion • Microprocessor development
• Programming tools • Simulation

THE BRIDGE, developed by Virtual Microsystems Inc., provides emulation of a standard CP/M® environment. THE BRIDGE, a task running under the host VAX/VMS and RSX operating systems, appears to the user to build a virtual microcomputer. That virtual microcomputer may then be used to run standard CP/M software or to provide a CP/M software development environment. THE BRIDGE is a true simulator and includes a license for the CP/M Version 2.2 operating system.

Files used with THE BRIDGE are stored on hard disk in CP/M format. To take advantage of the larger disk environment, these virtual floppies may range in size from one-quarter megabyte to four megabytes.

Utilities are provided with THE BRIDGE to:

• Transfer data from 8" standard CP/M diskettes (3740 IBM single density with CP/M directory structure) to virtual floppies and from virtual floppies to diskette
• Convert CP/M format files to and from Files-11 format

THE BRIDGE emulates the operation of the Intel 8080 executing CP/M and therefore cannot be expected to run as quickly as the actual microprocessor. Depending on system configuration and loading, the VAX/VMS version will execute an instruction some 7 to 10 times more slowly than a dedicated microprocessor, with apparent speed to the user resembling 1,200 baud communication. The RSX–11M and RSX–11M–PLUS implementation will execute an instruction some 10 to 15 times more slowly, with speed resembling 800 baud communication.

THE BRIDGE supports the full 8080 instruction set and all CP/M calls except IN, OUT, LIST STATUS, PUNCH, and READER. Most CP/M application software may be run on THE BRIDGE, with the exception of software designed to run only on specific machines, such as cursor control keys. CP/M communications software requiring specific port assignments or graphics requiring memory mapped video hardware cannot be used with THE BRIDGE.

DIGITAL distributes this software product under license from Virtual Microsystems Inc., 2150 Shattuck Ave., Suite 720, Berkeley, CA 44704.

Refer to SPD #A0.48.00 when requesting further information on this product from your local DIGITAL sales office.

THE BRIDGE™ is a trademark of Virtual Microsystems, Inc. CP/M® is a registered trademark of Digital Research, Inc.
A version of this product is available for the PDP–11 computer.

Price: $2,500 – $3,500
Product Support Available: No
Contact: Consult your local DIGITAL sales office
(see Introduction).

**poly–XFR™ CP/M® Communications**

**Operating System:** VMS

**Keywords:**
- Data conversion
- Diagnostics
- File management
- File transfer

The package, developed by Polygon Associates, Inc., features binary/ASCII file transfers between DIGITAL's VT180 CP/M local system or a PC100 (Rainbow) CP/M–86/80 local system and a host system. Host systems include PC100 (Rainbow) CP/M–86/80, VT180 CP/M, RT–11, RSTS/E, RSX–11M, RSX–11M–PLUS, and VAX/VMS systems.

The package has time-out and error-detection features that ensure the integrity of the transferred data. The software runs up to 9,600 bps in a local environment and uses full-duplex modems for remote data transfer.

The poly–XFR CP/M Communications package enables the user to transfer, store, and retrieve files, use host peripherals, and act as terminal to the host. With either system, the user can do program development, transfer data between systems, or toggle the local printer on or off.

The CP/M Communications package has two main components — software that runs on the host and software that runs on the local system. The local software is composed of a file transfer program and a terminal emulator. The transfer program sends and receives files from the host. The terminal emulator converts the local PC100 or VT180 to a terminal so the user can have access to all the resources of the host computer. The host software interprets and executes the local programs file transfer requests. The poly–XFR CP/M Communications command language is executed at the personal computer.

The package is ideal for environments that employ distributed development and/or personal computing systems and that need to share data, programs, or peripherals among those systems.

DIGITAL distributes this software under license from Polygon Associates, Inc., St. Louis, MO.

Refer to SPD #A0.50.02 when requesting further information on this product from your local DIGITAL sales office.

poly–XFR™ is a trademark of Polygon Associates, Inc. CP/M® is a registered trademark of Digital Research, Inc.
A version of this product is available for the PDP–11 computer.

**Price:** $600 – $850

**Product Support Available:** No

**Contact:** Consult your local DIGITAL sales office
(see Introduction).

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**Professional Tool Kit BASIC–PLUS–2, Version 2.0**

**Operating System:** VMS

**Keywords:**
- Debugging
- Development tools
- Forms management
- Programming tools

The Professional Tool Kit BASIC–PLUS–2 is a significantly extended BASIC compiler that takes full advantage of the floating-point and integer instructions, as well as capabilities of the Professional operating system.

Generating threaded code instructions, BASIC–PLUS–2 provides a high-performance program execution environment for applications development. This product combines interactive program debugging with the power of a structured programming language.

An application is compiled on systems running RSX–11M, RSX–11M–PLUS, or VAX/VMS as part of the Professional Tool Kit and subsequently linked and moved to the Professional 300 for debugging and execution.

Refer to SPD #30.27.0 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

**Price:** $140 – $1,755

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office
(see Introduction).
Personnel
AIS Human Resources System

Operating System: VMS
Keywords: Data base management, Employment, Management, Payroll

The AIS Human Resources System offers:
- On-line entry and immediate update of all databases
- Employee data bases — basic, extended, dependent, skills, property, position, and salary
- Position data bases — basic, skills, salary administration, and employee
- Same data bases as payroll uses
- Federal government compliance
- Salary administration
- Performance and evaluations
- Applicant tracking and matching
- Absence control
- Attrition analysis
- Skills inventory
- Benefits eligibility and statements
- Eighty-three standard inquiries/reports
- Report writer
- User-defined fields, inquiries, and reports

Price: $6,000 – $12,000
Product Support Available: Yes
Contact: AIS
(415) 444–5954
ARGONAUT INFORMATION SYSTEMS
383 Grand Avenue
Oakland, CA 94610

ARCHON: PAY

Operating System: VMS
Keywords: Education, Payroll, Taxes

The ARCHON: PAY (payroll) and personnel system is a set of program modules, integrated with a data management system, that automates many phases of a payroll operation for educational institutions and other nonprofit organizations. The system supports on-line payroll entry and retrieval, employee payroll data records organized by department or location, and generation of special reports. Variable pay periods and assorted user-defined deductions are built-in features. An interface exists to the ARCHON: FRS Financial Reporting System. The system produces, in addition to control reports, the checks and registers necessary for payroll records, plus prelists (transmittal sheets) for timecard and salary, and exception control. Other features are the management and personnel reporting facilities of the system.
A version of this product is available for the PDP–11 computer.

**Price:** $7,650

**Product Support Available:** Yes

**Contact:** Nancylou Rapp
(203) 728–6777
QUODATA CORP.
266 Pearl Street
Hartford, CT 06103

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**CJ/Payroll™**

**Operating System:** VMS

**Keywords:** • Accounting • Data dictionary • Payroll • Taxes

This on-line menu-driven data base–oriented payroll processing and reporting system provides automatic processing from time transactions through general ledger updating for variable pay periods. The system fully accommodates multiple companies, divisions, and departments as well as single entities. System customization is achieved through user-defined master files, data tables, and logic controls.

Features include multiple pay types and frequencies, along with user-defined table-driven earnings categories and voluntary deductions; automatic holiday pay; payroll and labor distribution; personnel reporting; tax and government reporting; automatic calculation of manual checks; check reconciliation; management reporting by employee last name and employee number; employee search and transfer by employee last name and employee number; and automatic data preparation for updating the general ledger. This system interfaces with Collier–Jackson’s personnel resources system, CJ/Personnel,™ to form a complete automated payroll/personnel system.

**Price:** $16,000

**Product Support Available:** Yes

**Contact:** Dave Sloan
(813) 251–1077
COLLIER–JACKSON, INC.
P.O. Box 25546
Tampa, FL 33622

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**CJ/Personnel™**

**Operating System:** VMS

**Keywords:** • Data base management • Data dictionary
• Employment • Recruiting

This on-line menu-driven data base–oriented personnel reporting system provides comprehensive analysis and control of all personnel
data. The system fully accommodates multiple companies, divisions, and departments as well as single entities. System customization is achieved through user-defined master files, data tables, logic controls, and user-specified report parameters.

Features include retention and reporting of salary and benefits administration, education information, job status data, on-line skills search, EEO and OSHA reporting, resume and application records, and career and attendance history. The system has full mass change capability and automatic preparation of data for interfacing to the payroll system. The system interfaces with Collier–Jackson's payroll processing and reporting system, CJ/Payroll,™ to form a complete, automatic payroll/personnel system.

Price: $24,000
Product Support Available: Yes
Contact: Dave Sloan
(813) 251–1077
COLLIER–JACKSON, INC.
P.O. Box 25546
Tampa, FL 33622

Cyborg On-Line Payroll and Human Resource Management System

Operating System: VMS
Keywords: • Banking • Data base management • Employment • Payroll

Written in ANSI COBOL, this integrated system uses a consolidated employee data base that contains all the information users need to perform payroll functions and maintain a human resources management system. The system can run in either batch or an on-line mode. The reporting feature includes all the standard payroll registers and reports, as well as the human resource reports necessary to comply with the requirements of all government agencies. The system also includes a high-level report writer language, which enables the user to report on any information in the payroll/human resource data base.

The Payroll System has an extensive list of standard features: Labor Distribution, Bank Services, Check Reconciliation, Cyborg History, and General Ledger. All tax body levels are supported by the Cyborg System. The Human Resource System offers complete EEO, ERISA, and OSHA reporting. The Human Resource System also offers many standard features: Benefits Administration, Salary Administration, Skills and Education, Job History, Position Control, and Applicant Flow. Each screen of the system in the on-line feature has three standard formats: inquiry only, maintenance only, and a combination of the two. The Cyborg System is supported with a full year of
telephone assistance and a predetermined number of free training
days. The Cyborg System is also industry independent.

**Price:** $45,000 – $95,000  
**Product Support Available:** Yes  
**Contact:** John Kluska  
(312) 454–1865  
CYBORG SYSTEMS, INC.  
2 N. Riverside Plaza, 21st Floor  
Chicago, IL 60606

**Fedder Payroll Checkwriting and Personnel Information System**

**Operating System:** ULTRIX, UNIX  
**Keywords:** • Financial planning  
• General ledger  
• Payroll  
• Taxes

This system features tracking of sick and vacation pay and entitle-
ment, integration with Fedder General Ledger/Financial Reporting
and Job/Product Costing,— Manufacturing Management, Property
Management, and other systems. The system handles multiple
states/provinces, multiple pay rates, union reports, certified P/R for
contractors — meals and tips, quarterly reports and annual W–2s,
garnishments, advances, and multiple standard deductions. As in all
Fedder software, the Fedder P/R System is multicompany, password-
protected, and menu driven.

The system is suitable for branch offices/divisions of Fortune 1000
companies; small retail, wholesale, service, and manufacturing com-
panies; and also for contractors who require certified P/R reports and
job cost systems.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** David E. Fedder  
(301) 561–3579  
FEDDER SOFTWARE, INC.  
P.O. Box 248  
Timonium, MD 21093

**MANMAN/PAYROLL**

**Operating System:** VMS  
**Keywords:** • Employment  
• Payroll  
• Taxes

MANMAN/PAYROLL, an on-line interactive menu-driven product
that can process any size payroll, including those of large, multidivi-
sional companies, can also process any combination of pay frequencies in the same run. The 4-module product contains Employee Data, Pay Calculation and Checks, Deductions, and Taxes. MANMAN/PAYROLL allows for an unlimited number of deductions per employee and calculates deductions as fixed rate, percentage, or rate x hours. The product handles five pay frequencies and an unlimited number of pay types. Federal, state, and local taxes are supported, and MANMAN/PAYROLL provides W-2s, 941-As, and state reports. EEOC reporting and statistics are provided. Pay is issued by check or through direct deposit.

Price: $18,000
Product Support Available: Yes
Contact: Carol Singh, Corporate Communications Coordinator
         (415) 969-4442 ext. 4152
         ASK COMPUTER SYSTEMS INC.
         730 Distel Drive
         Los Altos, CA 94022

MATCHUP

Operating System: VMS
Keywords: • Employment • Operations • Simulation
          • Statistics

MATCHUP matches or assigns prospective job applicants (skills, years of experience, education, and so on) to available jobs in a company (preferably a larger one). The company does so by considering the prospective employee's reliability and cost to the company, based on its investment of salary in and any necessary training of the prospect. That is accomplished by using numerical ratings in the matchup or assignment process. The output is a message of excellent, good, possible, or no match at all, accompanied by a numerical score corresponding to the total matches between all attributes of an employee's personnel profile and the requirements of the available position. Again, numerical weights can be attached to any characteristics of the applicant — for example, highest degree obtained, number of years of experience in commercial data processing or defense, minority group member, war veteran, number of years of real-time software development, or speaks French or German.

A version of this product is available for the PDP-11 computer.

Price: $5,000
Product Support Available: Yes
Contact: Jon Prescott
         (707) 446-8139
         J & S ASSOCIATES
         130 Palisades Court
         Vacaville, CA 95688
PAYROL–IMPRS Payroll P/R System

Operating System: VMS
Keywords: • Payroll  • Security  • Taxes
PAYROL–IMPRS is a total payroll system that:
• Records pay period hours, pay, and taxes
• Allows for weekly, biweekly, semimonthly, and monthly pay frequencies and for hourly, salary, and salary with overtime pay types
• Provides for calculation of taxes — federal, state, and local — tax exceptions, and up to 18 authorized deductions
• Provides for overrides at entry time of rate, salary, and department
• Has menu-driven entry and maintenance systems
• Provides for security passwords to control access, complete reporting and audit trail, and automatic master file backups
• Performs extensive on-line editing and easy interactive reporting of all files

A version of this product is available for the PDP–11 computer.

Price: $3,000
Product Support Available: Yes
Contact: Elvin E. Smith or Forrest E. Weddle
         (913) 782–8544
         RUF CORP.
         1533 E. Spruce
         Olathe, KS 66061

Payroll

Operating System: VMS
Keywords: • General ledger  • Payroll  • Taxes
Deductions, attachments, and vacation pay are simple matters on this system. Allowance is made for 5 different taxes and 11 different deductions (fixed and/or miscellaneous). Totals are carried on both a fiscal year-to-date and calendar year-to-date basis. Paychecks may be produced weekly, monthly, semimonthly, every two weeks, or any number of days. Complete payroll reporting includes W–2 and 941 forms, as well as a detailed user-defined analysis of payroll distributions by department and type of work. Payroll automatically produces payroll checks and a check register. The distribution of earnings automatically interfaces with ADD's General Ledger system.

A version of this product is available for the PDP–11 computer.

Price: $2,000 – $4,000
Product Support Available: Yes
Contact: Bruce A. Bott, President
         (201) 584–4026
         ADVANCED DIGITAL DATA, INC.
         354 Route 206
         Flanders, NJ 07836
Payroll

Operating System: VMS
Keywords: • Banking • Employment • Payroll • Taxes
The multiple-user Payroll System provides:
- Handling of daily, weekly, biweekly, semimonthly, and monthly pay frequencies and exempt or nonexempt employees
- Allowance for nine kinds of pay
- Any combination of tax withholding profiles
- Fourteen user-defined deduction codes
- Four types of accruals, as well as federal types of accruals
- Employee earnings records
- Complete month-to-date, quarter-to-date, and year-to-date history for each employee
- Allowance for multiple banks
- Manually written or precalculated checks for a single employee

The reporting features are report writer facility, time sheet, payroll register, earnings report, tax summaries, W–2s, 941s, checks, and a deduction report.

A version of this product is available for the PDP–11 computer.
Price: $2,500 – $3,000
Product Support Available: Yes
Contact: Linda Wingfield, Software Support Manager
(919) 766–0571
RESOURCE SYSTEMS CORP.
P.O. Box 1546
Clemmons, NC 27012

Payroll

Operating System: MS/DOS, PICK, UNIX, XENIX
Keywords: • Employment • Payroll • Report writer • Taxes
The Payroll program provides the following:
- Complete payroll time entry, editing, and updating capability for salaried, hourly, and contract personnel.
- Calculation and printing of payroll checks.
- Allowance of virtually unlimited deduction/earning codes, including advance earned income credit, as well as temporary ad hoc deductions and earnings.
- No restrictions on number of deductions per employee. Deductions may be computed by percent or fixed-dollar amounts, with not-to-exceed limits, for any pay period frequency.
- Summarized data for government reporting (local, state, and federal), including quarterly report and W–2s.
- Flexible table-driven tax calculations handle virtually any tax computation/deduction method.
• Pay period frequencies daily through yearly.
• Allowance of different pay periods for salaried and hourly employees.
• Accommodation of manually written checks.
• Multiple G/L distributions (no limit) per employee.
• Payroll distribution, payroll history, employee history and review, and overtime and sick-pay reports.
• Job cost distributions.
• Data-input accuracy — transaction entries may be edited and corrected prior to posting.
• Transaction entry screens match the format of original documents.
• Audit trails — posting programs automatically produce journals.

A version of this product is available for the PDP-11 computer.

Price: $600
Product Support Available: Yes
Contact: Steve Thomas
(713) 270–5218 or (800) 231–0062
THE SOFTWARE EXPRESS, INC.
10103 Fondren, Suite 220
Houston, TX 77096

Payroll (Canadian)

Operating System: VMS
Keywords: • Accounting • Construction • Government • Payroll

This system, designed to work in conjunction with the Computer Management System, is table driven, with all files processed by data dictionaries. The system can be adapted to cover a wide range of requirements and provides a base of programs and file designs that can be used to meet the needs of any Canadian organization.

The Payroll and Personnel Master files are maintained in both numeric and alphabetic sequence for easy access and inquiry. The system is self-verifying, with audit trails of all processing, and may be used as is. However, it is assumed that the input and/or the output reports will be modified to meet the exact needs or the standards of the user.

A base of more than 100 programs is included to draw from in building a customized set of payroll programs.

The Payroll system is used in construction, entertainment, government, manufacturing, processing, and sales.

A version of this product is available for the PDP-11 computer.

Price: $8,000
Product Support Available: Yes
Contact:  Bill Hay  
(204) 888–5253 or 832–3680  
BILL HAY & CO.  
1164 Crestview Park Drive  
Winnipeg, Manitoba R2Y 0W6  
Canada

Payroll (Canadian)

Operating System: VMS  
Keywords:  • Data base management  • Employment  • Payroll  • Taxes  
This easy-to-operate system features:  
• Interactive entry of personnel information with field-to-field cross-edits  
• Auto pay with override for salaried employees  
• One-step procedure for validation, including automatic data base backup; process payroll, including register, checks, and updated data base; and data base restore in case of errors  
• Year-end rollover (last year’s year-to-date data maintained on current data base)  
Earnings and deduction names, taxes, default earnings and deductions, and other parameters are table-driven. Tables can be updated by the user on a security-level basis. This system has comprehensive user and operator documentation and is designed for total operation by clerical-level personnel.

Price:  $14,000  
Product Support Available:  Yes  
Contact:  Robert Brown  
(902) 429–3175  
DYMAXION RESEARCH LTD.  
Box 1053, Armdale Station  
Halifax, Nova Scotia B3L 4L5  
Canada

Payroll System

Operating System: VMS  
Keywords:  • Payroll  • Report writer  • Taxes  
The Payroll System provides operational efficiency and reliability with maximum system flexibility and responsiveness. The system requires minimum maintenance and program intervention but still provides a package for a wide range of application situations. From check writing to form printing to report generating, DSF’s Payroll System simplifies the total payroll function.
The system provides:
- Employee master file
- Restaurant payroll for proper handling of tips and meals
- Hourly and salary payrolls, which can be run separately
- Weekly, biweekly, semimonthly, and monthly payrolls
- Automatic calculation of gross pay, withholding, and deductions
- Entry of payroll attendance transactions
- Payroll attendance list printing
- Payroll and payroll check registers
- Computer-printed checks
- Attendance distribution report
- Computer-printed 941−A and W−2 forms
- Departmental breakdown for labor analysis
- Multistate capability
- Payroll tax deposit

A version of this product is available for the PDP−11 computer.

**Price:** $2,750
**Product Support Available:** Yes

**Contact:** Bob Sprowls  
(904) 434–2685  
DIGITAL SYSTEMS OF FLORIDA, INC.  
114 E. Gregory Street  
Pensacola, FL 32501

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**Placement Agency (Applicant Retrieval and Order/Billing System)**

**Operating System:** VMS  
**Keywords:** • Billing • Employment • Payroll

This system records data on each applicant who has been interviewed. With this data base in place, the retrieval system will select a range of applicants based on specific selection criteria — for example, permanent or temporary, job category, skill code, and industry background. The system provides both a summary and a detail list of the applicants retrieved.

The Order/Billing system will allow for orders of permanent and temporary applicants. Permanent orders are billed as a flat fee or a percentage; temporary orders are billed on time spent on site. All temporary billings are automatically fed into the payroll system for weekly checks.

All billings interface automatically with the Accounts Receivable, Sales Analysis, and General Ledger systems.

A version of this product is available for the PDP−11 computer.

**Price:** $5,000
**Product Support Available:** Yes
Contact:  Nigel Harris  
(613) 829–8888  
HARRIS COMPUTER SYSTEMS  
16 Credit Union Way  
Nepean, Ontario K2H 8R6

PST (Payroll + State Tax)

Operating System: VMS  
Keywords:  • Government  • Payroll  • Taxes

With Plus State Tax, the end user may have employees working in multiple states during the same pay period and still generate only one payroll check per employee, with correct deductions for each state withholding tax. This ability to handle single checks for multiple states also includes the printing of one federal W–2 totaling the employee’s earnings from all states for the year for that employee and also printing the appropriate number of state W–2 forms showing that state’s earnings.

Plus State Tax will simultaneously support all 50 states, although at present only 40 states have a withholding tax. This multistate support is interfaced with the DIBS–11 Payroll Package and is completely transparent to the user. A 2-character printed state code before the deducted amount will appear on each employee’s payroll check, indicating which state’s tax(es) was withheld. An Edit Report may be printed, showing the amount deducted from each employee, subtotaled by state.

A version of this product is available for the PDP–11 computer.

Price:  $1,500 – $2,000  
Product Support Available:  Yes  
Contact:  Nick Culbreth  
(404) 256–3067  
AMERICAN DIGITAL PRODUCTS CORP.  
5775–B Glenridge Drive N.E., Suite 320  
Atlanta, GA 30328

RealWorld℠ Payroll

Operating System: ULTRIX, UNIX  
Keywords:  • Data entry  • Information management  • Payroll  • Taxes

This hourly and salary payroll system for small businesses provides payroll record maintenance and easy compliance with changing tax laws. The system sets systemwide parameters that determine and tailor the payroll to fit the business.
The program does the following:

- Maintains employee files and lists
- Handles both hourly and salary employees on daily, weekly, biweekly, semimonthly, quarterly pay frequencies and a variety of deductions and earnings
- Prints the payroll worksheet to help gather payroll input data
- Allows interactive entry and editing of attendance input data, with edit list and register, and entry and maintenance of formulas and tables for federal, state, and local tax calculation
- Calculates the payroll
- Prints the payroll checks, the check register, and the payroll distributions to the General Ledger
- Allows entry, editing, and posting of manual payroll and adjustment transactions, with edit list and register
- Prints the quarterly, the nonemployee compensation, and the year-end W2 information reports, plus the history, the union deductions, and the hours reports
- May be interfaced to the RealWorld General Ledger or used stand-alone
- Includes password protection, extensive data file integrity check, and backup/restore facilities

A version of this product is available for the PDP–11 computer.

**Price:** $795

**Product Support Available:** Yes

**Contact:**
Larry Wilber
(603) 798–5700
REALWORLD INC.
Dover Road
Chichester, NH 03263

**TEMPUS–11 Time and Attendance System**

**Operating System:** VMS

**Keywords:** Data collection  Forms management  Project management  Shop floor control

TEMPUS–11 is a hardware and software system that assists in the management of human resources by continuously monitoring individual personnel schedules with recorded attendance. The system uses a time-clock terminal, TMP–21/TK, produced by ATS, to record arrival and departure of personnel at the workplace. Up to 99 work schedules can be defined to cover unique work schedules. Rotating shifts, flexitime, part-time, or job-sharing time structures are all accommodated. The menu-driven displays guide personnel managers in use of the system. A real-time attendance status display is immediately available with a single keystroke. Individual attendance records are continuously updated. Management summaries by cost center or department are readily compiled. Overtime can be automati-
cally approved within specified parameters or held for individual review. Error conditions are listed for resolution by the supervisor. Monthly reports reflecting man hours scheduled versus hours worked, sickness, absence, attendance by day, overtime, and master file changes are all available to provide personnel managers with information about the human resources, the most important asset in any organization. The system can interface to large mainframes to provide input to payroll and accounting systems or can generate floppy disks or magnetic tapes for information transfer. The time attendance terminal is equipped with CMOS memory and battery backup to ensure continuous performance and capture of data.

A version of this product is available for the PDP–11 computer.

**Price:** $4,600 – $19,450

**Product Support Available:** Yes

**Contact:** Robert L. Hirtle  
(904) 433–7578  
ATS DATA PROCESSING, INC.  
1101 North 9th Avenue  
Pensacola, FL 32501

**TIMANA–IMPRS Time-Analysis System**

**Operating System:** VMS  
**Keywords:** • Accounting • Billing • File management

TIMANA–IMPRS handles manpower reporting and invoicing, client analysis reports, and journals. The system provides a complete record of all employee hours, automatically calculates for chargeable hours, allows separate rates for each employee for different customers, has menu-driven file maintenance, performs extensive on-line editing, will not allow duplicates to be entered, allows instant access to employee records, allows separate rates for each employee for special jobs, provides automatic master file backups, allows for constant monthly charges to be established, prints client invoices and labels, handles manual invoices, has proof reporting available, and allows all master files to be interactively reported.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000

**Product Support Available:** Yes

**Contact:** Elvin E. Smith or Forrest E. Weddle  
(913) 782–8544  
RUF CORP.  
1533 E. Spruce  
Olathe, KS 66061
AESOP (Aggregate Exception System for Mortgage Portfolios)

Operating System: VMS
Keywords: • Banking • Financial analysis
       • Property management • Report writer

AESOP has been designed for the master servicer or trustee of a portfolio of single-family mortgages. The system aids reporting to the investor or the source of mortgage funds by reconciling the direct servicer’s reports and remittances. The system is designed for both commercial application and public housing agencies.

On a monthly basis, the only input to the system consists of exceptions to the normal monthly payment, such as liquidations, curtailments, prepayments, delinquencies, or principal adjustments. If the mortgagor makes the normal scheduled payment, no input is required. User-friendly screens and prompts guide the user in operating the system.

All reconciling and balancing are done before individual mortgage records are posted. Therefore, discrepancies are resolved before files are updated.

The system produces monthly reconciliation reports and forecasts for the next month, based on the activities of the month just closed. A mortgage trial balance is generated, as is a forecast trial balance.

The user decides on the elements to be stored for each mortgage. An integral report writer enables the user to retrieve any stored data and to format ad hoc reports.

A version of this product is available for the PDP–11 computer.

Price: $35,000
Product Support Available: Yes
Contact: Ralph S. Trigg, Jr.
(505) 842–1247
AUTOMATED OFFICE SYSTEMS, INC.
P.O. Box 100
Albuquerque, NM 87103

Fedder Rental Property Management System

Operating System: ULTRIX, UNIX
Keywords: • Billing • Financial analysis • General ledger
       • Property management

The Fedder Rental Property Management System, an interactive real-time system, puts facts at the user’s fingertips. The system handles tenant billing, security deposits and interest calculations, late fees, unit maintenance history, and reports that include journals,
rent roll, delinquency lists, projected availabilities, and tenant ledgers.

The residential version includes HUD-required demographic data and reports. The commercial version contains store sales history, billing for special charges, pass-through of increased property taxes, and rent-increase computations on increases in the CPI and/or operating costs. Future rent potential and 5-year projected space availabilities are also provided.

Companion Fedder software is available for Accounts Payable and Cash Disbursements, General Ledger/Investor Reports, Payroll, Loan Amortization Schedules, Fixed Asset Depreciation Accounting, Construction Estimating, and Job Costing.

The system is suitable for companies engaged in managing income properties for themselves or for outside investors.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** David E. Fedder
(301) 561–3579
FEDDER SOFTWARE, INC.
P.O. Box 248
Timonium, MD 21093

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**Mortgage**

**Operating System:** UNIX, VMS

**Keywords:** • A/D, D/A • Financial management
• Property management

Mortgage calculates any item missing from this list of four: term, principle, payment, interest rate. The system then produces an amortization table showing the principle balance, principle payment, and interest payment for each month. Also, totals are shown for each full or partial year. The table can start at any month in the year.

A version of this product is available for the PDP–11 computer.

**Price:** $150

**Product Support Available:** Yes

**Contact:** Michael L. Bussler
(412) 661–2100
ALGOR INTERACTIVE SYSTEMS, INC.
Essex House, Suite L1
Essex Square
Pittsburgh, PA 15206
PMS (Property Management System)

**Operating System:** VMS  
**Keywords:**  
- Financial analysis  
- Information management  
- Property management  
- Spreadsheets

PMS is a comprehensive, easy-to-operate, automated management tool for large or small property managers. PMS is flexible so that it can be modified to meet your special needs. The program will:

- Update and retrieve property lease information by complex, building, and unit  
- Track rent receipts and delinquent rent payments  
- Maintain tenant information files with deposit amounts, lease terms, and demographic data  
- Prepare lease status reports indicating leased versus vacant properties and date of vacancies  
- Provide expiration reports showing dates of expiring leases and lease amounts  
- Prepare estimated lease revenue reports by complex, building, and unit  
- Interact with the word processing system for correspondence with tenants and reporting to investors  
- Interact with the spreadsheet system for financial planning purposes

A version of this product is available for the PDP-11 computer.

**Price:** $1,500 – $20,000  
**Product Support Available:** Yes

**Contact:**  
Bob Samis  
(405) 840-0000  
R. E. HAYDELL CO.  
6505 N. Olie, Suite 100  
Oklahoma City, OK 73116

Property Management

**Operating System:** VMS  
**Keywords:**  
- Accounts receivable  
- General ledger  
- Property management

This program provides for both commercial and residential requirements. Tenant billing and accounts receivable age analysis are produced. Property and tenant master files are maintained to control lease expirations, scheduled rent increases, insurance expiration, etc. The system interfaces with Franklen's CPA-11, General Ledger/Financial Reporting System, to produce user-definable financial statements and consolidations.

A version of this product is available for the PDP-11 computer.

**Price:** $1,500 – $2,500  
**Product Support Available:** Yes
Property Management (Rental)

Operating System: VMS
Keywords: • Accounting • Financial analysis
• Property management • Scheduling

The Property Management system gives the property manager a complete set of functions to control and report on the financial aspect of the buildings managed. A full record is kept of all units within buildings within projects, and financial statements can be generated for individual buildings or projects, as well as for the consolidated operation. New buildings can easily be added into the system as the need arises.

The system handles the automatic chargeup of monthly charges, which can include rent, condominium fees, parking, and miscellaneous charges (cable, and so on) for all occupied units. The system keeps track of lease-renewal dates for the generation of renewal letters and will automatically apply percentage increases as permitted by law for lease renewal. Various types of delinquency letters are generated, based on severity of delinquency. Vacancy lists can be printed on request, and unit expiry lists can be printed for any specified date.

Full tenant information and history are maintained for all active tenants; up to three previous tenants and one future tenant can be associated with any unit. That permits collection of debts from previous tenants to be handled easily.

The integrated accounts payable system allows cash disbursements to be distributed appropriately to one or more of the buildings or projects as determined by the property manager. An automatic check-generation facility is also available.

A full set of financial statements is provided, including Detailed and Summary Trial Balances, Income Statement, and Balance Sheet.

A version of this product is available for the PDP–11 computer.

Price: $5,000
Product Support Available: Yes
Contact: Nigel Harris
(613) 829–8888
HARRIS COMPUTER SYSTEMS
16 Credit Union Way
Nepean, Ontario K2H 8R6
Canada
Research
CHROM (Chromatography Graphics and Analysis)

Operating System: UNIX, VMS
Keywords: Chemical, Engineering, Graphics, Scientific

This interactive program plots and quantitatively analyzes up to two sets of chromatography data, based on sequential samples obtained from one or two chromatographic analyses. Data are stored in one or two 2- to 4-column files. File names and column identifiers (abscissa and ordinate axes) are input interactively, as are several other user options. Entire chromatograms or portions of interest are plotted and scaled automatically. One or both chromatograms are analyzed by numerical integration of all peaks. The results are expressed directly on the same plot, at the same time, as a percentage in each peak of the total ordinate units recovered in the chromatogram — for example, percent in each peak of total radioactivity cpm recovered in all chromatographic samples.

The program is written in FORTRAN, in modular form, for the VT55 graphics terminal. Adaptation to other terminals/devices is easily made by substitution of one subroutine.

A version of this product is available for the PDP-11 computer.

Price: $500 +
Product Support Available: Yes
Contact: Dr. Joseph J. DiStefano III, Professor
         (213) 825–7482 or 825–4033
         UNIVERSITY OF CALIFORNIA, LOS ANGELES
         School of Engineering and Applied Science
         Biocybernetics Laboratory, 4731K Boelter Hall
         Los Angeles, CA 90024

CHROMPAK (Chromatography Analysis Package)

Operating System: UNIX, VMS
Keywords: Chemical, Data collection, Engineering, Health care

CHROMPAK aids in the collection and analysis of chromatography data. Modular programs are quickly adapted to a variety of measuring instruments and collection techniques. The following programs are available:

• DATAIN collects and stores data from a gamma or beta counter, spectrophotometer, and so on. Data files are multicolumn, ASCII format for use with other utilities.
• PEAKS analyzes data files and reports on total data, location and percentage of peaks, percent total recovery, and other invaluable statistics.
• SUBGRAM sums or integrates all the data in a file (chromatogram).
• CHROMPLOT displays one or two chromatography files on a CRT terminal. Functions are same as CHROM.
• BKSUB accepts two input files: one data file and one instrument noise file. The output is a file with noise subtracted from data.
• DELA, DELB strips off one or more columns from a multicolumn data file.
• CORRECT allows the user to adjust data values to compensate for machine or technique idiosyncrasies — for example, tube geometry or volume correction for a gamma counter.
• NORM normalizes a multicolumn file to time, volume, and so forth.
• ZEROSERT inserts zero data values in a data file.

A version of this product is available for the PDP–11 computer.

Price: $1,000 – $2,000
Product Support Available: Yes
Contact: Dr. Joseph J. DiStefano III, Professor
         (213) 825–7482
         UNIVERSITY OF CALIFORNIA, LOS ANGELES
         School of Engineering and Applied Science
         Biocybernetics Laboratory, 4731K Boelter Hall
         Los Angeles, CA 90024

CLIN–TEAMS®

Operating System: VMS
Keywords: • Data collection • Health care • Medical • Scientific

CLIN–TEAMS, an integrated system of programs for data collection in the clinical trial environment, collects data on computers as small as a single-user system and is offered in a BASIC–PLUS–2 version to run under RSX–11M or VMS operating systems. Data, collected by filling in Case Report Form images on the CRT, is transferred at predetermined intervals for integration into the central data base. CLIN–TEAMS provides the audit trails required by FDA guidelines.

Data collection formats for new studies can be set up (protocol compiled) interactively without reprogramming. Branching logic within the system provides the ability to go to specific questions based on the response to the current question.

CLIN–TEAMS, an extremely flexible, user-friendly system that is both menu driven and protocol driven, has a monitoring report–generating facility that lets you tailor interim reports to your needs. The system also lets you unload the data to a sequential data file for use with statistical analysis programs such as SPSS, BMDP, and SAS.
CLIN-TEAMS is an application package that allows other programs to be run while CLIN-TEAMS is being used. Thus, CLIN-TEAMS can fit well into a multiuser, multiprogramming environment on the host computer.

A version of this product is available for the PDP-11 computer.

**Price:** $30,000

**Product Support Available:** Yes

**Contact:** Floyd E. Leaders, Jr.
(214) 386–5764

TECHNICAL EVALUATION AND MANAGEMENT SYSTEMS, INC.
13601 Preston Road
820 Carillon Tower West
Dallas, TX 75240

**DATAIN**

**Operating System:** UNIX, VMS

**Keywords:** Biology Data collection

Device drivers/handlers Engineering

DATAIN is a computer/laboratory instrument interface. A C program for collecting data from a laboratory instrument, DATAIN is adaptable to any instrument with an asynchronous serial (RS232) interface.

The program establishes contact with the instrument, conditions I/O channels, and opens input files. The operator is then prompted to begin data transmission. No more operator intervention is necessary until collection is stopped. Thus, DATAIN can be run unattended for long periods.

Files are automatically named by date or may be individually named by the operator. The data is error checked at input and stored as ASCII characters for easy interpretation and manipulation by other program tools.

A version of this product is available for the PDP-11 computer.

**Price:** $500 – $1,000

**Product Support Available:** Yes

**Contact:** Dr. Joseph J. DiStefano III, Professor
(213) 825–7482 or 825–4033

UNIVERSITY OF CALIFORNIA, LOS ANGELES
School of Engineering and Applied Science
Biocybernetics Laboratory, 4731K Boelter Hall
Los Angeles, CA 90024
FITPACK (Curve and Surface Fitting Package)

Operating System: VMS
Keywords: • Mathematics

FITPACK is a collection of FORTRAN programs for curve and surface fitting, using spline functions. Features included are automatic knot selection, error smoothing, and data reduction. The user provides a parameter by which he/she controls the trade-off between closeness of fit and smoothness of fit. Confidence limits for that parameter are available if the statistical errors on the data points can be estimated.

In addition to a standard routine for curve fitting over an interval and a routine for surface fitting over a rectangle, the package contains special programs for smoothing periodic functions, parametric curves (closed or otherwise), functions with convexity constraints, and data over a rectangular grid and over the sphere. Routines are included for evaluating, differentiating, and integrating the spline approximations.

A version of this product is available for the PDP–11 computer.

Price: $50
Product Support Available: Yes
Contact: Paul Dierckx
UNIVERSITY OF LEUVEN, DEPT. OF COMPUTER SCIENCE
Celestijnenlaan 200 A
B–3030 Heverlee
Belgium

GLIM–3

Operating System: UNIX, VMS
Keywords: • Education • Mathematics • Statistics

GLIM–3 was developed by the British Royal Statistical Society for use in generalized linear modeling, vector calculation with various output options, data exploration, and teaching. As a modeling aid, GLIM–3 handles linear, loglinear, logit and probit models, and models with gamma errors. Specification of standard models is simple but powerful, allowing refinements such as prior weights and the fixing of certain parameter values. Any generalized linear model can be handled and robust regression procedures developed. Powerful macro definition facilities are available.

GLIM–3 can operate with general arithmetic expression on vectors and scalars; subvectors are easily manipulated. The package can be used interactively or in batch mode, interactive use being particularly appropriate to data exploration — for instance, in the search
for linearity-inducing transformations. As a teaching aid, GLIM–3 lets the student concentrate on the statistical aspects of a problem without concern about arithmetic.

GLIM–3 consists of a single FORTRAN program of about 11,500 lines, of which about 40% are comments. The program runs efficiently in an overlaid form.


A version of this product is available for the PDP–11 computer.

**Price:** £150 – £300

**Product Support Available:** Yes

**Contact:** M. G. Richardson
+44 865 511245
NUMERICAL ALGORITHMS GROUP LTD.
NAG Central Office
Mayfield House, 256 Danbury Road
Oxford OX2 7DE
United Kingdom

**IAE (Interactive Editor)**

**Operating System:** VMS

**Keywords:** • Acoustics • Scientific • Signal processing
• Text editing/formatting

IAE, developed by Signal Technology, Inc., is a FORTRAN program for editing speech parameters for hardware and software speech synthesizers. Features include vocabulary generation in a voice-response system, speech synthesis–quality enhancement, acoustic/phonetic experimentation, speech parameter plotting and verification, and parameter manipulation, interpolation, and transformation.

IAE is an editing program that allows manipulation of speech parameters generated by linear prediction or format analysis programs. The editing features allow the display of up to five parameter tracks at a time or the printing of numerical values. The editor allows the replacement of old values with new values, the moving and scaling of parameters, and the interpolation of parameters over specified time intervals. IAE utilities transform frequency and bandwidth data to linear prediction coefficients.

Standard mnemonic names are used to identify the speech parameters. Twenty locations are reserved for additional parameters with user-definable mnemonic names.

The IAE program is an add-on option to Signal Technology’s Interactive Laboratory System (ILS), which is a high-level software package for user-oriented digital signal processing.
DIGITAL distributes this software product under license from Signal Technology, Inc.

Refer to SPD #A0.20.02 when requesting further information on this product from your local DIGITAL sales office.

IAE (Interactive Editor)™ is a trademark of Signal Technology, Inc.

A version of this product is available for the PDP-11 computer.

Price: $5,000

Product Support Available: No

Contact: Consult your local DIGITAL sales office
(see Introduction).

IDL (Interactive Data Language)

Operating System: VMS

Keywords: • Astronomy • Graphics • Medical • Scientific

IDL is an interactive software system designed specifically to analyze, reduce, and display scientific and engineering data. IDL combines self-describing array-oriented data sets, operators, functions, and powerful graphic and image display capabilities into a complete interactive system.

Applications include physics, astronomy, medicine, engineering, and image processing.

A version of this product is available for the PDP-11 computer.

Price: $2,750 – $10,700

Product Support Available: Yes

Contact: David M. Stern
(303) 399–1326

RESEARCH SYSTEMS, INC.
2021 Albion Street
Denver, CO 80207

LIMS/SM (Laboratory Information Management/ System Sample Management)

Operating System: VMS

Keywords: • Data base management • Data collection
• Data dictionary • Medical

This data base management system is layered on VAX DATA-TRIEVE, VAX DBMS, VAX Common Data Dictionary, and VAX FMS Form Driver and is tailored toward sample tracking applications in testing laboratories. The product consists of the data base schema and applications programs needed to form a fully functioning system.
VAX LIMS/SM provides:

- Sample log in, with sample identification or sample numbers generated by the system. The algorithm for the sample numbers can be tailored to fit differing user needs.
- Worklist generation and backlog reports, lists of samples to be done by test.
- Collection lists, for samples that have been entered into the system but that have not been picked up or sent to the lab.
- Sample status reports, to provide a means of checking the progress of a sample through the lab and to give the results of testing completed to date.
- Result reports on completed sample.
- Audit trails for sample data (magnetape required).
- Archiving of data (magnetape suggested).

The reporting system can be updated with new reports prepared by the user.

VAX LIMS/SM includes two predefined plots for subject and sample trends. Plots can be displayed only on a VT125. Hard copy can be obtained by an LA34–VA (or similar capability printer) attached to the VT125.

Refer to SPD #26.18.00 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office (see Introduction).

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**Minitab™ Data Analysis Software**

**Operating System:** ULTRIX, VMS

**Keywords:** • Education • Mathematics • Scientific • Statistics

Minitab is a general-purpose data analysis system designed for anyone with data to organize and analyze. Emphasis is on ease of use for engineers, social and physical scientists, managers, students, statisticians, and others who need to learn from data. Minitab has 100% compatible batch and interactive modes and is also completely compatible among all supported processors.

Data analysis features include descriptive statistics; flexible plotting, including histograms and other displays; multiway tables in a wide variety of layouts; regression with residual analysis, diagnostics, and stepwise procedures; analysis of variance; nonparametric methods; exploratory data analysis, including features developed by John Tukey; and time series analysis, including Box-Jenkin procedures. General features include easy transformations and coding, automatic
handling of missing values, data editing and manipulation, and input/output from terminal or files.

Complete documentation is available in the Minitab Reference Manual, the Minitab Student Handbook, and the Quick Reference Card and through the on-line HELP facility.

Most Minitab sessions require just a few straightforward commands; new users need less than one hour to get started.

The price range for academic users is $500 to $600 a year.

A version of this product is available for the PDP-11 computer.

**Price:** $1,000/yr – $1,200/yr
**Product Support Available:** Yes
**Contact:** Mary E. Montminy  
(814) 865–1595  
Minitab, INC.
215 Pond Laboratory  
University Park, PA 16802

### Minitab™ Graphics Option

**Operating System:** VMS  
**Keywords:**  
- Education  
- Graphics  
- Mathematics  
- Statistics

This add-on capability for the graphics output of Minitab Data Analysis Software enables a user to produce high-resolution versions of Minitab PLOTs, LPLOTs, MPLOTs, TPLOTs, and BOXPLOTs. The Graphics Option is intended to provide both useful plots to the working statistician and attractive plots for presentation purposes. With the Graphics Option, a user can also perform operations that cannot be performed with Minitab alone. For example, a user can draw up to 20 lines on a single plot. Since Graphics Option commands are simple and look like the corresponding printer commands, they are easy to learn and use.

The Graphics Option is compatible across all supported devices. That is, when the same set of observations is plotted on those devices, all the resulting plots will have the same labels, scales, and format.

The lower price is for academic customers only.

**Price:** $250/yr – $500/yr
**Product Support Available:** Yes
**Contact:** Mary E. Montminy  
(814) 865–1595  
Minitab, INC.
215 Pond Laboratory  
University Park, PA 16802
NAG FORTRAN Library

Operating System: ULTRIX, UNIX, VMS
Keywords: • Graphics • Mathematics • Operations
          • Statistics

The NAG FORTRAN Library is a tailored collection of FORTRAN subroutines grouped into chapters devoted to particular areas of mathematics, operations research, and statistics. Within a chapter, each algorithm is selected to solve problems of an identified type.

The Mark 10 NAG Library contains 490 subroutines. The NAG Library Manual has the same chapter structure as the Library. Each subroutine has its own document describing the use of the routine in detail and including a complete program listing with input data and results. Each chapter introduction gives extensive advice on the selection of routines.

An interactive on-line documentation supplement and a graphics supplement including interfaces to many standard graphic devices are available. Educational and multiprocessor discounts are offered.

Outside North America, contact John Reaves (National 0865 511246) (International +44 865 511245), Numerical Algorithm Group LTD., Mayfield House, 256 Banbury Road, Oxford OX2 7DE, United Kingdom. The price is £1,150/yr.

A version of this product is available for the PDP–11 computer.

Price: $1,800/yr
Product Support Available: Yes
Contact: James C. T. Pool
         (312) 971–2337
         NUMERICAL ALGORITHMS GROUP LTD.
         1101 31st Street, Suite 100
         Downers Grove, IL 60515

OSS (Optimal Sampling Schedule Designs)

Operating System: UNIX, VMS
Keywords: • Biology • Data collection • Pharmaceutical
          • Statistics

OSS is a series of portable FORTRAN programs for computing D-optimal, discrete-time data sampling schedules — designs that maximize the determinant of the Fisher Information Matrix — for different types of standardized and general model and experiment types: "impulse response" or "step response" kinetic experiments in pharmacology and biology for single-input, single-output linear models (built in); multiinput, multioutput linear models (built in); and models of any form, in FORTRAN user-provided subroutines. Other optimization criteria can be accommodated by substitution of one subroutine. The user has the choice of interactive or batch mode for
program input, and both program input and program output are highly readable and user friendly. Telephone demos can be arranged.

A version of this product is available for the PDP-11 computer.

**Price:** $500 – $5,000  
**Product Support Available:** Yes  
**Contact:** Dr. Joseph J. DiStefano III, Professor  
(213) 825–7482  
UNIVERSITY OF CALIFORNIA, LOS ANGELES  
School of Engineering and Applied Science  
Biocybernetics Laboratory, 4731K Boelter Hall  
Los Angeles, CA 90024

**P–Cubed (Picture Processing Package)**

**Operating System:** VMS  
**Keywords:** • CAD/CAM • Graphics • Programming tools  
• Scientific

P–Cubed, developed by Advanced Technology Center, is an integrated software system designed for use as a general-purpose tool in image processing research and applications development work. The system brings the much desired coherence, uniformity, and structure to a group developing image processing-related software. It obviates the frustration, cost, and valuable time associated with the do-it-yourself approach to software development.

This comprehensive library includes the basic image processing routines necessary to develop applications programs. Also included are the necessary image handling and pixel access routines. This library provides the user with enormous power/functionality.

For users desiring a complete turnkey capability, a powerful command interpreter is provided to process, manipulate, and analyze images through built-in commands/functions. No programming is required to use those commands; the user merely types in the command name and the necessary parameters. The command interpreter is table-driven, and thus the user can conveniently add application-dependent commands to the system.

**Price:** $8,000  
**Product Support Available:** Yes  
**Contact:** Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue, Suite 117  
Orange, CA 92665
RDE (Research Data Entry)™

**Operating System:** VMS  
**Keywords:** • Data entry  
• Forms management  
• Scientific  

RDE, developed by Bolt, Beranek and Newman, Inc., provides capabilities for the design and creation of forms for review, modification, or reporting and the preparation of formatted output. The system features data entry, data retrieval, and audit trail of data modifications and compatibility with other BBN research systems, as well as with other PDP–11–based systems requiring forms-oriented data entry.

Features include:

• Data entry — Data is keyed directly into fields in forms presented on a CRT screen. RDE can check for number ranges, type of value, and menus of values during data input and can provide default values and sequential numbers for data fields.

• Audit trail — Data in RDE forms cannot be deleted. When values are changed, the original values are preserved with information about who made the changes, when, and why.

• Forms design — The user can produce RDE forms to match particular data entry needs by creating a text image of the form as it will appear on the screen and adding information about the data fields.

• Report design — RDE can prepare reports and displays of selected data in the format desired.

• Instrument data entry — Data from laboratory instruments can also be inserted into RDE forms.

DIGITAL distributes this software product under license from Bolt, Beranek and Newman, Inc., 10 Moulton St., Cambridge, MA 02138.

Refer to SPD #A0.13.02 when requesting further information on this product from your local DIGITAL sales office.

RDE (Research Data Entry)™ is a trademark of Bolt, Beranek and Newman, Inc.

A version of this product is available for the PDP–11 computer.

**Price:** $4,000  
**Product Support Available:** No  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

Reduce

**Operating System:** VMS  
**Keywords:** • CAD/CAM  
• Engineering  
• Mathematics  
• Scientific  

Reduce, developed by Mirashanta, is a program designed to do symbolic logic manipulations and reduction on a set of Boolean equa-
tions. Those equations can describe a PLA, multilevel random logic, or any logic circuit without memory. The reductions are of two types. One is the elimination of parentheses and the application of all the Boolean theorems on all combinations of pairs of terms to combine or simplify them until each expression is a minimal “sum” of terms. The second is the use of a proprietary algorithm for cover reduction, which eliminates terms covered by one, two, or more terms.

Reduce allows up to 500 auxiliary equations and performs substitution of the reduced auxiliary expression for each occurrence of the auxiliary variable in subsequent equations. The program allows up to 400 output variables and equations and up to 111 driving variables. A driving variable is either an input variable or an output variable that is also used internally to the logic net. A total of up to 64,000 terms can be in the total logic net; a total of up to 64,000 associated terms and prime implicants can be in the cover reduction of each equation.

**Price:** $1,895  
**Product Support Available:** Yes  
**Contact:** Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue, Suite 117  
Orange, CA 92665

**RS/1**

**Operating System:** ULTRIX, VMS  
**Keywords:**  
- Data base management  
- Engineering  
- Graphics  
- Statistics

RS/1 is an easy-to-use, integrated computer software system that offers data management, statistical analysis, and full graphics capability. The system enables researchers and engineers to maintain direct control of their data. RS/1 runs on DIGITAL VAX, PDP–11, and PRO 350 computers.

RS/1 is a product of BBN Research Systems, a division of Bolt Beranek and Newman Inc., which designs and develops computing tools for science and technology. RS/1 meets the information-handling needs of the research scientist. Through simple English-like commands, RS/1 gives the user access to a full range of data-handling techniques, including data entry and retrieval, data transformation and analysis, graphics, statistical analysis, curve fitting, and analytical models.

Data may be entered into RS/1 directly or through the Research Data Entry system, a forms-oriented system that simplifies the task of entering, editing, reviewing, auditing, and reporting large amounts of data. Data is stored and used in the format of 2-dimensional tables.
The user can create hundreds of tables and use any number of them at one time. Presentation-quality graphs, bar graphs, and pie charts can be created by the user with simple commands and with fast display and plotting times.

The Research Programming Language (RPL) enables RS/1 users to extend and tailor system capabilities for their applications. RPL is fully integrated into the RS/1 data management system and can be used to develop procedures through direct use of RS/1 commands and procedures and direct access to RS/1 tables, graphs, bar graphs, and models.

A version of this product is available for the PDP-11 computer.

**Price:** $1,900 – $25,500  
**Product Support Available:** Yes  
**Contact:** Donna Berman  
(617) 491–8488  
BOLT BERANEK AND NEWMAN INC.  
10 Moulton Street  
Cambridge, MA 02238

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**RS/1 (The Research System)**

**Operating System:** VMS  
**Keywords:**  
- Data base management  
- Data conversion  
- Graphics  
- Statistics

RS/1, developed by Bolt, Beranek and Newman, Inc., is a generalized data management system designed to assist in the information-handling needs of the research scientist. RS/1 data management features provide data storage and retrieval, data transformation and analysis, graphics, statistical analysis, curve fitting, and analytical models. Users can extend capabilities and tailor the system through a PL1-like structured programming language that is fully integrated into the data management features. RS/1 can be interfaced to data-gathering systems, data base management systems, and other statistics packages. RS/1 capabilities are accessed through a command language that integrates its data management, data analysis, and graphics functions.

DIGITAL distributes this software product under license from Bolt, Beranek and Newman, Inc., 10 Moulton St., Cambridge, MA 02138.

Refer to SPD #A0.14.02 when requesting further information on this product from your local DIGITAL sales office.

**RS/1 (The Research System)**™ is a trademark of Bolt, Beranek and Newman, Inc.

A version of this product is available for the PDP–11 computer.

**Price:** $13,400 – $32,500
Product Support Available: No
Contact: Consult your local DIGITAL sales office
(see Introduction).

RUNREF

Operating System: UNIX, VMS
Keywords: • Documentation • Medical • Scientific
• Text editing/formatting

RUNREF, a reference formatting and retrieval program for scientific manuscripts, retrieves citations from a data base, inserts appropriate numbers in text, and produces bibliographies in the punctuation style appropriate for a variety of medical and scientific journals. The programs are written in C.

Citation material is placed in a data base format that allows retrieval by keyword, phrase, author, year, and so on. Citations are given unique identifying numbers, which may be used in the production of text. The text formatting program uses the text and data base to then format the text and bibliography. The text will include, for example, superscripted numbers in citation or alphabetical order according to the bibliographic style required by the publisher or granting agency. Authors' names and year of publication may appear within the text, if desired. Alphabetic or numeric-order listings of the cited bibliographic material are produced in the "references" section in any one of 27 available punctuation styles. Styles conform to widely used scientific and medical English-language journals. Error checking for incorrect input and a 25-page user's guide are available.

The lower price includes documentation for a single user. The higher price is for an annual licensing fee for a multiuser system with automatic updates.

A version of this product is available for the PDP–11 computer.

Price: $200 – $500
Product Support Available: Yes
Contact: B. Todd Troost, M.D.
(216) 444–3190
MEDICAL INFORMATICS
12023 Lakeshore Boulevard
Cleveland, OH 44108

S531A/S631A ABACOS II

Operating System: VMS
Keywords: • Instrumentation • Nuclear • Quality control
• Scientific
The capability and versatility of the three whole-body counting systems — ACCUSCAN, FASTSCAN, and the 2230 (chair) — lie in the application software. ABACOS II, the body-burden analysis software, represents a high level of sophistication for sodium iodide and germanium detector spectra. ABACOS II can quantify up to 30 isotopes in the background-level spectra. ABACOS II is written in FORTRAN IV, allowing it to be easily upgraded as new analysis algorithms are developed or modified for special applications.

Large $4 \times 4 \times 16$ detectors are used. Sensitivities of 10 nanocuries and better have been obtained for 1-minute counts. Routines for complete body burden and dose calculations are included.

Note that although the three units are generally stand-alone, ABACOS II can be integrated into an existing computer system of the proper configuration.

A version of this product is available for the PDP-11 computer.

**Price:** $10,000 – $19,000

**Product Support Available:** Yes

**Contact:** Mark Biron

(203) 238–2351

CANBERRA INDUSTRIES, INC.

One State Street

Meriden, CT 06450
Retail
BARR (Billing and Accounts Receivable for Retailers)

Operating System: VMS
Keywords: • Accounts receivable • Billing • Query facilities
This balance-forward system is designed to aid a retail business in the performance of its accounts receivable accounting function. Data entry may be either through a CRT or by an optional communication module that polls local and remote POS terminals. In addition to generating aged statements and other aged accounts receivable listings, the system provides for on-line inquiry into customer accounts. It also maintains sales history by customer and produces delinquent-account reports and notices. A mailing label option is also available for this package.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: John T. Rasted
(203) 265–2226
SOFTWARE DYNAMICS, INC.
1000 Yale Avenue
P.O. Box 500
Wallingford, CT 06492

DCPOST (Point of Sale Data Communications Module)

Operating System: VMS
Keywords: • Data base management • Data collection • Data entry • Point of sale
The DCPOST module is a sophisticated host-based data management and communications system for retail point-of-sale operations.

As an on-line data collection and register maintenance system, DCPOST provides site scheduling, polling control, dynamic workload balancing, performance tracking and reporting, centralized data management, real-time performance messages, workload documentation, autorestart facilities, and single/multithread communications.

A version of this product is available for the PDP–11 computer.

Price: $18,500 – $45,000
Product Support Available: Yes
Contact: Stephen Henry, Director of Marketing
(203) 633–4646
COMPTech, INC.
10 Commerce Street
Glastonbury, CT 06033
DTS–11

Operating System: VMS
Keywords: • Accounting  • Data collection
  • Telecommunications

DTS–11 — synchronous communications for DTS Cash Registers — is a Binary Synchronous Communications (BSC) package enabling telecommunications with Data Terminal Systems Series 500 electronic cash registers. DTS–11 uses a 3780-type protocol for transmitting and receiving data between the host and cash register(s). The package supports both host and store IDs for security purposes. DTS–11 operates at a line speed of 2,400 baud, using Bell System 201 or equivalent modems. DTS–11 can also be operated in a local mode, using a modem eliminator.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: John T. Rasted
          (203) 265–2226
SOFTWARE DYNAMICS, INC.
1000 Yale Avenue
P.O. Box 500
Wallingford, CT 06492

Fedder Retail Merchandise Control System

Operating System: ULTRIX, UNIX
Keywords: • Accounts receivable  • General ledger
  • Inventory  • Point of sale

This system is based on the Fedder Foresight Scientific Inventory Management and Fedder Accounts Receivable systems. Special features include layaways, hot-seller and slow-moving item reports, open-to-buy reports, classification price line reports, salesperson productivity, and so on.

The system is either a POS system controlling a cash drawer or a back office system verifying handwritten sales checks. The POS version includes the capabilities of an electronic cash register, including price lookup.

The Fedder Software group offers a companion cash drawer optical wand and computer interface for POS operation.

Over 1,400,000 retail establishments are in the United States. The Fedder Retail System is suitable for chain stores, department stores, and individual specialty-shop operations.

A version of this product is available for the PDP–11 computer.
Price: Available upon request
Product Support Available: Yes
Contact: David E. Fedder
        (301) 561-3579
        FEDDER SOFTWARE, INC.
        P.O. Box 248
        Timonium, MD 21093

Fedder Tire Dealer System

Operating System: ULTRIX, UNIX
Keywords: • Cost accounting • Inventory • Order entry
          • Point of sale

The Fedder Tire Dealer System is a specialized version of the Fedder Foresight™ System, with provisions for excise taxes and multiple locations. The system also tracks customer purchase history, serial numbers, and new and used tire inventories. Point-of-sale operations are supported.

A version of this product is available for the PDP-11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: David E. Fedder
        (301) 561-3579
        FEDDER SOFTWARE, INC.
        P.O. Box 248
        Timonium, MD 21093

IDW–5

Operating System: VMS
Keywords: • Accounting • Distribution • Inventory
          • Wholesale

The IDW–5 package provides order entry, inventory control, accounts receivable, accounts payable, purchasing and payroll — all integrated to a sophisticated general ledger.

Those packages have been installed in a variety of industries, including tire, office supply equipment, automotive, lawn and garden, and food. The unique table-driven software can be tailored and enhanced for applications in the wholesale or the retail field. The IDW–5 package is fully supported in Canada.

A version of this product is available for the PDP–11 computer.

Price: $100,000
Product Support Available: Yes
Contact: Ed Katz
        (602) 897–9576
IN–TOUCH

Operating System: VMS
Keywords: • Accounts receivable • Distribution • Inventory
          • Point of sale

IN–TOUCH is an integrated point-of-sale entry, accounts receivable, and inventory management system. IN–TOUCH eliminates the traditionally time-consuming, error-prone procedures of sales ticket writing, invoice posting, and inventory checking, replacing them with a fast, accurate system in which the procedures are performed with one entry and with minimal manual effort. Besides freeing employees for more productive work, the system captures a wealth of management information for various reporting purposes, including gross profit reporting, suggested order reporting, inventory valuations, and quantity exception reporting.

As the data entry source, IN–TOUCH can use on-line cash registers, on-line CRT/printer combinations, and/or polled cash registers. IN–TOUCH has provisions for payment by cash, check, charge cards, and/or the user’s house credit plan. The system also provides for cash refunds, credit memos, layaway sales, receipts of payment on account, and credit-limit checking.

IN–TOUCH will automatically price on-sale items at their sale price according to user-supplied starting and ending promotion dates. For companies that may require customers to pick up certain items from a warehouse or pick-up station, IN–TOUCH produces a special pick-up ticket that lists only those pick-up items. Daily close-out is quick and easy, with IN–TOUCH providing a detailed summary of the day’s activity. IN–TOUCH is capable of handling multiple stores and contains provisions for transferring inventory between stores.

Price: $35,000
Product Support Available: Yes
Contact: Terry K. Holder or Nathan I. Lieberman
         (812) 479–6951
         EVANSVILLE DATA PROCESSING CORP.
         1010 S. Weinbach Avenue
         P.O. Box 2469
         Evansville, IN 47714

MAILHOUSE™

Operating System: VMS
Keywords: • Billing • Distribution • Inventory
          • Order entry
MAILHOUSE is completely interactive and gives a business the flexibility needed to properly track and maintain an invoice from the time an order is received from a customer until shipment is complete. Inventory levels are automatically maintained on line during invoice entry. Items are placed on back order if invoice entry indicates that an adequate inventory does not exist to fulfill an order. In case of phoned-in orders, even the sales tax and UPS or parcel post charges are automatically included in the amount while the customer is still on the line.

Once an invoice is entered, the operator must obtain approval for credit on those invoices selected by MAILHOUSE as ready for shipment. The order will be held until credit clearance is given.

Back-ordered invoices are automatically checked each day to determine the availability of inventory for given items. The results are a cross-reference report that gives the operator full knowledge of all invoices the system has on hold. MAILHOUSE includes an invoice editor designed to minimize operator problems by simulating invoice entry.

In addition to invoicing, MAILHOUSE also allows a business to keep track of sales, cost of sales, taxes, inventory levels, gross profit, and movement. To comply with FTC regulations, a day-counter and a notifier for each invoice are included.

**Price:** $30,000

**Product Support Available:** Yes

**Contact:** Terry K. Holder or Nathan I. Lieberman
(812) 479–6951
EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
P.O. Box 2469
Evansville, IN 47714

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**Point of Sale**

**Operating System:** VMS

**Keywords:** • Financial analysis  • Inventory  • Point of sale  
• Purchasing

This system is fully operational in multiple checkout situations. The special terminal supports laser scanner, credit card reader, over-printing, and so on, and is driven by either a PDP–11 or a VAX.

Full cash control and invoice production are provided even if the processor fails. The unit operates stand-alone.

The cost per checkout is around $3,000, and multiple checkouts per processor keep total costs per checkout under $6,000.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $100,000
Product Support Available: Yes
Contact: Dr. E. A. Haworth  
(061) 248–7100
M.C.S.
3, Wynnslay Grove, Fallowfield
Manchester
United Kingdom

Retail Furniture System

Operating System: VMS
Keywords: • Accounts receivable • Inventory • Order entry
• Point of sale

This integrated order entry, accounts receivable, and inventory management system helps firms in controlling the retail process. The system concentrates on the accurate accounting of sales and inventory and incorporates all the appropriate management control tools needed to minimize costs and maintain a fair return on investment. Retail Furniture System uniquely identifies each piece in inventory and will identify its specific location at call. The system also reports the need to fill a specific location on the display floor due to merchandise sales.

Operated in a conversational, interactive mode, Retail Furniture System performs extensive edit checking, thereby ensuring the overall integrity of the data entered into the system. At the point of sale, a receipt is printed, and inventory and accounts receivable are automatically updated. The inventory-received entry function immediately updates inventory and causes inventory tags to be printed. Through this function, special-order and sold items are tagged and flagged. Available as options to the Retail Furniture System are EDPC's ABLE general ledger and management reporting system, AIM (Affordable Information Management) payables, AiM payroll, and other complementary systems.

Price: $35,000
Product Support Available: Yes
Contact: Terry K. Holder or Nathan I. Lieberman  
(812) 479–6951
EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
P.O. Box 2469
Evansville, IN 47714

Retail Inventory and Receivables

Operating System: VMS
Keywords: • Accounts receivable • Inventory • Management
• Point of sale
This easy-to-operate system provides an accurate reporting and management analysis tool. Unproductive items are automatically recognized and eliminated. One easy entry at the point of sale updates inventory, receivables, and general ledger.

Some capabilities include:
- Tracking of inventory with interaction to accounts receivable at point of sale
- Stock status reports that indicate items above or below the desired inventory levels
- Sales reports by item, location, and salesperson
- Automatic production of invoices and/or balance-forward statements
- Production of aged trial balance
- Automatic calculation of finance charges
- Automatic interface to general ledger, payroll, and accounts payable and receivable systems
- Automatic production of accounts payable and payroll checks
- Production of inventory sales tags with retail price
- Interaction with word processing system to allow for personalized customer letters and mailings

A version of this product is available for the PDP–11 computer.

Price: $1,500 – $20,000
Product Support Available: Yes
Contact: Robert Douglass
(405) 843–5658
ROBERT DOUGLASS, LTD.
50 Penn Place
Oklahoma City, OK 73101

RIMS (Retail Inventory Management System)

Operating System: VMS
Keywords: • Financial analysis • Inventory • Purchasing
RIMS can track inventory at both SKU and class levels. RIMS provides detailed inventory and sales analysis information for multilocations on a daily, monthly, and year-to-date basis. This package also includes a purchase order tracking module for generating open-to-buy reports. Input into the system may be either by an optional communications module that polls local and remote POS terminals or through CRT entry. Additional optional modules include A/R, A/P, and G/L specifically tailored for the retail business.

A version of this product is available for the PDP–11 computer.

Price: $8,000 – $23,000
Product Support Available: Yes
Contact: John T. Rasted
(203) 265–2226
SOFTWARE DYNAMICS, INC.
1000 Yale Avenue
P.O. Box 500
Wallingford, CT 06492

TABS (Total Application for Building Suppliers)

Operating System: VMS
Keywords: • Inventory • Materials handling • Point of sale
• Wholesale

TABS is a user-friendly software system designed specifically to meet the needs of building material retailers, wholesalers, and home improvement centers. TABS emphasizes the vital areas of inventory control and customer credit and provides the full range of functions and reports that a building material dealer needs to run his/her business effectively. A few highlights are:

• Point-of-sale option for retail establishments; back office order entry for wholesalers
• Multitasking capability (any application may be run simultaneously with virtually any other application)
• Time-sharing attributes, with file sharing
• Expedient management-by-exception approach to data retrieval
• Menus, prompts, and other interactive aids
• Secure password protection for each branch of menu, with restricted access to the operating system
• Screen scrolling for convenient on-line inventory item and customer search
• User-defined system defaults and other time-saving features
• Screen display of virtually any hard-copy report
• Full audit trails, legality-check network, and data editing

The standard TABS package consists of six fully interfaced, interactive software modules: order entry/inventory, accounts receivable, accounts payable, purchasing, general ledger, and payroll. Each module can also function independently, as well as be interfaced to optional software.

A version of this product is available for the PDP-11 computer.

Price: $15,000 +

Product Support Available: Yes

Contact: Hugh MacDonald, Sales Manager
(617) 964–4011

COMPUTER SOFTWARE CONSULTANTS, INC.
200 Boylston Street
Chestnut Hill, MA 02167
Sales and Marketing
Ad Tracking

Operating System: ULTRIX, UNIX
Keywords: • Data base management • Management
          • Office systems • Report writer

This system allows the user to do all fulfillment from direct mail campaigns, advertising campaigns, and so on. The system generates reply letters to prospects and lead reports for salespeople and/or dealers and produces a series of reports that analyze the effectiveness of ad campaigns. A complete data base of all leads and lead activity is maintained. The ad tracking system is written in C language and uses the public domain Ingres data base written by the University of California at Berkeley. Binary and source codes are available for UNIX*. Berkeley 4.1 and 4.2. The source code is available for all others.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $2,500 – $10,000
Product Support Available: Yes
Contact: Fred Potthoff
         (612) 941–9470
         FARGO ELECTRONIC SERVICES, INC.
         7150 Shady Oak Road
         Eden Prairie, MN 55344

AIS Sales Order Processing/Invoicing System

Operating System: VMS
Keywords: • Order entry • Report writer • Taxes
          • Warehousing

This program provides the following features: on-line sales order entry, allocation of inventory, release approval, shipment, and invoice printing; quick order entry option; detail order entry option; automatic price calculation; distribution by line item; inventory accounting option; credit control; commission reporting; sales analysis; tax reporting; on-line update to accounts receivable; multiple company; and multiple warehouse.

Price: $6,000 – $30,000
Product Support Available: Yes
Contact: Marketing Department
         (415) 444–5954
         ARGONAUT INFORMATION SYSTEMS, INC.
         383 Grand Avenue
         Oakland, CA 94610
BCP (CODE 39 Barcode and Label Generation Software), Version 1.0

Operating System: VMS
Keywords: • Accounting • Forms management • Graphics
• Printing

VAX–11 BCP (Barcode/Block Character Plotter) is a software package that enables VAX/VMS users to generate CODE 39 barcode on an LXY graphics printer. The package consists of:

• An interactive user program that permits on-line generation of graphic figures. The graphic figures, generated by library routines, include CODE 39–type barcode, block characters, and horizontal and vertical bars or lines.

• A library of graphic routines that can be linked to user application programs written in VAX–11 FORTRAN to provide graphic capabilities. User-written application programs access the VAX–11 BCP library routines to specify designs for shipping labels, shelf labels, barcodes, identification labels, forms, signs, and accounting documents.

Refer to SPD #26.26.00 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).

Direct Marketing and Mail Order Management System

Operating System: VMS
Keywords: • Data base management • Demos • Management

This series of modules demonstrates the special expertise of Interactive Systems & Management Corp. in tailoring and designing direct marketing and mail order management systems. Systems implemented by ISM include direct mail, catalog, continuity programs, direct response advertisement, and package inserts.

A customer usually retains us first to produce customized specifications, which are then translated into an operational system.

A version of this product is available for the PDP–11 computer.

Price: $15,000 – $100,000 +
Product Support Available: Yes
Contact: Alexander J. Phillips, President
(201) 256–7633
INTERACTIVE SYSTEMS & MANAGEMENT CORP.
1500 Cardinal Drive
Little Falls, NJ 07424

Fedder Sales Analysis System

Operating System: ULTRIX, UNIX
Keywords: • Cost accounting • Data base management
• General ledger • Query facilities

The Fedder Sales Analysis System provides for 2-year histories with
trend analysis for products, categories, customers, and salespeople.
The system is used with the Fedder Foresight™ System. The data
base includes sales, costs, and commissions on a month-by-month
basis for up to 24 months. A companion sales prospect management
system (Market Master) plus a user-friendly query report writer are
available.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: David E. Fedder
(301) 561–3579
FEDDER SOFTWARE, INC.
P.O. Box 248
Timonium, MD 21093

Fedder Wholesalers System

Operating System: ULTRIX, UNIX
Keywords: • Accounting • Billing • Inventory • Wholesale

This comprehensive integrated real-time interactive system provides
for order entry with back-order control, invoicing, inventory control,
accounts receivable, sales analysis, and commission reporting. The
system also includes scientific inventory management with computed
sales forecasts, computed reorder points, economic order quantities,
24-month sales history by customer and product, sales, and profit and
trend analysis by customer, category, salesperson, and products.
Commission computations, quantity break price matrix, and contract
pricing are all included. Companion purchasing, receiving, payables,
payroll, fixed asset, and general ledger systems are also available.

Wholesaler, distributors, and manufacturers with finished goods in-
ventories can use the Fedder Wholesalers System.

A version of this product is available for the PDP–11 computer.
Price: Available upon request
Product Support Available: Yes
Contact: David E. Fedder
(301) 561–3579
FEDDER SOFTWARE, INC.
P.O. Box 248
Timonium, MD 21093

MANMAN/OMAR

Operating System: VMS
Keywords: • Accounts receivable • Billing • Financial analysis
• Order entry

MANMAN/OMAR, for order management and accounts receivable, is an on-line interactive menu-driven product that manages a customer's orders from the time they are entered until they are paid for. The 5-module order management product is comprised of Sales Order Entry, Shipping/Invoicing, Accounts Receivable, Cash Receipts, and Sales Analysis. The product handles order entry through customized prompts and prints sales orders, shipping documents, and invoices. MANMAN/OMAR performs on-line credit checks at order entry. Inventory backlog is posted to MANMAN's manufacturing product and relieved at shipment. The product monitors bookings and sales by product, product type, customer, and salesperson; processes multiple commissions; and maintains a historical sales data base.

Price: $30,000
Product Support Available: Yes
Contact: Carol Singh, Corporate Communications Coordinator
(415) 969–4442 ext. 4152
ASK COMPUTER SYSTEMS INC.
730 Distel Drive
Los Altos, CA 94022

Marketab®

Operating System: ULTRIX, UNIX
Keywords: • Data collection • Financial analysis • Statistics
Marketab facilitates fast, accurate, and systematic processing of questionnaires and other survey data. Marketab is used by the market research industry, advertising agencies, financial institutions, and tabulation service bureaus.

Marketab's three principal phases with supporting utilities cover every aspect of the processing of survey data, from the initial editing of raw data, through any required adjustments, to the final tabular printouts.
Marketab has the following features:
- Any data file may be processed, as well as multipunched (column binary).
- Comprehensive editing eliminates inaccuracies.
- Final tabulations are formatted to meeting management requirements.
- Security is ensured, since tabulating can be done on an "in-house" basis.
- The tab system produces table and page numbers, plus a complete table of contents.
- Survey tabulations from multiple-wave studies may be combined into a single report without retabulation.
- Market tabulations are formatted for ease of reference.

A version of this product is available for the PDP–11 computer.

**Price:** $40,000 – $50,000

**Product Support Available:** Yes

**Contact:** Harold Zadwanski

(203) 853–7511

MNEMONICS, INC.

280 Connecticut Avenue

Norwalk, CT 06854

**Order Entry Processing**

**Operating System:** VMS

**Keywords:**
- Accounting
- Distribution
- Inventory
- Project management

This sales order processing software is designed to track orders, backlog, and sales activity. The software may be operated independently or as part of an integrated package including accounts receivable, accounts payable, general ledger, payroll, job cost accounting, and inventory control.

The program provides fully interactive processing; table-driven input data specifications, allowing you to decide what data is to be maintained for each sales order and each line item; table-driven reports with user-specified format and contents; and full integration with accounts receivable so that orders are automatically marked shipped and backlog is automatically reduced when invoicing is done.

A version of this product is available for the PDP–11 computer.

**Price:** $4,000 +

**Product Support Available:** Yes

**Contact:** Janna McMillan

(617) 275–5810

BREUER & CO.

54 Middlesex Turnpike

Bedford, MA 01730
PROS (Prospect, Letter, and Sales Facility)

Operating System: VMS
Keywords: • Data base management • Data entry
         • Presentation aids • Report writer

PROS is a software package that includes data entry for letter, prospect, and sales information; data base inquiry and maintenance; personalized letter generation; customized label generation; and comprehensive report generation. This package requires the following "SYS-GEN" parameters: alphabetic month and a minimum of two pseudokeyboards.

PROS is designed for high efficiency and ease of use to aid the small business, corporate division, or institution in its mailing requirements and/or search for prospective customers. Using this facility for mailing and storing prospect/customer correspondence greatly enhances sales efficiency.

A version of this product is available for the PDP–11 computer.
Price: $8,000
Product Support Available: Yes
Contact: Muriel King
         (801) 224–5306
         CLYDE DIGITAL SYSTEMS, INC.
         3707 N. Canyon Road, Suite 3–E
         Provo, UT 84604

RealWorld™ Sales Analysis

Operating System: ULTRIX, UNIX
Keywords: • Financial analysis • Inventory • Office systems
         • Point of sale

The Sales Analysis system locates specific areas of increasing or decreasing sales and allows a close analysis of the components vital to increasing revenues. Data from this system assists in formulating marketing and sales strategies.

The system features sales analysis by customer, customer type, customer sales volume, responsible salesperson, state, item, item category, and item sales volume and also includes password protection.

A version of this product is available for the PDP–11 computer.
Price: $795
Product Support Available: Yes
Contact: Larry Wilber
         (603) 798–5700
         REALWORLD INC.
         Dover Road
         Chichester, NH 03263
Sales Analysis

Operating System: VMS
Keywords: • Decision support • Financial analysis

Sales Analysis is an on-line reporting module that helps management make informed business decisions and provides customer, salesperson, and product information for current periods, year to date, and defined combination. Full maintenance capability is provided for changing, adding, or deleting pertinent information.

A version of this product is available for the PDP-11 computer.

Price: $6,900 – $33,500

Product Support Available: Yes

Contact: Marketing Department
 (502) 491–9820 or 1–800–626–6268
AMCOR COMPUTER CORP.
1900 Plantside Drive
Louisville, KY 40299
Service Industries
Fedder Auto/Truck and Equipment Dealers
System

Operating System: ULTRIX, UNIX
Keywords: • Automotive  • Billing  • Operations
       • Property management
This system includes all the features of the Fedder Foresight™ and
Auto Parts System plus provisions for service order writing, mainte-
nance contract billing, rental billing, equipment/vehicle mainte-
nance history, and service person productivity analysis.

The system is suitable for auto and truck, farm implement, and copy
machine dealers; air conditioning and appliance sales and service;
marinas; boat sales and service; private airports; airplane dealers;
and any type of equipment dealership.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: David E. Fedder
        (301) 561–3579
        FEDDER SOFTWARE, INC.
P.O. Box 248
Timonium, MD 21093

Fedder Equipment Maintenance and Field
Service System

Operating System: ULTRIX, UNIX
Keywords: • Accounts receivable  • Billing  • Inventory
       • Order entry
Fedder Equipment Maintenance and Field Service System with ser-
vice order writing/billing and parts inventory control is an extension
of the Fedder Foresight™ System and provides a detailed mainte-
nance history and cost per unit (time period, mileage, or number of
copies). Productivity by technician is also provided.

A version of this product is available for the PDP–11 computer.

Price: $8,750
Product Support Available: Yes
Contact: David E. Fedder
        (301) 561–3579
        FEDDER SOFTWARE, INC.
P.O. Box 248
Timonium, MD 21093
Fedder Food/Beverage and Route Sales System

Operating System: ULTRIX, UNIX
Keywords: • Accounts receivable • Billing • Inventory
• Order entry

This system, a specialized version of the Fedder Foresight™ System, includes Rapent™ high-speed order entry, preprinted sales orders with customers’ purchase history, driver settlement accounting, invoices printed in truck route and stop sequence, and manifests and load sheets provided with facilities to easily shift stops to balance loads. Chain-store tonnage and alcohol control commission reports are provided at modest added cost.

The overall system includes accounts receivable, inventory control, sales analysis, and commission reporting. Companion systems are available for purchasing accounts payable, payroll, general ledger/financial reporting, and fixed assets accounting.

This system is suited specifically to food and beverage distributors and is easily adapted to the needs of anyone selling to Sears or Wards chain stores.

A version of this product is available for the PDP-11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: David E. Fedder
(301) 561-3579
FEDDER SOFTWARE, INC.
P.O. Box 248
Timonium, Md 21093

Fedder Invoicing and Inventory Control

Operating System: ULTRIX, UNIX
Keywords: • Billing • Inventory • Order entry
• Sales and marketing

This system, an add on to the Fedder Accounts Receivable System, provides virtually all the capabilities of the complete Fedder Foresight™ Inventory System but does not allow order entry or back orders. Sales analysis and commission reporting are included.

The system is suitable for any mercantile or service establishment and can be expanded to complete the order entry system.

A version of this product is available for the PDP-11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: David E. Fedder
(301) 561-3579
FOCIS (Food Operation Control and Information Systems)

**Operating System:** VMS

**Keywords:** • Accounting  • Cost accounting  
• Financial management  • Inventory

The FOCIS system is a comprehensive financial and operational accounting package designed for the food service industry. Key features include sales analysis, inventory and recipe control, vendor and labor analysis, A/P, A/R and G/L, payroll, financials, and POS data communications.

A version of this product is available for the PDP–11 computer.

**Price:** $10,000 – $35,000

**Product Support Available:** Yes

**Contact:** Stephen Henry, Director of Marketing  
(203) 633–4646  
FOOD SERVICE SYSTEMS GROUP, A DIV. OF COMPTECH, INC.  
10 Commerce Street  
Glastonbury, CT 06033

Grocery Management System

**Operating System:** VMS

**Keywords:** • Distribution  • Facilities management  • Inventory  
• Point of sale

This easy-to-operate, economical, and comprehensive computerized management and analysis system improves profit and reduces overhead expenses. The system consists of 12 interactive programs specifically designed for the grocer and includes grocery inventory, meat processing programs, check cashing, ad analysis, accounting package, and word processing.

The Gondola sales-to-space analysis program delineates which inventory items are faster movers and which items yield the highest gross profit margins. The program allows the grocer to control inventory, direct store delivery vendors, and profit margins and will help eliminate nonmovers and will allow analysis of slow movers as a percentage of gross profit. An analysis is done to determine how much space each individual item deserves according to movement and revenues generated by that item.
The Direct Store Delivery program tracks vendors' deliveries for efficient management of inventory quantity and space allocation. The Time and Attendance program keeps wage percentages under control. The program yields reports according to revenue periods, telling when to have employees on hand and how many. Employee scheduling is departmentalized.

A version of this product is available for the PDP-11 computer.

**Price:** $1,500 – $20,000  
**Product Support Available:** Yes  
**Contact:** Nick Harroz  
(405) 732–2358  
CREST DISCOUNT FOODS  
7212 East Reno  
Midwest City, OK 73140

### Inventory/Rentals

**Operating System:** VMS  
**Keywords:**  
- Inventory  
- Maintenance  
- Report writer  
- Sales and marketing

This system has special application for rentals, as it maintains inventory by serial number as well as by count, and is ideal for companies that sell or maintain products that are referenced by serial number. The system handles sales, maintenance, rentals, leases, and demo orders. Initial invoicing is automatically generated upon shipment, and repeat billings for maintenance, leases, or rentals are generated monthly. Management maintains control over price and credit approval.

Inventory/Rentals is highly interactive while maintaining tight controls and detailed audit trails. A high-level report writer generates reports from data base, audit trails, or both. A brief (1-minute) session enables the user to initiate a report with user-specified sorts, page breaks, titles, selects, and totals. The system is stand-alone or bundled with A/P, A/R, G/L, and payroll. The cost per transaction is minimized when generating a large number of small monthly invoices.

**Price:** $20,000  
**Product Support Available:** Yes  
**Contact:** Robert Brown  
(902) 429–3175  
DYMAXION RESEARCH LTD.  
Box 1053, Armdale Station  
Halifax, Nova Scotia B3L 4L5  
Canada
LEASEPAK

Operating System: VMS
Keywords: • Automotive • Maintenance
• Property management • Taxes

LEASEPAK, a lease accounting and management system for the
equipment or auto lessor, features state-of-the-art hardware and soft-
ware. Some features of LEASEPAK’s core system are:

• The handling of all lease rate types, including level yield, rule of
  78ths, straight line, and simple fixed and floating
• Cycle billing, all types of payment schedules (regular or irregular),
  consolidated billings, and open-item invoicing
• Complete state, county, and city sales tax; property tax; and federal
  highway use tax collection and reporting
• Complete ITC and all types of depreciation accounting and report-
ing, including depreciation and ITC recapture
• Comprehensive reporting, including delinquency, collateral status
  exception, insurance follow-up, management, and audit control re-
ports
• Amortization schedules that include the effects of a loan payment
  as well as ITC and depreciation for the lease

Eight additional optional modules are also available and can be inte-
grated into the core system with no restructuring: lease application
and document tracking, collateral follow-up with work schedule,
portfolio participation, collection tracking with work schedule, ma-
turing leases tracking with work schedule, loss accounting tracking
with work schedule, forecasting, and service bureau relicensing.

LEASEPAK software is tamperproof and offers comprehensive audit
and security controls.

Price: $25,500 – $137,000
Product Support Available: Yes
Contact: Cheryl Vanderwiel
(415) 348–0650
MCCUE SYSTEMS, INC.
330 Primrose Road, Suite 212
Burlingame, CA 94010

MANMAN/SERVICEMAN™

Operating System: VMS
Keywords: • Cost accounting • Maintenance
• Materials handling • Statistics

MANMAN/SERVICEMAN is an on-line interactive menu-driven
product that manages job reporting, service contract maintenance,
material requisitioning, and costing for all parts that require service.
The 4-module product contains Job Reporting, Service Contract
Maintenance, Material Requisitioning, and Service History and Statistics. MANMAN/SERVICEMAN prioritizes jobs for out-of-action equipment and provides reports on labor bookings by engineer, job, and contract. The product maintains contract, site, and equipment relationships; provides on-line inquiry to parts availability; and automatically validates part numbers and inventory locations. Unfilled requisitions are automatically backordered.

**Price:** $20,000  
**Product Support Available:** Yes  
**Contact:** Carol Singh, Corporate Communications Coordinator  
(415) 969–4442 ext. 4152  
ASK COMPUTER SYSTEMS INC.  
730 Distel Drive  
Los Altos, CA 94022

### Oil Burner Service/Inventory

**Operating System:** VMS  
**Keywords:**  
- Cost accounting  
- Inventory  
- Maintenance  
- Petroleum

This application software addresses the most demanding areas of burner service. From the moment the customer calls and a work order is requested, the system can track the progress of that work order until completion, ultimately producing multiline invoices showing (at the user’s option) reasons for call, parts used, work done, prices, taxes and amount due, as well as special messages. The parts inventory aspect of the package keeps track of quantity, tracks costs, automatically prices the invoice, and excludes charges for parts and/or labor covered by service contracts. Although the information posted to the system is entered in abbreviated format (defined by the user), the system maintains a complete history of those calls in clear English on each account for several years. Management reports include Profit by Customer, Parts Usage by Mechanic, and Overall Department performance. Automatic cleaning tickets and contract renewals are also accommodated.

A version of this product is available for the PDP–11 computer.

**Price:** $10,000 – $20,000  
**Product Support Available:** Yes  
**Contact:** Bruce A. Bott, President  
(201) 584–4026  
ADVANCED DIGITAL DATA, INC.  
354 Route 206  
Flanders, NJ 07836
Travel System 4/11

Operating System: UNIX, VMS
Keywords: • Accounts receivable • Scheduling • Statistics
• Word processing

Travel System 4/11 is an on-line reservation and management system for tour and coach operators and travel companies. The system provides for route structure, holiday/tour packages, charting, planning, on-line reservations and space checking, and relevant documentation as produced and linked to an integrated accounting system. Word processing, statistical analysis, forecasting, and management/hotel/holiday maintenance systems are also featured.

Benefits include:
• Daily analysis
• Periodic summary of requirements
• Accurate monitoring of transactions
• Automatic fares restructuring — off-peak periods, off days
• Flexible route and service structuring
• Statistical analysis enabling forecasting of peaks and troughs
• Cancellations and alterations of bookings
• Processing of open returns
• Running cost per mile per coach/tour/holiday package
• Closer control on accounts receivable

A version of this product is available for the PDP−11 computer.

Price: $4,500 – $40,000
Product Support Available: Yes
Contact: H. B. H. Reporter, Managing Director
021 352 0011
FOURTH DIMENSION PRODUCTS LTD.
Ryknild House
Burnett Road
Sutton C’Field, West Midlands B74 3EL
United Kingdom
Transportation
CRAS (Car Rental Agreement System)

Operating System: VMS
Keywords: • Accounting • Automotive • Credit • Taxes

This system allows for daily transactions to be recorded for the initiation and/or completion of a car rental agreement. Breakdowns offered include mileage charges, rental, drop charges, tax, collision, P.A.I., gasoline, and so on. Transactions can be credit card charges or cash.

All transactions interface with the general ledger system, in which only the charged sales interface with the accounts receivable system. Special reports include the Summary of Credit Card Charges, Vehicles Out Summary, Master Vehicles Listing, and Bad Accounts List.

The Fixed Asset System allows for the monitoring of long- and short-term lease arrangements. Depreciation is automatically charged out by straight line or declining balance each month to produce a Fixed Assets report showing the new book value.

A version of this product is available for the PDP–11 computer.

Price: $5,000
Product Support Available: Yes
Contact: Nigel Harris
(613) 829–8888
HARRIS COMPUTER SYSTEMS
16 Credit Union Way
Nepean, Ontario K2H 8R6
Canada

E M D A Super Car Rental and Control System

Operating System: VMS
Keywords: • Accounting • Automotive • Inventory
• Order entry

This modular system for use by car rental agencies having from 100 to 5,000 cars may be run as a back room system with one person entering all information or can be expanded to a completely on-line real-time system with CRT terminals and slaved printers at each check-out or check-in station. The system provides complete car control; printed customer rental agreements; on-line check-in; dispatch, ready-line, and garage and maintenance controls; reservations; car selection at check-out; and instant status check of the cars in the fleet. E M D A is a complete system that ends with the daily business report and can then be interfaced to existing accounting systems.

E M D A has been upgraded to run on personal computers in its smallest form. Since the system is modular, modules may be purchased separately. For large installations, E M D A runs on multiple MICRO–11s linked in a local area network. For small installations,
the system can run on a MICRO-11 or Professional 350-series computer.

A version of this product is available for the PDP-11 computer.

**Price:** $800 – $45,000

**Product Support Available:** Yes

**Contact:** Edwin J. Stevens  
(213) 795-5991  
EMDA INC.  
111 South Hudson Street, Suite B  
Pasadena, CA 91101

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**FLEET™**

**Operating System:** VMS

**Keywords:**  
• Cost accounting  
• Financial analysis  
• Maintenance

FLEET develops a complete analysis of the operating costs of a fleet of motor vehicles, heavy construction equipment, manufacturing machinery, or other units having either an odometer or an hour meter. In addition to the cost analysis, the package also issues preventive-maintenance reminders, based on a set of 99 user-defined parameters.

The package accumulates a period's total costs by cost categories and by vendor and simultaneously accumulates the total of the individual cost occurrences by cost categories for each specific unit. Individual fuel, repair, or cost vouchers are entered at random and according to any user-defined frequency or period. An individual unit's accumulated miles or hours can be entered with each cost voucher or once at the end of the period.

For reporting purposes, units can be subdivided into logical groups for closer operating cost comparisons.

**Price:** $6,000

**Product Support Available:** Yes

**Contact:** Terry K. Holder or Nathan K. Lieberman  
(812) 479-6951  
EVANSVILLE DATA PROCESSING CORP.  
1010 S. Weinbach Avenue  
P.O. Box 2469  
Evansville, IN 47714

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**RAFT (Revenue Accounting for Truckers)**

**Operating System:** VMS

**Keywords:**  
• Accounting  
• General ledger  
• Maintenance  
• Payroll
Transportation

RAFT, developed for the short-haul and long-haul trucking company, consists of four modules:
- Revenue Accounting (Probilling)
- Vehicle Equipment Costing and Maintenance
- General Ledger and Financial Statements
- Payroll

The Revenue Accounting module uses the probill as entry to the system and updates both receivables and various statistics, including customer history, employee performance, and traffic flow. This module also produces weekly invoices and monthly statements.

Probills are retained on an open-item basis and are paid either on an individual or a weekly basis. Statistics are also produced for delivery efficiency upon entry of the probill "pink" (delivery copy).

A version of this product is available for the PDP-11 computer.

Price: $5,000
Product Support Available: Yes
Contact: Nigel Harris
(613) 829-8888
HARRIS COMPUTER SYSTEMS
16 Credit Union Way
Nepean, Ontario K2H 8R6
Canada

TAPS (Transportation Accounting Packages)

Operating System: VMS
Keywords: Accounts receivable  Billing  General ledger
          Sales and marketing

The TAPS system takes care of the accounting functions for the trucking company — from free-form invoicing through state reporting — and includes accounts payable, general ledger, accounts receivable, miles and gallons reporting, owner-operator settlement programs, and sales analysis.

A version of this product is available for the PDP-11 computer.

Price: $10,000 – $20,000
Product Support Available: Yes
Contact: Anthony J. Ruggeri
(314) 644-4050
AUTOMATED INFORMATION INC.
6710 Clayton Road
St. Louis, MO 63117
Utilities
CMDS (Computerized Mapping and Diagram System)

Operating System: VMS
Keywords: • Education • Electrical • Engineering • Mapping
CMDS has been designed to meet the special mapping needs and budgetary constraints of small- and medium-size utilities and their consultants. It is adaptable to almost any geographic base.

The major features of CMDS are:
• The layers of geographic features, such as roads, lakes, subdivision, and so on, are selected by the user, as are the layers of electrical utility lines or other facilities.
• The user develops symbols for plotting items, such as road signs, protective devices, transformers, poles, switches, and capacitors.
• Subdivisions can be digitized from original plats and fitted into the base maps.
• The Distribution Primary Analysis (DPA) data can be created by CMDS and can reside within the mapping data base (only one data base to maintain).
• The user selects the scale of each map and the items to be plotted.
• Other facilities, such as telephone, gas, water, sewers, and so on, may be layered.
• The user can develop work order drawings, including instructions to crews.

CMDS requires a tablet digitizer and a Calcomp-compatible plotter in addition to a computer.

A version of this product is available for the PDP–11 computer.

Price: $27,500
Product Support Available: Yes
Contact: Walter G. Scott
(314) 576–7727
SCOTT & SCOTT CONSULTANTS, INC.
1180 Toreador Drive
St. Louis, MO 63141

DPA (Distribution Primary Analysis)

Operating System: VMS
Keywords: • Education • Electrical • Engineering
DPA is an interactive on-line family of programs for the engineering studies associated with the planning, design, and operation of electrical distribution systems. The major features of DPA are:
• The electrical and physical parameters of the system are stored in a permanent data base.
• On-line editing, including on-line switching, permits the engineer to simulate almost any operating condition.
• Analysis programs provide voltage levels, unbalanced current flow, line losses, line loading, fault currents, and capacitor placement.
• Single-line diagrams of the feeders may be plotted from the DPA data base.
• DPA options include a system to extract data, using a tablet digitizer and menu, and the software to plot feeder single lines.

A version of this product is available for the PDP–11 computer.

Price: $27,500
Product Support Available: Yes
Contact: Walter G. Scott
(314) 576–7727
SCOTT & SCOTT CONSULTANTS, INC.
1180 Toreador Drive
St. Louis, MO 63141

DTM (Distribution Transformer Management)

Operating System: VMS
Keywords: • Education • Electrical • Engineering

DTM is a family of five on-line interactive programs. The transformer model may be used to simulate almost any banking arrangement, such as line-to-ground single-phase, open wye, open delta, and combination single-phase/three-phase. The analytical model uses the transformer models to determine loading levels, demand losses, energy losses, and loss-of-life probability. The load model simulates a variety of loading cycles and can impose the resultant demand requirements on the analytical model (hourly, daily, weekly, or annual). The energy interface model obtains customers and energy usage by class of service by transformers from customer billing records and imposes these data on the analytical model. The economic model interfaces with the analytical model to determine present worth of a transformer configuration, based on costs over its life. Costs used in the model include investment, interest, installation, removal, replacement, demand losses, energy losses, and loss of life.

Utilities use DTM to obtain answers to such engineering/economic questions as:
• What sizes and types of transformers should be stocked?
• How should bids be evaluated?
• What are the best sizes for a particular installation?
• What are the loads on existing transformers?
• When should a transformer be replaced?

DTM also includes the files and interface software to transmit transformer sizes, customers, energy usage, and spot loads to the Distribution Primary Analysis (DPA) data base.
A version of this product is available for the PDP–11 computer.

Price: $750
Product Support Available: Yes
Contact: Walter G. Scott
(314) 576–7727
SCOTT & SCOTT CONSULTANTS, INC.
1180 Toreador Drive
St. Louis, MO 63141

**Economic Optimization of Distribution Losses**

Operating System: VMS
Keywords: • Education • Electrical • Engineering

This all-inclusive system was especially developed for:
- Modeling the major components of a distribution system over a selected time frame such as 10 years
- Analyzing the components to isolate technical losses (demand and energy)
- Computing the cost of losses, using marginal demand and energy prices
- Enabling the engineer to reduce losses through alternative corrective actions such as adding capacitors
- Economically evaluating the construction and loss costs for the alternatives (annual costs and present worth of annual costs)

This system consists of a load model to derive load and loss duration factors, a station power transformer model, a primary and secondary system model (a special version of DPA), a distribution transformer model, a construct cost model, and economic analyses.

A version of this product is available for the PDP–11 computer.

Price: $7,500
Product Support Available: Yes
Contact: Walter G. Scott
(314) 576–7727
SCOTT & SCOTT CONSULTANTS, INC.
1180 Toreador Drive
St. Louis, MO 63141

**EUBA (Electrical Utility Billing and Accounting)**

Operating System: VMS
Keywords: • Accounting • General ledger • Inventory • Payroll

EUBA is a complete, interactive system designed for electric utility companies. The system includes a comprehensive billing system that encompasses all aspects of producing bills, making adjustments,
keeping statistics and history, reporting, and transformer loading. The system also includes general ledger, financial statements, payroll, accounts payable, inventory, P.O. system, estimating, work order processing, and costing.

The software conforms to AMEU accounting practices and regulations.

A version of this product is available for the PDP–11 computer.

**Price:** $16,000 – $25,000

**Product Support Available:** Yes

**Contact:** Nigel Harris, President
(613) 829–8888
HARRIS COMPUTER SYSTEMS
16 Credit Union Way
Nepean, Ontario K2H 8R6
Canada

### General Ledger System

**Operating System:** VMS

**Keywords:** • Financial planning • General ledger • Telecommunications

The General Ledger System for telecommunications and telephone companies is a comprehensive system providing financial statements in a variety of formats.

Accounts are established with an account number, account name, and financial statement code that controls the format for profit and loss and balance sheet reports. Budget amounts and prior-year comparisons can be entered. The system can also produce supporting schedules and a source cross-reference.

The General Ledger System can optionally interface with the Payroll, Vehicle Ledger, Accounts Payable, and Work Order systems.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Bob Morse
(206) 456–3535
ALLIED DATA
P.O. Box 2406
Olympia, WA 98507

### MLF (Microarea Load Forecast)

**Operating System:** VMS

**Keywords:** • Education • Electrical • Engineering • Graphics
MLF is a family of on-line interactive programs that provide a definitive short- and long-range load forecast for the planning of distribution systems. The forecast is for discrete, small areas, or cells, rather than for macro, or large-area, forecasts used for generation and transmission planning. MLF is based on the socioeconomic parameters that dictate future load levels, such as land use, zoning, population, income, and the correlations between population and commercial/industrial electrical needs.

The user is in complete control of the forecast from beginning to end, with all of the following variables at the user's fingertips:

- Cells — quantity, size, and year of initiation
- Consumer classification — residential, commercial, industrial, and institutional
- Zones — city center, urban, suburban, and rural
- Saturation — vacancy level
- Population — people per dwelling
- Energy factors — kWh/acre by consumer class
- Demand factors — kW by consumer class

MLF includes the software to form the data base via forms and screen-formatted input or by extracting land use from the zoning maps with a tablet digitizer and menu. MLF also includes the software to transfer the forecasted demands and growth rates directly into the Distribution Primary Analysis (DPA) data base for analysis and planning.

MLF will be modified to meet special needs at software consulting rates.

A version of this product is available for the PDP-11 computer.

**Price:** $950

**Product Support Available:** Yes

**Contact:**
Walter G. Scott  
(314) 576-7727  
SCOTT & SCOTT CONSULTANTS, INC.  
1180 Toreador Drive  
St. Louis, MO 63141

**Oil and Gas System**

**Operating System:** VMS  
**Keywords:** Accounting  
Financial analysis  
Management  
Petroleum

The Oil and Gas System, developed by Pittsburgh National Bank, provides a flexible, cost-effective, integrated system for oil and gas exploration, drilling, and production companies. Audit trails and control will be integrated into the systems to the greatest possible extent. Validation criteria will ensure accurate, efficient processing.
Major components of the Oil and Gas System include the following systems:

- Lease Information and Control
- Accounts Receivable
- Accounts Payable
- General Ledger
- Oil and Gas Revenue
- Reserve Analysis
- Economic Evaluation

**Price:** $35,000 – $50,000

**Product Support Available:** Yes

**Contact:** Henry C. Gaylor  
(412) 355–8523  
PITTSBURGH NATIONAL BANK  
Fifth Avenue and Wood Street  
Pittsburgh, PA 15222

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**ORS (Outage Reporting and Analysis System)**

**Operating System:** VMS  
**Keywords:**  
- Education  
- Electrical  
- Engineering  
- Scheduling

ORS is a family of on-line interactive programs for:

- Establishing a data base containing details concerning all distribution outages: location of caller, time (received, off, dispatched, on), dispatched to, device tripped and location, priority (sickness, dairy, and so forth), weather, portion of system affected, cause, and number of consumers (from DPA).
- Printing a summary of outages at any time: month to date, calendar year to date, previous 12 months to date.
- Creating special printouts on which the user selects the time period (dates), location, and one of the following: cause, device, system, weather. The others are variables that may be sorted at the discretion of the user.

The Outage Reporting System is used to determine reliability levels, pinpoint areas with high outage rates, locate devices with a high failure rate, determine probable emergency crew needs under various weather conditions, assess efficiency of emergency procedures and personnel, and increase quality of service at lower cost.

This system has the interface software to access the (DPA) data base to obtain customers out of service and lost energy.

A version of this product is available for the PDP–11 computer.
RADWASTE

Operating System: VMS
Keywords: • Inventory • Nuclear • Scheduling
• Warehousing

This FORTRAN program tracks radioactive waste through the two main stages of waste processing — on-site storage and shipment to the burial site. The user is allowed to define the container type, physical form of waste, storage location, activity, and nuclide content and activity. Automatic spectral analysis is permitted via Canberra’s SPECTRAN-F or APOGEE programs. Manual nuclide entry is also permitted, as well as complete file maintenance and editing.

Designed in accordance with 49 CFR 173 and 10 CFR 61, this program generates inventory reports, Reg. Guide 1.21 semiannual reports, and other weekly and periodic summary reports. As with all Canberra software, human interfacing has been provided to ensure ease of use and minimal user training.

A version of this product is available for the PDP-11 computer.

Price: $50,000
Product Support Available: Yes
Contact: Gary Laskowski
(203) 238–2351
CANBERRA INDUSTRIES, INC.
One State Street
Meriden, CT 06450

TASCAL

Operating System: VMS
Keywords: • Labor • Nuclear • Quality control • Scheduling

The TASCAL software, a useful scheduling tool for managers at nuclear facilities, allows list generation for tasks to be executed, overdue tasks, and completed tasks, to name a few.

The design allows for separate files for each department or a general file that contains all the tasks for the facility. Written in FORTRAN
and supported by menu-driven techniques and simple user dialog, this program provides a powerful tool for the manager concerned with time management and the scheduling of activities.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Robert Loesch  
(203) 238–2351 ext. 352  
CANBERRA INDUSTRIES, INC.  
One State Street  
Meriden, CT 06450

### UTIANA–IMPRS Utility Analysis System

**Operating System:** VMS  
**Keywords:**  
- Data base management  
- Data collection  
- Facilities management  
- Query facilities

This system records up to three years of monthly power, gas, water, and telephone information; summarizes total information by building number and meter number; provides complete on-line inquiring/processing; allows for easy interactive reporting of all files; is completely menu driven; uses security passwords to control access; provides automatic master file backups; and performs extensive on-line editing and balancing.

A version of this product is available for the PDP–11 computer.

**Price:** $2,500  
**Product Support Available:** Yes

**Contact:** Elvin E. Smith or Forrest E. Weddle  
(913) 782–8544  
RUF CORP.  
1533 E. Spruce  
Olathe, KS 66061

### Utility–11

**Operating System:** VMS  
**Keywords:**  
- Billing  
- Maintenance  
- Report writer

Utility–11 is a comprehensive utility billing and reporting package. It is designed to provide on-line inquiry into customer information and to provide flexibility in maintenance of utility customer information, water rates, electrical rates, meter readings, and sewer/sanitation rates.
A version of this product is available for the PDP–11 computer.

Price: $5,580 – $10,290

Product Support Available: Yes

Contact: Ronald R. Kirchhoff, President
(306) 293–4286
KMK ENTERPRISES, INC.
302 West 8th
Plainview, TX 79072
Part II
Systems Software
Communications
2780/3780 Protocol Emulator, Version 1.4

Operating System: VMS
Keywords: • Data base management • Data conversion
        • File transfer • Forms management

VAX–11 2780/3780 Protocol Emulator (PE) emulates the synchronous line protocol used by a 2780 or a 3780 Remote Batch Terminal. The emulator provides the VAX/VMS user with a mechanism for transferring data between the VAX/VMS operating system and another system equipped to handle 2780 or 3780 communications protocols.

The emulator can be invoked interactively or by a command procedure. The emulator’s command set is designed to facilitate sharing of a communication line among several users. With the appropriate modem options, the emulator can automatically answer incoming calls.

Sophisticated operations can be performed by a combination of command procedures, allowing, for example, unattended operation. That would include the capability of detecting an incoming call, establishing the connection, and then transmitting and receiving files and recovering from transmission failures, all without operator intervention.

Several data formats are supported with the use of a particular format selected via user command. Users can select various forms control translation schemes, variable-length records or card images, ASCII/EBCDIC translation, and BSC transparency. All file I/O is performed through the VAX/VMS record management facility. Print and punch stream recognition is implemented so that the data manipulation scheme can differ with each stream.

The product can concurrently run up to four physical lines, each with a different set of attributes — some can be 2780, the others 3780, at speeds up to 9,600 bps per line.

Refer to SPD #25.07.05 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).

3271 Protocol Emulator, Version 2.0

Operating System: VMS
Keywords: • Data conversion • Networking
        • Programming tools • Simulation

VAX–11 3271 Protocol Emulator (PE) enables VAX VT100 terminals and application programs to interact with IBM system application programs and system services.
The Terminal Emulator utility allows the VT100 user on a VAX–11 system to access an IBM system. This feature is useful for users who are implementing distributed processing with VAX systems. Users who are moving applications from centralized mainframes to VAX–11 distributed processors will find this capability an efficient migration tool during the transition phase; users who occasionally access applications that remain on mainframes can access those applications through their local VAX systems.

The application program interface provides a base for distributed applications where one component of the application runs in an IBM system and the other component in a VAX–11. This type of application is useful in situations such as on-line access and update of a mainframe data base in response to an event in the VAX or where it is inappropriate to present a 3270-style formatted screen to a user who is accustomed to VAX-style screens.

Refer to SPD #25.21.2 when requesting further information on this product from your local DIGITAL sales office.

**Price:**  Available upon request

**Product Support Available:**  Yes

**Contact:**  Consult your local DIGITAL sales office

(see Introduction).

### 3780 COMBOARD™

**Operating System:**  VMS

**Keywords:**  • Device drivers/handlers  • Pre- and postprocessors  • Simulation

COMBOARD, a front-end data communications processor that plugs into the PDP–11 UNIBUS, is a hex-height module utilizing a 16-bit microprocessor. Software is 3780 protocol and has interfacing utilities for RSTS/E, RSX–11M/M+, and VMS. A device driver is also included. A 3780 protocol emulator runs directly on the COMBOARD, and all other I/O software runs in the DIGITAL host. The price includes source code for all software except the emulator. Quantity discounts are available.

A version of this product is available for the PDP–11 computer.

**Price:**  $9,800 – $26,900

**Product Support Available:**  Yes

**Contact:**  Bill Martin

(800) 772–3282

SOFTWARE RESULTS CORP.
2887 Silver Drive
Columbus, OH 432111081
ACCES XNS Protocol Package

**Operating System:** ULTRIX, UNIX, VMS

**Keywords:** • Data conversion • File transfer • Networking • Telecommunications

The ACCES XNS networking protocol package links applications and system-level programs to data files and processing services in a distributed environment through simple remote procedure calls.

The ACCES XNS protocol package enables applications programmers to name, locate, and use high-level processing services in a distributed environment. An applications programmer need not be concerned with network architecture, routing, flow control, or packetization but instead views the network as a pool of resources to manipulate with simple remote procedure calls. The ACCES XNS protocol package also offers systems programmers and designers a highly structured programming environment in which lower levels of network operation can be accessed.

The ACCES XNS protocol package is strictly modeled in accordance with the standard defined and published by Xerox Corp. in "Internet Transport Protocols" and "Courier, the Remote Procedure Call Protocol." The ACCES XNS package implements Courier, the Sequenced Packet Protocol (SPP), and the Internet Datagram Protocol (IDP). In addition, the ACCES XNS package provides network management functions.

The ACCES XNS protocol package is useful to design engineers responsible for the networking and communication architecture for their companies’ product lines or for system managers responsible for interconnecting their companies’ resources. The key feature is the implementation of Courier, the Remote Procedure Call Protocol and other Xerox standards.

A version of this product is available for the PDP–11 computer.

**Price:** $2,500 – $4,500

**Product Support Available:** Yes

**Contact:**

(805) 963–9431

ACC

720 Santa Barbara Street
Santa Barbara, CA 93101

BSC/DV (Binary Synchronous Communications Support)

**Operating System:** VMS

**Keywords:** • Device drivers/handlers • Telecommunications
BSC/DV is a driver for the DIGITAL DV-11, a 16-line multiplexer. The driver is sufficiently general to handle most BSC-based protocols and is suitable for transparent and nontransparent transmission, point-to-point and multidrop disciplines, 4-wire and 2-wire half-duplex lines, CRC-16 and LRC block checks, and line speeds up to 9,600 bps.

A version of this product is available for the PDP-11 computer.

**Price:** $5,000 – $7,500

**Product Support Available:** Yes

**Contact:** Martha Schriefer  
(617) 861–0670  
EVANS GRIFFITHS & HART  
55 Waltham Street  
Lexington, MA 02173

**BSO/TEKLD (Tektronix Emulator Loading Program)**

**Operating System:** UNIX, VMS

**Keywords:**  
- Data conversion  
- Debugging  
- Microprocessor development  
- Programming tools

The TEKLD program is a utility program designed to interface a VAX or PDP-11 to a Tektronix 8001, 8002, 8540, 8550, or 8560/61 Microprocessor Development Lab. The program permits transmission of microprocessor object programs in either direction between the two machines. TEKLD also performs error checking and transmission timing and handshaking.

A version of this product is available for the PDP-11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Simon Wieczner  
(617) 894–7800 or TWX: (710) 324–0760  
BOSTON SYSTEMS OFFICE, INC.  
469 Moody Street  
Waltham, MA 02154

**BT–II**

**Operating System:** VMS

**Keywords:**  
- Acoustics  
- Data collection  
- Telecommunications  
- Telephone

BT–II allows an authorized individual to use any pushbutton telephone to interact with any application program running on a PDP–11 system. The procedure is as follows:
• Pick up the phone.
• Dial a number.
• Input data by pressing the pushbuttons on the telephone. You will receive instructions, verification, and answers in a natural-sounding human voice.
• Call (617) 821-0326 for a demonstration of this capability.

BT-II connects on one end of your company's telephone system. On the other end it plugs into a standard terminal port on your DIGITAL computer. The BT-II is an FCC-approved, stand-alone unit supporting multiple telephone lines simultaneously with instant voice response.

A version of this product is available for the PDP-11 computer.

Price: $15,000 +
Product Support Available: Yes
Contact: Douglas Keelan, Marketing
(617) 821-0320
PERCEPTION TECHNOLOGY CORP.
50 Shawmut Road
Canton, MA 02021

BURCOM-11 (DIGITAL/Burroughs Communication System)

Operating System: VMS
Keywords: • Asynchronous communication  • Data conversion  • Diagnostics

BURCOM-11 allows a DIGITAL PDP-11 or VAX to communicate with Burroughs computers, using synchronous or asynchronous communication techniques. With either dial-up or leased telephone lines, BURCOM-11 supports the Burroughs point-to-point conversational and the poll-select protocols to give high throughput data transmission with low operating system overhead. Multiple buffers may be used to ensure that the transmission link is fully utilized. BURCOM-11 handles error detection and record retransmission automatically. BURCOM-11 provides user-callable subroutines for sending and receiving messages, establishing a transmission link (including dialing of numbers), terminating a link, and reviewing the line status and error counts.

BURCOM-11 supports emulation of the Burroughs MT983/993 terminals on the VT100.

A version of this product is available for the PDP-11 computer.

Price: $795 – $6,000
Product Support Available: Yes
Contact: Elizabeth F. Epermanis
(919) 942-7801
APPLIED INFORMATION SYSTEMS, INC.
500 Eastowne Drive, Suite 207
Chapel Hill, NC 27514

CALOUT

Operating System: VMS
Keywords: • Data transfer • File management • Telecommunications • Telephone

CALOUT allows you to dial up another computer by entering the phone number at your keyboard. You can then work as a remote user of the other computer, with the additional ability to move files from one system to the other. All types of disk files may be moved between the computers in either direction, including binary program files, with all attributes retained. The package will communicate with any foreign system in ASCII mode.

A version of this product is available for the PDP–11 computer.

Price: $1,500
Product Support Available: Yes
Contact: Muriel King
(801) 224–5306
CLYDE DIGITAL SYSTEMS, INC.
3707 N. Canyon Road, Suite 3–E
Provo, UT 84604

CONTRL

Operating System: VMS
Keywords: • Security • Simulation

CONTRL links the manager's terminal to any keyboard on the system and provides remote interactive training and user support. Keystrokes entered at the user terminal and information presented to the terminal are also presented to the manager's terminal. CONTRL also permits security management personnel to monitor interaction at randomly selected terminals at any time, without interruption or intrusion into their job sessions. A complete log file on any session may be kept.

A version of this product is available for the PDP–11 computer.

Price: $900
Product Support Available: Yes
Contact: Muriel King
(801) 224–5306
CLYDE DIGITAL SYSTEMS, INC.
3707 N. Canyon Road, Suite 3–E
Provo, UT 84604
CYX–DV DV11 Multiplexer Driver

Operating System: VMS
Keywords: • Data conversion • Device drivers/handlers

CYX–DV is a software driver that reduces to a minimum the CPU overhead normally associated with message processing. CYX–DV lets you use DV11 communications multiplexers on PDP–11 or VAX computers with the RSX–11M or the VMS operating system. CYX–DV uses DV11 nonprocessor request (NPR) transfers for both input and output, significantly cutting the CPU time required to handle serial communication lines. CYX–DV handles many protocol features automatically as defined in character tables accessed by the DV11.

CYX–DV allows the transmission of a split buffer so that a single transmission block can be sent from two contiguous buffers. Therefore, you can add headers to transmission blocks even if you have not provided a space for the header adjacent to the data to be sent.

CYX–DV supports multiple protocols and/or character sets and the use of both the synchronous and asynchronous line interfaces supplied for the DV11. CYX–DV is incorporated into the RSX–11M or the VMS executive as a standard loadable driver and conforms to RSX or VMS driver software conventions. CYX–DV transfers data to and from a physically contiguous portion of main memory (up to 48,000 bytes in the PDP–11 version, unlimited size in the VAX version). The buffer is defined when the system is initialized.

A version of this product is available for the PDP–11 computer.

Price: $3,000 – $4,000
Product Support Available: Yes
Contact: Johan Nik Kirkeng
(612) 835–4884
CYTROL, INC.
4620 West 77th Street
Edina, MN 55435

DECMOD

Operating System: VMS
Keywords: • Manufacturing • Process control
• Production control • Quality control

DECMOD is a stand-alone system that provides operator communications between a DIGITAL host computer and Modicon Series 484 and 584 programmable controllers (PC). This system allows PC ladder logic programs to be created and documented by the host operator from a VT100 video terminal. Those programs can be stored on disk and then, at any time, selectively down-loaded to any PC. Ladder
logic programs may also be up-loaded from selected PCs to allow DECMOD to alert the operator to changes that have been made by local operators.

A version of this product is available for the PDP–11 computer.

**Price:** $5,000 – $7,000  
**Product Support Available:** Yes  
**Contact:** G. D. Newman  
(713) 789–8880  
BILES & ASSOCIATES  
7207 Regency Square, Suite 250  
Houston, TX 77036

**DECnet–VAX, Version 3.1 VAX/FMS Network Software (Full Function and End Node)**

**Operating System:** VMS  
**Keywords:**  
- Data conversion  
- File management  
- File transfer  
- Networking

DECnet–VAX allows a suitably configured VAX/VMS system to participate as a routing or end node in DECnet computer networks. Using DECnet–VAX Version 3.1, DECnet computer networks can contain up to 1,023 nodes given proper network planning. DECnet–VAX interfaces are standard components of VAX/VMS for use on a local, stand-alone system. The DECnet–VAX software, when installed on a VAX/VMS system, enables communication between different, networked systems that use the same protocols.

DECnet–VAX is a Phase IV network product and is warranted for use only with Phase III and Phase IV products supplied by DIGITAL.

DECnet–VAX offers task-to-task communications, file management, down-line system and task loading, network command terminals, and network resource sharing capabilities using the DIGITAL Network Architecture (DNA) protocols. DECnet–VAX communicates with adjacent and nonadjacent Phase III and Phase IV nodes (adjacent nodes control opposite ends of a point-to-point communication line).

VAX/VMS programs written in VAX–11 MACRO and native-mode high-level language can use DECnet–VAX capabilities, but programs executing in PDP–11 compatibility mode cannot use DECnet–VAX.

The network functions available to a DECnet–VAX user depend, in part, on the configuration of the rest of the network. Each DECnet product offers its own functions and its own set of features to the user. Networks consisting entirely of DECnet–VAX Phase IV nodes have all the functions described in this SPD. Networks that combine DECnet–VAX nodes with other DECnet products may limit the func-
tions available to the DECnet–VAX user because some DECnet–VAX features may not be supported by all DECnet products. Conversely, a user of another DECnet implementation will not necessarily have access to all DECnet–VAX functions.

The DECnet products and functions available to users on mixed networks can be determined by comparison of the SPDs for the appropriate products.

Refer to SPD #25.03.11 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

## DECnet/SNA Gateway Products

**Operating System:** VMS  
**Keywords:**  
- Data conversion  
- File transfer  
- Networking  
- Telecommunications

The DECnet/SNA Gateway products allow users to share information between VAX–11 systems in a DECnet environment and IBM systems in an SNA (System Network Architecture) environment. Users on one or more VAX–11 systems can simultaneously access IBM application programs or other system resources, act as a 3270 terminal, transfer data between VAX–11 file subsystems and IBM batch subsystems acting as an RJE workstation, and implement Distributed Application Programs that run between DIGITAL and IBM systems.

The DECnet/SNA Gateway family includes five products: the Gateway (the DX24 hardware/software package) and four access routines that operate on VAX–11 systems that use the Gateway. The five products are:

- DECnet/SNA Gateway (Software Package for the DX24)  
- DECnet/SNA VMS Gateway Management  
- DECnet/SNA VMS 3270 Terminal Emulator  
- DECnet/SNA VMS Remote Job Entry  
- DECnet/SNA VMS Application Interface

Refer to SPD #30.15.0 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).
**DL–11 Terminal Line Driver**

**Operating System:** VMS  
**Keywords:** • Device drivers/handlers  
Memory Required: 307 bytes.

This driver allows VAX/VMS installations to use DL–11 interfaces for the connection of additional terminal lines to the system. All the functions of the standard VAX/VMS DZ–11 driver are supported except dial-up lines and software control of line parameters. This driver may also be used as the skeleton for drivers supporting other terminal line interfaces.

Documentation is in the form of comments in the listing. DECUS number VAX–2.

**Price:** $5 – $225  
**Product Support Available:** No  
**Contact:** DECUS (see Introduction)

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**DMG/NET**

**Operating System:** VMS  
**Keywords:** • Debugging  
• File management  
• File transfer  
• Networking

DMG/NET provides controlled computer-to-computer communications. An easy-to-use operator interface allows nontechnical users to access a variety of computers interactively and to transfer files to/from remote systems. DMG/NET uses standard DIGITAL ASYNC ports and standard DIGITAL operating systems and interfaces with most other computers, including micros.

Networks can be a mix of direct (EIA) connections, leased lines with modems, autodial units, and X.25 packetizers (PADS). Between compatible DIGITAL computers, full file transfer capability includes error checking and support for RMS, binary, and WORD–11 and USER–11 file formats. To/from non-DIGITAL computers, transfers are ASCII only.

Features of DMG/NET are indirect command file processing, password protection on any destination, excellent error recovery and reporting, alternate path capability, and an on-line help facility.

Single CPU, rentals, and corporate licensing are available.

A version of this product is available for the PDP–11 computer.

**Price:** $2,000 – $30,000  
**Product Support Available:** Yes  
**Contact:** Ken Allsopp  
(416) 225–7788
DN11 Driver, Version 1.0

Operating System: VMS
Keywords: • Data conversion • Device drivers/handlers
• Networking • Telecommunications

The VAX–11 DN11 Driver supports the DN11 Automatic Calling Unit Interface. The DN11 device driver and hardware, under VAX/VMS user-programmed instructions, control a Bell 801 Automatic Calling Unit (ACU), or equivalent, to dial any telephone number in the U.S. Direct Distance Dial Network by establishing a data link between the processor and remote data terminal equipment.

The DN11 ACU interface consists of the DN11–AA, a prewired system unit that mounts up to four DN11–DA line interfaces. When a system unit has more than one line interface, CSR addresses must be consecutive.

The first DN11–DA line interface in the DN11–AA system unit serves as the "controller" for the remaining line units. For a DN11 having a controller designation of A, equipped with four DN11–DA line units, those four devices must be configured as OBA0:, OBA1:, OBA2:, and OBA3:.

Refer to SPD #25.96.0 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: No
Contact: Consult your local DIGITAL sales office (see Introduction).

DR11–C Driver, Version 1.0

Operating System: VMS
Keywords: • Asynchronous communication
• Device drivers/handlers • Programming tools
• Telecommunications

The VAX–11 DR11–C Driver supports the DR11–C under the VAX/VMS operating system. The DR11–C is a non–DMA UNIBUS device that provides a general-purpose interface between the UNIBUS and a user’s peripheral. The device provides the capability for program-controlled parallel transfers of 16-bit data between a VAX–11 processor and an external device. The DR11–C is a single-unit per controller device.
The VAX-11 DR11-C device driver allows VAX-11/750 and VAX-11/780 systems to use the DR11-C as a basic parallel I/O interface between the UNIBUS and an unspecified user peripheral. The VAX-11 DR11-C device driver will support a general user application. VAX-11 DR11-C driver functionality does not incorporate a specific application, due to the variety of peripherals that can be used. The VAX-11 DR11-C driver includes many general-purpose parameters to simplify its use for several applications and also supports DR11-C operation in maintenance loopback mode.

Refer to SPD #25.97.0 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** No

**Contact:** Consult your local DIGITAL sales office (see Introduction).

## DX/VMS, Version 1.2

**Operating System:** VMS

**Keywords:**
- Asynchronous communication
- Data conversion
- Diagnostics
- Word processing

DX/VMS, a VAX-11 FORTRAN software package that executes on the VAX/VMS operating system, enables a WPS-8 word processing system running WPS-8, WPS-8/78, or WPS-8/MTS software to communicate with the VAX/VMS host over an asynchronous terminal interface. The WPS-8 system appears to the host application programs to be a normal terminal. Communication between the WPS-8 system and the VAX/VMS system uses the DX error-correcting message protocol.

DX/VMS effectively enables distributed stand-alone WPS-8 systems and the host VAX/VMS system to be linked for better system utilization and data sharing. The DX/VMS package includes utility programs that convert VAX/VMS files stored in word processing format to VAX/VMS files stored in ASCII format and vice versa.

DX/VMS enables the WPS-8 system user to:

- Store word processing format files on a VAX/VMS system and later retrieve them. The ability to use the VAX/VMS disk structure enables the WPS-8 system user to access a large number of documents that might fill several document floppies, including large documents filling an entire floppy.
- Use the high-speed line printer connected to the VAX/VMS system to print rough drafts and other documents that do not require letter-quality printing. This increases system throughput and increases the availability of the WPS-8 letter-quality printer for printing final drafts. Conversely, the VAX/VMS system user can output text files converted from the VAX/VMS file system on the WPS-8 letter-quality printer.
• Create VAX/VMS source language and data files off line from the VAX/VMS system, using the WPS–8 editor, and then transmit the files to the VAX/VMS system for processing.

Refer to SPD #25.25.4 when requesting further information on this product from your local DIGITAL sales office.

**Price:** $250  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office
  (see Introduction).

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**DY32 DECdataway Local Area Network Software, Version 2.1**

**Operating System:** VMS  
**Keywords:**  
- Data conversion  
- File transfer  
- Networking  
- Telecommunications

This software package provides local area network communications for VAX/VMS host systems. It allows user application programs in a VAX/VMS host to communicate with multidropped devices connected to the VAX/VMS host via the DECdataway.

VAX–11 DY32 hosts control the DECdataway through the DECdataway controller driver, which provides a standard operating system interface to the DECdataway controllers. Through it, the network software and other processes in the host can determine the status of each remote DECdataway device. It allows simultaneous requests to all addresses on the DECdataway, verifies the validity of the request, and passes it to the DECdataway controller. The DECdataway controller driver treats each DECdataway address as a separate physical device unit and logs DECdataway errors, which are put in a file on the system disk and reported by a VAX/VMS utility.

The DECdataway Manager, the DECdataway house-keeping program, loads the DECdataway driver, runs confidence tests on the controller, loads and starts the controller's microcode, and notifies the Automatic Reboot Facility when a remote DECdataway device first comes on line and needs service. The DECdataway Manager runs during DY32 system start-up and whenever the DECdataway driver notifies it that conditions on the DECdataway require its attention.

Refer to SPD #25.57.04 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office
  (see Introduction).
**FUSION™**

**Operating System:** MS/DOS, ULTRIX, UNIX, VMS  
**Keywords:**  
- Data collection  
- Data conversion  
- File management  
- Networking

FUSION Ethernet software provides the user with complete access to the programs, files, and computing power of a remote machine. With a single command, you can transport groups of files or complete directory hierarchies between previously incompatible processors. Data transfer rates exceed 1 million bits per second, making FUSION 2 to 20 times faster than comparable software packages. With the Virtual Terminal function, you have the ability to execute commands on a remote system. Network Utilities allow for network traffic monitoring, performance analysis, and mail and print service. In addition, any system can be designated as a File or a Print Server to any other system on the FUSION network.

Vendor-independent FUSION can interconnect a wide variety of computers, operating systems, and local area network (LAN) hardware components. FUSION can link PDP–11, VAX, 68000, 8086, and IBM PC processors on the same Ethernet network while crossing UNIX*, UNIX*-like, VMS, and MS/DOS operating system boundaries. Network hardware is available from 3Com, Interlan, and Communication Machinery Corps.

FUSION customers include end users and major manufacturers. The benefits offered by Print Server and File Server capabilities are especially attractive to budget-minded research and office environments. OEMs bundle FUSION into their own systems, enhancing their products' reputations by providing high-performance software to prospective customers.

Complete installation and service support are provided.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** $750 – $6,000  
**Product Support Available:** Yes  
**Contact:**  
Kyle Todd  
(213) 474–7717  
NETWORK RESEARCH CORPORATION  
1964 Westwood Boulevard, Suite 200  
Los Angeles, CA 90025
GCLINE

**Operating System:** VMS
**Keywords:** • Automotive • CAD/CAM • Graphics • Mapping

GCLINE is a communication protocol servicing Kongsberg on-line drafting tables. GCLINE searches and readsdisk files, handshakes with Kongsberg Graphic Controller (GC300), and transmits plot data. GCLINE also reads disk files sequentially backwards when the table controller requests backspace mode. In digitizing mode, GCLINE writes digitized coordinates back from graphic table to disk.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:**
Hans Engfelt
47 – 3 – 73 82 65
A/S KONGSBERG VAPENFABRIKK
Data Systems Division
P.O. Box 25
N–3601 Kongsberg
Norway

HASP

**Operating System:** VMS
**Keywords:** • Networking • Process control • Simulation

HASP is a generalized communications package installed as a system utility that can operate as an emulator of any standard HASP multileaving workstation (RJE mode) or as a host to other workstations (host mode). The protocol uses bidirectional communications and automatic character compressions to provide line efficiencies that are not available with packages such as the 2780 or 3780. Full support is provided for an operator console plus the maximum concurrent mix from each of seven input, print, and punch streams. HASP requires a DU or a DUP–11; optional hardware supported includes KG–11 and DN–11.

A version of this product is available for the PDP–11 computer.

**Price:** $3,500 – $5,500

**Product Support Available:** Yes

**Contact:**
Lewis L. Lovett, Sales Manager
(301) 864–3700
GEJAC, INC.
P.O. Box 188
Riverdale, MD 20737
HASP COMBOARD™

Operating System: ULTRIX, UNIX, VMS
Keywords: • Data conversion  • Device drivers/handlers
         • Pre- and postprocessors  • Source code control

COMBOARD, a front-end data communications processor that plugs directly into the PDP–11 UNIBUS, is a hex-height module using a 16-bit microprocessor. Software is HASP protocol and has interfacing utilities for RSTS/E, RSX–11M/M+, and all UNIX* systems. A device driver is also included. HASP protocol emulator runs directly on the COMBOARD, and all other I/O software runs in the DIGITAL host. The price includes source code to all but the HASP emulator.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $13,900 – $26,000
Product Support Available: Yes
Contact: Bill Martin
         (800) 772–3282
         SOFTWARE RESULTS CORP.
         2887 Silver Drive
         Columbus, OH 43211

IBM 2780/3780

Operating System: VMS
Keywords: • Data entry  • Networking  • Telecommunications

IBM 2780/3780, a communication subsystem for UNIBUS-based computers, provides data transfer via DMA facility and dual-host support.

A version of this product is available for the PDP–11 computer.

Price: $9,000
Product Support Available: Yes
Contact: Mogens Poulsen
         01–20 00 66
         A/S DATALOG
         Rygaards Alle 104
         DK–2900 Hellerup
         Denmark

IBM 3270

Operating System: VMS
Keywords: • Data entry  • Networking  • Telecommunications

The IBM 3270, a subsystem for UNIBUS-based computers, includes DIGITAL multiplexer from 8 to 32 channels, DMA data transfer,
dual-host support, and full-screen buffer facility emulating IBM 3277 terminals on a VT100 terminal.

A version of this product is available for the PDP–11 computer.

**Price:** $13,000  
**Product Support Available:** Yes  
**Contact:** Mogens Poulsen  
01–20 00 66  
A/S DATALOG  
Rygaard Alle 104  
DK–2900 Hellerup  
Denmark

### IEC11–V Device Driver for VAX/VMS, Version 2.0

**Operating System:** VMS  
**Keywords:** • Device drivers/handlers  
• Networking  
• Pre- and postprocessors  
• Telecommunications

The IEC11–V Device Driver allows programs written in MACRO–32, FORTRAN, and BASIC to communicate with IEEE STD.488 devices connected to the IEC11–A and IEC11–B. Communication is implemented through a choice of direct QIO calls to the executive or a set of subroutines callable from high-level languages.

The IEC11–A and IEC11–B are digital input/output interfaces for the IEEE STD.488 (1978) Programmable Interface Bus System, also known as the General Purpose Interface Bus (GPIB). The interface boards are compatible with both ANSI MC 1.1 and IEC 625.1 standards.

The IEC11–A is an interrupt-driven interface with full IEEE–488 control capabilities. The IEC11–B is a DMA option that significantly reduces processor loading for long messages when acting as an IEEE–488 talker or listener. Software support of these devices consists of independent drivers that support up to 28 IEC11–As and 28 IEC11–Bs on a single VAX. Each of these interfaces may be on the same or on different IEEE–488 buses up to the limits specified in IEEE STD.488.

Refer to SPD #25.74.01 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).
INCOMM (VAX to Intel MDS Communications Utility)

Operating System: VMS
Keywords: • Cross-compilers • Debugging • File transfer
• Microprocessor development

INCOMM provides a complete general utility for bidirectional data transmission between PDP–11–family computers and Intel MDS systems, using serial communications lines. The INCOMM package aids your use of cross-assemblers/compilers operating on PDP–11 and VAX systems. Applications programs may be assembled or compiled on the –11 system and the resulting binaries transmitted to an MDS system for testing. Intel FORTRAN–77 or PL/M source programs may also be developed and maintained on an –11 system and downloaded for compilation.

INCOMM uses standard RS–232 communications via local cable or switched telephone networks, operating reliably at speeds of up to 9,600 baud. Extensive error checking and retransmission facilities are included to ensure the reliable data transfer of both binary and ASCII data formats. In addition, binary object files produced by Microbench 8086/8088 and 8080/8085 cross-assemblers may optionally be converted to Intel OBJ formats.

INCOMM consists of two programs: one that operates on the –11 and the other that operates on an MDS 800, Series II, or Series III system under ISIS. Typically, the sequence is started on the MDS system, with the user specifying the type of system, baud rate, and logging device. The program then enters a transparency mode in which all characters typed at the MDS terminal are transmitted to the PDP–11. Actual file transfers are initiated by starting the PDP–11 program and specifying source and destination devices and file names, along with switch options to specify file formats and transmission block size.

Once the device and file name specifications are complete, the transfer proceeds automatically, with progress reported on the MDS logging device. All errors, including recoverable errors, and successful data transfers are reported. Once the transfer is complete, the MDS returns to transparency mode, and further operations involving the PDP–11 may be initiated.

A version of this product is available for the PDP–11 computer.

Price: $500 – $1,000
Product Support Available: Yes
Contact: Nicholas P. Mason
(415) 935–4944
VIRTUAL SYSTEMS, INC.
1500 Newell Avenue, Suite 406
Walnut Creek, CA 94596
KCT32, Version 1.0

Operating System: VMS
Keywords: • Asynchronous communication • Debugging
          • Device drivers/handlers • Telecommunications

VAX–11 KCT32 is a software and firmware package that provides VAX/VMS support of the KCT32 hardware communication option. VAX–11 KCT32 software, in conjunction with the KCT32 firmware and KCT32 hardware, allows the user to implement custom communication applications.

Users can program the KCT32 communication lines for bit/byte synchronous or asynchronous transmission and reception, using the standard DIGITAL PDP–11 Instruction Set, as implemented with the DCT11 chip. This software, used with the KCT32 hardware and user-written communication application, allows the VAX/VMS host processor to perform high-speed (two lines at 64K baud in bit sync mode or one line at 130K baud in bit sync mode) multiline communication functions.

Refer to SPD #26.04.00 when requesting further information on this product from your local DIGITAL sales office.

Price: $100 – $500
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

KMS11–BD/BE X.25 Link Level Software,
Version 1.0

Operating System: VMS
Keywords: • Debugging • Networking • Pre- and postprocessors
          • Telecommunications

This package consists of X.25 Level 2 firmware plus a VAX/VMS device driver for the KMS11–BD/BE X.25 Link Level Software. The driver, in conjunction with the X.25 Level 2 firmware and KMS11–BD/BE hardware, allows the VAX/VMS processor to perform high-speed multiline synchronous communication in a point-to-point environment.

The primary purpose of the driver is to allow command, control, and data information to/from VAX/VMS users, KMS11–BD/BE firmware, and the remote end of communication line. The driver is full-duplex and maintains internal queues.

Refer to SPD #25.80.0 when requesting further information on this product from your local DIGITAL sales office.
MC/LINK (UNIX*/VMS Communications Link)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Asynchronous communication • Data conversion
          • File management  • File transfer

MC/LINK provides a communication facility between a VAX–11–series computer running the VMS operating system and a computer running the UNIX* operating system. Some features include an error-free data path, virtual channels allowing multiple simultaneous users, and a user-oriented UNIX* command interface.

A direct user interface to MC/LINK is provided in the form of new UNIX* commands that copy files from UNIX* directories to VAX directories, from UNIX* directories to a VAX line printer, and from VAX directories to UNIX* directories and that carry on an interactive VMS session from a terminal on the UNIX* machine.

MC/LINK provides disk files that serve as virtual UNIX* machine disks and are transparent to UNIX* programs.

Preallocated files of arbitrary size on VMS disk volumes can be prepared for use by means of the "mkfs" and "mount" utilities. After that they will be available to users on the same basis as other UNIX* machine disk units. The rate of data transfers to and from virtual disks is limited by the throughput of the interprocessor link.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $5,000
Product Support Available: Yes
Contact: Robert M. Ziersel
         (603) 643–3800
         CREARE R&D INC.
         P.O. Box 71
         Hanover, NH 03755

MICOMM (VAX to Microtek MICE Communications Utility)

Operating System: VMS
Keywords: • Assemblers  • Compilers  • Cross-compilers
          • Device drivers/handlers

MICOMM is a general utility for data transmission between VAX–11 computers and Microtek MICE systems. MICOMM uses standard RS–232 communications via local cable or switched telephone networks.
The MICOMM package facilitates the use of cross-assemblers and cross- compilers operating on VAX systems. Applications programs may be assembled or compiled on a VAX system and the resulting binaries transmitted to a MICE for testing. MICOMM provides the capabilities to down-load Intel and Tektronix hexadecimal formats as well as Virtual Systems LDA formats to a MICE module.

MICOMM also allows for direct communications with a MICE through a transparency mode, in which data is sent and received between the MICE and your VAX terminal. This mode thus allows you to issue all the MICE commands from your VAX terminal (including Execution, Trace, Halt, Assemble, and so on) and to display microprocessor memory and register contents.

MICOMM is distributed under a perpetual license. Pricing includes two users' manuals and a 1-year software maintenance/update service. The MICOMM program is distributed on RX01/RX02 diskette or 9-track 800 bpi magnetic tape. Additional manuals may be purchased by special order.

Price: $250 – $500
Product Support Available: Yes
Contact: Nicholas P. Mason, Sales Manager
(415) 935-4944
VIRTUAL SYSTEMS, INC.
1500 Newell Avenue, Suite 406
Walnut Creek, CA 94596

MUX200/VAX, Version 1.2 Multiterminal Emulator

Operating System: VMS
Keywords: • Data conversion • File management
• File transfer • Networking

MUX200/VAX is a VAX–11–based software package that provides communication with a CDC 6000, CYBER series, or other host computer systems capable of using 200 UT Mode 4A communications protocol.

Any VAX–11 interactive terminal can be used to control remote job entry or to communicate at command level with the host system. Input files can be sent from and output files received onto any VAX–11–supported mass storage, unit record, or terminal device.

MUX200/VAX communicates with the host using the Mode 4A communications protocol as defined in CDC publication No. 82128000. The software package can be configured to support either the ASCII or the external BCD versions of the protocol.
MUX200/VAX provides for one synchronous communication circuit to a host computer system. The product supports a single switched or dedicated leased line 2- or 4-wire common carrier facility at speeds up to 9,600 bps.

MUX200/VAX enables several users to communicate simultaneously with a host system over a single line. The VAX/VMS system, while using a single physical drop, appears to the host as a number of multidrops and terminals on the circuit. The maximum number of simultaneous users supported by the MUX200/VAX system is 16. However, this may be limited to a lower figure by host hardware or software.

Refer to SPD #25.2.4 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

NU–11/FTS

Operating System: ULTRIX, UNIX, VMS
Keywords: • File transfer • Networking
• Telecommunications

This network file transfer service for heterogeneous systems is suitable for use with a variety of DIGITAL operating systems, Xerox NS, and various IBM file and operating systems.

A version of this product is available for the PDP–11 computer.

Price: $1,000 – $1,500
Product Support Available: Yes
Contact: ACC
(408) 425–0937
ACC
720 Santa Barbara Street
Santa Barbara, CA 93101

NU–11/VTS

Operating System: UNIX, VMS
Keywords: • Networking • Telecommunications

This network virtual terminal service for heterogeneous systems supports multiple, concurrent, and logical sessions established with DIGITAL, IBM, and other hosts connected to local and internetworks.
618 Communications

A version of this product is available for the PDP–11 computer.

Price: $1,000 – $1,500
Product Support Available: Yes
Contact:
(408) 425–0937
ACC
720 Santa Barbara Street
Santa Barbara, CA 93101

NU–11/XNS–TCP–IP

Operating System: ULTRIX, UNIX, VMS
Keywords: • Networking • Telecommunications

This comprehensive host-resident network communications protocol package provides concurrent support for Xerox NS and various DOD protocols. The package supports XNS Courier at the Presentation Layer, DOD TCP protocol at the Transport Layer, and DOD Internet Protocol at the Network Layer.

In addition to the communications utility, the package includes a linkable run-time library, providing user interfaces at each protocol layer. The product can be used with the ACCES: IF–11/Ethernet as well as Thernet Controllers from other vendors.

A version of this product is available for the PDP–11 computer.

Price: $2,500 – $4,500
Product Support Available: Yes
Contact:
(408) 425–0937
ACC
720 Santa Barbara Street
Santa Barbara, CA 93101

OS/NET (Local Area Networking)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Device drivers/handlers • Networking

The OS/NET Local Area Networking module provides the necessary networking interface and device driver software required to implement Local Area Networking on several types of DIGITAL computers using DESNET, Destek's high-performance, low-cost Local Area Network. Using OS/RT, Destek's real-time, multitasking operating system kernel, OS/NET allows an OS/RT application "task" to communicate over the DESNET network using the IPC (Inter Process Communications) functions of OS/RT as if it were operating on a single machine. OS/NET transparently routes IPC messages to any com-
puter on the network. OS/NET can be applied to any business or industrial application that is distributed.

A version of this product is available for the PDP–11 computer.

**Price:** $400 – $2,000

**Product Support Available:** Yes

**Contact:** Dennis Rieger
(408) 737–7211
THE DESTEK GROUP
830 East Evelyn Avenue
Sunnyvale, CA 94086

**PHONELINK™, Version 2.0**

**Operating System:** VMS

**Keywords:** • Debugging • Diagnostics • File transfer
• Telecommunications

PHONELINK allows DIGITAL minicomputers to communicate directly with a PC100 (Rainbow) system via modem or RS232 connection. The system additionally provides direct communications between PC100 systems.

PHONELINK software is available on VAX–11 systems, PDP–11 systems running RSX–11M or RSTS/E, and PC100 systems running PC100 CP/M®–86/80. Communication between PC100 systems is also supported by the PHONELINK package for the PC100 systems. Processors forming the communications link must be running the PHONELINK software on the resident operating system. For additional information on PHONELINK for the PC100 systems, consult SPD #A1.54.00. Communication may be initiated from either microcomputer or minicomputer, except for systems running RSTS/E. PHONELINK running under RSTS/E operating system cannot initiate a file transfer.

PHONELINK can support data transfers at rates up to 19.6 kilobaud. The package incorporates error detection and automatic retry for error-free and convenient transfer of binary and ASCII data.

DIGITAL distributes this software product under license from Virtual Microsystems, Inc.

Refer to SPD #A1.74.00 when requesting further information on this product from your local DIGITAL sales office.

PHONELINK™ is a trademark of Virtual Microsystems, Inc.

A version of this product is available for the PDP–11 computer.

**Price:** $900 – $1,200

**Product Support Available:** No

**Contact:** Consult your local DIGITAL sales office
(see Introduction).
Professional Host Communications, Version 1.7

Operating System: VMS
Keywords: • Data conversion • File transfer • Networking
• Telecommunications

Professional Host Communications allows files to be transferred between a Professional 300 and an RSX–11M, RSX–11M–PLUS, or VAX/VMS host system. Professional Host Communications is initiated by a Professional running PRO/Communications in terminal emulation mode. After the Professional Host Communications facility is started, the Professional switches from terminal emulation to file transfer mode. The files can then be transferred between the Professional and the host system.

Refer to SPD #30.29.02 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

PSS (Performance Simulation System)

Operating System: VMS
Keywords: • Diagnostics • Disk utilities
• Forms management • Security

The PSS system for VAX allows a user to record one or more terminal sessions, transparent to the application running on the terminal. The recorded terminal sessions can then be played back through pseudoterminals.

PSS provides three main facilities — performance testing, application reliability, and security (monitor terminal parts connected to modems).

DIGITAL layered products such as TDMS and FMS can be used with PSS.

Price: $1,995 – $4,995
Product Support Available: Yes
Contact: Marie C. Murphy
(201) 798–6400
ADVANCED SYSTEMS CONCEPTS, INC.
22 Hudson Place
Hoboken, NJ 07030
RGS

Operating System: ULTRIX, VMS
Keywords: • Device drivers/handlers • Graphics
• Interpreters • Production control

IMLAC Series II and 1600 IID terminals are supported by a 2-part software package. The first part, terminal-resident firmware, provides the user with communications handling, display list creation and manipulation, local device handling, and display production and control. The second part, a general-purpose interactive graphics subroutine library provided by IMLAC, resides in the host computer. The library of FORTRAN-callable subroutines, supplied on 9-track magnetic tape, has extensive interactive facilities for reporting and interpreting events that occur at the terminal. RGS is available for most popular host computers.

A version of this product is available for the PDP–11 computer.

Price: $3,500
Product Support Available: Yes
Contact: John DesJardins
(617) 449–4600 ext. 218
IMLAC CORP.
150 A Street
Needham, MA 02194

SEL/DEC Data Link

Operating System: VMS
Keywords: • Data conversion • Device drivers/handlers

The SEL/DEC Data Link provides task-to-task communications capability between any SEL 32-series computer running MPX 2.x software and any PDP–11, LSI–11, or VAX computer running RSX–11 or VMS software. Also available is optional capability permitting SEL programs to access peripherals attached to PDP–11 or LSI–11 computers.

The SEL/DEC Data Link includes the following:
• High-speed parallel link, which consists of the SEL HSD interface, control logic (SEL compatibility card), DIGITAL Q–BUS or UNIBUS-compatible DMA interface, 25′ interconnect cables (50′ to 250′ optional), UNIBUS transfer rates up to 1.0MB per second
• H.QLNK driver (900 words) syngen into the MPX executive, which translates read or write calls to the “user-defined” device code “U1” as task-to-task data transfers between tasks in the SEL system and the DIGITAL system; translates SEL I/O calls into DIGITAL I/O calls (option requires an additional 300 words in driver)
• LKDRV driver (1.0KW) for RSX–11 or VMS, which handles the high-speed data link, accepts read and write calls to the device “L.K.” as task-to-task data transfers between tasks in the SEL system and the DIGITAL system, and receives I/O calls over the data link from the SEL and queues them for processing by an optional RSX task that accomplishes the I/O requested by the SEL program (option requires an additional 200 words in driver)

A version of this product is available for the PDP–11 computer.

Price: $16,000 +
Product Support Available: Yes
Contact: Wayne R. Fox
         (615) 482–6649
         SCIENCE APPLICATIONS, INC.
         Plaza Tower, Suite 801
         Oak Ridge, TN 37830

SNA/COMBOARD

Operating System: ULTRIX, UNIX, VMS
Keywords: • CAD/CAM   • Device drivers/handlers
         • Networking   • Simulation

COMBOARD/SNA is a unique drop-in front-end communications system that allows DIGITAL UNIBUS computers using VMS to access IBM centrals in SNA networks. COMBOARD/SNA causes the DIGITAL host to appear to the IBM/SNA network as a type-2 physical unit (PU). Software Results supplies two logical unit (LU) emulators. LU Type 1 supports SNA batch communications such as provided by 3770 batch stations. LU Type 2 allows a VT100-compatible terminal to emulate an IBM 3270 terminal. COMBOARD/SNA is available in three models according to transmission speed.

A version of this product is available for the PDP–11 computer.

Price: $18,000 – $32,800
Product Support Available: Yes
Contact: Bill Martin
         (800) 772–3282
         SOFTWARE RESULTS CORP.
         2887 Silver Drive
         Columbus, OH 43211

Tektronix 8001/8002/8550 Communication Package

Operating System: VMS
Keywords: • File management   • File transfer
         • Microprocessor development
Memory required: 8KW.

This MACRO–11 routine handles intersystem communications between PDP–11/VAX hosts and the Tektronix Micro Processor Development Lab stations. The program may be conditionally assembled for RT–11, RSTS/E, or RSX operating systems. Both the formatted and unformatted transfer modes, described in the Tektronix 8001/8002/8550 Users Manual, are supported. Formatted transfers utilize the Standard Tektronix Hexadecimal Format (TEKHEX). System interconnection is made via standard RS–232–C terminal interface port on the PDP–11 or VAX host.

The Tektronix 8001/8002/8550 Microprocessor Development Lab Users Guide is available through your Tektronix sales representative.

Documentation is on magnetic media. DECUS number 11–SP–24.

A version of this product is available for the PDP–11 computer.

Price: $5 – $225

Product Support Available: No

Contact: DECUS (see Introduction)

TYCHO/HASP

Operating System: VMS

Keywords: • Disk utilities • File management • Networking • Simulation

TYCHO/HASP is a shareable HASP workstation emulation and management system for RJE data communications with remote IBM and CDC mainframes. The system may be installed on PDP–11/24 through /70 models, under RSTS/E, and on VAX–11s under VMS.

RJE functions are available to all logged-in users concurrently with RSTS time-sharing services. DIGITAL standard disk structures and user disk areas are employed. TYCHO/HASP includes a management/queuing subsystem that permits users to enter and launch RJE jobs from their own disk area, route returns to a RSTS printer or back to their disk area, and monitor the status of their RJE jobs. Heavy line printer returns may be streamed directly from memory to a system printer, bypassing disk I/O. Once launched, RJE job submissions to and returns from the remote site are managed automatically, whether or not the user remains logged in. Hooks are provided for interface with the system manager’s own software. Features include a printer forms management subsystem.

The license fee includes a technical review of the proposed configuration and a 3-month warranty. Full postwarranty support is available. A network fee schedule is available.
Communications

A version of this product is available for the PDP–11 computer.

Price: $6,000
Product Support Available: Yes
Contact: D. Marie Jantzi
          (519) 679–1367
          TYCHO RESEARCH ASSOCIATES, INC.
          995 Waterloo Street
          London, Ontario N6A 3X4
          Canada

UAP–LINK

Operating System: ULTRIX, UNIX, VMS
Keywords: Data conversion, File management, File transfer, Telecommunications

UAP–LINK is a communications file transfer software family designed to move binary or text files between mixed or matched computers, using standard ports. A reliable protocol corrects line errors and compresses transmitted data, saving you time and money. Files are ready to be used as stored; no conversion programs are necessary. Configurations can be high-performance local connections, with minimum impact on multiuser systems, or across the nation, using low-cost modems.

UAP–LINK's virtual user facility permits remote time-sharing system commands to be stored in a local command file. You can easily develop automatic procedures to LOGON to the remote system, INJECT several commands, EXECUTE the host module, TRANSFER several files, LOGOFF, and DISCONNECT from the modem to greatly simplify your job. Additional features include data compression, independent device defaults, file protection, and a smart-terminal mode.

A version of this product is available for the PDP–11 computer.

Price: $250 – $1,250
Product Support Available: Yes
Contact: W. T. DeRouchey
          (714) 730–1012
          UNIQUE AUTOMATION PRODUCTS
          15401 Redhill, Suite G
          Tustin, CA 92680
UNIVAC NTR

Operating System: VMS
Keywords: • Data entry • Networking • Telecommunications
UNIVAC NTR, a subsystem for UNIBUS-based computers, provides data transfer via DMA facility and dual-host support.

A version of this product is available for the PDP–11 computer.

Price: $9,000
Product Support Available: Yes
Contact: Mogens Poulsen
01–20 00 66
A/S DATALOG
Rygaard Alle 104
DK–2900 Hellerup
Denmark

UNIX* MASCOT

Operating System: UNIX, VMS
Keywords: • Real time • Scheduling
UNIX* MASCOT is a set of kernel modifications and user programs providing extended interprocess communication and real-time scheduling capabilities within UNIX*.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $4,000
Product Support Available: Yes
Contact: Douglas J. Ross, President
(613) 548–4355
ANDYNE COMPUTING LTD.
P.O. Box 1496
221 King Street East
Kingston, Ontario K7L 5C7
Canada

VAX–11 NTR, Version 1.0

Operating System: VMS
Keywords: • Data conversion • File management
• File transfer • Networking

This software package allows a VAX/VMS system to communicate with a UNIVAC 1100 series or other host computer systems capable of using UNIVAC NTR protocol. The software operates under the
VAX/VMS operating system to permit batch input/output. Start-up, Shut-down and host queue interrogation by the emulator can be controlled from any one terminal — the control terminal — connected to the VAX/VMS operating system. VAX–11 NTR communicates with the host over a switched or nonswitched 2- or 4-wire line at speeds up to 9,600 baud.

Refer to SPD #25.68.00 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office (see Introduction).

### VAX–11 PCL, Version 1.0

**Operating System:** VMS  
**Keywords:** Device drivers/handlers, File transfer, Networking, Telecommunications

The VAX–11 PCL driver is an optional VAX/VMS software product that supports interprocessor communications via the PCL11 hardware option. The VAX–11 PCL driver provides a message-oriented data communications capability between user software located in up to 16 processors linked into a local area network by the PCL11 multidropped parallel bus. A user-oriented message of variable length can be directed to any other single receiving node during each transmission transaction. Both VAX–11 and PDP–11 processors can be mixed on the same PCL11 local network. The VAX–11 PCL driver is compatible with the PCL–11M driver, version 2.0 and above, for the RSX–11M operating system.

The VAX–11 PCL driver also supports interprocessor communications via the DECnet–VAX network software package. The PCL11 hardware and VAX–11 PCL driver will support all the features of DECnet–VAX except down-line loading. Mixed networks of VAX–11 and RSX–11M DECnet nodes may be implemented, provided that the RSX–11M DECnet is not earlier than version 3.1. VAX–11 PCL is provided as source code only.

Refer to SPD #26.23.00 when requesting further information on this product from your local DIGITAL sales office.

**Price:** $300 – $4,280  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office (see Introduction).
VAX–11 PSI, Version 2.1 Packetnet System Interface

**Operating System:** VMS  
**Keywords:**  
- Data conversion  
- Networking  
- Process control  
- Telecommunications

VAX–11 PSI allows a suitably configured VAX/VMS system to connect to Public Packet Switching Networks (PPSN) conforming to the CCITT recommendation X.25 (June 1980). VAX–11 PSI supports access for VAX/VMS user programs written in VAX–11 MACRO and native-mode high-level languages — for example, VAX–11 FORTRAN. Programs executing in PDP–11 compatibility mode cannot use VAX–11 PSI. VAX–11 PSI supports process-to-process and terminal communications via the network.

VAX–11 PSI is a layered product on VAX/VMS. PSI allows the use of DECnet–VAX facilities over X.25 circuits in addition to DECnet's support for private leased lines or switched telephone networks. A DECnet–VAX license is required to communicate with other DECnet nodes over X.25. For details, please refer to the DECnet–VAX SPD (25.03.xx).

Refer to SPD #25.40.05 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

VAX Communications Package

**Operating System:** VMS  
**Keywords:**  
- Data conversion  
- Instrumentation  
- Networking  
- Scientific

The VAX Communications Package allows data transfer to/from a multichannel analyzer and analyzer control by the VAX user. The package uses RS232C- or RS422-type interfaces (DL–11 or DZ–11), and data protocol is single-drop asynchronous DDCMP. Standard VMS disk drivers are employed. The menu-driven program provides simple operation.

**Price:** $1,500 – $3,000  
**Product Support Available:** Yes  
**Contact:** Bob Schlossmann, Product Support Engineer  
(312) 884–3627  
NUCLEAR DATA INSTRUMENTATION DIVISION  
Golf and Meacham Roads  
Schaumburg, IL 60196
VAX/VMS PCL11–B DECSnet Driver

Operating System: VMS
Keywords: • Device drivers/handlers • File transfer
        • Networking • Telecommunications

This product, developed by TRW, provides the following:
• Support for all DECSnet Phase 3 capabilities over the PCL11–B bus link
• PCL11–B DECSnet links among VAX/VMS systems and to RSX–11M systems
• Full advantage of DECSnet Phase 3 facilities taken over your PCL11–B

The VAX/VMS PCL11–B DECSnet device driver supports DECSnet Phase 3 on the PCL11–B interprocessor UNIBUS link. Up to 16 VAX/VMS and RSX–11M systems may be connected by the PCL11–B. A PCL11–B DECSnet device driver for RSX–11M is supplied with the DECSnet–11M software from DECS. This product requires a physical PCL11–B and a valid VAX/DECSnet license from DECS.

Price: $2,000
Product Support Available: Yes
Contact: Cheryl Pankratz
         (714) 998–6041
         MIDCOM CORP.
         1940 N. Tustin Avenue, Suite 117
         Orange, CA 92665

VT125 and VAX–11 RGL Presentation

Operating System: VMS
Keywords: • Presentation aids

The software in this submission is intended to assist VT125 users of VAX–11 RGL in preparing and giving presentations. Those presentations would include “slides” generated with the RGL package and can use a slave color monitor (to the VT125) or overhead slides (prepared using a Bausch & Lomb ReGIS Plotter).

Documentation is on magnetic media. DECSUS number VAX–42.

Price: $5 – $225
Product Support Available: No
Contact: DECSUS (see Introduction)
Data Conversion
Applicon 860 to/from Calma GDS2–Stream Format

Operating System: ULTRIX, VMS
Keywords: • CAD/CAM • Electrical • Electronic • Engineering

These programs translate Applicon AGS/860 CAD data bases to and from Calma GDS2–Stream format data bases. Cell and structure nesting is preserved. Data types are maintained where equivalents exist. Parameterized control allows cell and structure renaming, level mapping, and other features.

(Data base conversions are also performed as a service using this software.)

A version of this product is available for the PDP–11 computer.

Price: $12,000 – $18,000
Product Support Available: Yes
Contact: John Greene
(415) 962–8080
OCTAL, INC.
1951 Colony Street
Mountain View, CA 94043

Applicon APPLE/860 to/from Caltech Intermediate Format

Operating System: ULTRIX, VMS
Keywords: • CAD/CAM • Electrical • Electronic • Engineering

These programs translate Applicon APPLE/860 CAD data bases to and from Caltech Intermediate Format (CIF) data bases. Cell and symbol nesting structure is preserved. Data types are maintained where equivalents exist. Parameterized control allows cell and symbol renaming, level mapping, and other features.

(Data base conversions are also performed as a service using this software.)

Price: $10,000 – $15,000
Product Support Available: Yes
Contact: John Greene
(415) 962–8080
OCTAL, INC.
1951 Colony Street
Mountain View, CA 94043
Applicon APPLE/860 to/from Computervision CADDSS2 Formats

Operating System: ULTRIX, VMS
Keywords: • CAD/CAM • Electrical • Electronic
• Engineering

These programs translate Applicon APPLE/860 CAD data bases to and from Computervision CADDSS2 External and Exchange formats data bases. Cell nesting structure is preserved. Data types are maintained where equivalents exist. Parameterized control allows cell renaming, level mapping, and other features.

(Data base conversions are also performed as a service using this software.)

Price: $12,000 – $18,000
Product Support Available: Yes
Contact: John Greene
(415) 962–8080
OCTAL, INC.
1951 Colony Street
Mountain View, CA 94043

BASTOC (BASIC to C)

Operating System: UNIX, VMS
Keywords: • Compilers • Language enhancers
• Pre- and postprocessors • Translators

BASTOC translates programs written in one of several varieties of BASIC to C language. BASTOC is used to migrate programs written for the CP/M environment to new systems using UNIX* or UNIX*-like operating systems.

Most single-user system applications are written in a variation of BASIC. The typical UNIX* system, however, favors the use of the C language. Converting BASIC programs to C permits them to be maintained and enhanced, using the many software development tools available in the UNIX* environment.

In addition to its use as a conversion aid, BASTOC is a conventional BASIC compiler when used with a C compiler. Most UNIX*-based systems provide a C compiler; BASTOC can be configured as a preprocessor to the C compiler to provide a complete BASIC compiler.

BASTOC is flexible. The translator is implemented in a highly modular fashion, with more than two dozen user-configurable options. The default dialect of BASTOC is Microsoft BASIC, but the user can tailor BASTOC to the local version by editing the configuration file
provided with the package. The user may even configure multiple BASTOC translators if several versions of BASIC are to be supported on one system.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** $300 – $15,000

**Product Support Available:** Yes

**Contact:** Deborah A. Pullam, Technical Staff Member  
(215) 657–5660  
JMI SOFTWARE CONSULTANTS  
1422 Easton Road  
Roslyn, PA 19001

**BIO (Block I/O)**

**Operating System:** VMS  
**Keywords:**  
• Communications  
• File management  
• Simulation  
• Source code control

The BIO package contains I/O routines that allow non–RMS/RSTS applications to be moved to VAX/VMS without changing file structure or programs. BASIC programs are modified by replacing the OPEN, CLOSE, GET, PUT, UNLOCK, and SPEC statements with calls to routines in the BIO package. BIO allows multiple block I/O transfers when shared files are used, whereas VMS does not.

**Price:** $3,000

**Product Support Available:** Yes

**Contact:** Peter J. Avenali, Marketing Director  
(206) 284–4025  
PARK SOFTWARE  
P.O. Box 202 Northgate Station  
Seattle, WA 98125

**BLAST**

**Operating System:** VMS, CP/M  
**Keywords:**  
• Asynchronous communication  
• Communications  
• File transfer  
• Networking

BLAST, developed by Communications Research Group, Inc., is the powerful, low-cost software solution for mixed-vendor communications. It will allow error-free file transfer among many popular computers, including micros, minis, and mainframes, and operating systems.

BLAST utilizes the standard serial ports found on virtually every model of computer and can operate over standard modems. BLAST
transmits binary or text files, using CRC error correction for 100% reliability.

BLAST allows transfer of parts of files as well as complete files. It provides timeout on line-loss with automatic restart; file transfer continues from the point of interruption. Full-duplex simultaneous transfer in both directions speeds completion of communication tasks.

BLAST's advanced, full-duplex, sliding-window protocol also allows it to operate efficiently on circuits subject to propagation delays, such as satellite links, local area networks, and packet-switching networks. BLAST meets today's big need: a reliable, efficient communications product for a variety of communications environments.

A version of this product is available for the PDP–11 computer.

**Price:** $895

**Product Support Available:** Yes

**Contact:** Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue, Suite 117  
Orange, CA 92665

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**BSO/OBJCNV**

**Operating System:** UNIX, VMS

**Keywords:** • Microprocessor development • Programming tools

The OBJCNV set of programs permits the microprocessor system developer to convert programs in one microprocessor object format to another, regardless of manufacturer. Programs can be converted back and forth between BSO format and Intel, Motorola, Texas Instruments, Tektronix, Millennium, Zilog, or other formats.

Intel symbolic object format and Tektronix 8001/8002/8540/8550/8560 MDL up-line/down-line loading are also supported. A DIGITAL computer user can therefore develop programs for any microprocessor on a fast single- or multiuser system. Then the program can be readily transmitted in the proper format to the test board, emulator (ICE), or PROM programmer.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Simon Wieczner  
(617) 894–7800 or TWX: (710) 324–0760  
BOSTON SYSTEMS OFFICE, INC.  
469 Moody Street  
Waltham, MA 02154
CALC (A Calculator Program)

**Operating System:** VMS  
**Keywords:** • Mathematics  • Scientific

Memory required: Approximately 249 peak virtual pages.

CALC is a calculator designed to evaluate arithmetic expressions. In its basic form, expression evaluation is similar to that used by ANSI FORTRAN with calculations performed on INTEGER*4 and REAL*8 constants. Variables are limited to single alphabetic characters. Additional features include octal, hexadecimal, and multiple-precision arithmetic capabilities. Commonly used commands and expressions can be placed in a file and executed when convenient. It is assumed that the reader is familiar with FORTRAN data types, constants, expression syntax, operator precedence, and the syntax for assigning values to variables.

This version is similar to DECUS No. 11–341 except for the following changes:

• FORTRAN modules run in VAX native mode.
• The GETMCR module is modified so that CALC can be invoked as a VMS foreign command.
• Commands in lowercase are converted to uppercase.
• If a command error occurs, the default base is left unchanged.

Documentation is on magnetic media. DECUS number VAX–15.

**Price:** $5 – $225  
**Product Support Available:** No  
**Contact:** DECUS (see Introduction)

Calma GDS2–Stream to/from Caltech Intermediate Format

**Operating System:** ULTRIX, VMS  
**Keywords:** • CAD/CAM  • Electrical  • Electronic  • Engineering

These programs translate Calma GDS2–Stream CAD data bases to and from Caltech Intermediate Format (CIF) data bases. Structure and symbol nesting structure are preserved. Data types are maintained where equivalents exist. Parameterized control allows cell and symbol renaming, level mapping, and other features.

(Data base conversions are also performed as a service using this software.)

**Price:** $10,000 – $15,000  
**Product Support Available:** Yes
Contact: John Greene  
(415) 962-8080  
OCTAL, INC.  
1951 Colony Street  
Mountain View, CA 94043

DRE11–C Device Driver, Version 4.2

Operating System: VMS
Keywords:  
- Asynchronous communication  
- Device drivers/handlers  
- Communications  
- Source code control

The VAX–11 DRE11–C Device Driver supports the DRE11–C interface, a general-purpose, parallel interface between the VAX/UNIXBUS adapter (UBA) and a user’s peripheral. The device performs Direct Memory Access (DMA)–controlled block transfers of 16-bit data between a VAX–11 processor and an external device. Multiple blocks of data can be transferred without setting up new DMA parameters, by means of hardware-controlled switching of alternate buffers in the processor's memory.

The driver enables the user to communicate with the interface, using the functions in a VAX–11 MACRO language program. All the I/O functions are accessible through the $QIO System Service, which may be called from VAX–11 FORTRAN or any high-level language.

Refer to SPD #26.17.01 when requesting further information on this product from your local DIGITAL sales office.

Price: $500 – $1,500
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office  
(see Introduction).

FORTRAN X/Y Transportation Package

Operating System: UNIX, VMS
Keywords:  
- Communications  
- Compilers  
- Documentation  
- Source code control

This aggregate of tools allows for the development, testing, and formatting on one computer of FORTRAN programs intended for compilation on another computer. The package is also of invaluable assistance in moving existing programs from one computer to another.

The transportation (conversion) of software defies manual implementation. It must be performed automatically. This package supports transportation among DIGITAL, IBM, DG, HP, and Gould S.E.L. computers.
A version of this product is available for the PDP–11 computer.

**Price**: Available upon request

**Product Support Available**: Yes

**Contact**: Bruce Hanna  
(805) 964–0560  
SOFTOOL CORP.  
340 S. Kellogg Avenue  
Goleta, CA 93117

### ITU–11 (Intersystem Transfer Utility)

**Operating System**: VMS

**Keywords**:  
- File management  
- File transfer  
- Telecommunications

ITU–11 is an interactive file transfer utility that transfers any kind of files between any two DIBOL-based operating systems. Those files can include programs, tasks or commands, data files, sequential files, and so on. Handling characteristics allow the transfer of special characters, such as CTRL/Z, inside the transfer.

Operation is controlled from the local system. Any number of remote sites can be installed via phone lines from the local system, using the autoremote installation of ITU. Once a connection has been established, the utility allows the local operator to log in and run applications on the remote system, send files from the local to the remote system, or receive files from the remote system. Licensing is only for the local system, allowing any number of remote sites.

A version of this product is available for the PDP–11 computer.

**Price**: $1,000

**Product Support Available**: Yes

**Contact**: Larry Landusky  
(806) 792–3785  
COMPU–SHARE, INC.  
3824 50th Street  
Lubbock, TX 79413

### Mixed Radix Fourier Transform Program

**Operating System**: Independent

**Keywords**:  
- Mathematics  
- Programming tools  
- Source code control

The mixed radix Fourier transform code computes the discrete Fourier transform of a set of real or complex data points, using FORTRAN IV–PLUS. The fast Fourier transform programs usually encountered are Radix–2 transforms, where the number of data points is restricted to a power of two. With the mixed radix code, the num-
ber of data points that can be transformed is much more flexible. In those routines, the number can be a product of a power of two, three, four, or five.

The transform has two stages: first, the data is reordered; second, the arithmetic operations of the transform are performed. For speed and generality, the first stage requires an additional workspace array equal in size to the input data array. Another stage is required if the input data was real. If the data is complex, the real and imaginary parts are stored as FORTRAN stores them. The code is not optimized. On a PDP-11/34 with floating-point processor, a 1,000-point transform takes 1.52 seconds. DECUS number 11–559.

A version of this product is available for the PDP–11 computer.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (See Introduction)

MOLDYN (A Molecular Dynamics Program)

Operating System: VMS
Keywords: • Energy • Mathematics • Scientific
Memory required: Up to 31K (for NORMOD).

MOLDYN calculates the classical Newtonian trajectory for a system of interacting particles whose initial configuration and momenta are specified by the user. The forces acting between the particles are determined by potential energy information separately initialized (in terms of a nonredundant set of internal coordinates of stretches and bends, allowing interactions among them). The program allows the user to follow the detailed trajectory or to ignore intermediate states of the system.

The program can also be used to obtain a (locally) minimum energy configuration of the input system. The program can repeat trajectories with the same initial configuration but for random orientation and impact parameter of a monatomic collider. The program can also repeatedly subject the central molecule to collisions with a single atom from random directions and with random impact parameters.

Provided along with MOLDYN is NORMOD. Using the same files as MOLDYN, NORMOD solves for the normal modes of the system in internal coordinates. It can project internal coordinate information saved by MOLDYN onto the normal modes, using the matrix of eigenvectors transforming between internal and normal coordinates. Other, smaller programs included are ANALYZ, CONTUR, and MOVIE.

(These programs require, respectively, a user-provided differential equation solver and a user-provided eigen-problem solver. The code as provided expects to use the IMSL routine DVERK and the EISPACK routine RG.)
Data Conversion

Documentation is on magnetic media. DECUS number VAX-41.
A version of this product is available for the PDP-11 computer.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

POLFIT (A General Polynomial Fitting Program)

Operating System: VMS
Keywords: Mathematics
Memory required: 15K (RT-11) to 241 pages (VAX/VMS).

POLFIT is an interactive program fitting the function \( f(x) \) to data input as X,Y pairs, where \( f(x) \) has the function form:

\[
    f(x) = a_1 x^{p_1} + a_2 x^{p_2} + \ldots;
\]

The powers \( p \) are arbitrary real numbers specified by the user; the returned coefficients \( a \) provide the best least-squares fit.

Data is input under user-specified format(s) from one or two files. The powers and the number of coefficients are specified interactively, and the program returns the fitted coefficients and the goodness-of-fit parameter rho**2.

The program includes a line printer/terminal plotting option allowing display of the data and the fitted curve.

Documentation is on magnetic media. DECUS number 11-554.
A version of this product is available for the PDP-11 computer.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

poly-XFR™

Operating System: VMS
Keywords: Asynchronous communication File management Networking

This software provides error-free transfer of text and data files, such as graphics and other non-text information, to and from another system also running poly-XFR software. The transfer can be personal computer to personal computer (office to office) or personal computer to mini or mainframe (office to corporate computer). The software also allows you to use your personal computer as a terminal.

The poly-XFR software supports standard terminal ports and asynchronous serial interfaces. Communication links can be established with modems over dial-up or leased lines or by direct cable connection. The software runs at speeds of 9,600 bits per second or the speed allowed by your modems.
The poly-XFR software is as easy to use as the "copy" command on your system. The package provides full documentation, examples, and descriptive error messages.

To use poly-XFR software, each computer involved requires its own version of the package. The programs for your personal computer (the local system) consist of a terminal emulator, called TTY, and the file transfer program, called XFR. The remote computer (the host system) uses a program called HST. The host computer may be another personal computer or a larger timesharing system.

To operate the software, you run TTY to log on to the host system, act as a timesharing terminal, and start the HST program. You then exit from TTY and start using XFR on your local system to transfer files in either direction.

When your host system is a personal computer without support for remote terminals, a switch program allows you to control the personal computer from the communication line. The switch program is provided with the poly-XFR software package for most personal computer systems.

A version of this product is available for the PDP-11 computer.

Price: $585
Product Support Available: Yes
Contact: Mary Krummenacher
          (314) 576-7709
          POLYGON ASSOCIATES, INC.
          9 American Industrial Drive
          St. Louis, MO 63043

Professional Real-Time Interface Library,
Version 1.0

Operating System: VMS
Keywords: ● Communications ● Debugging
          ● Device drivers/handlers ● File transfer

Professional Real-Time Interface Library provides subroutines to control real-time data transfers to and from a variety of external devices in conjunction with the PC3XX-AA Real-Time Interface module for the PC325 and PC350 personal computers. The library includes interface software to drive the module's two RS232/423 serial lines, IEEE-488 bus and 24-bit parallel digital port. Utility routines to simplify data conversion are also included.

Professional Real-Time Interface Library supports three types of operation:
● Hardware initialization
● Establishment of handshaking or flow control parameters
● Data transfers to, from, or between devices interfaced to the PC3XX-AA
I/O operations can be performed synchronously or asynchronously with the calling task. Calls can be made concurrently from multiple tasks. The user can also create a shared resident library of Professional Real-Time Interface Library subroutines. Those subroutines are callable from either Professional Tool Kit BASIC–PLUS–2 or Professional Tool Kit FORTRAN–77. After development using the Professional Developer’s Tool Kit, Professional Real-Time Interface Library applications can be run on an appropriately configured PC300 target system independent of the host system.

Refer to SPD #30.37.00 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office (see Introduction).

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**RSTS/E to VAX/VMS Batch Stream Conversion Utility**

**Operating System:** VMS  
**Keywords:** • Communications  
• File management  
• Operating systems

This unsupported utility consists of the conversion utility software and a user’s guide. This utility was developed by DIGITAL European Software Engineering under the RSTS/E and VAX/VMS coexistence effort. The purpose for providing this utility is to help RSTS/E users maintain the investment in their batch streams, if they migrate RSTS/E batch processing applications from RSTS/E to VAX/VMS.

The utility, which runs on VAX/VMS V2.0 or later versions, converts RSTS/E batch statements to VAX/VMS DCL statements. RSTS/E batch command files and indirect command files can be converted to VAX/VMS command procedures. Everything that is not convertible will be clearly and explicitly documented in the output. When it cannot convert something, the utility will make it very clear why not and will give possible alternatives. This product will not convert all RSTS/E batch streams. Specifically, it is not guaranteed to be able to effectively convert privileged operations (the concept of privilege on VAX/VMS is different from that on RSTS/E). Most likely, the users would want to reprogram their operator functions and system manager functions to take full advantage of VAX/VMS.

The product contains a user’s guide that provides tutorial information, as well as full details of the utility. The user’s guide is aimed at RSTS/E users and contains references to RSTS/E publications and assumes a limited knowledge of VAX/VMS, as given by the VAX/VMS Primer.
Documentation is on magnetic media. DECUS number VAX–13.

Price: $5 – $225

Product Support Available: No

Contact: DECUS (see Introduction)

STAT

Operating System: VMS

Keywords: • Graphics • Mathematics • Source code control
• Statistics

Memory required: IAS, 32K partition; RSX, 32K; VMS, 300K.

STAT is a large statistical package containing approximately 30 statistical analyses within one homogenous program. It contains simple population statistics and listings, several forms of regression statistics, several models of analysis of variance, and several nonparametric analyses.

A sophisticated program (OUTLAY) for interactive construction of data files supports a slightly primitive interface to SPSS files.

The package also contains a graphical version of the statistical program (which due to so many different types of hardware, will have to be set up by the user) and a powerful program for nonlinear regression using user-defined subroutines in a GAUSS–NEUTON–type minimization.

The main program is extremely modular and can be adapted to most applications (a reduced version of the same package runs in 8K on the PDP–8, DECUS No. 8–660). The tape contains all sources and the images for the major programs for VAX and 11M, together with all command files necessary to generate the system (except some of the programs that have not been set up for 11M).

Note: For RSX–11/IAS distribution of STAT, see DECUS No. 11–508.

Documentation is on magnetic media. DECUS number VAX–5.

A version of this product is available for the PDP–11 computer.

Price: $5 – $225

Product Support Available: No

Contact: DECUS (see Introduction)

TERMIND

Operating System: UNIX, VMS

Keywords: • Data base management • Language enhancers
• Programming tools • Source code control

DIBOL programs can now be made terminal-independent. A newly developed language, simple but powerful, provides the facility to de-
Data Conversion

fine standard cursor addressing sequences for any terminal. DIBOL programs access a data base of terminal descriptions so that they are automatically converted to match the terminal in use. The supplied data base includes the code for a number of popular terminals types, and the maintenance facility provided allows the user to introduce new terminals.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request
**Product Support Available:** Yes
**Contact:** L. McCloskey
(44) 232–247433
SOFTWARE IRELAND LTD.
26 Linenhall Street
Belfast BT2 8PJ
Ireland

Time Calculator

**Operating System:** VMS
**Keywords:** • Documentation • Mathematics

Time Calculator allows a VAX/VMS user to perform addition, subtraction, multiplication, division, and comparison on time values when using DCL (DIGITAL Command Language interpreter). This ability is very useful when time values have to be calculated for use in various DCL commands — for example, BACKUP, SUBMIT, PRINT, DELETE, DIRECTORY. The calculator can deal with absolute time and delta time formats and can also handle month and year transitions. It also has the ability to return the results in a DCL symbol that can then be used by the DCL commands that follow. Once defined as a DCL foreign command, the calculator is used just like any other command on the system. Time Calculator converts all time values to 64-bit binary values that are then used to perform all calculations and comparisons. The system services SYS$BINTIM and SYS$ASCTIM are used for the time conversions. Complete HELP instructions describing the program’s use and syntax are supplied.

Documentation is on magnetic media. DECUS number VAX–20.

**Price:** $5 – $225
**Product Support Available:** No
**Contact:** DECUS (see Introduction)
UNIXLIB

Operating System: ULTRIX
Keywords: • A/D,D/A  • Data collection
          • Device drivers/handlers  • Instrumentation

UNIXLIB, a real-time software subroutine library that supports the analog and digital I/O features of Data Translation's DT1770 board for the UNIBUS, will run under Version 4.2 of the Berkeley UNIX* operating system. The package consists of a device driver, a configuration command file for each software installation, the user-interface library, bootable hardware diagnostics, and test programs. The library is written in C and may be called from an application program written in FORTRAN or C.

The major features of the user-interface library are:
• Single word, single buffer, and continuous analog I/O transfer
• Signal averaging as a separate data acquisition mode
• Support of data transfer between mass storage and the analog I/O peripheral
• Pre- and posttrigger sampling

*UNIX is a trademark of AT&T Bell Laboratories.

Price: $1,890
Product Support Available: Yes
Contact: Vic Karevicius
         (617) 481–3700 ext. 238
         DATA TRANSLATION, INC.
         100 Locke Drive
         Marlboro, MA 01752

Very Extended Integer Arithmetic

Operating System: VMS
Keywords: • Documentation  • Mathematics

These subroutines offer the capability of extended precision integer arithmetic on the VAX. Input arguments can be of any length in bytes. Output arguments allow the user to specify the number of bytes in the DCL commands that follow. Once defined as a DCL foreign command, the calculator is used just like any other command on the system. The time calculator converts all time values to 64-bit binary values that are then used to perform all calculations and comparisons. The system services SYS$BINTIM and SYS$ASCTIM are used for the time conversions. Complete HELP instructions describing the program's use and syntax are supplied.

Documentation is on magnetic media. DECUS number VAX–27.
Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)
VMSLIB

Operating System: VMS
Keywords: • A/D, D/A • Data collection
• Device drivers/handlers • Instrumentation

VMSLIB is a real-time software package that supports the analog and digital I/O features of Data Translation's DT1770 board for the UNIBUS. The package consists of a device driver, a configuration command file for easy software installation, a user interface library, bootable hardware diagnostics, and several test programs. The library may be called from an application program written in FORTRAN, C, MACRO, or Pascal.

The major features of the user-interface library are single word, single buffer, and continuous analog I/O transfer; signal averaging as a separate data acquisition mode; support of data transfer between mass storage and the analog I/O peripheral; and pre- and posttrigger sampling.

Price: $1,890
Product Support Available: Yes
Contact: Vik Karevicius
(617) 481–3700 ext. 238
DATA TRANSLATION, INC.
100 Locke Drive
Marlboro, MA 01752

VTC (VT100/VT52 Interactive Full-Screen Calculator)

Operating System: VMS
Keywords: • Mathematics • Scientific

VTC is an interactive full-screen calculator for VT52 and VT100 terminals attached to RT–11, RSX–11M, or VMS systems. VTC provides trigonometric, logarithmic, and statistical functions; radix conversions; stack manipulations; and accessible memory registers under a reverse-Polish notation logic system. The stack registers x, y, z, and t are displayed and updated dynamically. The functions available, through three dynamic keypad displays, include:

SIN  SINH  SQRT  SUM +/–
COS  COSH  LN    MEAN
TAN  TANH  EXP   STD. DEV
ARCSIN  RAD<–>DEG  LOG  BINOMIAL COEF.
ARCCOS  →POLAR  10**X
ARCTAN  →RADIAN  X !

Also available are functions that manipulate and selectively clear the x, y, z, and t registers; perform radix conversion between decimal,
octal, hexadecimal, and an arbitrary radix; and display and access 36 memory registers.

A version of this product is available for the PDP–11 computer.

**Price:** $50  
**Product Support Available:** Yes  
**Contact:** Dan Dill  
(617) 353–4277  
BOSTON UNIVERSITY  
Chemistry Department  
675 Commonwealth Avenue  
Boston, MA 02215

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**WS–2–OASYS Whitesmith Object Module Conversion Utility**

**Operating System:** Independent  
**Keywords:** • Assemblers • Cross-compilers • File management • Microprocessor development

This conversion utility transforms existing Whitesmith object modules into a format suitable for input to the OASYS Linker. The required object modules need be converted only once.

The OASYS M68000 Cross-Assembler system is frequently used to replace the rather limited, built-in assembler that comes with all Whitesmith C and Pascal compilers. Those compilers generate M68000 assembly source code, which is passed to the OASYS cross-assembler, which in turn generates object modules that can be linked with the OASYS Linker.

Object modules that were previously generated via a Whitesmith compiler are not immediately compatible with the OASYS Linker; although there is no industry standard for object module formats, the OASYS Linker produces standard S-record output. Thus, one cannot link Whitesmith’s CLIB object modules with modules produced by the OASYS cross-assembler, unless they are first converted with WS–2–OASYS.

The WS–2–OASYS utility eliminates having to unnecessarily purchase Whitesmith source code in order to make certain library functions linkable with the OASYS Assembler system. Instead, one can use the object libraries already shipped with the compilers.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Joel Schacht  
(617) 491–4180  
OASYS, INC.  
60 Aberdeen Avenue  
Cambridge, MA 02138
XOREN IPL-11 (File Transfer Package)

Operating System: VMS
Keywords: • Asynchronous communication • File transfer • Networking • Telecommunications

This package permits files (data/or programs) to be reliably transferred between any combination of the supported computers — PDP-11, LSI-11, VAX-11, and Professional — over an asynchronous link via direct or telephone lines. All versions also include a terminal emulation feature. For file transfer, each computer must be loaded with a licensed version of IPL-11 appropriate to its operating system. The two computers can be any combination of models from the four ranges and may have different operating systems. Full communications error-checking ensures error-free transfers even over noisy lines.

Outside the United States and Canada, contact John Jarvis, XOREN COMPUTING LTD., 28 Maddox Street, London W1R 9PF, England (01) 629-5932.

A version of this product is available for the PDP-11 computer.

Price: $540 – $1,080
Product Support Available: Yes
Contact: Barbara Cepinco
(714) 998-6041
MIDCOM CORP.
1940 N. Tustin, Suite 117
Orange, CA 92665
Development Tools
6500/6502

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compilers
        • Microprocessor development

This package of microprocessor software cross-development tools consists of the 6500/6502 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP-11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer’s. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Contact: UniWare Sales
        (312) 620–4830
        NUVATEC/INC., UNIWARE DIVISION
        261 S. Eisenhower
        Lombard, IL 60148

65C02

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compilers
        • Microprocessor development

This package of microprocessor software cross-development tools consists of the 65C02 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer’s. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Contact: UniWare Sales
        (312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148

68000 Cross-Assembler Package

Operating System: VMS
Keywords: • Assemblers • Microprocessor development
• Programming tools • Research

The 68000 Cross-Assembler Package contains:
• An instruction set identical to the Motorola MC68000 manual
• Extensions and optimizations of instructions that simplify coding
  and make programs more intelligible, while occupying less memory
• A loader that handles displacements on external symbols
• Segmentation that supports control of code and data locations
• Relocation and linking that permit programs to be written in small
  modules
• Listings that show generated code and addresses
• No limit on program size or number of symbols
• A cross-reference that shows each line that refers to each symbol
• File down-load that is in standard Motorola format

The entire package consists of the 68000 cross-assembler, the 68000
cross-linking loader, validation programs for installation, an install-
lation guide, and a user’s manual.

A version of this product is available for the PDP–11 computer.

Price: $1,750 – $2,500
Product Support Available: Yes
Contact: Thomas F. Loschiavo, Marketing Manager
(215) 362–0966
ENERTEC, INC.
19 Jenkins Avenue
Lansdale, PA 19446

ACMS (Application Control and Management System) Product Set, Version 1.0

Operating System: VMS
Keywords: • Inventory • Microprocessor development
• Order entry • Programming tools

These tools for the development and control of complex on-line appli-
cations can reduce application development and maintenance time
by replacing significant amounts of control and application code with
definitions stored in the VAX–11 Common Data Dictionary (CDD).
The VAX–11 ACMS product set consists of two parts: VAX–11
ACMS/AD (Application Development) Version 1.0 and VAX–11
ACMS (Application Execution and Control) Version 1.0. ACMS/AD provides the tools to design, develop, and maintain on-line applications; ACMS is used to create the operational environment in which to run them. The ACMS product set is an integrated member of the VAX Information Architecture, using the VAX–11 CDD for storing definitions and VAX–11 TDMS for menu processing.

A wide range of transaction processing and other complex on-line applications can be developed and controlled with the ACMS product set, including inventory control, order administration, and accounting applications.

Refer to SPD #25.50.00 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

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**ADE (Application Development Environment), Version 2.2**

**Operating System:** VMS  
**Keywords:**  
- Graphics  
- Language processors  
- Programming tools  
- Report writer  

VAX–11 ADE is a nonprogrammer's development software package for small applications requiring processing of character, numeric, and/or date-oriented information. The package is designed specifically as a productivity tool for use by nontechnical personnel and runs under the VAX/VMS operating system.

VAX–11 ADE allows users to do the following:  
- Create their own information base  
- Add, change, or delete data  
- Perform calculations on data  
- Produce simple bar graphs  
- Write/print reports

Refer to SPD #25.76.02 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).
AMGS (VAX Automatic Microcode Generation System)

Operating System: VMS
Keywords: • Compilers • Debugging
• Microprocessor development • Programming tools

AMGS, developed by JRS Research Laboratories, Inc., for the VAX-11/780 computer, permits source programs written in a higher-level language similar to FORTRAN to be compiled directly to microcode. The system is integrated with the DIGITAL microprogramming tools package to assemble the microprogram and load it into the user-writeable control store. The AMGS provides automatic support for interrupt handling and page faults and utilizes the FPA to perform floating-point computations.

Microprogramming permits users to obtain increased performance and efficiency from the VAX-11/780 by customizing the firmware of the machine to support selected segments of application code. With the AMGS, user microprogramming for the VAX is no longer risky or expensive and can provide a practical solution to a wide range of performance problems.

Permanent first-time licenses include 40 hours of consulting time for training, installation, programming, and so on.

Price: $12,500
Product Support Available: Yes
Contact: Cheryl Pankratz
(714) 998–6041
MIDCOM CORP.
1940 N. Tustin Avenue, Suite 117
Orange, CA 92665

APDL (Advanced Program Design Language)

Operating System: VMS
Keywords: • Graphics • Programming tools
• Project management • Source code control

Developed by Advanced Computer Concepts, this tool for managers and programmers aids in the structuring, documenting, reviewing, and controlling of software projects. APDL provides a uniform and complete design document for each project. Module designs are documented with text (narrative) and logic (pseudocode) segments. The module design descriptions are supported with data structure descriptions, indexes, cross-reference charts, a table of contents, and reports to support the design descriptions and aid system design, presentation, and analysis.
With APDL, you can be sure that the design is complete before coding starts. Software problems often appear in projects when coding starts before the design is complete. Use APDL as a basis for the source code documentation. Once the APDL design document is complete, incorporate the text and logic segments into the source code. Comment out the pseudocode or edit it into the source language. Later, compare the sources to the original design. Are there design changes? Why?

Use APDL to support reviews and walkthroughs, to help enforce your top-down design process, and as a software design analysis tool.

**Price:** $4,000

**Product Support Available:** Yes

**Contact:** Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue, Suite 117  
Orange, CA 92665

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**APPGEN (Applications Generator)**

**Operating System:** MS/DOS, PICK, UNIX, XENIX

**Keywords:**  
- Documentation  
- File management  
- Programming tools  
- Query facilities

If you develop or modify commercial software systems, APPGEN can increase your efficiency by a factor of 10 to 50 times. APPGEN is an interactive, menu-driven, fourth-generation language computer-aided applications generator environment. It allows you to implement complex, transaction-driven, integrated commercial applications with virtually a limitless number of files, screens, menus, and reports.

APPGEN uses a nonprocedural English-language approach that does not require you to learn a new language. Because the system is developed through parameter tables, the applications work exactly the way they were designed. No program debugging is required.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $12,000

**Product Support Available:** Yes

**Contact:** Steve Thomas  
(713) 270–5218 or (800) 231–0062  
THE SOFTWARE EXPRESS, INC.  
10103 Fondren, Suite 220  
Houston, TX 77096
BSO/ASSEMBLE

Operating System: ULTRIX, UNIX, VMS
Keywords: • Assemblers • Microprocessor development
• Programming tools

The BSO/ASSEMBLE series of high-speed relocatable assemblers satisfies the need for rapid generation of machine code for microprocessors. BSO/ASSEMBLE is written in assembly language for speed and compactness. By using a more powerful machine than the microprocessor itself, the programmer can take advantage of the higher speed, larger memory, more powerful editing capability, and high-speed peripherals of the host computer. BSO/ASSEMBLE features include high speed, multiuser capability, relocatable output capability, 2-pass assembler, symbol-passing capability, 32-bit addressing, 32-bit expression evaluation, cross-reference, and conditional assembly capability.

BSO/ASSEMBLE supports Intel 8086/88/186, 8087, 8085, 8051, 8048 series; Motorola 68000, 6800/01 series, 6805, 6809; Zilog Z80, Z8001, Z8002; Rockwell 6502 family; TI 9900–9995, 1000; RCA 1802–1805; and others.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Simon Wieczner
(617) 894–7800 or TWX: (710) 324–0760
BOSTON SYSTEMS OFFICE, INC.
469 Moody Street
Waltham, MA 02154

BSO/DEBUG (Microprocessor Symbolic Debuggers)

Operating System: UNIX, VMS
Keywords: • Assemblers • Debugging
• Microprocessor development • Programming tools

BSO's microprocessor symbolic debuggers enable the microprocessor system designer to fully debug software in a protected real-time environment. They allow the user to take advantage of a larger computer, thereby significantly reducing the number of hours spent in program development.

Features include software testing in a fully protected environment, multiuser capabilities, code in assembly language for speed and compactness, full symbolic capability, full and accurate clock cycle counting, symbol-passing capability, extremely flexible setting of trace/breakpoints, unlimited trace data recording, user-definable instruction constructs, and in-line symbolic assembler/disassembler.
BSO/DEBUG supports Intel 8086/88, 8085, 8051, 8048 series; Motorola 68000, 6800 series, 6809, 6805; Zilog Z80, Z8000, Z8001, Z8002; Rockwell 6502; TI 9900, 1000; RCA 1802–1805; and others.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Simon Wieczner

(617) 894–7800 or TWX: (710) 324–0760

BOSTON SYSTEMS OFFICE, INC.

469 Moody Street

Waltham, MA 02154

### BSO/MLIB (Microprocessor Program Librarian)

**Operating System:** UNIX, VMS

**Keywords:** • Microprocessor development • Programming tools

Libraries are created by storing frequently needed subroutines or program segments in encoded, relocatable form with MLIB. During linking, the needed libraries are specified with MLINK commands. The external references within the calling program are then automatically resolved by the linker.

If programs within the library reference each other, MLINK resolves those references as well. The referenced library program segments are automatically included in the final output object file with the correct relative addressing values.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Simon Wieczner

(617) 894–7800 or TWX: (710) 324–0760

BOSTON SYSTEMS OFFICE, INC.

469 Moody Street

Waltham, MA 02154

### BSO/MLINK (Microprocessor Program Linker)

**Operating System:** ULTRIX, UNIX, VMS

**Keywords:** • Assemblers • Mapping

• Microprocessor development • Programming tools

For multiple-module programming, BSO’s assemblers can generate relocatable programs, which are then joined into one complete program with the supplied linker, MLINK. Modules in user-generated object libraries, in either relocatable or absolute format, can also be included. MLINK can link an unlimited number of program modules, enabling the sophisticated programmer to write structured programs
with many sections, each dealing with one task. Better documentation, fewer errors, and more successful parallel programming should result. The final output of MLINK is a complete program in absolute object format. Because the linker is written in assembly language, it is faster than any other microprocessor program linker. Specific features of MLINK are high-speed performance, multiuser capability, library access capability, multiple levels of global nesting permitted, mapping capability, symbol-passing capability, 32-bit addressing, and 32-bit expression evaluation.

A version of this product is available for the PDP–11 computer.

Price: Available upon request

Product Support Available: Yes

Contact: Simon Wieczner
(617) 894–7800 or TWX: (710) 324–0760
BOSTON SYSTEMS OFFICE, INC.
469 Moody Street
Waltham, MA 02154

**c-isam**

Operating System: MS/DOS, ULTRIX, UNITY, UNIX

Keywords: • Data dictionary • File management
• Programming tools • Security

An invaluable programmer’s tool, c-isam is designed for software products that require an indexed sequential access method without the additional capabilities provided by a data base management system. An easy-to-use and consistent method of data management, c-isam also provides fast data retrieval, comprehensive data protection, and efficient data storage.

You can increase the speed of your application with c-isam’s advanced data handling techniques. The program’s indexing structure provides fast data access and retrieval, regardless of the type of request or its magnitude. Once your index file is created, you can read records by value, using a full or partial key. The program can locate a sequence of records quickly, since it is optimized for speed on next and previous retrievals.

The program provides flexible indexing capabilities. Each key can consist of one to eight record segments. The segments do not need to be in sequence within the record or be of the same data type. You can also specify any number of indexes for a single file and allow or disallow duplicate values for each index created.

With c-isam, you can reduce the disk space required for your application’s files. You can specify that leading duplicate characters, trailing blanks, and duplicate values be suppressed within the stored index value.
All c-isam files grow dynamically and reuse space left by deleted records. The index files are automatically updated and balanced every time a data file modification occurs.

File locking procedures ensure data integrity in the most active multiuser environments. You can request that c-isam lock an entire file or just the current record when retrieved. Or, if you need to lock several records concurrently, locking can be controlled by your application.

You can specify transaction audit trails for any or all files. These audit trails are invaluable when your application's recovery routines must be invoked due to a system malfunction.

A version of this product is available for the PDP–11 computer.

**Price:** $450 +

**Product Support Available:** Yes

**Contact:** Robert J. Macdonald  
(415) 424–1300  
RELATIONAL DATABASE SYSTEMS, INC.  
2471 East Bayshore Road, Suite 600  
Palo Alto, CA 94303

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### C Language System

**Operating System:** VMS

**Keywords:**  
• Cross-compiler  
• Language processors  
• Microprocessor development  
• Programming tools

**Memory required:** At least 24K words.

C is a general-purpose programming language well suited for professional use. The DECUS C distribution contains a complete C programming system, including:

• A compiler for the C language. The entire language is supported 2> except for floating point, macros with arguments, bit fields, and enumerations.

• A common run-time library (standard I/O library) for C programs running under the RSX–11 or RT–11 operating systems. By using this library, C programs may be developed on one operating system for eventual use on another.

• A RSTS/E extensions library allowing access to all RSTS/E executive services.

• An RSX–11/M extensions library allowing access to all RSX–11M executive services.

• More than 20 C programs, including a cross-reference lister for C programs, a lexical analyser program generator, cross-assemblers for several microcomputers, and several games.

• Extensive documentation for the compiler and run-time libraries.
All software is distributed in source format. C may be built to run
under RSTS/E V7.0, RSX–11M V3.2, RT–11 V3B, or VMS V2.0 (com-
patibility mode) and may be modified to run on earlier versions of
those operating systems.

For a description of C, refer to The C Programming Language, by

One copy of the Release Notes (11–SP–18A) will be shipped with all magtape requests.

Documentation is on magnetic media. DECUS number 11–SP–18.

A version of this product is available for the PDP–11 computer.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

CAI Alpha-16

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compilers • Microprocessor development

This package of microprocessor software cross-development tools con-
ists of the CAI Alpha-16 relocating cross-Assembler with macro
preprocessor, linking loader, down-loader, and utilities. The DIGI-
TAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression
syntax and lexical features are patterned after C, with extensive
macro facilities, conditional assembly, and arbitrary-length symbol
names. The linker supports library searching and overlays/banked
memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

Price: $360 – $3,600
Product Support Available: Yes
Contact: UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148
CAI LSI–4/10

Operating System: ULTRIX, UNIX

Keywords: • Assemblers • Compilers • Cross-compilers
• Microprocessor development

This package of microprocessor software cross-development tools consists of the CAI LSI–4/10 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

Price: $360 – $3,600

Product Support Available: Yes

Contact: UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148

CDEBUG Symbolic C Debugger

Operating System: ULTRIX, UNIX, VMS

Keywords: • Debugging • Diagnostics • Pre- and postprocessors
• Programming tools

CDEBUG, developed by Complete Software Inc., is a powerful, highly interactive tool for symbolically debugging C source code routines. CDEBUG can access, modify, and examine all C elements — for example, globals, locals, pointers, structures, arrays — by name and type. CDEBUG, designed to operate independently of the host operating system and hardware, uses its own preprocessor to incorporate symbol tables directly into the source code to be debugged, thereby eliminating dependence on the host C compiler. CDEBUG uses a unique menu-driven and command line approach to debugging, which makes it easy to learn and fast to use.

CDEBUG features:
• Full C support as specified in Kernighan and Ritchie
• Support of floating-point operations, watchpoints, and tracepoints
• Conformance of debugger commands to standard C notation
• An unlimited number of breakpoints, which can be set on statement, function, and block levels
• Handling of all exception conditions (for example, access violations)
• Ability to access or watch all variables on all active stack frames
• Automatic generation of JOURNAL file, which records the entire debugging session; JOURNAL files can be used as a command file in "Playback" mode
• No need for link maps and hexadecimal conversions
• Use of CDEBUG instead of a test driver for a larger component

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Joel Schacht
(617) 491–4180
OASYS, INC.
60 Aberdeen Avenue
Cambridge, MA 02138

CDOC (C Source Code Format Utility)

Operating System: Independent
Keywords: • Source code control • Text editing/formatting

Available in source and object formats, CDOC is used to format C or Pascal source file listings. Control information is embedded directly into the source text as legal comments (for example, /* ... */ ). CDOC scans the source code for control commands prior to printing and controls page breaks, titling, primary and secondary page headings, and indentation. Sections of source files may be automatically extracted for inclusion in other files. CDOC is useful in updating/writing functional specifications.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Joel Schacht
(617) 491–4180
OASYS, INC.
60 Aberdeen Avenue
Cambridge, MA 02138

COBOL Documenter A

Operating System: UNIX, VMS
Keywords: • Documentation • Programming tools
• Project management • Source code control

The Documenter A aids and expedites the methodical and uniform documentation of source program units. This compiler-independent tool provides two basic facilities. The first is a mechanism for gener-
ating source program documentation units in the format of a template predefined by the user. Source programs are coded in a straightforward, succinct form and are presented to Documenter A for automatic expansion into a complete documentation unit as detailed in the predefined template. The second facility permits the relocation of source statements from their coded location to any other location within the source text.

This tool serves as an excellent quality assurance instrument that allows management to set, facilitate, and enforce source program documentation standards. This product, also available for a number of other programming languages, is a member of SOFTOOL, an integrated set of software tools for software management, development, and maintenance.

A version of this product is available for the PDP–11 computer.

**Price:** $7,000

**Product Support Available:** Yes

**Contact:** Bruce Hanna  
(805) 964–0560  
SOFTOOL CORP.  
340 S. Kellogg Avenue  
Goleta, CA 93117

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**COBOL Interface Documenter**

**Operating System:** UNIX, VMS

**Keywords:** • Documentation • Pre- and postprocessors  
• Programming tools • Project management

This software product accepts as input a collection of object modules and automatically generates clear information indicating all interfaces between the object modules. For each module, the interface documenter produces an annotated list of the modules it references, as well as a list of all the modules that reference it. External data items are also documented. This easy-to-use product accepts as inputs the same object modules that are normally presented to your linker (binder). Thus, in order to generate the interface documentation, you submit your inputs to the Interface Documenter instead of to the linker (binder).

This product, also available for a number of other programming languages, is a member of SOFTOOL, an integrated set of tools for software development, management, and maintenance.

A version of this product is available for the PDP–11 computer.

**Price:** $7,000

**Product Support Available:** Yes

**Contact:** Bruce Hanna  
(805) 964–0560
SOFTOOL CORP.
340 S. Kellogg Avenue
Goleta, CA 93117

COBOL Library of Preprocessors

Operating System: UNIX, VMS
Keywords: • Documentation • Pre- and postprocessors
• Programming tools • Project management

This open-ended collection of preprocessors is written using the Structurizer tool. Each preprocessor translates programs written in a different structured language into equivalent programs in a language acceptable to the host COBOL compiler. The library includes ADA-like, RATFOR-like, and METACOBOL-like preprocessors and the Softool Recommended Preprocessor for COBOL.

A version of this product is available for the PDP–11 computer.

Price: $4,500
Product Support Available: Yes
Contact: Bruce Hanna
(805) 964–0560
SOFTOOL CORP.
340 S. Kellogg Avenue
Goleta, CA 93117

COBOL Optimization Instrumenters

Operating System: UNIX, VMS
Keywords: • Debugging • Programming tools
• Project management • Source code control

These three tools automatically generate program, paragraph, and statement-level execution-time profiles (reports) of programs. The profiles quantify optimization efforts in detail, showing absolute and relative execution times for programs, paragraphs, and statements, as well as frequency counts and optimization indices. Instrumenter I operates at the program level; Instrumenter II, at the paragraph level; and Instrumenter III, at the statement level. No modification of any compiler or application program is required. The tools accept as input source programs and test data and output clear profiles. These tools permit top-down optimization in a natural manner.

These instrumenters possess a strong management orientation and can have much impact in properly focusing optimization efforts. The tools serve as an excellent quality assurance facility that allows management to set, facilitate, and enforce optimization standards. These products, also available for a number of other programming languages, are members of SOFTOOL’s ® an integrated set of tools for software management, development, and maintenance.
A version of this product is available for the PDP–11 computer.

Price: $7,000

Product Support Available: Yes

Contact: Bruce Hanna
         (805) 964–0560
         SOFTOOL CORP.
         340 S. Kellogg Avenue
         Goleta, CA 93117

COBOL Structurizer

Operating System: UNIX, VMS
Keywords: • Pre- and postprocessors • Programming tools
         • Project management • Source code control

The Structurizer allows a user to generate custom-made preprocessors that augment COBOL with control structures defined by the user. This tool, a key to the implementation of an effective structured language facility, is also available for a number of other programming languages. The Structurizer is a member of SOFTOOL® an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP–11 computer.

Price: $8,500

Product Support Available: Yes

Contact: Bruce Hanna
         (805) 964–0560
         SOFTOOL CORP.
         340 S. Kellogg Avenue
         Goleta, CA 93117

COBOL Testing Instrumenters

Operating System: UNIX, VMS
Keywords: • Debugging • Programming tools
         • Project management • Quality control

These three tools automatically generate program, paragraph, and statement-level execution-time profiles (reports) of programs. The profiles quantify test coverage and test effectiveness in detail: Instrumenter I operates at the program level; Instrumenter II, at the paragraph level; and Instrumenter III, at the statement level. No modification of any compiler or application program is required. The tools accept as input source programs and test data and output clear profiles. The instrumenters permit top-down testing in a natural manner.
These products possess a strong management orientation and can have much impact on minimizing the cost of testing. They serve as an excellent quality assurance facility that allows management to set, facilitate, and enforce testing standards. These products, also available for a number of other programming languages, are members of SOFTOOL,® an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP-11 computer.

**Price:** $7,000  
**Product Support Available:** Yes  
**Contact:** Bruce Hanna  
(805) 964–0560  
SOFTOOL CORP.  
340 S. Kellogg Avenue  
Goleta, CA 93117

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**COBOL Tracing Instrumenters**

**Operating System:** UNIX, VMS  
**Keywords:**  
- Documentation  
- Maintenance  
- Programming tools  
- Project management

These three tools automatically document the path of program, paragraph, and statement flow of control. Instrumenter I operates at the program level; Instrumenter II, at the paragraph level; and Instrumenter III, at the statement level. They offer the software professional a flexible, consistent, and easy-to-use tracing facility. No modification of any compiler or application program is required. The tools accept as input source programs and test data and output clear trace documentation (profiles) that is formatted and indented to facilitate understanding. The tools permit top-down tracing in a natural manner.

These products, also available for a number of other programming languages, are members of SOFTOOL,® an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP-11 computer.

**Price:** $7,000  
**Product Support Available:** Yes  
**Contact:** Bruce Hanna  
(805) 964–0560  
SOFTOOL CORP.  
340 S. Kellogg Avenue  
Goleta, CA 93117
DEC/MMS (Module Management System),
Version 1.1

Operating System: VMS
Keywords: • Language enhancers • Management
         • Microprocessor development • Programming tools

VAX DEC/MMS is a software tool designed to enhance programmer productivity. It determines what components in a described software system have changes and rebuilds the system in an optimal way.

When some modules of a software system are modified, dependent modules may need to be recompiled. VAX DEC/MMS determines which modules need to be recompiled and performs the appropriate actions to ensure that the software system is recompiled and linked with all the latest changes. Additionally, VAX DEC/MMS can interact with VAX DEC/CMS (Code Management System) to provide an enhanced software development package.

Refer to SPD #26.03.01 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).

DYADS (Dymaxion Application Development System)

Operating System: VMS
Keywords: • Data base management • Data dictionary
         • Programming tools • Report writer

DYADS provides tools in five areas:
• Data base structure — 1 master file, network of lists, hashed entries, and 15 field types
• Utility programs — menu, change list size, batch update, plus maintenance and support programs
• Report generator — external file and/or data base lists in a single report, multilevel reports, compute variables, select conditions, and five levels of totals
• Envelope programs — master programs require appending of only brief user-code section to perform updates, displays, and so on
• Programming and testing — a library of more than 250 modules, including a BUILD procedure and automatic testing and installation procedures

Price: $20,000
Product Support Available: Yes
Contact:  Robert Brown
(902) 429–3175
DYMAXION RESEARCH LTD.
Box 1053, Armdale Station
Halifax, Nova Scotia B3L 4L5
Canada

Dynamic Linking Loader for VAX/VMS

Operating System:  VMS
Keywords:  • Demos  • Documentation  • Programming tools
• Source code control

This dynamic linking loader is similar in concept and implementation to the Dynamic Loader available under the MTS system. A demonstration of the loader can be obtained by typing:

\$ @DYNAM

Unlike implementation of the MTS linking loader, there is no "merge" option; hence, COMMON regions cannot be used to communicate between the main program and the dynamically linked subroutine. The only direct communications allowed is through the subroutine argument mechanism.

The sources for the linking loader exist as files LINK.FOR, LINK.FOR, LLOAD.FOR, and LOAD.FOR. The run-time execute routine is contained in file EXECUT.MAR. This documentation file lives in file DYNAM.DOC. Object code must be relocatable.

Documentation is on magnetic media. DECUS number VAX–30.

Price:  $5 – $225
Product Support Available:  No
Contact:  DECUS (see Introduction)

Fargo Forms and Screen Package

Operating System:  ULTRIX, UNIX
Keywords:  • Data entry  • Debugging  • Forms management
• Text editing/formatting

This package, known as CIO, makes menus and screens easy to build. CIO consists of more than 40 functions written in C language, allowing you to put up menus, process choices, specify data types, and do error checking. Data types supported are short, long, float, double, string characters, date, time, and telephone. Curses, a public domain screen package developed by the University of California at Berkeley, is used as the base to make screens terminal-independent.

This package is sold in source form only. Source includes complete user documentation, manual pages for each function, and several sample programs, such as a working mailing-list system.
A version of this product is available for the PDP–11 computer.

Price: $1,000 – $5,000

Product Support Available: Yes

Contact: Fred Potthoff  
(612) 941–9470
FARGO ELECTRONIC SERVICES, INC.
7150 Shady Oak Road
Eden Prairie, MN 55344

FMS, Version 2.1

Operating System: VMS
Keywords: • Data entry • Forms management
• Programming tools • Query facilities

The VAX–11 FMS Forms Management System is designed to aid in the development of application programs that use video forms. VAX–11 FMS manages the forms for application programs that use DIGITAL’s family of VT100-compatible terminals. Forms defined using FMS enable the programmer to use the following:
• Individual character attributes of reverse video, bold, blink, and underline
• Line attributes of double width, double height, and scroll
• Screen wide attributes such as 80- or 132-column lines and reverse video
• Alternate character sets, including the VT100 “special graphics character set” for line drawing

VAX–11 FMS form data structures are used by the Form Driver during run time to display forms and to access and validate data entered by the terminal operator. Forms can be created and modified interactively with the interactive editing facility (FMS/EDIT), or they can be defined as a source form description with the Form Language and then converted to a form data structure, using the Form Language Translator (FMS/TRANSLATE).

Forms usually reside in form library files on disk and are retrieved as needed by application programs at execution time. This arrangement results in a high degree of independence between form data structures and application programs. Forms can be modified without recompilation or relinking of the application program. Forms can also be converted into an object module and linked with application programs to create memory-resident forms, or forms can be dynamically loaded into memory by the application program.

Refer to SPD #26.10.01 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Product Support Available: Yes

Contact: Consult your local DIGITAL sales office
(see Introduction).
Forms–2

Operating System: UNIX, VMS
Keywords: • Forms management • Programming tools
• Source code control

This powerful visual programming tool speeds the creation of programs involving interactive screen handling. Forms–2 allows the programmer to "paint" the form on the screen, just as the form is to appear to the user at run time. Forms–2 then generates COBOL source code to define the screen.

A version of this product is available for the PDP–11 computer.

Price: $200
Product Support Available: Yes
Contact: Andy Pope or Stacy Beard, Technical/Customer Support
(415) 856–4161
MICRO FOCUS, INC.
1860 Embarcadero Road, #235
Palo Alto, CA 94303

FORTRAN Documenter A

Operating System: UNIX, VMS
Keywords: • Documentation • Programming tools
• Project management • Source code control

The Documenter A aids and expedites the methodical and uniform documentation of source program units. This compiler-independent tool provides two basic facilities. The first is a mechanism for generating source program documentation units in the format of a template predefined by the user. Source programs are coded in a straightforward, succinct form and are presented to Documenter A for automatic expansion into a complete documentation unit as detailed in the predefined template. The second facility permits the relocation of source statements from their coded location to any other location within the source text.

This tool serves as an excellent quality assurance instrument that allows management to set, facilitate, and enforce source program documentation standards. This product, also available for a number of other programming languages, is a member of SOFTOOL®, an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP–11 computer.

Price: $7,000
Product Support Available: Yes
Contact: Bruce Hanna
(805) 964–0560
FORTRAN Interface Documenter

Operating System: UNIX, VMS
Keywords: • Data conversion  • Documentation  
          • Programming tools  • Project management

This software product accepts as input a collection of object modules and automatically generates clear information indicating all interfaces between the object modules. For each module, this product produces an annotated list of the modules it references and a list of all the modules that reference it. External data items are also documented.

This easy-to-use product accepts as inputs the same object modules that are normally presented to your linker (binder). Thus, in order to generate the interface documentation, you submit your inputs to the Interface Documenter instead of to the linker (binder).

This product, also available for a number of other programming languages, is a member of SOFTOOL,® an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP-11 computer.

Price: $7,000
Product Support Available: Yes
Contact:  Bruce Hanna
          (805) 964–0560
          SOFTOOL CORP.
          340 S. Kellogg Avenue
          Goleta, CA 93117

FORTRAN Optimization Instrumenters

Operating System: UNIX, VMS
Keywords: • Maintenance  • Programming tools  
          • Project management  • Source code control

These two tools automatically generate module and statement-level execution-time profiles (reports) of programs. The profiles quantify optimization efforts in detail, showing absolute and relative execution times for subsystems, modules, and statements, as well as frequency counts and optimization indices.

Instrumenter I operates at the routine level; Instrumenter II, at the statement level. No modification of any compiler or application program is required. The tools accept as input source programs and test data and output clear profiles. The instrumenters permit top-down optimization in a natural manner.

These tools possess a strong management orientation and can have much impact in properly focusing optimization efforts. The tools
serve as an excellent quality assurance facility that allows management to set, facilitate, and enforce optimization standards.

These products, also available for a number of other programming languages, are members of SOFTOOL,® an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP–11 computer.

Price: $7,000
Product Support Available: Yes
Contact: Bruce Hanna
(805) 964–0560
SOFTOOL CORP.
340 S. Kellogg Avenue
Goleta, CA 93117

FORTRAN Productivity Library

Operating System: UNIX, VMS
Keywords: • Diagnostics • Programming tools
• Project management • Source code control

This applications generator permits the effective use of prefabricated sections of code. Softool has identified a set of high-level data structures that satisfy the need of a large range of application programs and has created the Productivity Library with the routines necessary to manipulate those structures. The user writes programs in terms of these high-level data structures and typically obtains well over 50% of the code required for an application automatically from the library. Two versions of the library are available: one incorporates extensive diagnostics; the other is streamlined for efficient operation. This product includes an interactive interface for data definitions, a dynamic memory management facility, and a number of powerful diagnostic features such as range checking and dynamic flow analysis.

The Productivity Library is a member of SOFTOOL,® an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP–11 computer.

Price: $12,500
Product Support Available: Yes
Contact: Bruce Hanna
(805) 964–0560
SOFTOOL CORP.
340 S. Kellogg Avenue
Goleta, CA 93117
FORTRAN Structured Language

Operating System: UNIX, VMS
Keywords: • Debugging • Documentation • Programming tools
          • Project management

This facility supports both control and data structures in an integrated manner and also supports dynamic memory management and the generation of portable code. This product incorporates modern programming ideas in an effective and pragmatic manner. Structured Language is a member of SOFTOOL®, an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP–11 computer.

Price: $20,000
Product Support Available: Yes
Contact: Bruce Hanna
        (805) 964–0560
        SOFTOOL CORP.
        340 S. Kellogg Avenue
        Goleta, CA 93117

FORTRAN Structurizer

Operating System: UNIX, VMS
Keywords: • Documentation • Programming tools
          • Project management • Source code control

The Structurizer allows a user to generate custom-made preprocessors that augment FORTRAN with user-defined control structures. This tool, a key to the implementation of an effective structured language facility, is also available for a number of other programming languages. The Structurizer is a member of SOFTOOL®, an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP–11 computer.

Price: $8,500
Product Support Available: Yes
Contact: Bruce Hanna
        (805) 964–0560
        SOFTOOL CORP.
        340 S. Kellogg Avenue
        Goleta, CA 93117

FORTRAN Testing Instrumenters

Operating System: UNIX, VMS
Keywords: • Debugging • Programming tools
          • Project management • Quality control
These two tools automatically generate routine- and statement-level execution-time profiles (reports) of programs. The profiles quantify test coverage and test effectiveness in detail: Instrumenter I operates at the routine level; Instrumenter II, at the statement level. No modification of any compiler or application program is required. The tools accept as input source programs and test data and output clear profiles. The instrumenters permit top-down testing in a natural manner.

These products possess a strong management orientation and can have much impact on minimizing the cost of testing. They serve as an excellent quality assurance facility that allows management to set, facilitate, and enforce testing standards. These products, also available for a number of other programming languages, are members of SOFTOOL, an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP–11 computer.

**Price:** $7,000
**Product Support Available:** Yes
**Contact:** Bruce Hanna
(805) 964–0560
SOFTOOL CORP.
340 S. Kellogg Avenue
Goleta, CA 93117

**FORTRAN Tracing Instrumenters**

**Operating System:** UNIX, VMS
**Keywords:** Debugging  Maintenance  Programming tools  Project management

These two tools automatically document the path of routine and statement flow of control. Instrumenter I operates at the routine level; Instrumenter II, at the statement level. These products offer the software professional a flexible, consistent, and easy-to-use tracing facility. No modification of any compiler or application program is required. The tools accept as input source programs and test data and output clear trace documentation (profiles) that is formatted and indented to facilitate understanding. The instrumenters permit top-down tracing in a natural manner.

These products, also available for a number of other programming languages, are members of SOFTOOL, an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP–11 computer.

**Price:** $7,000
**Product Support Available:** Yes
**Contact:** Bruce Hanna
(805) 964–0560
GI–1610

**Operating System:** ULTRIX, UNIX  
**Keywords:** • Assemblers • Compilers • Cross-compilers • Microprocessor development

This package of microprocessor software cross-development tools consists of the General Instruments 1610 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

**Price:** $360 – $3,600  
**Product Support Available:** Yes  
**Contact:** UniWare Sales  
(312) 620–4830  
NUVATEC/INC., UNIWARE DIVISION  
261 S. Eisenhower  
Lombard, IL 60148


GI–1650

**Operating System:** ULTRIX, UNIX  
**Keywords:** • Assemblers • Compilers • Cross-compilers • Microprocessor development

This package of microprocessor software cross-development tools consists of the General Instruments 1650 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.
**GI-1670**

**Operating System:** ULTRIX, UNIX  
**Keywords:**  
- Assemblers  
- Compilers  
- Cross-compilers  
- Microprocessor development

This package of microprocessor software cross-development tools consists of the General Instruments 1670 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP-11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP-11 computer.

**Price:** $300 – $3,000  
**Product Support Available:** Yes  
**Contact:** UniWare Sales  
(312) 620-4830  
NUVATEC/INC., UNIWARE DIVISION  
261 S. Eisenhower  
Lombard, IL 60148

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**GIGI Tool Kit**

**Operating System:** VMS  
**Keywords:**  
- Data conversion  
- Graphics  
- Programming tools  
- Statistics

The GIGI Tool Kit (VMS) contains the following tools:

- **HC2X**, to generate double-size hard copy on the LA34VA printer, from a file of ReGIS graphics
- **DIGITIZ**, to use the Summagraphics Bit Pad to digitize a hard-copy image, generating a ReGIS file
- **DIGITIZE**, a version of DIGITIZ that runs in GIGI BASIC
- **RBOS**, to support the GIGI BASIC, SAVE, and HOST commands, using the host as a file saver
• PROGKEY, to help the user to program GIGI's programmable keys
• PCU, a pie chart utility for generating pie charts from data files
• COPYSHOW, a VMS DCL procedure to copy a GIGI Slide Projector
  tray file plus all ReGIS files referenced by it

Documentation is on magnetic media. DECUS number VAX–22.

**Price:** $5 – $225  
**Product Support Available:** No  
**Contact:** DECUS (see Introduction)

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**GRAFPAK–CORE**

- **Operating System:** UNIX, VMS
- **Keywords:** • CAD/CAM  • Graphics  • Process control  
  • Scientific

GRAFPAK–CORE was developed by Advanced Technology Center and features:

• User-callable routines to build and support your graphics applications
• Graphics that deliver functionality to match your application environment
• Programs for scientific analysis, process control, CAD, typesetting, and business graphics
• Necessary functional capabilities for application programs
• Valuable programmer time savings and easier maintenance of documentation
• A major breakthrough for state-of-the-art graphics software

The device- and machine-independent features of GRAFPAK–CORE along with its modular architecture offer an exceptional long-term investment value. You can now analyze and design applications rather than spend time on writing output graphics utilities. OEMs can use this tool very effectively in building their custom applications.

A version of this product is available for the PDP–11 computer.

**Price:** $1,950 – $2,950  
**Product Support Available:** Yes  
**Contact:** Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue #117  
Orange, CA 92665

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**H–CHAMP**

- **Operating System:** ULTRIX, UNIX
- **Keywords:** • File management  • Manufacturing  
  • Pre- and postprocessors  • Programming tools
H-CHAMP, an applications environment, is a commercial interface that provides utility software tools for multiuser microcomputer systems. It provides a user-friendly environment so that end users need never deal with the operating system. Then, optional modules deliver utility tools to speed and to simplify sorting, information handling, file archiving, and report modifying. Additional H-CHAMP modules deliver productivity through procedures, automated batch processing, report scheduling, and print formatting. H-CHAMP runs on the de facto standard operating systems for 8080/8085/Z80, 8086/8088, Z8000, and 68000 families of hardware.

The H-CHAMP Core Module includes user menus, access and security, the shell, housekeeping, mail, and directory and file handling. H-CHAMP optional modules are H-CHAMP + I Module, sorting and information handling; H-CHAMP + II Module, archiving and text formatting; H-CHAMP + III Module, procedures and batch processing; and H-CHAMP + IV Module, report scheduling, formatting, and print control.

A version of this product is available for the PDP-11 computer.

Price: $695
Product Support Available: Yes
Contact: Lew Silverstein
(408) 246-8300
HELMSMAN SYSTEMS, INC.
1030 So. Winchester #205
San Jose, CA 95128

Hitachi 6301

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compiler
• Microprocessor development

This package of microprocessor software cross-development tools consists of the Hitachi 6301 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP-11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP-11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Development Tools

Contact: UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148

IMSL Library

Operating System: Independent
Keywords: Mathematics • Programming tools • Statistics
The IMSL Library is a comprehensive collection of more than 540 mathematical and statistical FORTRAN subroutines that are building blocks in the development of application programs. One hundred thousand users at more than 2,000 installation sites worldwide use the IMSL Library to increase programming productivity. IMSL fully supports the Library with maintenance and updates.

Applications include analysis of variance; basic statistics; categorized data analysis; differential equations, quadrature, differentiation; eigensystem analysis; forecasting; econometrics, time series, and transforms; generation and testing of random numbers; interpolation, approximation, and smoothing; linear algebraic equations; mathematical and statistical special functions; nonparametric statistics; observation structure and multivariate statistics; regression analysis; sampling; utility functions; vector and matrix arithmetic; and zeros and extrema, linear programming.

Substantial price discounts are available for universities.

Price: $2,000 – $2,500
Product Support Available: Yes
Contact: IMSL Marketing Division
(713) 772–1927
IMSL, INC.
NBC Building
7500 Bellaire Boulevard
Houston, TX 770365085

Intel 8041/8042

Operating System: ULTRIX, UNIX
Keywords: Assemblers • Compilers • Cross-compilers
• Microprocessor development

This package of microprocessor software cross-development tools consists of the Intel 8041/8042 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP–11 and VAX are supported as host computers.
Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

**Price:** $300 – $3,000

**Product Support Available:** Yes

**Contact:** UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148

**Intel 8048/8049**

**Operating System:** ULTRIX, UNIX

**Keywords:** • Assemblers • Compilers • Cross-compilers
• Microprocessor development

This package of microprocessor software cross-development tools consists of the Intel 8048/8049 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

**Price:** $300 – $3,000

**Product Support Available:** Yes

**Contact:** UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148

**Intel 8051**

**Operating System:** ULTRIX, UNIX

**Keywords:** • Assemblers • Compilers • Cross-compilers
• Microprocessor development
This package of microprocessor software cross-development tools consists of the Intel 8051 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer’s. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Contact: UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148

**Intel 8080/8085**

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compilers • Microprocessor development

This package of microprocessor software cross-development tools consists of the Intel 8080/8085 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer’s. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Contact: UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148
Intel 8086

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compilers
• Microprocessor development

This package of microprocessor software cross-development tools consists of the Intel 8086 C compiler with relocating cross-assembler, linking loader, and down-loader. The DIGITAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer’s. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

Price: $1,750 – $3,500
Product Support Available: Yes
Contact: UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148

Interactive Simulators for Microprocessors

Operating System: ULTRIX, UNIX, VMS
Keywords: • Language processors • Microprocessor development
• Programming tools • Simulation

Simulators are available for a wide range of microprocessors, including the 8051, 8080/8085, 8086/88/186/188, 8048, 68000, 6809, 6800/01/02/03/04, Z80, Z8002, 1802/1804, and F8/3870. The programs are written in ANSI standard FORTRAN IV and perform interpretive execution of the microprocessor object module in an interactive or a batch mode. The programs can simulate the RAM/ROM environment, I/O operations, and interrupts, as well as the more conventional operand and instruction breakpoints, memory dumps, patching, register setting, and program tracing. Timing information is displayed as cumulative cycle counts, allowing routine execution times to be determined. Run-time error messages are generated for such conditions as illegal op codes and attempts to write into protected memory.

The programs simulate the complete microprocessor addressing space by using a disk page swapping technique that reduces page swapping. Extensive I/O simulation is provided. Input data may be
obtained from the user via a program-generated prompt, from a predefined data table, or from an input data file. Output data may be written to the user's output device, an output data latch that may be examined with a simulator command or a data file. The user may specify the source of the input data and the destination of the output data for each port. I/O through memory locations may be simulated in the same manner. The simulators allow the user to use the symbolic names (labels) from the assembler and thus provide for symbolic debugging, avoiding the need to deal with absolute addresses.

A version of this product is available for the PDP–11 computer.

**Price:** $1,250 – $1,500

**Product Support Available:** Yes

**Contact:** Peggy Hall  
(408) 733–2919  
MICROTEC RESEARCH, INC.  
P.O. Box 60337  
505 W. Olive, Suite 325  
Sunnyvale, CA 94088

**InterUpt (ISM Universal Programming Tool)**

**Operating System:** VMS  
**Keywords:** • Programming tools • Project management  
• Security • Source code control

InterUpt is designed to facilitate MUMPS systems development and has many of the features necessary to enable a MUMPS programmer to develop MUMPS systems efficiently. Using InterUpt's various functions, a programmer writes, edits, and saves programs; automatically creates routine cross-references, global file cross-references, routine verification, and file link cross-references; and performs routine compare, restore, move, dump, and print operations.

InterUpt also includes a security system whereby use of the Routine Development Utility is password controlled. In that way, personnel may be limited to using one or more of the functions in InterUpt. In addition, user levels may be set up so that IDs may have access to routines that are developed at the same or lower level but not to routines developed at higher levels.

Each routine developed using InterUpt is date stamped with the horolog date and the programmer's ID. In that way, routines are easily identified as to the date of last update and the programmer responsible for the update.

Routines may also be given a package name and a program subset within the package. Thus, InterUpt can perform various tasks on a package or on a program subset of the package, given only the package name and/or functional subset's name.
A version of this product is available for the PDP–11 computer.

**Price:** $2,500

**Product Support Available:** Yes

**Contact:** Robert E. Joerger, Vice President
(201) 256–7633

INTERACTIVE SYSTEMS AND MANAGEMENT CORP.
1500 Cardinal Drive
Little Falls, NJ 07424

**Lawrence Berkeley Labs Software Tools**

**Operating System:** VMS

**Keywords:** • Interpreters • Pre- and postprocessors
• Programming tools • Text editing/formatting

This is an extended version of the software tools described in the book by Kernighan and Plauger entitled *Software Tools.* The tools include many utility programs such as editors, text manipulation routines, and so on, as well as a flexible, UNIX*-style command interpreter that acts as a command shell under VMS. This particular version of the tools package is in use at Lawrence Berkeley Labs. Most of the code is written in either FORTRAN or RATFOR (a more structured version of FORTRAN that may be preprocessed into ANSI 66 FORTRAN). A copy of the RATFOR preprocessor is included in the package.

Documentation is on magnetic media. DECUS number VAX–14.

*UNIX is a trademark of AT&T Bell Laboratories.

**Price:** $5 – $225

**Product Support Available:** No

**Contact:** DECUS (see Introduction)

**M6800/01/05/09 Cross-Software Packages**

**Operating System:** UNIX, VMS

**Keywords:** • Compilers • Cross-compilers
• Microprocessor development • Programming tools

Wintek’s M6800-family Cross-Software packages allow the rapid development of microcomputer software for the Motorola 6800, 6801, 6805, and 6809. The packages include both macroassemblers and high-level language compilers:

• 6800/6801, 6805, and 6809 cross-assemblers
• 6800 and 6809 PL/W cross-compilers
• Cross-linker
• 6800 and 6801 simulators
• 6800 floating-point, scientific subroutine package
Since these programs are designed to run on minicomputers and mainframes, the user has all the advantages of larger machines during development, such as powerful editing facilities, large file systems, utility programs, quick response, and multiuser access.

The cross-assemblers are normal, 2-pass assemblers that use most of the standard Motorola instruction mnemonics and directives. Both macros and conditional assembly are supported. The assemblers accept free-format input and produce formatted output complete with line and page numbers, titles, and subtitles. Error messages are in English and point to the character in error. The output listings include both an alphabetized symbol table and a cross-reference map for all symbols. The assemblers can produce either absolute object code in Motorola's S0–S1–S9 format or relocatable object code for use with the cross-linker.

PL/W is a high-level language patterned after PL/I and is very close to Intel's microcomputer language PL/M. Wintek's PL/W is a block-structured language that supports the control features required for structured programming, such as procedures, functions, IF–THEN–ELSE, DO CASE, DO WHILE, iterative DO, and more. Variable names may contain up to 31 characters. The compilers produce formatted source listings and relocatable object code.

The cross-linker links and relocates separately compiled and assembled relocatable routines, producing a single program in Motorola's S0–S1–S9 format.

The 6800 and 6801 simulators provide a way to test small programs without using a 6800 system.

The floating-point and scientific subroutine package is written in 6800 assembly language and can be linked to modules produced by the 6800 cross-assembler and 6800 PL/W. Operations performed by the packaged routines include addition, subtraction, multiplication, division, logarithms, exponentiation, square root, SIN, COS, TAN, ARCSIN, ARCCOS, ARCTAN, SINH, COSH, and TANH.

A version of this product is available for the PDP–11 computer.

**Price:** $1,000 – $3,400

**Product Support Available:** Yes

**Contact:** Mark Corzine or Steve Belter
(317) 742–8428

WINTEK CORP.
1801 South Street
Lafayette, IN 479042993

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**M/APS (Menu/Authorization Processor System)**

**Operating System:** VMS

**Keywords:**
- File management
- Information management
- Programming tools
- Security
M/APS allows automatic creation of user-oriented application menus and controls user access to both menus and the specific application programs. The system offers the ability to add new menus and modify existing menus through on-line entry and security through the ability to specify which users can gain access to individual applications and programs. M/APS monitors and warns when any illegal access is attempted and aborted, prevents access to the monitor level, limits display to only those items available to user, and traces user movement through the menu system.

M/APS provides management, applications developers, and the applications user with these benefits:

- Denies access or use of sensitive data to unauthorized users
- Provides relatively easy access for authorized users
- Logs all usage and detects illegitimate penetration

A version of this product is available for the PDP–11 computer.

Price: $995
Product Support Available: Yes
Contact: Neal J. Anderson
(414) 784–8250
MCHUGH, FREEMAN AND ASSOCIATES, INC.
1135 Legion Drive
P.O. Box 454
Elm Grove, WI 53122

MDE (Microcomputer Development Environment), Version 1.0

Operating System: VMS
Keywords: • Debugging • Microprocessor development
• Simulation • Source code control

VAX–11 MDE is an in-circuit emulation development system for Micro/T–11 16-bit microprocessors. VAX–11 MDE offers features for observing, controlling, and simulating the hardware interface between the processor and external circuitry, without impacting the speed, performance, or operating environment of the Micro/T–11.

VAX–11 MDE includes a MACRO–11 source language debugger and contains a hardware interface that observes and controls the Micro/T–11 signals in real time.

Refer to SPD #25.87.0 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).
Menu Presentation Software

Operating System: UNIX, VMS
Keywords:  • Programming tools  • Text editing/formatting

The Menu program allows rapid development of interactive menus for application systems. The menu layout and the action sequences are specified in editable menu files, allowing quick prototyping and modifications. Separate menu files may exist within the system so that different applications or classes of users can be accommodated.

The Menu program can substitute for /bin/sh as the user's log-in shell. Thus, an application environment can be created that completely isolates operators from the need to access facilities to which they may not or should not be given access.

The Menu text file describes the screen layouts that can be presented to the user. That file allows specification of command lines, status lines for informative messages, prompt lines, menu choices, date, and emphasized lines for terminals having appropriate hardware capability — for example, double-sized characters.

The Menu command file is specified as if it were a case statement, where the case selector represents a user input. The commands that can be executed within a case include run a program (with arguments), execute a string as a shell command, display a status message, display a prompt, read input from the user, wait for user response, and go to another menu.

A version of this product is available for the PDP-11 computer.

Price: $500
Product Support Available: Yes
Contact: Douglas J. Ross, President
(613) 548-4355
ANDYNE COMPUTING LTD.
P.O. Box 1496
221 King Street East
Kingston, Ontario K7L 5C7
Canada

The Menu System

Operating System: ULTRIX, UNIX
Keywords:  • Computer-aided instruction  • Data entry
  • Office systems  • Programming tools

The Menu System is a user-friendly system that allows designers to build menus in front of XENIX, or any program running under XENIX, with no need to learn a programming language or data file format. The end user is presented with a menu offering numbered choices. One keystroke will execute the most complex program. The
Menu System is terminal-independent and provides three levels of help and a tutorial mode that can be used to learn XENIX on any program.

A version of this product is available for the PDP–11 computer.

**Price:** $250 – $1,000

**Product Support Available:** Yes

**Contact:** Mike Heffler  
(201) 447–3901  
SOFTEST  
555 Goffle Road  
Ridgewood, NJ 07450

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**Microbench Simulators for the Zilog Z80, Intel 8080, and Intel 8086**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:**  
- Debugging  
- Microprocessor development  
- Simulation

These simulators provide a complete microprocessor development system that includes up to one megabyte of memory and that can simulate virtually any hardware environment, including interrupts. The simulators operate on PDP–11, LSI–11, and VAX computers.

You direct the execution of your program with the simulator from your terminal, controlling the contents of memory and the CPU registers at all times. You use the trace and breakpoint features to follow the exact progress of your program. The Microbench simulators enable you to run and debug your programs long before they reach the target microprocessor system.

Object files in standard Intel hexadecimal format — produced by Microbench cross-assemblers and cross-compilers — may be loaded into simulator memory. Any portion of the program can then be executed with or without breakpoints. The simulators allow you to assemble and load assembly language statements entered at the console. Memory locations and internal registers may be printed for examination or alteration.

Each simulator provides 16 relocation constants, a trace feature, cycle count, and I/O and memory map routines that may be modified to simulate any operating environment. Upon exit, the contents of the registers and relocation constants are saved. In addition, the Intel 8080 and 8086 simulators allow symbolic names to be displayed or deleted.

Microbench simulator software is distributed with a license and includes two sets of reference manuals and a software maintenance/update service. The reference manuals describe the operation of the
Microbench simulators and may be purchased by special order. Software is distributed on RX01/RX02 diskette or 9-track 800 or 1,600 bpi magnetic tape.

A version of this product is available for the PDP-11 computer.

**Price:** $1,400 – $2,400  
**Product Support Available:** Yes  
**Contact:** Nicholas P. Mason, Sales Manager  
(415) 935–4944  
VIRTUAL SYSTEMS, INC.  
1500 Newell Avenue, Suite 406  
Walnut Creek, CA 94596

### MIMER

**Operating System:** UNIX, VMS  
**Keywords:**  
- Data base management  
- Programming tools  
- Query facilities  
- Report writer

MIMER is a full-function multiuser relational data base management system. It is a unique product that runs on most mainframe and minicomputers. MIMER includes a fast query language, screen handler, fourth-generation report and program generator (with its own prototyping language), and an information retrieval system. MIMER is easy to understand and use and can be linked to statistical analysis, graphics, viewdata, CAD/CAM packages, and to programs written in conventional languages.

MIMER is a general-purpose application development system used in industrial, commercial, or governmental organizations. Size is no limitation, and applications with data bases up to 1,500 megabytes have been implemented with MIMER. Performance tuning enables MIMER to outperform many other file-handling and data base systems in fast data retrieval from the data base.

A version of this product is available for the PDP-11 computer.

**Price:** £4,000 – £35,000  
**Product Support Available:** Yes  
**Contact:** P. Walters  
(0524) 734505  
SAVANT ENTERPRISES  
2 New Street  
Carnforth, Lancashire LA5 9BX  
United Kingdom

### Motorola 68000

**Operating System:** ULTRIX, UNIX  
**Keywords:**  
- Assemblers  
- Compilers  
- Cross-compilers  
- Microprocessor development
This package of microprocessor software cross-development tools consists of the Motorola 6800 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

**Price:** $300 – $3,000

**Product Support Available:** Yes

**Contact:** UniWare Sales  
(312) 620–4830  
NUVATEC/INC., UNIWARE DIVISION  
261 S. Eisenhower  
Lombard, IL 60148

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**Motorola 68000**

**Operating System:** ULTRIX, UNIX  
**Keywords:**  
- Assemblers  
- Compilers  
- Cross-compilers  
- Microprocessor development

This package of microprocessor software cross-development tools consists of the Motorola 68000 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

**Price:** $360 – $3,600

**Product Support Available:** Yes

**Contact:** UniWare Sales  
(312) 620–4830  
NUVATEC/INC., UNIWARE DIVISION  
261 S. Eisenhower  
Lombard, IL 60148
Motorola 6801/6803

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compilers
• Microprocessor development

This package of microprocessor software cross-development tools consists of the Motorola 6801/6803 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP-11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer’s. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP-11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Contact: UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148

Motorola 6805

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compilers
• Microprocessor development

This package of microprocessor software cross-development tools consists of the Motorola 6805 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP-11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer’s. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP-11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Contact: UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148

Motorola 6809

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compilers
• Microprocessor development

This package of microprocessor software cross-development tools consists of the Motorola 6809 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP-11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP-11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Contact: UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148

National PACE

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compilers
• Microprocessor development

This package of microprocessor software cross-development tools consists of the National PACE relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP-11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP-11 computer.
Price: $360 – $3,600
Product Support Available: Yes
Contact: UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148

NDTRAN2

Operating System: VMS
Keywords: • Interpreters • Simulation

NDTRAN2 is a dynamic simulation interpreter capable of carrying out dynamic and stochastic simulations. It is available in two basic versions: a research version that will accept a source simulation program of up to 4,000 statements and a standard version that has the capability of executing programs somewhat larger than WORLD3 and that will operate on a computer with a 28K FORTRAN batch partition, such as the PDP–11–series computers. The standard version is available in a double-precision version or a single-precision version, depending on the requirements of the computer at the installing college or university. All versions sent to installations with PDP–11–series computers are single precision, requiring the half-word integer option.

The source program for NDTRAN2 is approximately 13,000 statements in length, of which about 8,000 are COMMENT cards that constitute the basic documentation for the NDTRAN interpreter. It is very important that you read the COMMENT statements in the main program NDTRAN, since that contains a number of parameters that must be set for the installation computer. DECUS number VAX–16.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

Pascal–2™ Cross-Compiler to Target 68K w/Concurrency Package

Operating System: VMS
Keywords: • Cross-compilers • Engineering
  • Programming tools • Signal processing

The Pascal–2 cross-compiler allows development of programs for the MC68000™ from the PDP–11 or VAX–11 environment. The cross-compiler generates object files using the Motorola S-record format that can be linked and run under the VERSAdos™ operating system or in stand-alone mode by means of a special support library, sup-
plied as part of the concurrent programming option. The cross-compiler generates extremely small and fast code. The package includes XFR, a utility that transfers object, text, or other files in either direction between the host system and VERSAdos.

Documentation consists of the *Pascal–2 User Manual* (user’s programmer’s guides, debugger, utilities, and installation guides, and language specification). Sections on cross-compiling are included. Also in the package are the textbooks *Programming in Pascal* and *Pascal User Manual and Report*.

Software support is included for one year from purchase (renewable).

An optional concurrent programming package provides concurrent programming in standard Pascal and allows user programs to run without an operating system on the MC68000. A cross-linker/assembler is also available.

Operating in five phases, the cross-compiler employs virtual memory techniques to allow compilation of very large programs. Optimizations include global register allocation, constant folding, dead-code elimination, short-circuit evaluation, expression targeting, array-index simplification, and common subexpression elimination.

MC68000 and VERSAdos are trademarks of Motorola, Inc.

A version of this product is available for the PDP–11 computer.

**Price:** $7,500 – $9,000  
**Product Support Available:** Yes  
**Contact:** Sales Department  
(503) 226–7760  
OREGON SOFTWARE  
2340 SW Canyon Road  
Portland, OR 97201

**PCDRIVER and Supporting ACP (PCACP)**

**Operating System:** VMS  
**Keywords:**  
- Debugging  
- Device drivers/handlers  
- Diagnostics

PCDRIVER is a driver for the PC11 paper tape reader/punch for VAX systems. The driver allows independent control of the reader and punch, error logging, and power-fail recovery. PCACP is an ACP that can be used with PCDriver. However, the driver can perform all its functions without the ACP. The ACP serves as a template from which other ACPs could be written.

Documentation is on magnetic media. DECUS number VAX–4.

**Price:** $5 – $225  
**Product Support Available:** No  
**Contact:** DECUS (see Introduction)
PDS–11

Operating System: VMS

Keywords: • File management • Production control
          • Programming tools

PDS/11, developed by McCue Systems Inc., is the low-cost way to speed up software development on your VAX/VMS system. If you are running VMS V3.0 or later and/or using DIGITAL’s FMS–11 Forms Management System, you should consider the advantages that PDS/11 has to offer.

PDS/11 system features include:
• A history command to reduce retyping of frequently used commands with EDT as a DCL command editor to modify any command from the history log. Five selectable command prompts provide constant system information.
• Use of the DCL SPAWN command to allow lengthy compiling and linking jobs to be run in the background. The compact code requires less than 100K disk space. Easy customizing considers site-dependent factors. All source code is provided with the system.

PDS/11 is easy to learn and use. Programmers find the additional commands completely natural, as an extension of VMS/DCL itself.

Price: $800

Product Support Available: Yes

Contact: Cheryl Pankratz
          (714) 998–6041
          MIDCOM CORP.
          1940 N. Tustin Avenue, Suite 117
          Orange, CA 92665

PDS (Pascal Development System)

Operating System: VMS

Keywords: • Data base management • Data entry
          • Documentation • Programming tools

PDS has all the tools necessary to develop commercial software in Pascal and allows users to establish a data base and parameterized data entry and reports. Some PDS features are a complete multiuser ISAM-type File Manager with utilities, file definitions that may be changed without changing programs, completely parameterized screen entry and editing, reports that are parameterized and that may be changed without changing programs, approximately 50 utility programs and procedures to allow flexibility of use and handling standard programming needs, and parameterized CRT routines allowing mixed CRTs on the system. The system is designed for interactive menu-driven systems and has self-documenting features. PDS is field-tested and has been used to develop complex accounting systems.
A version of this product is available for the PDP–11 computer.

**Price:** $750 – $1,250

**Product Support Available:** Yes

**Contact:** Chuck Tebbetts  
(213) 245–0917  
THETA BUSINESS SYSTEMS  
1110 Sonora Avenue, Suite 106  
Glendale, CA 91201

**PRO–IV**

**Operating System:** ULTRIX, VMS

**Keywords:** • Compilers • Data dictionary • Documentation  
• Programming tools

PRO–IV is a structured applications processor with which you can easily bring up any commercial application, without the use of conventional programming.

PRO–IV, a fourth-generation application development and execution system, offers:

• Inexpensive application software meeting most user needs
• Quick and inexpensive modifications to customize the software
• Simple maintenance
• Ease of use, with no computer background or programming knowledge required

With PRO–IV, a business application of any complexity can be developed. PRO–IV can be used by anyone having a fundamental knowledge of computers and an understanding of what the desired application is intended to do.

To bring up a PRO–IV application, the user completes a set of worksheets with information based on the business application. Once the application has been keyed in, PRO–IV typically creates the entire application in just seconds. The application is ready to accept, process, access, and store data. It can produce reports and provide a complete set of automatically generated documentation.

Customization and maintenance tasks take only hours or minutes. Because PRO–IV is completely structured, if an application developer cannot complete an application, another developer can easily take over.

PRO–IV generates documentation automatically, further reducing development and maintenance costs. It also provides various security levels to control access to information.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $20,000

**Product Support Available:** Yes

**Contact:** Ken Goldner, Vice President, Sales  
(617) 486–9621
PRO–RDM (Responsive Data Manager)

Operating System: VMS

Keywords: • Data base management • File management
• Forms management • Programming tools

PRO–RDM provides a library of more than 100 Pascal routines for the programmer who desires to develop applications without most of the code writing and debugging that usually go with it. PRO–RDM improves productivity because repetitive tasks do not have to be reinvented each time a task is needed. Debugging costs and time can be reduced substantially because the programmer writes less code. Security and protection facilities are provided.

PRO–RDM requires a Pascal compiler and the RDM V3.1 data base package, which is a table- and menu-driven data base package designed for general application development. RDM V3.1 permits users and programmers to develop and use their own applications, which may include the development of data files, input screens, reports, processes, and menus. PRO–RDM permits the programmer to link the RDM V3.1 data base system to the Pascal environment, modify the existing RDM V3.1 data base, or develop stand-alone applications for use elsewhere.

A version of this product is available for the PDP–11 computer.

Price: $2,500 – $3,500

Product Support Available: Yes

Contact: Tom Madison
(503) 644–0111
INTERACTIVE TECHNOLOGY INC.
1225 NW Murray Road, Suite 108
Portland, OR 97229

Professional Host Tool Kit DIBOL, Version 1.6

Operating System: VMS

Keywords: • Compilers • Language enhancers
• Language processors • Programming tools

Professional Host Tool Kit DIBOL is a high-level procedural language designed specifically for interactive business data processing. This product allows development of DIBOL application programs for the Professional 300 series of computers on a VAX/VMS, RSX–11M, or RSX–11M–PLUS host system.
The DIBOL program development process consists of compiling the DIBOL source program using the DIBOL–83 compiler, linking the object programs with external subroutines and library modules, and developing any required help or menu frames with the Frame Development Tool on the host system. The application and any frame files can then be transferred to the Professional system over a standard terminal interface line and executed and debugged on a Professional-series computer.

Professional Host Tool Kit DIBOL is based on the DIBOL Standards Organization’s DIBOL–83 definition of the language. Professional Host Tool Kit DIBOL is highly compatible with DIBOL–83 implementations on other operating systems, including RSTS/E, RSX–11M–PLUS, CTS–300, and VAX/VMS, as well as PRO/Tool Kit DIBOL, which allows applications to be developed on the Professional 350 computer with hard disk. The language also provides Professional Series 300–specific extensions while retaining the capabilities and advantages of DIBOL–83.

Refer to SPD #30.26.02 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).

Professional Host Tool Kit Pascal, Version 1.1

Operating System: VMS
Keywords: • Compilers • Language enhancers
          • Language processors • Source code control

Professional Host Tool Kit Pascal is an extended implementation of the Pascal language. The extensions assist the application programmer in accessing the P/OS system capabilities and simplify application design. In addition, there is a high degree of compatibility with VAX–11 Pascal and the ISO and ANSI Pascal standards.

Professional Host Tool Kit Pascal is a true optimizing compiler. This software, running on a host VAX/VMS, RSX–11M, or RSX–11M–PLUS system, generates PDP–11 instructions for eventual execution on a target Professional 300–series system. The compiler runs in the Tool Kit environment. The generated code has full access to the graphics library, menu services, and communications services.

Refer to SPD #30.30.01 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.
Professional Host Tool Kit, Version 1.7

Operating System: VMS
Keywords: • Compilers • Language enhancers
• Language processors • Programming tools

Formerly the Professional Developer’s Tool Kit, this product consists of programming tools and libraries that allow development of applications for the Professional 300 series of computer systems. Programming languages available to the developer for building Professional-based applications are BASIC–PLUS–2, COBOL–81, DIBOL, FORTRAN 77, MACRO–11, and Pascal.

The development process uses a host VAX/VMS, RSX–11M, or RSX–11M–PLUS system for application development. An editor provided with the host system is used to develop source files. MACRO–11 or a separately available Tool Kit language is used to assemble or compile the source program. The program is then linked against the libraries provided with the Tool Kit, and the frame builder is used to prepare the menu and help frames. The resultant files are then transferred to a Professional 350 with hard disk for debugging.

Refer to SPD #30.28.02 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

PROMPT

Operating System: VMS
Keywords: • Data entry

The PROMPT program allows a command procedure to prompt for input from the specified device and have the response returned in a specified local symbol. This program works very much like the INQUIRE command except that it has some features (such as allowing the system startup command procedure to prompt for options during system boot) that make it ideal for some special applications. Those features include a timeout so the prompt will not wait forever — that way, startup will continue booting if an operator is not present to
answer questions — and the terminal that the prompt is sent to and reply taken from may be specified (such as OPAO:). Complete HELP instructions supplied with the program describe its use and syntax. Documentation is on magnetic media. DECUS number VAX–25.

**Price:** $5 – $225  
**Product Support Available:** No  
**Contact:** DECUS (see Introduction)

**QREQUEST**

**Operating System:** VMS  
**Keywords:**  
- Data base management  
- File management  
- Security

QREQUEST allows a VAX/VMS user without the OPER privilege to start, pause, and stop device queues, as controlled by a file of authorized USERNAMES and a file of implemented options. The program also generates a log file of usage. Also included is a DCL command procedure for the maintenance of the authorization file. (All files used by QREQUEST are kept in SYS$SYSTEM.)

Documentation is on magnetic media. DECUS number VAX–34.

**Price:** $5 – $225  
**Product Support Available:** No  
**Contact:** DECUS (see Introduction)

**RABBIT–5**

**Operating System:** VMS  
**Keywords:**  
- Disk utilities  
- Facilities management  
- File transfer  
- Operations

RABBIT–5 is a full and incremental high-speed file backup-and-restore system. High-performance I/O techniques in RABBIT–5 often save or restore files as fast as tape-passing speed. In a busy installation with a large disk system, RABBIT–5 can free up many hours of time each week.

RABBIT–5 handles a wide range of backup choices, letting you choose which files you want to save or restore. The system provides full wildcarding in file specification; exclusion file lists; a verify option and a variety of progress-reporting options; optional update of file backup data; incremental saves based on backup date, creation date, modification date, and file size; checkpoint restart options; a full UIC protection scheme; implicit re-creation of directory structure on restores; and an internal tape labeling procedure and tape-positioning procedures.

You or your system user can know which tape to use for backup by consulting the RABBIT–5 mini–tape librarian. It keeps you up to
date on which tapes are in use, so later runs will use different tapes.
Tape identifiers tell your operators which tape to mount when a con-
tinuation reel is required. Except for your operator, RABBIT-5 runs
by itself — without fear of tape confusion.

RABBIT-5 makes it easy to transfer files from disk to tape for off-
line storage. For instance, in the novice mode, the system asks you
easy fill-in-the-blank questions. In the expert mode, RABBIT-5 sim-
ply asks for your orders, which you then give by prompt commands.
Either way, you tell it what you want. And RABBIT-5 will save or
restore your files for you.

RABBIT-5 is fast, automatic, and easy to use. It can save a 40-mega-
byte file in less than 2 minutes and use only 12 CPU seconds.

**Price:** $3,995 — $4,495

**Product Support Available:** Yes

**Contact:** Joseph Musler
(301) 258–2620
RAXCO, INC.
1370 Piccard Drive
Rockville, MD 20850

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**RAPID/USE (Rapid Prototyping of Interactive Dialogues)**

**Operating System:** ULTRIX, UNIX

**Keywords:**
- Forms management
- Interpreters
- Programming tools
- Translators

RAPID/USE is a tool for the rapid specification and implementation of
screen-oriented interactive dialogs and the rapid construction of
interactive information systems. Interactive dialogs are modeled
with augmented state transition diagrams. Those diagrams, encoded
for the Transition Diagram Interpreter, allow the specification of sys-
tem output, user input, and associated actions. Actions may be pro-
grammed in C, Pascal, FORTRAN 77, or PLAIN and may be linked
into an executable program with the Action Linker.

The Transition Diagram Interpreter allows prototypes of dialogs to
be rapidly constructed and modified. The Action Linker provides the
ability to build complete systems by linking in programmed actions
— including data base operations — to the resulting system.

RAPID/USE is independent of specific application areas or industries
and is best suited for applications involving alphanumeric displays in
which user-interface design is important. RAPID/USE is part of the
University of California, San Francisco, User Software Engineering
distribution (see Troll/USE). Commercial support and training are
provided through Interactive Development Environments, Inc., 44
Monterey Boulevard, Suite 32, San Francisco, CA 94131.
A version of this product is available for the PDP-11 computer.

**Price:** $300 – $750

**Product Support Available:** Yes

**Contact:** Anthony I. Wasserman  
(415) 666–2951  
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO  
Medical Information Science, Room A–16  
San Francisco, CA 94143

**RCS–7**

**Operating System:** VMS  
**Keywords:**  
- Data collection  
- Petroleum  
- Process control  
- Real time  

RCS–7 is a real-time monitor and control system suitable to SCADA and process control applications. Because of its generic design as a baseline system, RCS–7 is not only a good solution to a wide range of monitor and control applications but also suitable for systems ranging in size from PDP–11/23s to dual-redundant VAX–11/780 configurations. RCS–7 provides a user-friendly operator interface for non-programmer users.

Major features of RCS–7 are color graphics man/machine interface, data acquisition, data processing, alarms monitoring, event logging, supervisory control, on-line display generation, on-line acquisition, and applications interface.

Optional subsystems are automatic failover for redundant configurations, calculation processor, dot addressable trending, and historical data collection.

A version of this product is available for the PDP–11 computer.

**Price:** $15,000 – $60,000

**Product Support Available:** Yes

**Contact:** David J. Osina  
(713) 666–2701  
SGM, INC.  
8830 Interchange Drive  
Houston, TX 77054

**RDM (Responsive Data Manager)**

**Operating System:** VMS  
**Keywords:**  
- Data dictionary  
- Forms management  
- Programming tools  
- Report writer  

This general-purpose data base software allows users and professional programmers to quickly and accurately design and use their own applications. Menu-structured, totally table-driven RDM en-
ables even a nonprogrammer to develop a complete application, from the creation of data files and input screens, through processes and reports, to a fully integrated data management package, including menus and commands, on-line help, and even incorporating security for sensitive data — all by filling in the blanks on RDM definition screens.

Data files may be generated and modified as desired with the RDM data dictionary editor, by naming fields and specifying the type of data to be stored. The RDM forms program allows quick definition of unique screens for data input, review, or edit. RDM’s powerful report writers can be used for nearly every conceivable reporting need. Simple or sophisticated reports can be designed easily, with total control of both format and logic. A process generator allows users to design processes that calculate, assign, and move data among as many as four files. Simplified logic control permits the user to implement most common processing routines without writing complex code. User-designed menus and commands bring applications together in a complete, user-friendly unit. On-line help at every access level further enhances user friendliness. Finally, file-maintenance utilities are included to copy, merge, purge, and sort data records.

PRO–RDM (Programmers Pascal Library) is an optional and separate package that provides more than 100 Pascal routines that can help improve productivity by reducing the need to write, link, and debug program code.

A version of this product is available for the PDP–11 computer.

Price: $2,495
Product Support Available: Yes
Contact: Tom Madison
          (503) 644–0111
          INTERACTIVE TECHNOLOGY INC.
          1225 N.W. Murray Road, Suite 108
          Portland, OR 97229

REX–SMA/186

Operating System: ULTRIX, VMS
Keywords: • Assemblers • Microprocessor development
          • Programming tools • Project management

REX–SMA/186 is a relocatable macro cross-assembler that supports the development for Intel 8086, 8087, 8088, 80186, and 80188 microprocessor applications. The package contains five utility programs, which include an Intel-compatible macro assembler, XASM–186; a cross-linker, XLINK–186; an absolute object code locator, XLOC–186; an object code librarian, XLIB–186; and a menu-driven command interface.
XASM–186 is compatible with Intel’s ASM–86 at command, source code, and relocatable object code levels. XASM–186 supports type checking, data structure facilities, and macro processing capabilities and provides full address segmentation control at both the logical and physical levels. Logical segmentation gives the designer full control in partitioning program modules into logically separate segments without regard to actual physical address placement.

XASM–186 generates Intel-compatible MCS–86 relocatable object module format that can be linked, located, or combined by XLINK–186, XLOC–186, and XLIB–186. Furthermore, any object code modules produced using Intel language processors LINK–86 and LIB–86 can be processed by REX–SMA/186’s object code linker and librarian. Debugging information, such as symbols for both local and global variables, may be included in the object code module by the REX–SMA/186 utilities. The resulting absolute object code module produced by the XLOC–186 may contain symbol table records that are directly compatible with Intel’s In-Circuit-Emulator.

A version of this product is available for the PDP–11 computer.

**Price:** $3,750 – $4,750

**Product Support Available:** Yes

**Contact:**
Dr. V. P. Chien
(714) 241–8650
SYSTEMS & SOFTWARE, INC.
3303 Harbor Boulevard, C–11
Costa Mesa, CA 92626

### RIMS/MPG–PLUS

**Operating System:** VMS

**Keywords:**
- Data entry
- File management
- Programming tools
- Source code control

RIMS/MPG–PLUS is a complete application program–generating system that can be used by both nonprogrammers and programmers to quickly and easily create ready-to-use business-oriented application programs and the source code for those programs, in a variety of DIGITAL-based operating systems and language compilers.

The complete RIMS/MPG–PLUS system consists of eight key software modules, including a data file definition and seven program–generating modules. The RIMS/MPG–PLUS user can generate programs using either single or multiple data files. The types of application programs generated are for data entry, reports, sorting, transaction processing, graphics, menus, and file reorganization.

RIMS/MPG–PLUS–generated programs are readily moved from the computer for which they were created to any other computer using the same language compiler. RIMS/MPG–PLUS does not have to re-
side on the "recipient" computer in order for programs created on another "host" computer to work.

This interactive multifile application program-generating system can easily be "superimposed" over any existing data file handling/access and/or other input/output-related method because of the "protocol file" design concept, which ensures that all input/output-related functions (including data file handling/access methods) are completely independent of the program-generator modules.

A version of this product is available for the PDP-11 computer.

**Price:** $5,750 – $22,500

**Product Support Available:** Yes

**Contact:** David Supinski, Sales Representative
(412) 262–5507
INFORMATION AND SYSTEMS RESEARCH, INC.
410 Rouzer Road, Building #1
Airport Office Park
Coraopolis, PA 15108

**ROSS/V (RSTS/E Operating System Simulator for VAX)**

**Operating System:** VMS

**Keywords:** • Communications • Programming tools • Simulation

This software package provides a RSTS/E monitor environment for programs running in PDP-11 compatibility mode on VAX-11 CPUs under the VMS operating system, making it possible to run a wide variety of BASIC–PLUS and other RSTS/E-based programs on a VAX with little or no modification. ROSS/V is analogous to DIGITAL's Application Migration Executive, supplied with VMS, which provides an RSX-11M environment on the VAX in much the same way that ROSS/V provides a RSTS/E environment. Among the many RSTS/E features supported by ROSS/V are Concise Command Language (CCL) commands, multiuser read/write access to shared files ("update mode"), and concurrent use of multiple run-time systems.

No RSTS/E software is supplied with ROSS/V; any licensing required to use such software on the VAX should be arranged between the user and DIGITAL. ROSS/V is also available from Online Data Processing, Inc. (509) 484–3400.

**Price:** $5,500 – $10,900

**Product Support Available:** Yes

**Contact:** Martha A. Schriefer
(617) 861–0670
EVANS GRIFFITHS & HART, INC.
55 Waltham Street
Lexington, MA 02173
RTEM—11

Operating System: VMS
Keywords: • Assemblers • Compilers • Debugging
• Programming tools

RTEM—11 provides the RT—11 program development environment on one of the following host development systems: RSX—11M, RSX—11M—PLUS, and VAX/VMS. RTEM—11 runs in compatibility mode on VAX/VMS systems and allows several users to develop RT—11 applications concurrently on a host system. The number of users is dependent on CPU power and system activity. Application programs can be created, edited, assembled, and linked on RTEM—11 and then executed on RT—11.

The minimum memory requirement for RSX—11M or RSX—11M—PLUS systems is 48KB.

Refer to SPD #30.21.03 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP—11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

S68 Motorola 68000 Simulator

Operating System: VMS
Keywords: • Debugging • Microprocessor development
• Programming tools • Simulation

S68, a fully functional Motorola 68000 simulator developed by Pacer Software Inc., creates on the host CPU a M68000 run-time environment that permits developers to execute Motorola 68000 binary images (load modules), step through programs instruction by instruction, collect timing information, and verify program accuracy. All M68000 instructions are handled.

Used in conjunction with C68 and A68, the M68000 cross-compiler and M68000 cross-assembler, S68 can significantly increase productivity of companies involved in microprocessor development by making better use of centralized engineering computers and shortening overall debugging time by eliminating time-consuming down-line loads to microprocessor stations. This product is also ideal for educational environments that wish to teach microprocessor architecture but have limited funds for hardware expenditures.

Price: Available upon request
Product Support Available: Yes
Contact: Joel Schacht
(617) 491—4180
SB–5 (System Builders–5)

Operating System: VMS
Keywords: • Programming tools • Project management

SB–5 is a comprehensive system of software-development programs that automate the design, production, documentation, and maintenance of COBOL-language applications software. The system permits the interactive entry of design and program function parameters and user-added COBOL for description file layouts and all program types. From those parameter files, SB–5 generates design documentation, source COBOL-language programs, and English-language descriptions of program functions. Parameter files created on any supported system can be used to generate equally valid source COBOL code on any other supported system or systems, provided that the necessary licenses have been obtained.

The SB–5 system permits screen, report, and form layouts to be "painted." In addition to designing, producing, and documenting the desired applications software, SB–5-generated documentation includes screen and report previews, five levels of program and operating documentation, and project management statistics reports.

A version of this product is available for the PDP–11 computer.

Price: $12,000 – $23,000
Product Support Available: Yes
Contact: Willard C. Kimm
(201) 791–7661
BUSINESS CONTROLS CORP.
507 Boulevard
Elmwood Park, NJ 07407

SCCS (Source Code Control System) for Virtual UNIX*

Operating System: UNIX, VMS
Keywords: • Report writer • Source code control

The Source Code Control System provides a complete audit of changes made to program sources or documents on your UNIX* system. SCCS prevents multiple programmers from changing the same program and subsequent edits being overwritten. Version and date stamps within compiled object and executable files permit verifying the actual version of a program being tested.
Reports include histories of changes per file or specific changes for a version. Any version of a file may be extracted, by version number or by changes made until a cutoff time, and retrieved.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** $1,500

**Product Support Available:** Yes

**Contact:** Sam Bishop, Vice President, Sales
(312) 879–1008

UNIQ DIGITAL TECHNOLOGIES
28 S. Water Street
Batavia, IL 60510

**SCRNIO/11 (Terminal-Independent Screen Forms I/O)**

**Operating System:** VMS

**Keywords:** • Data entry  • Forms management
• Programming tools  • Telecommunications

The SCRNIO/11 library of subroutines provide terminal-independent screen forms and field attribute capabilities for the applications programmer. SCRNIO/11 includes Pennington’s VIDIO/11 (video terminal I/O), which makes it independent of the model of video terminal being used, and an interactive menu-driven Screen Form Editor. A screen form consists of background text (such as prompts, headings, and titles) and fields for input and output. A field has processing attributes, such as fixed/variable length, left/right justification, fill character, “no-terminator” and “no-echo” input options, or a default value and/or “missing” value, and error-checking attributes, such as mandatory/optional, a mask, a range, or a set of legal values.

Screen forms may be either disk-resident or memory-resident. The application program may use more than one screen form on the video terminal at a time. Screen forms may be used interactively on a video terminal or printed (with field values).

The Screen Form Editor supplied with SCRNIO/11 is an interactive menu-driven utility for creating and modifying screen forms. Screen form text is edited on the terminal screen exactly as the form will appear when used; field attributes are specified through fill-in-the-blank forms. Hard-copy documentation of screen forms may be produced at any time. The specifics of screen forms, field attributes, and even the terminal model are isolated from the application program, so changes made in any of those areas usually require no program maintenance.
A version of this product is available for the PDP–11 computer.

**Price:** $5,000  
**Product Support Available:** Yes  
**Contact:** Stephen F. Heffner, President  
(609) 737–2727  
PENNINGTON SYSTEMS INC.  
65 S. Main Street, Building C  
Pennington, NJ 08534

### SDDL (Software Design and Documentation Language)

**Operating System:** VMS  
**Keywords:**  
- Documentation  
- Programming tools  
- Project management  
- Text editing/formatting

SDDL provides an effective communication medium to support the design and documentation of complex software applications. SDDL supports communication between all the members of a software design team and provides for the production of informative documentation on the design effort. Even when an entire development task is performed by a single individual, it is important to explicitly express and document communication between the various aspects of the design effort, including concept development, program specification, program development, and program maintenance. SDDL ensures that accurate documentation will be available throughout the entire software life cycle. SDDL offers an extremely valuable capability for the design and documentation of complex programming efforts ranging from scientific and engineering applications to data management and business systems.

**Price:** $855  
**Product Support Available:** No  
**Contact:** Customer Support Department  
(404) 542–3265  
NASA'S COMPUTER SOFTWARE MGT. AND INFO. CENTER  
112 Barrow Hall  
University of Georgia  
Athens, GA 30602

### SNDRCV (Send/Receive File Utility)

**Operating System:** Independent  
**Keywords:**  
- Disk utilities  
- File transfer  
- Microprocessor development
SNDRCV, available in source and object formats, provides a reliable method for transferring ASCII or binary data files with specifiable record size between machines. SNDRCV, which can run as a background task, performs sumchecking and handshaking on both the sender’s and receiver’s ends. The SNDRCV utilities at each end of the transfer can track the progress of the transmission, retrying and restarting when needed. The handshaking mechanism checks each record sent and retries if needed.

One program is used for sending and receiving. The receive program, once started, can receive many files unattended. The send command specifies the destination file name, including path (in terms of the destination operating system). The record count and checksum of each file are computed and printed at both sides as a final check on integrity. The program handles byte-swapping differences between VAX and 68000 and is ideal for reliable transmission of program images, and so on. The baud rate is settable from the command line. Target memory address may be specified.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Joel Schacht  
(617) 491–4180  
OASYS, INC.  
60 Aberdeen Avenue  
Cambridge, MA 02138

**SofForms**

**Operating System:** ULTRIX, UNIX  
**Keywords:**  
• Data collection  
• Data entry  
• Forms management  
• Programming tools

SofForms, a forms creation package, provides data entry forms in front of any application, with help and validation associated with every data entry field. The form painter program allows the designer to paint the form on the screen and to associate help text and validation criteria with each field. The run-time portion will display the form for the end user, collect and validate data, and respond to help requests.

A version of this product is available for the PDP–11 computer.

**Price:** $250 – $1,000

**Product Support Available:** Yes

**Contact:** Sol Goldenberg  
(201) 447–3901  
SOFTEST  
555 Goffle Road  
Ridgewood, NJ 07450
SOFTOOL®

Operating System: UNIX, VMS
Keywords: • Debugging • Programming tools
          • Project management • Source code control

This comprehensive environment for software management, development, and maintenance consists of an integrated collection of software tools that are hosted on a conventional computer system to create a software development and control facility. SOFTOOL supports an explicit distinction between the host environment, where software is developed and controlled, and the target environment, where programs are executed.

SOFTOOL aids both management and software specialist. It permits management to set, facilitate, and enforce standards and to obtain visibility and control over software efforts. At the same time, SOFTOOL allows the software builder to concentrate effectively on the software construction process.

The tools available include shorthand languages, structured languages, source code auditor, source code documenter, interface documenter, error detectors, libraries of prefabricated code, testing aids, tracing aids, optimizers, dynamic memory managers, flow analyzers, tutorials, and change and configuration control.

SOFTOOL is available off the shelf for a growing number of computer systems. It supports FORTRAN and COBOL extensively and other programming languages to various degrees.

A version of this product is available for the PDP–11 computer.

Price: $3,500 – $80,000
Product Support Available: Yes
Contact: Bruce Hanna
         (805) 964–0560
         SOFTOOL CORP.
         340 S. Kellogg Avenue
         Goleta, CA 93117

SOFTOOL® COBOL Programming Environment

Operating System: UNIX, VMS
Keywords: • Maintenance • Programming tools
          • Project management • Source code control

This comprehensive set of tools for software management, development, and maintenance consists of an integrated collection of software tools that are hosted on a conventional computer system to create a software development and control facility. The COBOL Programming Environment supports an explicit distinction between the host environment, where software is developed and controlled, and the target environment, where programs are executed.
This set of tools aids both management and software specialist. It permits management to set, facilitate, and enforce standards and to obtain visibility and control over software efforts. At the same time, it allows the software builder to concentrate effectively on the software construction process.

The tools available include a shorthand language, structured languages, a source code documenter, an interface documenter, error detectors, testing aids, tracing aids, optimizers, and tutorials.

A version of this product is available for the PDP–11 computer.

**Price:** $3,500 – $33,500

**Product Support Available:** Yes

**Contact:** Bruce Hanna  
(805) 964–0560  
SOFTOOL CORP.  
340 S. Kellogg Avenue  
Goleta, CA 93117

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**SOFTOOL® FORTRAN Programming Environment**

**Operating System:** UNIX, VMS  
**Keywords:**  
- Debugging  
- Maintenance  
- Programming tools  
- Source code control

This comprehensive set of tools for software management, development, and maintenance consists of an integrated collection of software tools that are hosted on a conventional computer system to create a software development and control facility. The SOFTOOL FORTRAN Programming Environment supports an explicit distinction between the host environment, where software is developed and controlled, and the target environment, where programs are executed.

SOFTOOL aids both management and software specialists. It permits management to set, facilitate, and enforce standards and to obtain visibility and control over software efforts. At the same time, it allows the software builder to concentrate effectively on the software construction process.

The tools available include shorthand languages, structured languages, source code auditor, source code documenter, interface documenter, error detectors, libraries of prefabricated code, testing aids, tracing aids, optimizers, dynamic memory managers, flow analyzers, and tutorials.

A version of this product is available for the PDP–11 computer.

**Price:** $3,500 – $60,000  
**Product Support Available:** Yes

**Contact:** Bruce Hanna  
(805) 964–0560
SOFTOOL CORP.
340 S. Kellogg Avenue
Goleta, CA 93117

SOFTOOL® Tutorials Library

Operating System: UNIX, VMS
Keywords: • Computer-aided instruction • Education
• Programming tools • Project management

This comprehensive collection of interactive tutorials in support of the SOFTOOL methodology and tools is easy to use. The tutorials are organized in a hierarchical fashion that allows the user to select the degree of detail to be covered. The top level provides a management overview. The second level offers a programming overview. The third level consists of a detailed tutorial for each SOFTOOL component.

SOFTOOL is a methodology and an integrated environment for software management, development, and maintenance. The interactive tutorials, containing more than 25 hours of instructional material, allow for the rapid and thorough training of personnel.

A version of this product is available for the PDP–11 computer.

Price: $3,500
Product Support Available: Yes
Contact: Bruce Hanna
(805) 964–0560
SOFTOOL CORP.
340 S. Kellogg Avenue
Goleta, CA 93117

SoftProbe

Operating System: ULTRIX, VMS
Keywords: • Debugging • Microprocessor development
• Programming tools • Project management

SoftProbe is an interactive symbolic software emulator for debugging Intel 8086/8088 microprocessor software written in both high-level and assembly languages. The program provides both language-oriented program testing and machine-level debugging facilities that make program testing an integral part of the program development process. SoftProbe's language-oriented debugging facilities include symbolic debugging, high-level language statement trace, and data structure reference. Machine-level debugging facilities include ICE-like program execution, trace control, and extensive I/O and interrupt simulation to support the development for real-time embedded system applications. SoftProbe supports symbolic names, data types
and structures, and references for high-level language program debugging. The user may reference procedure names as well as program statement number as part of program execution control and execution history display.

For real-time embedded system applications, SoftProbe provides user-controlled memory simulation and I/O port simulation using four possible I/O operation models: constant list, memory location, host device, and special user-written procedures. For interrupt simulation, SoftProbe provides an 8259 PIC simulator and a real-time clock simulator. As a result, SoftProbe provides a simulation environment in which program logic and software interface may be checked out and that closely resembles the actual hardware environment.

User commands may be grouped into macros and may be executed from a command file. The user commands may also be executed based on conditions or by repeatedly using SoftProbe’s conditional and repetitive command execution facilities, respectively.

A version of this product is available for the PDP–11 computer.

**Price:** $3,750 – $5,250

**Product Support Available:** Yes

**Contact:** Dr. Y. P. Chien  
(714) 241–8650  
SYSTEMS & SOFTWARE, INC.  
3303 Harbor Boulevard, C–11  
Costa Mesa, CA 92626

### Software Toolkit/ctext

**Operating System:** UNIX, VMS  
**Keywords:**  
• Device drivers/handlers  
• File management  
• Programming tools  
• Text editing/formatting

Software Toolkit is a sophisticated set of tools designed from the ground up for use with one another, with standard conventions for specifying the components of a command line and for naming flags, regular expressions, sort keys, and other parameters. The complete toolkit can be transported to numerous host operating systems, because each tool has been designed and written to be portable. These tools are excellent for enriching your current operating system environment.

The ctext is a user-programmable system for creating formatted text suitable for reproduction by a variety of output devices. Supported devices include miscellaneous terminals or printers, VT52 or VT100 display terminals, Diablo printers, and the Varityper 5410/5810/5900 family of phototypesetters.
The style of markup, or commands, to be recognized by ctext is programmable, so that it can directly interpret nroff/troff "line-style" macros in addition to customized formats. In other words, manuscripts using any of the common nroff/troff macro sets can be easily formatted.

A version of this product is available for the PDP–11 computer.

**Price:** $200
**Product Support Available:** Yes
**Contact:** Christina B. Hanley  
(617) 369–8499  
WHITESMITHS, LTD.  
97 Lowell Road  
Millbrook Tarry  
Concord, MA 01742

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**SourceTools™**

**Operating System:** VMS  
**Keywords:**  
- File management  
- Language processors  
- Programming tools  
- Source code control

SourceTools is a language-independent tool for increasing individual and programmer productivity. With SourceTools, programmers cannot lose track of details, because it includes a source control system, a file rebuilder, a file comparator, and a stream editor to effectively manage and maintain all stages of the software development life cycle.

A version of this product is available for the PDP–11 computer.

**Price:** $3,600  
**Product Support Available:** Yes  
**Contact:** Sales Department  
(503) 226–7760  
OREGON SOFTWARE  
2340 SW Canyon Road  
Portland, OR 97201

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**SUBS (Standard Subroutine Library, Version II)**

**Operating System:** VMS  
**Keywords:**  
- Assemblers  
- Programming tools  
- Source code control  
- Text editing/formatting

SUBS is a set of assembler and BASIC routines that perform common programming functions. Some of the SUBS features are cursor positioning, clear the entire or specified portions of the screen, display a message at a screen location, accept a user response and edit it, display user error prompts and wait for a response, ASCII-to-
EBCDIC conversion, and packing and unpacking data fields. Also included are routines that perform terminal recognition tests and issue the proper cursor control sequences for a variety of terminals, including DIGITAL, Televideo, Hazeltine, and ADM terminals.

User manuals can be purchased to preview the functioning of the product. A user's instruction and installation guide is included.

Limited support, as defined in the Software Maintenance Agreement, is provided for SUBS for 60 days. Additional coverage is available.

A version of this product is available for the PDP-11 computer.

**Price:** $1,000

**Product Support Available:** Yes

**Contact:** Neal J. Anderson, Senior Product Specialist  
(414) 784–8250  
MCHUGH, FREEMAN AND ASSOCIATES, INC.  
1135 Legion Drive, P.O. Box 454  
Elm Grove, WI 53122

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**SUPERDBG**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:** • Debugging  
• Microprocessor development  
• Simulation

SUPERDBG is a family of software debuggers or emulators that supports microprocessor program development. Two SUPERDBG debugger versions are available for each of the commonly used microprocessors. The simplest and least expensive version, LEVEL 0, is a binary debugger similar to ODT in its operation. LEVEL 1 debuggers provide users with the additional capability to reference addresses and op codes symbolically.

SUPERDBG debuggers use the outputs of the corresponding SUPERMAX cross-assembler/linker packages to produce a load module, which is then read into SUPERDBG debugger using the LOAD command. The user can then perform a number of operations on the load module, including emulated execution. Other features include breakpoints, single- or multiple-step execution, and the ability to examine and/or modify individual registers, condition codes, and memory locations.

SUPERDBG debuggers can also communicate directly with the host system, reading and writing to the system device and accessing the console keyboard and screen. Those and other features are provided to allow the user to the external devices outside of the emulated microprocessor.

A version of this product is available for the PDP-11 computer.

**Price:** $500 – $1,000

**Product Support Available:** Yes
TDMS (Terminal Data Management System), Version 1.2

Operating System: VMS
Keywords: • Database management • Forms management • Programming tools • Query facilities

This product is designed for the implementation of interactive forms-intensive applications running on the VAX/VMS operating system. As a terminal subsystem, VAX-11 TDMS can reduce application development and maintenance effort. VAX-11 TDMS replaces application program logic, specific to terminal interactions, with definitions that are external to the program.

VAX-11 TDMS applications range from database inquiry/response/update to real-time uses such as the periodic display of an industrial process. VAX-11 TDMS is typically used as a terminal subsystem in terminal data management applications such as inventory control, manufacturing, distribution, and other form-intensive applications.

Refer to SPD #25.71.02 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).

T.I. TMS-7000

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compilers • Microprocessor development

This package of microprocessor software cross-development tools consists of the Texas Instruments TMS-7000 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP-11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.
For support of other host or target processors, contact Nuvatec.
A version of this product is available for the PDP-11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Contact: UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148

T$RAP
Operating System: VMS
Keywords: • Debugging • Programming tools
T$RAP is a FORTRAN-callable routine that intercepts 'C interrupts and program exceptions. The T$RAP is set up by the FORTRAN statement CALL T$RAP (line #, IERR), and program flow continues normally until 'C is typed or a program exception occurs. If a T$RAPpable condition occurs, program flow will be redirected to "line #", the T$RAP will be removed, and the Error Code will be inserted in INTEGER*4 variable IERR. The T$RAP will be cancelled if routine UNT$RAP is called, another T$RAP is inserted, a T$RAP occurs to "line #", and the routine calling T$RAP issues a RETURN.
T$RAP calls (undocumented) FORTRAN routine FOR$10–END, to avoid I/O recursion errors. Recursion-type errors still occur if the OPEN statement fails. T$RAP plays with stack frames in an unusual manner.
Documentation is on magnetic media. DECUS number VAX–29.
Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

Troll/USE
Operating System: ULTRIX, UNIX
Keywords: • Data base management • Information management
• Language processors • Programming tools
This compact relational data base kernel provides an algebraic (procedural) interface to relational data bases. At the relation level, the operations include selection, projection, join, and product. At the tuple level, the operations include cursor manipulation with tuple at a time processing, including an if-then-else. At the item level, the operations include assignment and associative access. Troll/USE supports data type checking, including scalars and variable-length strings.
The system works with a set of related tools, including the C-to-Troll and F77-to-Troll libraries, which allow easy interface to Troll/USE via message passing from C and FORTRAN 77 programs. Other tools related to Troll/USE are a screen-oriented relation browser and editor, a report generator (TRG), and a high-level programming language (PLAIN). Troll/USE can also be easily used with RAPID/USE to quickly build interactive information systems.

The Troll/USE environment is built as a collection of independent tools, following the UNIX* philosophy, rather than as a single monolithic system. Troll/USE is independent of application areas and industries.

Troll/USE is part of the University of California, San Francisco, User Software Engineering distribution (see RAPID/USE). Commercial support and training are provided through Interactive Development Environments, Inc., 44 Monterey Boulevard, Suite 32, San Francisco, CA 94131.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $300 – $750
Product Support Available: Yes
Contact: Anthony I. Wasserman
         (415) 666–2951
         UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
         Medical Information Science, Room A–16
         San Francisco, CA 94143

UF (Utility Facility)

Operating System: VMS
Keywords: • Data base management • Programming tools

The UF software package supplements other software products. It includes programs that perform installation and program-password maintenance, printer spooling control, master queue posting, data base corruption checking and recovery, and various package-dependent functions.

A version of this product is available for the PDP–11 computer.

Price: $2,400
Product Support Available: Yes
Contact: Muriel King
         (801) 224–5306
         CLYDE DIGITAL SYSTEMS, INC.
         3707 N. Canyon Road, Suite 3–E
         Provo, UT 84604
**USER–11**

**Operating System:** VMS  
**Keywords:**  
- Data base management  
- Data dictionary  
- Data entry  
- Programming tools

USER–11 is a comprehensive, easy-to-use data management system that provides high-level performance and efficiency. USER–11 incorporates the procedures necessary to develop business application systems, with little or no custom programming. Built around an internal data dictionary and an efficient file-management module, USER–11 has more than 20 integrated utility programs allowing complete systems to be built without the necessity of writing BASIC code. On-line HELP is available in every module at every prompt. If custom code is required, CREATE, a program generator incorporating complete building blocks and interfaces, is supplied. ENTRY, a high-level language and run-time processor, is included for developing anything from simple data entry programs to complete systems. USER–11 also contains MENU system for control and enhanced security and a group of utilities for the RSTS system manager.

A version of this product is available for the PDP–11 computer.

**Price:** $14,500  
**Product Support Available:** Yes  
**Contact:** Richard Baldwin, Vice President, Marketing  
(619) 745–6006  
NORTH COUNTY COMPUTER SERVICES, INC.  
2235 Meyers Avenue  
Escondido, CA 92025

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**VAX–11/750 G & H Format Microcode, Version 1.0**

**Operating System:** VMS  
**Keywords:**  
- Disk utilities  
- File management  
- Microprocessor development  
- Pre- and postprocessors

The VAX–11/750 G & H Format Microcode package implements the G-floating and H-floating extended range and precision floating-point format instructions and a microcode loader. The G & H floating-point formats expand the exponent range up to \(10^{**\pm4932}\) and the precision up to 33 digits. The microcode loader allows the system manager to control the loading of microcode into KU750 UCS hardware. The loader also provides for reloading of microcode, upon power-fail recovery of systems with main memory backup.

The VAX–11/750 G & H Format Microcode uses 1KW of control store provided by the KU750 and cannot be used concurrently with any other UCS microcode.
Refer to SPD #25.66.0 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

### VAX–11/780 Microprogramming Tools, Version 2.0

**Operating System:** VMS  
**Keywords:** • Debugging  • Diagnostics  
• Microprocessor development  • Source code control

The VAX–11/780 Microprogramming Tools enable a programmer to assemble and load microprograms for the User Writable Control Store (UWCS) option of the VAX–11/780 central processor.

VAX–11/780 Microprogramming Tools consist of the following:

• MICRO–2, an assembler written in BLISS–3 for user-written source microcode.

• VAXDEF, the definition file that describes to the assembler the VAX–11/780 microarchitecture. The definition file is assembled with the file containing customer-written microcode statements. The output of the assembler is an object file containing absolute microcode and a listing file containing the user source microcode and related microcode output.

• MICLD, a utility program to load the User Writable Control Store memory of a VAX–11/780 CPU from VAX–11/780 WCS microprogram object file. The utility program runs as a privileged task under VAX/VMS.

• A tool verification test that invokes a sample program to ensure that the tools have been installed correctly.

Refer to SPD #25.9.5 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

### VIDIO/11 (Terminal-Independent Video I/O)

**Operating System:** VMS  
**Keywords:** • Data entry  • Pre- and postprocessors  
• Programming tools  • Telecommunications

The VIDIO/11 library of subroutines provide terminal-independent video I/O capabilities for the applications programmer, including subroutines that write to or read (with "protected field") from a given
screen position; clear a line or the whole screen; and set video attributes, such as reverse video, blink, and underscore (if supported by the video terminal). Character and field delete are supported. VIDIO/11 protects the screen contents from bad input (entered by the terminal operator) or bad output (from the application program).

VIDIO/11 makes it unnecessary in most cases for the application program to know what model of video terminal it is communicating with. The program can be run from a number of different terminals with no changes; VIDIO/11 configures itself for the terminal model at run time.

Other capabilities provided by VIDIO/11 include "no-echo" and "no-terminator" input options, fixed-length and variable-length input, and partial screen scrolling on most terminals.

A version of this product is available for the PDP–11 computer.

**Price:** $2,500

**Product Support Available:** Yes

**Contact:** Stephen F. Heffner, President
(609) 737–2727

PENNINGTON SYSTEMS INC.
65 S. Main Street, Building C
Pennington, NJ 08534

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**Zilog Z8**

**Operating System:** ULTRIX, UNIX

**Keywords:** • Assemblers  • Compilers  • Cross-compilers
• Microprocessor development

This package of microprocessor software cross-development tools consists of the Zilog Z8 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer’s. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

**Price:** $300 – $3,000

**Product Support Available:** Yes

**Contact:** UniWare Sales
(312) 620–4830

NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148
Zilog Z80

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compilers • Microprocessor development

This package of microprocessor software cross-development tools consists of the Zilog Z80 relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP-11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP-11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Contact: UniWare Sales
(312) 620-4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148
File Management
Access—Controller

Operating System: VMS

Keywords:  • Data base management  • Disk utilities
           • Information management  • Security

The Access—Controller, developed by Bear Computer Systems, Inc., expands on the limited file protection categories of group, world, owner, and system provided by DIGITAL. With the Access—Controller, you have the ability to grant or deny file access to individual users or groups of users based on their user names, their accounts, or other identifying criteria. You may specify a "group" of users by a list of their user names and are thus not limited to UIC group definitions.

For each of your groups of users, you may grant read, read/write, or no access to specified disk volumes. Management is simplified by the ability to use wildcards and exception list features.

The Access—Controller, included with the Crypto—Disk and the Disk—Reducer, is an additional-cost item for the VAX/VMS Virtual/Memory Disk, which is required in order to use the Access—Controller.

Price: $250
Product Support Available: Yes
Contact: Cheryl Pankratz
         (714) 998—6041
         MIDCOM CORP.
         1940 N. Tustin Avenue, Suite 117
         Orange, CA 92665

ACT User Control Accounting

Operating System: VMS

Keywords:  • Accounting  • Data collection  • Disk utilities
           • Programming tools

ACT, developed by I S E, Inc., is a fully developed user accounting, control, and site management system working on VAX/VMS Version 3.1 or later. The system automatically collects and maintains usage information about CPU, paper, disk, and tape resources. ACT notifies the manager and users when they exceed their account parameters and can optionally turn off such users. The user has read access to all data regarding his/her particular account. The manager can access all the data, including all charge rates, controlling variables, summary data, and help information.

ACT provides for internal and external billings and supports cash base accounting, purchase order accounting, resource allocation and chargeback accounting, and project accounting. Display formats can conform to either European or U.S. standards.
The basic design philosophy behind ACT is ease of use. The mode of operation of ACT is identical to DIGITAL-supplied utilities and thus is very easy to follow, especially with the help file support.

**Price:** $3,300

**Product Support Available:** Yes

**Contact:** Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue, Suite 117  
Orange, CA 92665

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**ARCH (A File Archival System for the VAX)**

**Operating System:** VMS  
**Keywords:**  
- Data conversion  
- Disk utilities  
- File transfer  
- Programming tools

ARCH was designed to provide for the easy off-line storage and retrieval of arbitrary files on a VAX system. ARCH can handle any of the three types of Files-11 file formats (indexed, sequential, and relative), with a given type of file being allowed to have any arbitrary contents. The files are initially stored on disk, with eventual movement to tape storage. A complete history is maintained through a directory file that contains a list of the entire contents of each backup tape. Each tape also contains enough information to effect a system recovery.

Upon archiving by ARCH, a file is copied into a special disk directory, and an extensive entry for the file is made in the internal catalogs. While being copied, the file is changed to internal format, and two classes of user-supplied comments may be added — (short) summary information and (long) detailed description. Groups of files from that special disk directory can be moved onto tape. The system can always be restored to the state it had at the time of the latest backup tape generation, should a catastrophic disk failure occur. Several features aid the user in searching the archived files to eliminate the unnecessary dearchiving of files while searching for a particular file. When a file is retrieved (dearchived), the new user file duplicates the original file, with the option of adding the user-supplied archive comments. An internal help facility can provide assistance in all phases of the ARCH system.

**Price:** $975

**Product Support Available:** No

**Contact:** Customer Support Department  
(404) 542–3265
ARCHIVER

Operating System: VMS
Keywords: Disk utilities, Facilities management, Information management, Security

Archiver can reduce user disk storage and associated costs by storing seldom-accessed files on magnetic tape. The system maintains an on-line directory of files archived for each user and provides capabilities for retrieving and/or deleting files from archive storage. Archiver supports all standard VMS file organizations.

The system is distributed with an automatic archival option. Automatic archival refers to the process in which disk files are moved onto tape by the system rather than by the user. The system manager can choose the algorithm for migrating files.

Archiver uses a unique access method to increase both the number of files on a tape and the speed at which the files are copied to and retrieved from the tape. Additionally, Archiver ensures against tape failures by using primary and secondary tapes for each archived file and by detecting and correcting for tape read/write errors.

The user interface is installed as three DCL commands. The ARCHIVE command moves a file from disk to tape. The RETRIEVE command moves a file from tape to disk. The DISCARD command deletes a file from archive tape. Each command has numerous qualifiers to effect execution.

Price: $1,500 – $5,000
Product Support Available: Yes
Contact: Abby Turner
         (617) 273–5500
         STRATEGIC INFORMATION
         80 Blanchard Road
         Burlington, MA 01803

BCKQUOTA

Operating System: VMS
Keywords: Disk utilities

The program BCKQUOTA is designed to aid the system manager when backing up public disk volumes having disk quota enabled. If backup is run while disk quota is enabled, the BACKUP command
cannot open the QUOTA.SYS file and copy it to the backup tape. This file contains all the disk quota information on each of the users (by UIC) for the disk being backed up. BCKQUOTA uses the QIO interface to the file system ACPs to obtain all the disk quota information for the specified disk. BCKQUOTA then formats the information for each user into DISKQUOTA commands. If the resulting file of commands is backed up along with the rest of the data on the disk, it may be used at a later date if it becomes necessary to rebuild the disk quota information for a crashed disk. Complete HELP instructions are supplied.

Documentation is on magnetic media. DECUS number VAX–24.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

**CC™ (Change Control)**

**Operating System:** UNIX, VMS

**Keywords:**  
- Documentation  
- Programming tools  
- Project management  
- Source code control

This comprehensive environment for the management of software changes and their documentation controls who can make changes and to what components, thereby eliminating many unworkable manual procedures. The program can handle source code, object code, test data, and documents and can deal with many languages.

The program’s features include automatic reconstruction of previous versions, problem tracking, difference reports, management reports, access control, archiving, compression, encryption, and automatic recovery. CC is an interactive tool with an easy-to-use interface, online help, and interactive tutorials.

CC offers complete support for source code management and is upgradable to the SOFTOOL® Change and Configuration Control Environment, which in addition to change control, also offers full support for configuration control. CC is a stand-alone component of SOFTOOL, an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP–11 computer.

Price: $12,000

Product Support Available: Yes

Contact: Bruce Hanna  
(805) 964–0560  
SOFTOOL CORPORATION  
340 S. Kellogg Avenue  
Goleta, CA 93117
**CCC™ (Change and Configuration Control)**

**Operating System:** UNIX, VMS  
**Keywords:**  
- Documentation  
- Pre- and postprocessors  
- Programming tools  
- Project management

CCC provides a comprehensive change control environment and offers a full configuration control environment. CCC controls who can make changes; it can handle source code, object code, test data, and documents and can deal with many languages. The program’s comprehensive features include automatic reconstruction of previous versions, problem tracking, difference reports, management reports, access control, archiving, compression, encryption, and automatic recovery. CCC is an interactive tool with an easy-to-use interface, online help, and interactive tutorials.

A configuration embodies the popular concept of a version. The configuration control power of CCC is due to its support for multiple configurations and its implementation of virtual configurations, which results in major space savings. Further, the user can operate on configurations as a whole, rather than component by component.

CCC is a stand-alone component of SOFTOOL®, an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP–11 computer.

**Price:** $30,000  
**Product Support Available:** Yes  
**Contact:** Bruce Hanna  
(805) 964–0560  
SOFTOOL CORP.  
340 S. Kellogg Avenue  
Goleta, CA 93117

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**CMS (Computer Management System)**

**Operating System:** VMS  
**Keywords:**  
- Database management  
- Data dictionary  
- Programming tools  
- Report writer

The File Management portion of the CMS system consists of 10 utility programs used to create and maintain indexed and sequential files, along with 8 functions that are used to process those CMS files within the user programs. The Data Management/Dictionary portions are completely integrated with the file management programs and functions, as well as with the program generators. A precompiler converts the data dictionaries into BASIC PLUS library files, which are appended to the user programs.

The system’s three program generators generate file maintenance, report writing, and data extraction and sorting programs and are completely integrated with the file and data management systems.
Miscellaneous program functions include complete data packing and unpacking functions plus several small programs that are used as programming aids and tools.

Two program packages are available that use this system — Payroll and Accounts Payable (Canadian).

A version of this product is available for the PDP–11 computer.

**Price:** $8,000

**Product Support Available:** Yes

**Contact:**
Bill Hay
(204) 888–5253 or 832–3680
BILL HAY & CO.
1164 Crestview Park Drive
Winnipeg, Manitoba R2Y 0W6
Canada

**DEC/CMS (Digital Equipment Corporation Code Management System)**

**Operating System:** VMS

**Keywords:**
- Data base management
- Data dictionary
- Programming tools
- Source code control

VAX–11 DEC/CMS, Version 1.1, is a program librarian for software development and evolution. It is comprised of a set of commands enabling software developers to manage the files of an ongoing project.

The program does the following:
- Stores ASCII text files in a project library
- Retrieves previous file generations
- Obtains a report of file modification, including when, why, and by whom the modification was made
- Determines the origin of each line of a file, either as an annotated listing or as comments in the file
- Manages concurrent modifications
- Merges separately developed modifications
- Stores related files together as a single element
- Relates the generation of one element to the corresponding generations of other elements

Refer to SPD #25.52.1 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office
(see Introduction).
DES (Data Encryption System), Version II

Operating System: VMS
Keywords: • Security

DES encrypts source, data, and task image (binary relocatable) files in single- or double-encryption format. DES runs as a stand-alone program (ENCRIPT) that allows single or double encryption of the system file. Encryption of data is performed in a stepwise process that requires the entry of a file name and a keyword. Data is deencrypted by reentering the keyword. Failure to supply the correct keyword will cause “deencryption aborted” messages to be logged to the system in one of three user-selected methods. DES also contains two routines that may be incorporated into any application that accesses sensitive data.

On-line demonstrations are available. Demonstration tapes and user manuals can be purchased to preview the product. A user's instruction and installation guide is included.

Limited support, as defined in the Software Maintenance Agreement, is supplied for this package for 60 days. Additional maintenance coverage is available.

A version of this product is available for the PDP–11 computer.

Price: $1,250
Product Support Available: Yes
Contact: Neal J. Anderson, Senior Product Specialist
(414) 784–8250
MCHUGH, FREEMAN AND ASSOCIATES, INC.
1135 Legion Drive, P.O. Box 454
Elm Grove, WI 53122

Diagnostic Program Macros Library, Version 1.0

Operating System: VMS
Keywords: • Data base management • Debugging
• Diagnostics • Disk utilities

This set of macros establishes the interface between a diagnostic program and the VAX–11 diagnostic supervisor. The VAX–11 Diagnostic Program Macros Library is provided in two versions: MACRO–32 and BLISS–32.

Diagnostic Program Macros are organized into five categories by function and method of implementation:
• Utility macros control program format through assembly and linker directives. Program control utility macros enable the diagnostic program to test specific run-time conditions and to alter program flow.
• Symbol definition macros assist the programmer by defining the global symbols required by many programs.
• Supervisor service macros include supervisor service routines that perform specific functions but do not modify program flow. Most supervisor routines return status codes as well as return control to the location following the instruction that called the supervisor routine.

• VAX/VMS (Virtual Memory System) Service Macros, a subset of VAX/VMS service macros, are available to level 2R diagnostic programs (a few are available to level 3 diagnostic programs). The service macros return status codes as well as return control to the location following the instruction that called the VAX/VMS service.

• RMS (Record Management System) service macros, a subset of which is available to all diagnostic programs.

Refer to SPD #26.25.01 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).

Disk Compress

Operating System: VMS
Keywords: • Disk utilities

Some of the VAX/VMS utilities and compilers allocate more storage to a disk file than is required. As a result, a portion of the disk space is wasted without the user’s being aware of the loss. Therefore, on a highly used device, such as one used for development and program maintenance, a great deal of the allocated blocks are wasted.

That problem can be detected by doing a disk directory using the /size=all option. If a variance of more than the disk cluster size less one exists between the actual and allocated blocks, the file has been allocated an excess amount of storage.

One solution is to copy the file into a temporary file, delete the original version, then rename the temporary file as the original, thus preserving the version number. DSKCMP.COM is a DCL utility program designed to perform this copy/delete/rename/sequence for a specified disk account and file combination.

Note: *.DIR files are not processed. No users should be logged into the account(s) being processed. A disk compress (DSC–2) should be run after extensive use of this utility in order to prevent fragmentation of the disk.

Documentation is on magnetic media. DECUS number VAX–28.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)
FINDUIC

Operating System: VMS
Keywords: • Disk utilities

FINDUIC is a program to locate all files owned by a particular UIC. The program asks for a disk, UIC, and output device, then opens [0,0]INDEXF.SYS on the user-specified disk. All files owned by the UIC are then entered into an alphabetically ordered tree, together with the FILE ID and file size, which is obtained by opening the file by FILE ID. If the file is locked or otherwise protected against the caller, **** will be returned for the file size. FINDUIC should be defined as a foreign command:

FINDUIC: = = $SYS$SYSTEM:FINDUIC

and then called by typing:

FINDUIC Disk:[UIC]/OUTPUT:Output

Any of the parameters above may be omitted, with the disk defaulting to the user’s default disk, [UIC] defaulting to the caller’s UIC, and output defaulting to SYS$OUTPUT.

FINDUIC does not support multiheader files.

Documentation is on magnetic media. DECUS number VAX-21.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

Handle Access™

Operating System: ULTRIX, UNIX
Keywords: • Graphics • Networking • Office systems
          • Spreadsheets

Handle Access allows any Handle product to read and import or dynamically reference data from main-frame data bases. Through Handle’s integrated system, information can be incorporated into a spreadsheet or a document or plotted with Handle Graphics. Any Handle document can be exported to existing systems files.

A version of this product is available for the PDP-11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Karan Kauppila
         (916) 583–7283
         HANDLE CORP.
         P.O. Box 7018
         Tahoe City, CA 95730
HCR/Menu Shell

Operating System: UNIX, VMS  
Keywords:  • Development tools  • Programming tools

HCR/Menu Shell lets you make your own menus for using UNIX*. Users can choose any of the keywords that remain listed at the top of their screen; or, if they know UNIX* commands, they can issue them directly. The menu fields are addressable and so can be used to link with other programs. HCR/Menu Shell is an enhancement to the UNIX* shell, and there is no overhead on the system while it is running. HCR/Menu Shell can be adapted to other UNIX* configurations for OEMs.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $750 +

Product Support Available: Yes

Contact:  Sales Department
          (416) 922–1937
          HUMAN COMPUTING RESOURCES CORP.
          10 St. Mary Street
          Toronto, Ontario M4Y 1P9
          Canada

IMON (Image Monitor)

Operating System: VMS  
Keywords:  • Accounting  • Debugging  • Disk utilities
          • Programming tools

IMON, developed by Bear Computer Systems, Inc., gathers samples from a running program and produces a histogram display of where the time is being spent in the program. The display indicates that by specific routine names and can even go to the resolution of showing the exact line numbers in the routines. IMON can also display the time spent in the various scheduling states and processor modes for just the running program being sampled.

From any user terminal on your VAX, just run IMON and specify the process id, the process name, or the image name. IMON will take a number of samples and then display the data in the form of a bar chart. After IMON is started, the user is free to change many of the sampling and display parameters dynamically.

You do not need to relink or recompile the program to be examined. Routine names and line numbers will be displayed as long as the program was not built with the no-trace options. Otherwise, a load map would be helpful. IMON is essentially language-independent. Hard copy and file storage of raw data and displays are available for
off-line study and analysis. The user will find IMON easy to use with the on-line help facility.

**Price:** $2,500

**Product Support Available:** Yes

**Contact:** Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue, Suite 117  
Orange, Ca 92665

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**INTACT (Integrated Application Control System)**

**Operating System:** VMS  
**Keywords:**  
- Asynchronous communication  
- Forms management  
- Networking  
- Programming tools

INTACT, a transaction-processing system with interactive and batch-processing capability, provides terminal, file, and network management. Applications are written in any language that supports the CALL verb. Terminal screens (or forms) are managed by INTACT and kept separate from the application. File management is implemented through DIGITAL’s RMS services, is asynchronous, and is under INTACT control for maximum performance. Since INTACT runs on the complete VAX and PDP families, compatibility is ensured. Network management is performed through DECNet, and INTACT systems are peers, allowing a completely distributed system.

A version of this product is available for the PDP–11 computer.

**Price:** $2,000 – $15,000

**Product Support Available:** Yes

**Contact:** Marie C. Murphy  
(201) 798–6400  
ADVANCED SYSTEMS CONCEPTS, INC.  
22 Hudson Place  
Hoboken, NJ 07030

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**LOGIX**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:**  
- Compilers  
- Data base management  
- Query facilities  
- Report writer

LOGIX is a relational data base management system, uniquely configured for the UNIX* operating system. LOGIX is fully integrated with UNIX* and offers UNIX* facilities such as I/O redirection, pipes, and filters. LOGIX enables users to create, edit, and manipulate relations through a large set of interactive commands. LOGIX
also generates reports, prints forms, and updates relations, using interpreted or compiled queries.

Application designers will find a versatile and flexible query language that includes:

- **SelectQ**, an interactive query dialect that selects items, based on specific conditions, from one or more relations and places the result in a new relation
- **QuickQ**, an interpretive query programming dialect that expresses query programs to be interpreted and executed immediately, as well as output format statements for report writing
- **CompileQ**, a query dialect that precompiles QuickQ queries and integrates them with C-language macros and function calls

Application development time is decreased, and testability and maintainability are increased when programmers write in a high-level query language, such as Q.

LOGIX also provides an interface to the C programming language in addition to the tools required for developing sophisticated data management applications, from prototyping to final installation.

LOGIX runs on all major microprocessors, including the Z8000, DIGITAL’s PDP-11 series, the 8086, and 68000 machines.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.

**Price:** $1,000 – $15,000

**Product Support Available:** Yes

**Contact:** Anne C. Brink  
(617) 864–0137  
LOGICAL SOFTWARE, INC.  
55 Wheeler Street  
Cambridge, MA 02138

**NUCLUSTER.COM**

**Operating System:** VMS  
**Keywords:**  
- Data conversion  
- Disk utilities  
- File transfer  
- Security

NUCLUSTER.COM provides a means for changing the cluster factor on a SYSTEM and/or USER disk. The program can be used for SYSTEM disks on systems with more than one disk drive (one for the source system disk and the other for the new disk), as well as on non-SYSTEM disks on systems with more than two disk drives (one for the SYSTEM disk, one for the source disk, and the third for the new disk). The routine is designed to copy all the first-level directories and files from the “SOURCE” disk to the new “TARGET” disk while retaining the owner UID and file protection; however, the file creation date becomes the date the routine was run. A change to the
routine will be required to pick up the subdirectory files; the listing for a routine to locate subdirectory files is appended to the NUCLUS-TER.COM listing as a guide. All necessary documentation is contained in the listing. The routine prompts the user for all required data. DECUS number VAX-7.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

OS/FT (File System)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Data conversion • Instrumentation
• Process control • Simulation

The OS/FT File System is a superset of the UNIX*-style hierarchical file system. As such, it provides the hierarchical function of UNIX* systems yet can, because of its design, allow expanded hierarchical directories. OS/FT's primary function is to provide a hierarchical file system for OS/RT, Destek's real-time, multitasking operating system kernel. OS/FT was designed to be used in any disk-based process control, instrumentation, simulation, or communications control application. Additional utilities for the file system allow UNIX*, CP/M, and MSDOS files to be ported directly to OS/FT files. OS/FT is available in object or C source code.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.

Price: $600 – $3,000
Product Support Available: Yes
Contact: Dennis Rieger
(408) 737-7211
THE DESTEKK GROUP
830 East Evelyn Avenue
Sunnyvale, CA 94086

PAPICS (Product and Project Information Control System)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Documentation • Maintenance
• Project management • Source code control

PAPICS is a dedicated information system holding data generated or used in the course of a project. The objective of any such project may be development as well as maintenance. PAPICS is a tool supporting not only the programmers but the managers as well.
All data, software as well as information for the managers, is held in well-structured units and can therefore be presented in a simple, selective way. The tools for managers can deal with project phases as defined by individual software life cycles. Time and budget can be controlled in a most effective way.

PAPICS can hold and administer each product in even hundreds of versions, which will be stored and dealt with economically.

A version of this product is available for the PDP–11 computer.

**Price:**  DM 84.000  
**Product Support Available:**  Yes  
**Contact:**  Mr. Feigelbinder  
(089) 92 52 – 2 31  
SOFTLAB GMBH  
Arabellastrasse 13  
8000 Munich 81, Bavaria  
West Germany

**REFOR**

**Operating System:**  VMS  
**Keywords:**  • Data conversion

This package assists in converting FORTRAN card decks to nice files for readability and editing. Hollerith constants are removed.

The method of renumbering assists in understanding complicated code. The prettyprinting can be used repeatedly as changes are made for indenting. Also included is SPFOR, a program for splitting up a file into individual programs and giving them names.

Documentation is on magnetic media. DECUS number VAX–26.

**Price:**  $5 – $225  
**Product Support Available:**  No  
**Contact:**  DECUS (see Introduction)

**RFX–11 (Remote File Transfer and Virtual Terminal Facility)**

**Operating System:**  VMS  
**Keywords:**  • Data conversion  • File transfer  • Networking  
• Telecommunications

RFX–11 performs an error-free transfer of any text or binary file from one DIGITAL computer to another over any serial asynchronous line, dial-up or dedicated. Using data compression methods to reduce transmission time up to 50% or more, RFX can operate at speeds up to 9,600 baud on any terminal port. RFX uses simple, PIP-type commands with full wildcard support. HELP files are included.
The RFX Virtual Terminal mode lets you talk with any remote computer running any operating system. Your home computer can be a VAX, PDP–11, LSI–11, or PRO–350.

Optional cross–operating system support is available for File Transfer mode to allow transfers among RSX, RT, VMS, and P/OS systems. RFX can also down-line load its support task onto a remote system, enabling you to install RFX without a trip to the remote site.

RFX also provides security keys, a continuous transfer status display, and support for Autodial. RFX is very efficient, using less than 5K of memory. The remote task uses less than 3.3K. Licensing is per central site (the one with the command line interface), with unlimited remote sites included.

A version of this product is available for the PDP–11 computer.

**Price:** $675 – $4,975

**Product Support Available:** Yes

**Contact:** Ross Amann, Vice President  
(212) 695–5001

RGTE SYSTEMS SOFTWARE  
One Penn Plaza  
New York, NY 10001

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**RT–DBASE**

**Operating System:** VMS  

**Keywords:** • Data base management • Project management

RT–DBASE is a package of mailing list/data storage programs written in FORTRAN and MACRO. The menu-driven RT–DBASE programs store, alter, search, and do housekeeping for the disk data base.

In addition to the usual name, address, and telephone data, the data base structure contains nine 6-byte user spaces with each entry for date of last contact, type of client, tax status, and spectra-on-file type data.

The data base is formatted on disk so that it can be inspected directly. Direct file modification, even a data file deletion, will not cause the data base maintenance system to crash. Interface subroutines for the user spaces are very easy to write, as are routines for general access to the data base.

The RT–DBASE package includes well-documented source code and a printed instruction manual.

A version of this product is available for the PDP–11 computer.

**Price:** $350

**Product Support Available:** No
RT–NEWUSER V2.0

Operating System: VMS
Keywords: • Language enhancers • Programming tools
• Security

RT–NEWUSER is a collection of more than 80 FORTRAN and MACRO subroutines and other items to speed up programming and help overcome the problems a new RT–11 user encounters. In addition, RT–NEWUSER has many tools that the experienced RT–11 user will love — for example:
• Eliminate input conversion errors by using "ASK" subroutines.
• Do VT100 screen control with simple subroutine calls.
• Protect programs from unauthorized use with password function MONKEY.

The RT–NEWUSER programs, subroutines, and functions are supplied as easy-to-follow, well-documented FORTRAN and MACRO source.

A version of this product is available for the PDP–11 computer.

Price: $350
Product Support Available: No

Contact: Kathleen Peckham, President
(213) 849–4082
COMPUTER PROGRAMMING SERVICES
1925 W. Glenoaks Boulevard
Glendale, CA 91201

RTUTIL (RT–11 File Transfer Utilities)

Operating System: UNIX, VMS
Keywords: • File transfer • Programming tools

RTUTIL provides routines for accessing RT–11 file systems from UNIX* systems. Facilities provided include reading, writing, and deleting RT–11 files, initializing RT–11 file systems, and obtaining directory listings.

Written in the C programming language, the RTUTIL utilities are portable to any UNIX* system. All routines allow for multiple RT–11 directory segments, thus making the package useful for maintaining large RT–11 file systems as well as floppy-based systems.
RT utility commands are entered to the UNIX* shell, so a user has full use of shell facilities such as I/O redirection, pipes, filters, and file name expansions. In addition, RT utilities support RT-11-type wildcards.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.

Price: $500
Product Support Available: Yes
Contact: Douglas J. Ross, President
(613) 548–4355
ANDYNE COMPUTING LTD.
P.O. Box 1496
221 King Street East
Kingston, Ontario K7L 5C7
Canada

SLIM/1 (File Compression Utility)

Operating System: VMS
Keywords: • Data conversion • Disk utilities • Security
• Telecommunications

SLIM/1 reduces the size of any text or binary file by 20% to 80%, using Huffman Coding statistical techniques. The resulting compressed file is a standard file compatible with DECnet, PIP, BRU, and so on. In compressed form, a file takes up less space on storage media, requires less transmission time for communications, and is more secure from unauthorized viewing.

SLIM/1 uses standard PIP-type commands with full wildcard support. Compression and reexpansion for active use are comparable to PIP copies in command format and operation time.

SLIM/1 increases the capacity of your current system.

A version of this product is available for the PDP-11 computer.

Price: $900
Product Support Available: Yes
Contact: Ross Amann, Vice President
(212) 695–5001
RGTI SYSTEMS SOFTWARE
One Penn Plaza
New York, NY 10001

SystemMaster

Operating System: VMS
Keywords: • Data base management • Facilities management
• Maintenance • Production control
SystemMaster, an automated system manager package, is designed for any person responsible for the operation and management of a VAX system. The program's easy-to-use menu-driven format automates the major tasks of system management. With little knowledge of the VAX/VMS operating system, one can readily perform most system manager functions, including disk volume management, user authorization, print queue and batch queue management, system backup, file restoring, setting/modifying terminal characteristics, system shutdown, and software update and installation.

SystemMaster has screen-oriented data entry and an extensive internal help facility. Each task is fully documented with help screens, providing the information required for task completion. Most of the system management tasks require the user to do little more than complete an input screen.

**Price:** $1,500 – $3,500
**Product Support Available:** Yes
**Contact:** Abby Turner
(617) 273-5500
STRATEGIC INFORMATION
80 Blanchard Road
Burlington, MA 01803

**TAPESYS (Tape Management System for VAX/VMS)**

**Operating System:** VMS
**Keywords:** • Management • Query facilities • Report writer • Security

TAPESYS manages a large tape library in a VAX/VMS environment. Major features of the system include fully automatic daily system backup, screen-oriented support for end-user backup and restore, maintenance of a FIFO scratch pool, and controlled recycling of tapes. Users can allocate tapes from the scratch pool with simple DCL-like commands, change control fields within the tape record, and request backups and restores at will.

Users can query the system for files, save sets, and reel numbers used in the past. TAPESYS employs VMS BACKUP, ensuring standard tape creation from one VMS site to another. The system performs tape selection for all functions, eliminating operator error in writing over valuable tape volumes, and includes a flexible report writer. TAPESYS provides full security protection against users crossing over to other users' tapes and prevents unauthorized retrieval from unowned volumes.

TAPESYS V2.0 includes an auditing feature. The system manager has available hard copy of all tape transactions occurring throughout the day. In the event of disk loss, TAPESYS can automatically recre-
ate all transactions up to the time of the data loss. The system can track and account for usage all allocated tapes by tape-day units. The feature is aimed at the time-sharing vendors and those installations where system chargeback is practiced.

Version 2.0 also features a revised operator's guide detailing all reports, system management considerations, image backups with TAPESYS, and full disk-restoration procedures.

**Price:** $3,000 – $6,500  
**Product Support Available:** Yes  
**Contact:** Philip A. Jamieson  
(617) 887–6409  
SOFTWARE PARTNERS/32, INC.  
68 Pinehurst Drive  
Boxford, MA 01921

**TLP (Tape Library Program)**

**Operating System:** VMS  
**Keywords:** • Data base management • Source code control

TLP is a system of programs that manage data about a magnetic tape library. The data file (TAPE$LIBRARY) contains information on ownership, access date, tape label, and membership in a volume set, if any, and provides 80 characters of user-writeable comment space for each reel to enable the owner to keep track of what is on each reel. The data file is created and manipulated by TAPE$LIBR and accessed by MOUNT, INITIALIZE, and OK. All programs are designed as DCL foreign commands, such that only the owner of a given reel may INITIALIZE or MOUNT it. All sources are available, including a HELP library file. The TAPE$LIBR program is approximately 90% VAX–11 FORTRAN and 10% MACRO–11 and is designed to be modified, with symbolic offsets defined for all parts of the data file and modular structured constructs used whenever possible.

Documentation is on magnetic media. DECUS number VAX–17.

**Price:** $5 – $225  
**Product Support Available:** No  
**Contact:** DECUS (see Introduction)

**TPU Time Profiler Utility**

**Operating System:** Independent  
**Keywords:** • Debugging • Disk utilities  
• Language processors • Report writer

TPU is an easy-to-use, powerful tool for analyzing the run-time performance of programs written in C. TPU allows the designer or engi-
neer to study the dynamics of a running C module or system and can be used as a debugging tool or as a tool for studying where critical time is being spent.

TPU allows the user to customize the generated reports. If a TPU built-in system limit is exceeded (for example, depth of nesting), the user can easily modify the appropriate parameter to accommodate the dynamics of the given situation without affecting normal operation of the utility. Since TPU is written in C, the user is encouraged to add functionality to the source file supplied by OASYS.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Joel Schacht  
(617) 491–4180  
OASYS, INC.  
60 Aberdeen Avenue  
Cambridge, MA 02138

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### TTI SORT

**Operating System:** VMS

**Keywords:**  
- Data base management  
- Data conversion  
- Disk utilities  
- Information management

TTI SORT, developed by Touch Technologies, is 4 to 25 times faster than VAX–11 SORT/MERGE in CPU time and 3 to 20 times faster than VAX–11 SORT/MERGE in elapsed time. In addition, TTI SORT uses 50% to 60% less disk space, generates 80% fewer page faults, and uses 85% less direct I/O.

**Price:** $1,295

**Product Support Available:** Yes

**Contact:** Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue, Suite 117  
Orange, CA 92665

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### UNIX*-Based Timesharing

**Operating System:** ULTRIX, UNIX

**Keywords:**  
- Accounting  
- Compilers  
- Education  
- Programming tools

Fargo offers timesharing on a VAX–11/750 running UNIX® Berkeley 4.2. Timesharing is offered on a month-to-month basis, allowing people to do development work on UNIX®. The following applications and tools are available: Curses, a terminal-independent screen pack-
age developed by Berkeley; the public domain Ingres relational data base; nroff word processing; troff phototypesetting, complete with phototypesetter; LISP for artificial intelligence; lex and yacc for compiler development; and accounting packages, including general ledger, job cost, accounts payable, and ad tracking. The VAX has 800 megabytes of on-line disk storage, plus a 9-track tape drive running either 800 or 1,600 bpi to read or make tapes.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** $100 – $5,000

**Product Support Available:** Yes

**Contact:** Fred Potthoff
(612) 941–9470
FARGO ELECTRONIC SERVICES, INC.
7150 Shady Oak Road
Eden Prairie, MN 55344

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**VAX/VMS Crypto–Disk**

**Operating System:** VMS

**Keywords:** • Data conversion • Disk utilities • Information management • Security

The Crypto–Disk VAX/VMS Security Disk, developed by Bear Computer Systems, Inc., appears to users as an extra disk drive but actually uses space on an existing disk drive; it performs user-transparent encryption on all data written to this extra "disk drive." Encryption of the data is based on a user-provided multilevel key.

This package is highly resistant to penetration and tampering and has special features to defeat passive taps and "Trojan Horse" programs. Decryption of the data may be restricted to a specific CPU or set of CPUs. A user interface is available to permit the use of other encryption programs, if desired.

Any number of Crypto–Disks may reside on the same VAX/VMS system. The encryption rate is fast enough so that the "disks" may be cascaded for additional security, using two or more independent sets of keys.

The Crypto–Disk also includes the VAX/VMS Virtual/Memory Disk, the Disk–Reducer, and the Access–Controller and all the features of those products.

**Price:** $3,500

**Product Support Available:** Yes

**Contact:** Cheryl Pankratz
(714) 998–6041
MIDCOM CORP.
1940 N. Tustin Avenue, Suite 117
Orange, CA 92665
VAX/VMS Disk—Reducer

Operating System: VMS

Keywords: • Data conversion  • Disk utilities
  • Information management

The VAX/VMS Disk—Reducer, developed by Bear Computer Systems, Inc., appears to users as an extra disk drive but actually uses space on an existing disk drive. The product performs user-transparent compression on all data written to this extra “disk drive” and permits storing more data than the physical disk hardware would normally be able to handle. The amount of physical disk space that is used is dynamically increased or decreased, depending on conditions. Compression rates from 10% to 90% have been observed, depending on the application. Large compression ratios are obtained for program sources, listing files, word processing files, DATATRIEVE domains, and reports.

Special features are available to enhance the disk compression ratio for graphics data, program libraries, archives, and word processing. They are also available to permit performance tuning by postponing compression processing to off-hours.

The Disk—Reducer also includes the VAX/VMS Virtual/Memory Disk and the Access—Controller and all the features of those products.

Price: $2,750

Product Support Available: Yes

Contact: Cheryl Pankratz
(714) 998–6041
MIDCOM CORP.
1940 N. Tustin Avenue, Suite 117
Orange, CA 92665

VAX/VMS Virtual/Memory Disk

Operating System: VMS

Keywords: • Data conversion  • Disk utilities
  • Programming tools

The VAX/VMS Virtual/Memory Disk, developed by Bear Computer Systems, Inc., is two products in one: a memory disk and a virtual disk. Both appear to users as an extra disk drive but actually use either virtual memory or space on an existing disk. The “extra” disk drive appears to be a normal physical disk to all VAX/VMS utilities and user software. Multiple memory disks and virtual disks may be present in memory or on the same physical disk simultaneously.

The Virtual Disk allows a physical disk to be divided into multiple segments, each with its own disk initialization and mount characteristics for access-speed/storage optimization. The VAX/VMS Virtual Disk can also be used to set “group” disk quotas. Thus, you may
allocate an amount of storage to a particular department and allow it
to decide how best to utilize its disk space. A group of users can be
made out of any set of VAX/VMS users and is not restricted to the
VAX/VMS UIC definition of a group.

The Memory Disk eliminates seek time and disk arm contention and
allows read/write operations to be performed at memory transfer
rates. It greatly accelerates disk-bound applications without any pro-
gram modification.

**Price:** $2,000

**Product Support Available:** Yes

**Contact:** Cheryl Pankratz
(714) 998–6041
MIDCOM CORP.
1940 N. Tustin Avenue, Suite 117
Orange, CA 92665

**VSELECT**

**Operating System:** VMS

**Keywords:** • File management • Programming tools

This record extraction utility for VAX/VMS writes extracted records
to an output file after optional modification by key field deletion,
rearrangement, and/or transformation, by means of user-written
VAX–11 functions. VSELECT supports the following:

• Hooks for user-coded selection criteria and output field transforma-
tions

• Conditional field copying

• The conditional generation of multiple output records from a single
input record

• The generation of backpointers into the input file(s) — including
RFAs for RMS files

• The insertion of string literals in output records

Input files contain fixed-size records; output records are fixed-size, no
more than 512 bytes long. VSELECT may be used stand-alone or
called from any VAX native mode languages that support the stan-
dard DIGITAL procedure-calling conventions.

A version of this product is available for the PDP–11.

**Price:** $500 – $1,500

**Product Support Available:** Yes

**Contact:** Martha A. Schriefer
(617) 861–0670
EVANS GRIFFITHS & HART, INC.
55 Waltham Street
Lexington, MA 02173
VSORT (Very Fast Sort for the VAX/VMS)

**Operating System:** VMS

**Keywords:** • File management • Programming tools

This machine-language sort for VAX/VMS handles fixed-record-length relative, sequential, and ROSS/V files. The VSORT package contains a stand-alone version of the sort and two callable versions that may be linked with applications. One of the callable versions accepts several calls compatible with the VAX–11 sort. VSORT is three to seven times as fast in CPU time as the VAX–11 sort, uses significantly less disk work space, and for a given working set size, has fewer page faults, and has less direct and buffered I/O than the VAX–11 sort.

A version of this product is available for the PDP–11.

**Price:** $2,500

**Product Support Available:** Yes

**Contact:** Martha A. Schriefer
(617) 861–0670

EVANS GRIFFITHS & HART, INC.
55 Waltham Street
Lexington, MA 02173

z–BOARD

**Operating System:** UCSD p-System, ULTRIX, UNIX, VMS

**Keywords:** • Cross-compiler • File transfer

• Microprocessor development • Programming tools

The z–BOARD program provides:

• Versions for both the UNIBUS and the Q–BUS. The Q–BUS version may be purchased in one, two, three, or four Z80 configurations.

• A cost-effective means of adding computing power to a minicomputer.

• Offloading the main computer in both CPU cycles and in memory.

The z–BOARD, developed by Virtual Microsystems Inc., is a hardware accelerator for use with THE BRIDGE™. Users are given access to high-speed microprocessors, without the problems associated with adding physical microcomputers.

Each z–BOARD has up to 4 Z80 microprocessors, 256K bytes of memory, and a bit-slice machine. The first four users on line (per board) have access to a dedicated micro — significantly increasing the execution speed of their programs. Other users are provided with THE BRIDGE simulator, queuing up for the next available Z80.

The z–BOARD substitutes for the “inner simulator” of THE BRIDGE, decreasing program execution time and reducing machine
load. THE BRIDGE software, together with one or more z–BOARDS, provides users with a complete micro environment, without the hassles of physical floppies, cable incompatibility, and so forth, but with all the advantages of centralized mass storage, high-speed printers, tape backup, and the sophisticated operating environments associated with DIGITAL minicomputers.

UCSD p-System™ is a trademark of University of California Regents. THE BRIDGE™ is a trademark of Virtual Microsystems, Inc.

A version of this product is available for the PDP–11 computer.

Price: Available upon request  
Product Support Available: Yes  
Contact: Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue, #117  
Orange, CA 92665
Graphics
ACS (Adage Core System)

Operating System: VMS
Keywords: • Device drivers/handlers • Engineering
• Mechanical engineering • Programming tools

ACS, a high-level user-friendly software programming system used with Adage 4145 Work Stations, requires an Adage 4145 Work Station connected to a host minicomputer. Modeled after the proposed ACM/SIGGRAPH Core standard, ACS includes an extensive library of FORTRAN-callable subroutines plus 4145 microcode. Features include 3-D graphics primitives, engineering viewing operations, display list operations such as image transformations, graphics input functions, a program debugger, and support for 4145 options. Each host driver costs $3,000 above the minimum price.

A version of this product is available for the PDP-11 computer.

Price: $4,000 – $7,000
Product Support Available: Yes
Contact: M. Clare Moulton
(617) 667–7070
ADAGE, INC.
One Fortune Drive
Billerica, MA 01821

AUTOART

Operating System: UNIX, VMS
Keywords: • CAD/CAM • Electronic • Signal processing
• Simulation

AUTOART is an interactive graphics program for designing hybrid MIC layouts. AUTOART can be used in conjunction with its companion program, SUPER–COMPACT, to provide automatic mask generation from an electrical design as specified in SUPER–COMPACT's design language. AUTOART automates the production of artwork and drives many types of CAD mask-making machines.

The designer can use NODE mode commands to edit the design, using microwave terminology. The displayed layout is redrawn as changes are requested. Final adjustments, including the addition of registration targets, circles, lettering, vias, and bias lines, can be made before sending the design to mask-making hardware.

A version of this product is available for the PDP-11 computer.

Price: $10,000 – $20,000
Product Support Available: Yes
Contact: Henry Wong
(415) 966–8440
AZPMAP

Operating System: VMS
Keywords: • Automotive • CAD/CAM • Data conversion
• Mapping

AZPMAP reads most AZP (Algemeine Zeichen Program) commands for Contraves plotters and converts to Kongsberg plot format.

Price: NKR 100,000
Product Support Available: Yes
Contact: Hans Engfelt
47 – 3 – 73 82 65
A/S KONGSBERG VAPENFABRIKK
Data Systems Division
P.O. Box 25
N–3601 Kongsberg
Norway

BLOX Graphics Builder

Operating System: ULTRIX, UNIX, VMS
Keywords: • CAD/CAM • Engineering • Programming tools
• Source code control

BLOX Graphics Builder is a software tool for creating graphics application programs. BLOX is used for application programs that use a mouse or other pointing device and that are highly graphical and interactive.

Nonprogrammers can use BLOX to interactively draw icons, menus, screen layouts, and more. The result is a dynamic user interface that responds to your interactions and that can be used immediately. BLOX automatically creates an on-line help file for your application and retrieves and displays the help text you provide. BLOX can be used for rapid prototyping and experimenting with different interactive screens.

Programmers can use BLOX to add application-dependent code to any BLOX-built user interface. One application action is associated with each menu item on the screen(s) or with other interactive events that you can define. BLOX creates a source code linkage between the graphics user interface and your application routines.

BLOX also includes the Core Graphics library conforming to the 1979 SIGGRAPH proposed standard. That high-performance general-purpose library keeps up with today’s high-speed graphics displays.
BLOX Graphics Builder is host- and device-independent. BLOX will run on any graphics device that supports your application.

A version of this product is available for the PDP–11 computer.

**Price:** $5,000 – $10,000  
**Product Support Available:** Yes  
**Contact:** Eve M. Goldfarb  
(617) 876–7993  
RUBEL SOFTWARE  
215 First Street  
Cambridge, MA 02142

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**CalComp Host Computer Basic Software (On Line/Off Line)**

**Operating System:** UNIX, VMS  
**Keywords:** • CAD/CAM  
• Device drivers/handlers  
• Engineering

The basic software in the host computer produces data that is read by the CalComp 925 Controller and used to drive the plotter. Or, this host computer basic software drives plotters through the CalComp 906 Controller.

The basic software consists of 10 subroutines used to display graphic output on CalComp plotters. Most of the subroutines are written in FORTRAN; some are in assembly language. The PLOT subroutine controls the formatting of all plotting data and handles all output to the plotter. PLOTS initializes the PLOT subroutine. SYMBOL places alphanumeric text and special symbols on the plotting surface. NUMBER places computed variables on the output page, with user control over format. AXIS plots an annotated axis with tick marks and title. LINE scales and plots arrays of data, with choice of line and/or point mode. SCALE computes factors to scale data from user units to plotter units. NEWPEN permits program selection of pens on multiple pen plotters. WHERE provides current pen coordinates and scale factor. FACTOR sets scale factor for the entire plot.

A version of this product is available for the PDP–11 computer.

**Price:** $500  
**Product Support Available:** Yes  
**Contact:** James F. MacLeod  
(714) 821–2011  
CALIFORNIA COMPUTER PRODUCTS  
2411 W. LaPalma Avenue  
Anaheim, CA 92803
CATSOLID

Operating System: UNIX, VMS
Keywords: • CAD/CAM • Data base management
• Engineering • Mechanical engineering

CATSOLID is a constructive solid geometry–based modeler allowing a designer to create a 3-D data base for an original or existing concept. The menu-formatted, user-friendly program can be learned in three days. A modular addition to CATSOLID, called CATFEM, is a preprocessor for most commercially available finite element analysis programs. The data base is passed to drafting packages and analysis systems via IGES file interfaces. Objects can be rotated, sectioned, dimensioned automatically, and color coded. Both outline (wireframe) and shaded images are possible, with hidden lines automatically removed. The program incorporates the workstation concept and can reside in both 16-bit and 32-bit processors.

A version of this product is available for the PDP–11 computer.

Price: $30,000 – $50,000
Product Support Available: Yes
Contact: Terence R. Binion
(404) 872–2300
CATRONIX CORP.
120 Ralph McGill Boulevard, N.E., Suite 800
Atlanta, GA 30308

D–PICT MESH

Operating System: VMS
Keywords: • Engineering • Natural resources
• Sales and marketing • Scientific

The device-independent D–PICT/MESH system enables users to create perspective views of 3-dimensional surfaces and allows graphics output on more than 100 types of graphics devices — screens and plotters. In addition, D–PICT/MESH runs on a wide range of computers and is a valuable analytical tool for market researchers, engineers, scientists, or anyone with a need to represent 3-dimensional data in paper, transparency, or slide form.

To operate the system, the user first chooses a viewpoint from which to "look at" a data grid of points in 3-dimensional space. Users may vary both the viewpoint and the scale and choose whether to create a free-floating or a base-connected mesh. D–PICT/MESH then generates a mesh of lines joining each of the points, producing a 3-dimensional image of the surface as seen from the selected viewpoint. Any line that would be hidden from view if the surface were real is not seen in the projected view. Even upper and lower surfaces may be used to create views of mesh solids.
D–PICT/MESH interacts with other software products in the D–PICT family. A user may overlay a design created with D–PICT/MESH onto a word chart created by D–PICT/LAYOUT, through the use of a third module — D–PICT/META.

Despite its powerful features, D–PICT/MESH is usable by novices to create basic 3-dimensional perspective views through our interactive, "plain English" menu system. More experienced users, however, may take advantage of the stand-alone program or the callable subroutines to achieve sophisticated results.

**Price:** $2,500  
**Product Support Available:** Yes  
**Contact:** Brian Diamond  
(416) 441–4163  
DATAPLOTTING SERVICES INC.  
225 Duncan Mill Road  
Don Mills, Ontario M3B 3K9  
Canada

**D–PICT/LAYOUT**

**Operating System:** VMS  
**Keywords:** • CAD/CAM • Management • Media  
• Presentation aids

D–PICT/LAYOUT, a software tool for designing page display layouts from basic graphic elements, runs on computers using FORTRAN 77 and is ideal for making word charts; for building complex and intricate illustrations, forms, and diagrams; for producing overhead transparencies and 35-mm slides; or for adding frames and titles to existing graphics. Files of text can also be used as input to a display.

D–PICT/LAYOUT works in two modes: interactively to produce immediate results for development and testing or from stored files of instructions to reproduce previous designs. The two modes can be combined, if desired.

Because the software is device independent, D–PICT/LAYOUT designs can be composed on one type of terminal, modified on another, and have the finished product displayed on yet another device. Regardless of which terminal is used, the entire graphic design is displayed on the screen in the correct proportions, even if the intended result is much larger or smaller than the screen.

Despite its powerful capabilities, D–PICT/LAYOUT requires no programming experience to use. A variety of graphic requirements can be satisfied simply by using a series of plain English commands.

The output can be directed to a device-independent graphics file. With D–PICT/META, several of those files can be combined, shifted, scaled, rotated, and windowed prior to output to a plotter or other hard-copy device.
D--PICT/LAYOUT takes advantage of Dataplotting's versatile D--PICT/Virtual Graphics Library, with its wide variety of patterns, colors, and line and lettering styles.

**Price:** $2,500  
**Product Support Available:** Yes  
**Contact:** Brian Diamond  
(416) 441–4163  
DATAPLOTTING SERVICES INC.  
225 Duncan Mill Road  
Don Mills, Ontario M3B 3K9  
Canada

**D--PICT/META**

**Operating System:** VMS  
**Keywords:**  
- Management  
- Media  
- Presentation aids  
- Sales and marketing

D--PICT/META, a specialized graphics utility that aids in graphic composition, can be used to position several small graphs or charts on paper, overhead transparency, or 35-mm slide. The true strength of the package, however, lies in its ability to combine separate graphic components into a single display.

D--PICT/META uses graphics produced by other D--PICT modules, including D--PICT/B (Business Graphics), D--PICT/LAYOUT, D--PICT/VGL (Virtual Graphics Library), and D--PICT/MESH (3-D utility). Each graphic component can be shifted, scaled, rotated, and windowed in any order required, allowing users to experiment with a variety of alternatives — either to arrive quickly at a final product or to present an entire range of graphic possibilities.

D--PICT/META is device independent. Users can create, edit, and finalize designs on a wide variety of graphics terminals and/or use a device-simulation mode to preview displays for output devices of different types, shapes, and sizes. Composition is further assisted by using the quick-preview mode, which presents only picture outlines. In that mode, the user can create and view a large number of alternative compositions in a short period of time.

D--PICT/META is used through a comprehensive "plain English" menu system, enabling even novice users to create a diverse range of presentation-quality compositions, without having to learn programming commands. For more experienced users, the package also offers more complex routines that substantially expand the power and creative potential of the system.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Brian Diamond  
(416) 441–4163
D–PICT/VGL

Operating System: VMS
Keywords: • Mapping • Presentation aids • Programming tools • Simulation

D–PICT/VGL, a comprehensive library of graphic subroutines compatible with the SIGGRAPH Core standard, is written in FORTRAN 77 and contains approximately 300 subroutines used by application programmers to create specialized graphic application programs. Graphical output functions include line, vector, chain, text, marker, polygon, arc, circle, and sector. Output is drawn using a pen of selected color and width and with a specified line style. A polygonal shape can be filled with a color or pattern or both. A number of type fonts are available. The attributes defining colors, line styles, and patterns are stored in attribute tables that can be easily accessed, printed, and modified as required. Window and viewport functions are available.

Modeling can be accomplished by translation, rotation, and scaling. Newly defined coordinate frames can be stored and recalled dynamically. Drawing is done in the relative coordinate system (world), and all objects are automatically transformed to the absolute coordinate system (device). Features and options with both 3-D and 2-D capability include modeling — shift, rotate, and scale — perspective and parallel projections, hidden surface display, and contouring.

Informative error messages are displayed and/or logged in an error report.

Price: $9,500
Product Support Available: Yes
Contact: Brian Diamond
          (416) 441–4163
          DATAPLOTTING SERVICES INC.
          225 Duncan Mill Road
          Don Mills, Ontario M3B 3K9
          Canada

DECgraph, Version 1.0

Operating System: VMS
Keywords: • CAD/CAM • Decision support • Financial analysis • Presentation aids

VAX–11 DECgraph is a general-purpose graphics plotting package that allows users to create, change, display, and print graphs. Indi-
Individuals can use VAX–11 DECgraph for decision support and for making presentations.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

**DECOR (Core Graphics System), Version 1.0**

**Operating System:** VMS  
**Keywords:**  
- Device drivers/handlers  
- Documentation  
- Presentation aids  
- Programming tools

VAX–11 DECOR is a graphics subroutine package that provides an interface between an application program and graphics devices. The interface is device independent and supports user-developed device handlers, as well as those supplied with VAX–11 DECOR. VAX–11 DECOR includes commonly required device handler routines and detailed documentation designed to guide and assist in the development of user-specified device handlers.

VAX–11 DECOR is based on the ACM/SIGGRAPH Graphics Standard Planning Committee’s 1979 “Core Graphics Proposal” and includes 2D direct and buffered output (level 2), a subset of synchronous input (level 2), and most “Raster Extensions.”

Refer to SPD #25.5.0 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

**DECslide, Version 1.0**

**Operating System:** VMS  
**Keywords:**  
- Disk utilities  
- Documentation  
- Presentation aids  
- Text editing/formatting

VAX–11 DECslide, a menu-driven graphic presentation utility, is intended for individuals who create or prepare materials for in-house presentations. A combination of symbols and text is used for menu selection.

VAX–11 DECslide uses an interactive interface so that diagrams and text are displayed as they are entered. Editing functions permit changes to slides as they are created or after they have been saved.

A strip (text) menu and message area at the bottom of the screen displays user options, help messages, and operation status. A direc-
tory feature lists the slides, including the date and time of creation, slide name, and comments.

After slides are created, they can be colored with available color palettes. The slides can be printed (single- or double-size format), saved (filed), copied, exported, changed, or deleted.

Refer to SPD #26.11.00 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

Design Graphix™

Operating System: VMS
Keywords: • Architecture • CAD/CAM • Engineering

Design Graphix is a powerful, user-friendly, flexible, low-cost computer-aided design/drafting package. Easy to learn and use, Design Graphix software packages offer a true 3-dimensional data base, multiple-pen and multiple-layer drawing construction, complete geometries, user-definable symbols and figures, graphic and text editing, numerous text fonts, automatic dimensioning, and bill of materials. The software also features user-definable menus, command file processing, a macro programming facility, and various utilities.

In order to minimize the user training cycle and maximize “user friendliness” and productivity, Design Graphix provides extensive help and automatic training facilities. Operator interaction can be command-driven, menu-driven, or autoping mode. In prompting mode, current parameter values are displayed and may be updated at the operator’s discretion. Parameter value retention and command repeatability also simplify operation.

A version of this product is available for the PDP–11 computer.

Price: $1,500 – $29,995
Product Support Available: Yes
Contact: Don Ellerman
(504) 769–2226
ENGINEERING SYSTEMS CORP.
2051 Silverside Drive, Suite 100
Baton Rouge, LA 70808

DIP–10 Plus

Operating System: VMS
Keywords: • CAD/CAM • Device drivers/handlers
• Presentation aids • Programming tools
Now you can run PLOT–10 programs on any graphics display device. Simply link your existing or new PLOT–10–based programs with our device-independent plotting library, DIP–10–Plus, developed by Advanced Technology Center, and you are ready to run your applications on any selected display device. This process does not involve any program conversion effort on your part, as our device-independent routines map directly into PLOT–10 routines, giving you the freedom to move ahead with your existing PLOT–10 programs to newer, more advanced display devices.

A variety of graphics display systems, including raster displays, plotters, printers, film recorders, directed-beam refresh displays, and storage tubes, are supported. Device drivers for most of the popular devices are available off the shelf.

**Price:** $1,200

**Product Support Available:** Yes

**Contact:** Cheryl Pankratz  
(714) 998–6041  
MIDCOM CORP.  
1940 N. Tustin Avenue, Suite 117  
Orange, CA 92665

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**Driver for 11C03, Version 2.0**

**Operating System:** VMS

**Keywords:**  
- Asynchronous communication  
- Device drivers/handlers  
- Networking  
- Telecommunications

The VAX–11 Driver for 11C03 provides a DMA interface for up to eight serial line graphics terminals running on the VAX/VMS operating system and supports rapid image generation during interactive design sessions on compatible graphics terminals. The VAX–11 Driver for 11C03 uses variable-length block DMA transfers for output data to reduce the VAX–11 CPU loading imposed by high data rates to the serial lines.

The DMA output to an LSI–11 contained within the 11C03 forms a buffered data interface that uses the LSI–11 to service each serial line with character data while the VAX/VMS system and user programs continue with other processing.

The 11C03 support of asynchronous serial lines does not provide for modem control or software control of baud rates.

**Features include:**

- Automatic selection of block-mode DMA data output when the data block contains two or more characters.
- The 11C03 achieves a maximum total data output capacity (shared by all active terminal lines when input is inactive) of 20,000 characters per second. The maximum input capacity is 1,000 characters
per second (also shared by all active terminal lines when output is inactive).
- A timesharing diagnostic provides assistance to service personnel while minimizing the disruption of 11C03 and/or other VAX-11 terminal users.
- The Driver will control up to four 11C03 interfaces (total of 32 serial line ports).

The VAX-11 Driver for 11C03 is supplied as a user-installed VAX/VMS driver.

The VAX/VMS driver FTDRIVER.EXE provides the interface among the user, VAX/VMS, and the hardware interface. A custom protocol is executed to communicate with the 11C03. Diagnostic functions are also implemented in the driver to provide a reliable method of testing and diagnosing the 11C03 hardware.

Refer to SPD #25.56.01 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office (see Introduction).

### Easel

**Operating System:** ULTRIX, UNIX  
**Keywords:**  
- Device drivers/handlers  
- Management  
- Report writer  
- Text management

Easel allows technical personnel to create icon-based interfaces for any applications. The program lets the end user communicate with computers, using a pointing device — for example, a mouse or a touch-sensitive screen. Easel translates those touches into appropriate commands that control local or remote applications programs. Easel can also intercept the text output of applications and translate it into any graphic images desired.

Easel can be used in conjunction with any software, without requiring any changes to the applications.

A version of this product is available for the PDP-11 computer.

**Price:** $1,000 – $15,000

**Product Support Available:** Yes

**Contact:** Mitchell D. Perlitch  
(617) 938-8440  
INTERACTIVE IMAGES, INC.  
21 Olympia Avenue  
Woburn, MA 01801
EXHIBIT Business Graphics

Operating System: VMS
Keywords: • Information management • Presentation aids
          • Sales and marketing • Spreadsheets

The easy-to-use business graphics package that plots charts and graphs, EXHIBIT uses a simple declarative language and English-language commands and requires no programmer intervention. Features include more than 15 types of high-quality charts, pies, bars, graphs, and combinations; full color support for up to 8 colors; and a wide variety of quality type fonts, fill patterns, line styles, and chart formats. A wide range of plotters is supported. The package can be commanded from any computer terminal — not just raster CRTs — and accepts data from TIPS word processing, C–CALC, and SuperComp–Twenty spreadsheets.

A version of this product is available for the PDP–11 computer.

Price: $3,900 – $7,500
Product Support Available: Yes
Contact: Diana Slocombe
         (415) 494–7500
         IPT CORPORATION
         1096 East Meadow Circle
         Palo Alto, CA 94303

FDV/CC (Form Driver and Cluster Controller for FMS–11)

Operating System: VMS
Keywords: • Forms management • Telecommunications

FDV/CC, the Forms Machine, is a remote forms server and terminal-cluster controller for use with DIGITAL’s FMS–11 Forms Management System. FDV/CC removes the overhead of screen handling from your PDP–11 or VAX by off-loading the FMS form driver function from the host to a small, dedicated LSI–11/23. The LSI controls a remote cluster of terminals (up to 16), using only one host line. FDV/CC is fully compatible with both new and existing FMS–11 application programs and uses DIGITAL-maintainable hardware.

A version of this product is available for the PDP–11 computer.

Price: $5,000 – $14,000
Product Support Available: Yes
Contact: Ronald Tepper, President
         (212) 695–5001
         RGTI SYSTEMS SOFTWARE
         One Penn Plaza
         New York, NY 10001
FSS 3000 (FORTRAN Support Subroutines)

Operating System: VMS

Keywords: • CAD/CAM • Device drivers/handlers
• Engineering • Programming tools

FSS 3000, a package of high-level FORTRAN-callable subroutines, provides an efficient interface between the Adage 3000 Color Raster Display System and device-independent application software packages. FSS 3000 requires an Adage 3000 Color Raster Display System connected to a host minicomputer. Two versions of FSS 3000 are available: FSS 3000G requires that the 3000 be equipped with the Adage GPS Graphics Processor Set; FSS 3000A requires that the 3000 be equipped with the Adage AGG4 Advanced Graphics Generator.

Features of FSS 3000 include:
• Local hidden-surface display and removal
• Interactive solid modeling
• Real-time, antialiased, 3-D vector display, and fast raster operations
• Graphics primitives
• Polygon fill
• Standard Adage host drivers
• Optional extension to include user-defined functions

A version of this product is available for the PDP–11 computer.

Price: $1,000

Product Support Available: Yes

Contact: M. Clare Moulton
(617) 667–7070
ADAGE, INC.
One Fortune Drive
Billerica, MA 01821

GAM (Graphic Access Method)

Operating System: VMS

Keywords: • Assemblers • Device drivers/handlers • Real time

GAM is a graphics input/output handler that provides graphics programming services for the assembler language programmer. GAM allows full interaction between a program and a graphics station. A station is referenced from the graphics program as any other peripheral device. GAM controls the man/machine interaction in the display environment and provides system integrity without impeding station interaction. GAM achieves those purposes by functioning as a handler rather than as a modification to the operating system.

A version of this product is available for the PDP–11 computer.
Price: $500 – $5,280
Product Support Available: Yes
Contact: Janice Wheaton
(818) 346–0549
INTERACTIVE GRAPHIC SYSTEMS, INC.
P.O. Box 1305
Woodland Hills, CA 91365

GC400 (Graphics Peripheral Console Handler)

Operating System: VMS
Keywords: • CAD/CAM • Communications • Data entry
• Device drivers/handlers

GC400 allows the Adage 4100 Work Station to function as the system console for the host minicomputer connected to the 4100. GC400 requires an Adage 4100 Work Station connected to a host minicomputer. The 4100 must also be equipped with the Adage GP400 Graphics Peripheral Device Handler.

A version of this product is available for the PDP–11 computer.

Price: $750
Product Support Available: Yes
Contact: M. Clare Moulton
(617) 667–7070
ADAGE, INC.
One Fortune Drive
Billerica, MA 01821

GC PLOT

Operating System: VMS
Keywords: • Aeronautics/aerospace • Automotive • CAD/CAM
• Mapping

GC PLOT is a set of FORTRAN subroutines (PLOT FACTOR, NEWPEN, and so forth) generating the Kongsberg plot format.

Price: NKR 10.500
Product Support Available: Yes
Contact: Hans Engfelt
47 – 3 – 73 82 65
A/S KONGSBERG VAPENFABRIKK
Data Systems Division
P.O. Box 25
N–3601 Kongsberg
Norway
GDL (Graphic Display Library)

Operating System: VMS
Keywords: • CAD/CAM • Programming tools • Real time
        • Simulation

GDL is the application programmer's interface with the display environment. GDL is a library of callable subroutines that provide graphic programming services to assist the application programmer in creating and manipulating graphic displays. GDL subroutines address one or more graphic display stations attached to any computer supporting GAM. A graphic display station is defined as a CRT monitor and any combination of interactive devices associated with it.

The subroutines in GDL are both modular and open-ended to promote rapid application software development and to allow for extending GDL. GDL is designed to relieve the programmer of the responsibilities of handling the graphic station, while allowing complete access to all of the hardware features. GDL is a reentrant resident library and operates on any system that includes IGS's GAM. GDL permits multiple display stations to be controlled from multiple programs. GDL also allows the station to be used as an input device. Inputs can be generated by the alphanumeric keyboard, function keys, light pen, or other input devices.

A version of this product is available for the PDP-11 computer.

Price: $4,400 – $9,290
Product Support Available: Yes
Contact: Janice Wheaton
         (818) 346–0549
         INTERACTIVE GRAPHIC SYSTEMS, INC.
         P.O. Box 1305
         Woodland Hills, CA 91365

GIGI Software

Operating System: VMS
Keywords: • Education • Financial analysis • Statistics
          • Text editing/formatting

GIGI Software, a set of host-resident graphics packages written in FORTRAN, supports a wide range of educational applications on the GIGI terminal. The software is distributed with hardware or individually by software product.

Two combined hardware and software packages are available. Package A comprises interactive general-purpose utilities that facilitate access to the GIGI terminal's full capabilities; Package B comprises specific applications using the GIGI terminal.
Package A consists of GIGI Graphics Editor, GIGI Character Set Editor, and GIGI Slide Projection System. Package B consists of GIGI DEC–RITE, GIGI Data Plotting Package, and GIGI ReGIS Application Library.

The GIGI Graphics Editor allows the user to create and edit pictures interactively on a GIGI terminal. The Graphics Editor can be used in both the sciences and the humanities to prepare illustrations for reports and presentations.

The GIGI Character Set Editor allows users to construct alternate character sets of up to 95 characters each. The character sets are stored in files on the host system and may be down-line loaded into any of the terminal’s three alternate character sets.

Symbolic and foreign language character sets are used in a wide range of disciplines, such as mathematics, chemistry, and Greek. GIGI character sets can be used by students, educators, and administrators in writing papers, memos, or illustrated works. The package allows nontechnical users to create character sets easily and to load and use them. The Editor provides commands for creating and manipulating character set files and for controlling screen display during editing. In addition, the user can define a character set, using combinations of available characters to form multiple-character mosaics.

The GIGI Slide Projection System allows the user to display existing Remote Graphics Instruction Set (ReGIS) picture files. The GIGI Slide Projection System provides a method of using picture files in a manner that resembles a slide projector and can be used in both the sciences and the humanities to prepare class materials and presentations.

GIGI DEC–RITE (ReGIS Illustrated Text Editor) is an on-screen editor providing interactive text-attribute selection, proofreading by the user, and optional final copy from GIGI connected to a DECwriter IV Graphics Printer.

The GIGI ReGIS Application Library is a set of subroutines designed to be used in applications developed for the GIGI terminal. The library allows the user to use the majority of the standard Remote Graphic Instruction Set (ReGIS) functions in the terminal.

Refer to SPD #30.10.2 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office
(see Introduction).
GP400 (Graphics Peripheral Device Handler)

Operating System: VMS
Keywords: • CAD/CAM • Communications
• Device drivers/handlers • Engineering

GP400 creates the software interface between the Adage 4100 Work Station and the processor in a host minicomputer. GP400 requires an Adage 4100 Work Station connected to a host minicomputer.

A version of this product is available for the PDP–11 computer.

Price: $1,750
Product Support Available: Yes
Contact: M. Clare Moulton
(617) 667–7070
ADAGE, INC.
One Fortune Drive
Billerica, MA 01821

GPL (Graphics Programming Language)

Operating System: VMS
Keywords: • CAD/CAM • Engineering • Mathematics
• Programming tools

GPL, a FORTRAN-based image-generation language, maximizes the power and flexibility of the Adage 4100 Work Station while maintaining programming simplicity. GPL requires an Adage 4100 Work Station connected to a host minicomputer. User-supplied programs written in GPL typically address the following markets: CAD/CAM, simulation, command and control, finite element modeling, and the analysis of engineering and seismic data.

A version of this product is available for the PDP–11 computer.

Price: $2,500
Product Support Available: Yes
Contact: M. Clare Moulton
(617) 667–7070
ADAGE, INC.
One Fortune Drive
Billerica, MA 01821

GPOTS (Graphics Peripheral Object Time System)

Operating System: VMS
Keywords: • CAD/CAM • Communications
• Device drivers/handlers • Programming tools

GPOTS, a set of FORTRAN-callable subroutines, provides a host minicomputer with functional capabilities within the Adage 4100
Work Station. GPOTS requires an Adage 4100 Work Station connected to a host minicomputer; in addition, the 4100 must be equipped with the Adage GPL programming language. GPOTS provides the host with the following capabilities: display-hardware control, dynamic graphic-element construction, interrupt processing, and application program–GPL image communication.

A version of this product is available for the PDP-11 computer.

**Price:** $2,000  
**Product Support Available:** Yes  
**Contact:** M. Clare Moulton  
(617) 667–7070  
ADAGE, INC.  
One Fortune Drive  
Billerica, MA 01821

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**GPR (Graphics Plotting Routines)**

**Operating System:** VMS  
**Keywords:** • CAD/CAM  
• Device drivers/handlers  
• Mapping  
• Printing

GPR software, used to generate commands and data for output to a Benson electrostatic plotting system, provides complete support of conventional pen plotter application software by supplying a set of pen plotter–callable routines. The routines AXIS, FACTOR, LINE, NEWPEN, NUMBER, OFFSET, PLOT, PLOTS, SCALE, SYMBOL, and WHERE can be integrated with any current pen plotter application programs. GPR transforms the pen plotter calls to Benson electrostatic plotter format.

GPR provides additional routines to assist the user in development and also to take advantage of Benson’s intelligent graphics processor — Graphware II. Additional routines include:

• DLINE, which draws dashed lines on the horizontal or vertical direction
• SHADE, which fills a rectangular area with one of 16 shades of gray
• TONE, which fills a polygonal area with one of 16 shades of gray or a special design pattern

A version of this product is available for the PDP-11 computer.

**Price:** $2,000 – $3,500  
**Product Support Available:** Yes  
**Contact:** John E. Potter, Product Marketing Specialist  
(408) 945–1000  
BENSON, INC.  
2690 Orchard Park Way  
San Jose, CA 951522059
Graphix–11™

Operating System: VMS

Keywords: • Financial analysis • Financial planning
          • Management • Presentation aids

Graphix–11 is a business graphics chart generator producing quality bar charts, line graphs, pie charts, and scattergrams, using the graphics features of most DIGITAL printing terminals and VT125s. Graphix–11 is user-oriented, determining the attributes of charts to be produced in a question-and-answer format. No specific programming skills are necessary, and many of the optional features default intelligently to produce well-Structured output the first time. The package can also recall parameters from a previous chart or can be driven by simple free-form parameters written by another applications program.

Graphix–11 charts feature scaling of axes, allowing the package to quickly summarize large data files into useful form. Scales may also be easily specified.

This unique package makes full use of the graphic capabilities of matrix printers, both in black and white and in color. Shaded areas on charts are created by using sophisticated pattern-fill techniques, allowing the user up to 25 patterns from which to select, as well as 14 colors on color devices. The result is a quality chart with a half-tone appearance that photocopies well. Devices supported include LA34, LA50, and LA100 terminals, as well as LA120s with Texprint’s add-in DECPLOT and DECOLOR hardware. VT125s and any other ReGIS devices are also supported, as well as printers by Trilog, Printronix, Anadex, and DataSouth.

A complete user manual is supplied and is also available separately. A 30-day warranty is standard, as is telephone support. Software updates are available at a reasonable charge.

This product is distributed in the United Kingdom and Europe by DataTrade, Ltd., Northampton, England.

A version of this product is available for the PDP–11 computer.

Price: $1,095 – $2,995

Product Support Available: Yes

Contact: Roger T. Prichard
         (215) 925–6690
         GEOGRAPHIX, INC.
         156 North Third Street
         Philadelphia, PA 19106
GS400

Operating System: VMS
Keywords: • CAD/CAM • Communications
  • Device driver/handlers • Programming tools

The Adage GS400 software package, by incorporating four or five different programs, provides powerful software development tools, software utilities, and communications support to any Adage 4100 Work Station connected to a DIGITAL host minicomputer. The GS400 requires an Adage 4100 Work Station connected to a DIGITAL VAX or PDP–11 host minicomputer. The GS400 software compatible with VAX minicomputers includes the following Adage packages: GPL, the Graphics Programming Language; GPOTS, the Graphics Peripheral Object Time System; GP400, the Graphics Peripheral Device Handler; and GC400, the Graphics Peripheral Console Handler.

The version of GS400 compatible with PDP–11 minicomputers includes all the packages for the VAX-compatible software; in addition, the PDP–11 version provides ED400, the Display Text Editor.

A version of this product is available for the PDP–11 computer.

Price: $6,000 – $9,000
Product Support Available: Yes
Contact: M. Clare Moulton
  (617) 667–7070
ADAGE, INC.
One Fortune Drive
Billerica, MA 01821

IB Slide

Operating System: VMS
Keywords: • Decision support • Flowcharts • Presentation aids

IB Slide is an easy-to-use product that gives your office personnel the capability to produce word charts, organizational charts, or flow diagrams. IB Slide helps you to easily create graphics for any presentation that you may need.

IB Slide's clear and concise menu system has been designed for all your users, even those with little or no computer expertise. With IB Slide, today's office professionals can quickly create their own presentation-quality graphics, 35-mm slides, transparencies, and high-resolution plots that will be as good as those produced by your art staff. In addition, IB Slide can edit business charts produced by IB Graph to produce exactly the picture that you need. IB Slide allows the user to create charts that contain both free-form text and shapes and to save and recall charts from disk. With IB Slide, you can create a library of commonly used shapes for easy assembly of complex charts.
Interfaces are available to outside applications — WORD–11 and IB Graph, for example. IB Slide supports a wide range of DIGITAL hardware, as well as high-resolution Hewlett-Packard pen plotters. A version of this product is available for the PDP–11 computer.

**Price:** $2,500 – $4,500  
**Product Support Available:** Yes  
**Contact:** Eric L. Moothart, Software Marketing Director  
(714) 970–1515  
DATA PROCESSING DESIGN, INC.  
1400 North Brasher Street  
Anaheim, CA 92807

### IDL (Display Language)

**Operating System:** VMS  
**Keywords:**  
- CAD/CAM  
- Programming tools  
- Simulation  
- Text editing/formatting

IDL, a graphics primitives language, enables the user of an Adage 3000 Color Raster Display System to write display programs that are executed by the 3000's graphics processor. IDL requires an Adage 3000 Color Raster Display System connected to a host minicomputer. In addition, the 3000 must be equipped with the Adage GPS Graph- ics Processor Set.

IDL includes a cross-assembler that runs on the host computer, plus a set of microcode routines and an interpreter that run on the BPS32/M graphics processor. A FORTRAN diagnostic package and FORTRAN driver software are also included. IDL is particularly appropriate in simulation applications requiring interaction with a set display format.

A version of this product is available for the PDP–11 computer.

**Price:** $1,000  
**Product Support Available:** Yes  
**Contact:** M. Clare Moulton  
(617) 667–7070  
ADAGE, INC.  
One Fortune Drive  
Billerica, MA 01821

### IGMS (Interactive Graphics Management System)

**Operating System:** VMS  
**Keywords:**  
- Graphics  
- Simulation

IGMS is a general-purpose interactive graphics software package plus a family of batch-mode utilities supporting command graphics
functions (for example, scaling, rotation, plotting). IGMS is Tektronix 4014–oriented and operates on DIGITAL 11/23, 11/34, and larger PDP–11 CPUs.

A version of this product is available for the PDP–11 computer.

Price:  $25,000
Product Support Available: Yes
Contact:  W. C. Schmidt
          (215) 328–1040
          BROOMALL INDUSTRIES, INC.
          700 Abbott Drive
          Broomall, PA 19008

IGOR 1 (Interactive Graphic Operating Resource)

Operating System:  VMS
Keywords:  • Device drivers/handlers  • Pre- and postprocessors
• Real time

IGOR 1 is a multifaceted program that allows the graphics hardware to be used as an intelligent workstation, as well as to operate as a graphic satellite to a host computer. IGOR is ideally suited for distributed graphic processing systems. IGOR off-loads much of the graphic processing normally handled by hosts. The savings to the host can be up to 90% of the overhead incurred on a normal graphic system. The TTY mode allows the station to communicate with any computer system that uses an RS232C serial interface; or, IGOR 1 may be configured to use a DMA interface, whichever suits the application needs. IGOR 1 is designed in modular format and incorporates structural programming techniques. Thus, IGOR 1 can accommodate the inclusion of new devices, handlers for different types of interfaces, and modifications. However, most users will find IGOR 1 satisfactory in its current configuration.

A version of this product is available for the PDP–11 computer.

Price:  $4,000
Product Support Available: Yes
Contact:  Janice Wheaton
          (818) 346–0549
          INTERACTIVE GRAPHIC SYSTEMS, INC.
          P.O. Box 1305
          Woodland Hills, CA 91365

MANMAN/GRAFMAN™

Operating System:  VMS
Keywords:  • Accounts receivable  • General ledger
• Manufacturing  • Order entry
This on-line interactive menu-driven product allows information from the MANMAN data bases to be presented in a variety of preformatted color charts and graphs. Custom graphs are also available. The charts and graphs complement standard MANMAN reports in the manufacturing, order management and accounts receivable, accounts payable, and general ledger products. The system also produces high-quality presentation slides and transparencies. MANMAN/GRAFMAN requires a graphics terminal, 8-color printer or plotter, and decision-support graphics software.

Price: $2,000
Product Support Available: Yes
Contact: Carol Singh, Corporate Communications Coordinator
         (415) 969-4442 ext. 4152
         ASK COMPUTER SYSTEMS INC.
         730 Distel Drive
         Los Altos, CA 94022

MAPS/GRAPH

Operating System: VMS
Keywords: • Decision support
MAPS/GRAPH has been designed to provide maximum power and flexibility in producing plots. It is used to produce graphs of values in line plots, vertical bar plots, combinations of both, and tables.

MAPS/GRAPH operates in a simple question-and-answer mode, allowing the user to easily define graphs, producing them on either the 8-pen or 4-pen flatbed plotter. Two graphs and their tables or up to four graphs can be plotted on the same page. Most graphic sizing and scaling is handled automatically.

A version of this product is available for the PDP-11 computer.

Price: $2,000 – $5,000
Product Support Available: Yes
Contact: Kevin Walsh
         (415) 856-1100
         ROSS SYSTEMS, INC.
         1860 Embarcadero Road
         Palo Alto, CA 94303

MGSP (Multiware Graphics Subroutine Package)

Operating System: VMS
Keywords: • Device drivers/handlers • Mapping
         • Presentation aids • Programming tools
MGSP is a library of FORTRAN-callable subroutines that implement a powerful 2-dimensional, device-independent graphics applications environment. MGSP is useful for creating high-quality charts and graphs in scientific, industrial, medical, educational, and business environments. More than 140 functional graphics building blocks are supplied, covering low-level device-driving capabilities, advanced primitive support, and complete chart preparation.

MGSP closely resembles SIGGRAPH's CORE specification for a 2-dimensional computer graphics package. Included are subroutines for drawing filled polygons, thick polylines, and software-generated text. Legends, protected areas, and protected polylines are also implemented. User-settable attributes control the appearance of those primitives. High-level subroutines draw complete labeled manual or autoscaled line/symbol charts, bar graphs, and pie charts.

A user-configurable device driver library is provided with support for many popular high-resolution graphics display terminals and pen plotters. Binary metafile output is also supported.

A version of this product is available for the PDP–11 computer.

**Price:** $1,500 – $3,000

**Product Support Available:** Yes

**Contact:** Robert Hamilton, Applications Engineer
(916) 756–3291
MULTIWARE, INC.
139 G Street, Suite 161
Davis, CA 95616

**MSC/GRASP**

**Operating System:** VMS

**Keywords:** Engineering  Mathematics  Pre- and postprocessors  Scientific

MSC/GRASP is an interactive graphics program used in the preprocessing of geometrical models for finite element analysis (FEA) and the postprocessing of FEA results. MSC/GRASP is used exclusively with the general-purpose finite element analysis program, MSC/NASTRAN, and gives the FEA engineer extensive graphical display capabilities for model development and output analysis. Those capabilities include model displays from any viewpoint, removal of hidden lines and surfaces, deformed and undeformed structure displays, stress contours on plane and solid elements, an extensive color capability, exploded views of models, a shrink element capability, a full windowing and clipping capability, and complete element numbering. Special features in the postprocessing of MSC/NASTRAN results include selective scanning of results, reformatting of output, and a complete capability to generate X–Y plots. A complete HELP facility that includes model and solution assistance makes MSC/GRASP a powerful tool for the engineer.
Price: Available upon request  
Product Support Available: Yes  
Contact: Perry L. Grant  
(213) 258–9111  
MACNEIL–SCHWENDLER CORP.  
815 Colorado Boulevard  
Los Angeles, CA 90041

OPTIPLLOT

Operating System: VMS  
Keywords: • Aeronautics/aerospace • Automotive  
• CAD/CAM • Mapping  

OPTIPLLOT is a set of FORTRAN subroutines (PLOT, FACTOR, WHERE, and others) generating KONGSBERG plot format. OPTIPLLOT also compresses plot files by filtering high-density vectors to user-definable tolerances. Random pen movements are sorted, giving substantial reduction of total plot time. Parameters influencing compressing and sorting (pen up optimizing) are customer-definable with no recompilation, letting the user compromise degree of optimizing with processing power.

Mapim, a main program delivered together with OPTIPLLOT, enables OPTIPLLOT to be run with KONGSBERG plot format as input.

A version of this product is available for the PDP–11 computer.

Price: NKR 27.000  
Product Support Available: Yes  
Contact: Hans Engfelt  
47 – 3 – 73 82 65  
A/S KONGSBERG VAPENFABRIKK  
Data Systems Division  
P.O. Box 25  
N–3601 Kongsberg  
Norway

PLXY–11/VAX (Plot Package), Version 1.2

Operating System: VMS  
Keywords: • CAD/CAM • Device drivers/handlers  
• Engineering • Pre- and postprocessors  

PLXY–11/VAX is a software package designed to provide the VAX/VMS user with access to the plotting capabilities of the LXY printer/plotter. The package consists of a library of FORTRAN-callable graphic subroutines and a postprocessing program (to create a plot file).
The PLXY-11/VAX user writes FORTRAN application programs, using the graphic facilities provided by the PLXY-11/VAX subroutine library. Those subroutines convert the user's graphic requests into a series of vectors stored on an intermediate (vector) file. Vector data from that file is sorted and formatted into LXY printer/plotter plottable data (raster format) by the postprocessing program. That plottable data is stored in an intermediate file, where it can be subsequently spooled or transferred via a system utility to the LXY printer/plotter. Output to the LXY printer/plotter is directed through the standard LP11 line printer driver.

Facilities are provided to automatically queue postprocessing of the vector file by the user application program.

The PLXY-11 subroutine library includes routines for character and line drawing. As all operations are program controlled, either axis or both axes can be addressed in positive or negative incremental steps.

Refer to SPD #25.42.2 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office

(see Introduction).

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**POLYGRAFIX, Version 1.1**

**Operating System:** VMS

**Keywords:** • Financial analysis • Presentation aids

- • Statistics • Text editing/formatting

The five host-resident graphics packages that make up the POLYGRAFIX software package are written in FORTRAN and support a wide range of graphics applications on a GIGI (VK100) or VT125 terminal.

The components are:

- The ReGIS Graphics Editor allows the user to create and edit pictures interactively on a GIGI (VK100) or VT125 terminal. The keypad-driven ReGIS Graphics Editor provides an easy means of generating Remote Graphics Instruction Set (ReGIS) code for the terminal. The user can define or change attributes, such as color, shading, writing patterns, text size, and direction. Pictures created by the Graphics Editor can be stored in files on the host system for subsequent use by ReGIS Slide Projection System and ReGIS DEC–RITE. The Graphics Editor can be used to prepare illustrations for reports and presentations.

- The ReGIS Slide Projection System allows the user to display existing Remote Graphics Instruction Set (ReGIS) picture files. This system provides a method of using picture files in a manner that resembles a slide projector.
The ReGIS Character Set Editor allows users to construct alternate character sets of up to 95 characters each. The character sets are stored in files on the host system and may be down-line loaded into any of the GIGI (VK100) or VT125's three alternate character sets. The package allows nontechnical users to create character sets easily and to load and use them. The ReGIS Character Set Editor provides commands for creating and manipulating character set files and for controlling screen display during editing. In addition, the user can define a character set, using combinations of available characters to form multiple character mosaics.

ReGIS DEC–RITE (ReGIS Illustrated Text Editor) is an on-screen editor providing interactive text-attribute selection, proofreading by the user, and optional final copy from a GIGI (VK100) or VT125 connected to an LA34–VA or LA100 printer.

The ReGIS Data Plotting Package performs interactive file and data manipulation for graphics plotting, allowing the user to enter and edit data in a table and to use the table to draw various types of predefined plots, such as bar graphs or line graphs, or to use the table for predefined statistical analysis.

Refer to SPD #26.14.00 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office (see Introduction).

## RABBIT–6 Image Monitor

**Operating System:** VMS  
**Keywords:**  
- CAD/CAM  
- Operations  
- Programming tools  
- Real time

The purpose of RABBIT–6 is to determine where within a program (image) system resources are being consumed. RABBIT–6 tracks the resource consumption by subroutine name, line number, or address and offset. RABBIT–6 then creates a bar chart showing CPU consumption by subroutine over time.

The program analyst, utilizing image monitor output, can quickly determine the area of program code that requires optimization to increase efficiency. RABBIT–6 thus reduces the professional analyst's systems check-out time as well as reduces program and system run time — a twofold saving.

RABBIT–6 is a stand-alone system requiring no sysgen or operating system modification.

**Price:** $2,995 – $3,995  
**Product Support Available:** Yes
ReGIS Software, Version 1.1

Operating System: VMS
Keywords: • Financial analysis • Presentation aids
• Statistics • Text editing/formatting

The ReGIS software packages, written in FORTRAN, are a set of host-resident graphics packages that support a wide range of graphics applications on a GIGI (VK100) or VT125 terminal.

The ReGIS Graphics Editor allows the user to create and edit pictures interactively on a GIGI or VT125 terminal. The keypad-driven ReGIS Graphics Editor provides an easy means of generating Remote Graphics Instruction Set (ReGIS) code for the terminal. The user can define or change attributes, such as color, shading, writing patterns, text size, and direction. Pictures created by the Graphics Editor can be stored in files on the host system for subsequent use by the ReGIS Slide Projection System and ReGIS DEC–RITE. The Graphics Editor can be used to prepare illustrations for reports and presentations.

The ReGIS Slide Projection System allows the user to display existing Remote Graphics Instruction Set (ReGIS) picture files, including those created with the following ReGIS packages: ReGIS Graphics Editor, ReGIS Character Set Editor, and ReGIS Data Plotting Package. The ReGIS Slide Projection System provides a method of using picture files in a manner that resembles a slide projector. A picture file contains ReGIS commands that have been inserted either directly or with any of the ReGIS software packages mentioned above.

The ReGIS Character Set Editor allows users to construct alternate character sets of up to 95 characters each. The character sets are stored in files on the host system and may be down-line loaded into any of the GIGI or VT125's three alternate character sets. The package allows nontechnical users to create character sets easily and to load and use those character sets. The ReGIS Character Set Editor provides commands for creating and manipulating character set files and for controlling screen display during editing. In addition, the user can define a character set using combinations of available characters to form multiple character mosaics.

ReGIS DEC–RITE (ReGIS Illustrated Text Editor) is an on-screen editor providing interactive text-attribute selection, proofreading by the user, and optional final copy from a GIGI or a VT125 connected to an LA34–VA or LA100 printer.
The ReGIS Data Plotting Package performs interactive file and data manipulation for graphics plotting. The ReGIS Data Plotting Package allows the user to enter and edit data in a table and to use the table to draw various types of predefined plots, such as bar graphs or line graphs, or to use the table for predefined statistical analysis. Plots can be stored and accessed for later use by other ReGIS software applications. Tables of data and plot specifications can be stored for subsequent reuse by the ReGIS Data Plotting Package.

Refer to SPD #26.15.00 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

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**RGL (ReGIS Graphics Library), Version 1.0**

**Operating System:** VMS  
**Keywords:**  
- Architecture  
- Engineering  
- Mechanical engineering  
- Presentation aids

This collection of subroutines conforms to the standard VAX/VMS calling interface and is designed to support the graphic capabilities of the VT125 terminal. RGL is written in FORTRAN, executes under the VAX/VMS operating system, and features picture drawing and data plotting capabilities.

Refer to SPD #25.62.1 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

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**Rhintek Plotting Package**

**Operating System:** VMS  
**Keywords:**  
- CAD/CAM

Rhintek Inc. has developed a complete software plotting package for use on the Printronix printer/plotters attached to DIGITAL's PDP-11 system. These routines are supplied in source form and can be adapted by the customer to drive any printer capable of plotting. This package, written in FORTRAN, is capable of directly replacing the standard CalComp-type software subroutines in existing plotting programs and of producing an equivalent plot on a printer/plotter, without any program changes. The package forms overlay capability
and has had several years of user experience in the field. The package intersperses printing and plotting.

Two packaged plot routines are provided for a user who does not need to control the details of the plot but who would rather have a quick plot capability. The resulting plots are appropriately scaled, and the axes are automatically annotated to produce a useful result. The two routines are PPLXY, for a linear 1-page plot with two variables, and PPLDB, for a logarithmically scaled 1-page plot.

A version of this product is available for the PDP–11 computer.

**Price:** $1,050
**Product Support Available:** Yes
**Contact:** Heath Clark  
(301) 730–2575  
RHINTEK INC.  
P.O. Box 220  
Columbia, MD 21045

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**RIMS/GRAF**

**Operating System:** VMS  
**Keywords:**  
- Presentation aids  
- Programming tools  
- Query facilities  
- Source code control

RIMS/GRAF, a multifile graphics program–generating system, can be used by both nonprogrammers and programmers to quickly and easily create ready-to-use business-oriented graphics programs and the source code for those programs in a variety of DIGITAL-based operating systems and language compilers. RIMS/GRAF can readily be superimposed over any existing data file structure. RIMS/GRAF gives its user the opportunity to generate a number of different business graphics, including bar graphs, deviation bar graphs, pie graphs, and a U.S. map graph. Ready-to-use graphics programs are generated in accordance with answers, called parameters, that are provided by the RIMS/GRAF user in response to questions posed on a screen.

A version of this product is available for the PDP–11 computer.

**Price:** $1,250 – $2,500  
**Product Support Available:** Yes  
**Contact:** David Supinski, Sales Representative  
(412) 262–5507  
INFORMATION AND SYSTEMS RESEARCH, INC.  
410 Rouser Road, Building #1  
Airport Office Park  
Coraopolis, PA 15108
SAS/GRAPH™

Operating System: VMS
Keywords: • Documentation • Presentation aids

The SAS/GRAPH product provides device-intelligent color graphics and can be used to produce charts, plots, and maps, using a variety of colors and patterns. Many font styles can be used for titles, footnotes, and notes; fonts can also be created. Fifteen procedures are available for plotting; displaying bar, pie, exploded pie, star, and block charts; projecting statistical data to choropleth, surface, prism, and block maps; making slides; and replaying stored results for management presentations. Map coordinates for U.S. states and counties and for Canadian provinces are provided. The SAS/GRAPH product is used in business and research for presentation and information graphics applications. Major graphics devices are supported; write or call Software Sales at SAS Institute for a complete list.

Price: Available upon request
Product Support Available: Yes
Contact: Jeanne E. Newsom
(919) 467–8000
SAS INSTITUTE INC.
P.O. Box 8000
Cary, NC 27511

Series 5000 Advanced Graphics Software

Operating System: VMS
Keywords: • Architecture • CAD/CAM • Civil engineering • Construction

Auto-trol's Series 5000 Advanced Graphics software provides 32-bit computer power to speed complex design and drafting functions. It operates on Auto-trol's Advanced Graphics workstation (AGW) or on the VAX family of 32-bit processors.

Engineers, architects, designers, and drafters can use the Series 5000 software to increase productivity, reduce overhead costs, improve drawing quality, and reduce design errors. The Series 5000 database provides 3-D geometry, random access with an in-place updating capability, user-definable units, and single- or double-precision data representation.

Price: Available upon request
Product Support Available: Yes
Contact: Kim White
(303) 452–4919
AUTO-TROL TECHNOLOGY
12500 North Washington Street
Denver, CO 80233
Series 7000 Advanced Graphics Software

Operating System: VMS
Keywords: • CAD/CAM • Demos • Engineering
• Mathematics

Auto-trol's Series 7000 Advanced Graphics software is a geometric modeling system that provides a set of tools for the graphic development of 2- or 3-dimensional product models that can be used to conduct design studies, generate documentation, and prepare numerical control (N/C) programs.

Series 7000 software operates on Auto-trol's Advanced Graphics Workstation (AGW) or on the VAX family of 32-bit processors. Series 7000 is designed for the mechanical design and manufacturing industry.

Price: Available upon request
Product Support Available: Yes
Contact: Kim White
(303) 452-4919
AUTO-TROL TECHNOLOGY
12500 North Washington Street
Denver, CO 80233

SHADE

Operating System: VMS
Keywords: • CAD/CAM • Engineering • Mapping
• Presentation aids

The SHADE computer program provides for the generation of realistic shaded color pictures from computer-defined arbitrary shapes. Objects that are defined for computer representation can be displayed as smooth color-shaded surfaces, including varying degrees of transparency. SHADE-generated displays can also be used for the presentation of computational results. By performing a color mapping, SHADE can color the model surface to display such analysis results as pressures, stresses, and temperatures. NASA has used SHADE extensively in conjunction with programs for the design and analysis of high-performance aircraft. Industry should find a wide range of applications for SHADE in such areas as computer-aided design (CAD) and computer-aided manufacturing (CAM).

Objects can be defined to SHADE in terms of polygons, PANAIR networks, or parametric bicubic splined patches. The image data used to generate the picture is comprised of polygons. The parametric bicubic patch definition is subdivided to yield a polygonal definition for shaded display purposes. Defining polygons can have a different color associated with each corner point. SHADE offers numerous options, including varying the resolution from 256 to 4,096 pixels, dis-
playing text with the graphics, creating and editing a user view file, controlling the shading techniques (transparency, highlights, and specular reflectivity), and generating color bars from displayed results correlation.

**Price:** $1,125  
**Product Support Available:** No  
**Contact:** Customer Support Department  
(404) 542–3265  
NASA’S COMPUTER SOFTWARE MGT. AND INFO. CENTER  
University of Georgia  
112 Barrow Hall  
Athens, GA 30602

### SIMPLEPLOT Mark 2

**Operating System:** UNIX, VMS  
**Keywords:** • Device drivers/handlers • Scientific • Simulation

SIMPLEPLOT Mark 2 is a device-independent library of FORTRAN subroutines for plotting graphs. Those subroutines make graph drawing easy for the nonexpert programmer. Facilities include linear/logarithmic/normal probability/polar scales and axes, multiple scales on single graphs, choice of smooth curves through sets of data, linear and quadratic regression, distinct broken lines and symbols, keys and titles, layout in pages and groups, grids, and histograms.

Drivers can be obtained for pen plotters, raster scan devices, refresh displays, and character devices.

A version of this product is available for the PDP–11 computer.

**Price:** £1,050  
**Product Support Available:** Yes  
**Contact:** David Butland  
(0274) 309214  
BRADFORD UNIVERSITY SOFTWARE SERVICES LTD.  
16 Campus Road, Off Shearbridge Road  
Bradford, West Yorkshire BD7 1HR  
United Kingdom

### SIMPLEPLOT Mark 2 Part 2

**Operating System:** UNIX, VMS  
**Keywords:** • Device drivers/handlers • Scientific

SIMPLEPLOT Mark 2 Part 2, a major extension to the SIMPLEPLOT Mark 2 FORTRAN library, consists of about 60 user subroutines for representing data as contour plots and surface pictures. Data to the subroutines can be:
Graphics 781

- Gridded: regular or irregular “tartan” grids
- Function definitions: $z = f(x,y)$
- Arbitrarily spaced $(x,y,z)$ values
- Data structured into elements as from finite element analysis programs

Facilities include triangulating irregularly spaced data, contouring from any of the data forms on Cartesian or Polar charts, surface representations with hidden line removal, annotating surface pictures using $(x,y,z)$ coordinates, and all the layout and labeling facilities of SIMPLEPLOT Mark 2 Part 1.

As this software is an extension of SIMPLEPLOT Mark 2 Part 1, it can address an unlimited range of graphics devices.

A version of this product is available for the PDP–11 computer.

**Price:** £1,950 – £3,000

**Product Support Available:** Yes

**Contact:**
S. David Butland, Managing Director
(0274) 309214
BRADFORD UNIVERSITY SOFTWARE SERVICES LTD.
16 Campus Road, Off Shearbridge Road
Bradford, West Yorkshire BD7 1HR
United Kingdom

### SPSS Graphics Option

**Operating System:** VMS
**Keywords:** • Health care  • Mental health  • Presentation aids  • Statistics

The SPSS Graphics Option provides complete display and rendering of SPSS–X data analysis output in bar, line, and pie charts, as well as thematic maps. An exceptionally easy-to-use system, the SPSS Graphics Option includes form fill-out and on-line menu-driven instructions to help users get into the system.

The SPSS Graphics Option was developed by experienced graphic artists and system designers to allow users to take full advantage of defaults for accurate representational data display and scaling. If users want to override the automatic defaults and make their own artistic choices, they may do so through menu selections.

**Price:** $1,000 – $3,000

**Product Support Available:** Yes

**Contact:**
Susan Phelan
(312) 329–2400
SPSS INC.
444 North Michigan Avenue
Chicago, IL 60611
STAG II Drawing System

Operating System: ULTRIX, UNIX
Keywords: • Architecture • CAD/CAM • Civil engineering • Engineering

STAG is a moderately priced system for producing useful, accurate, and detailed drawings suited to the practical needs of architects and others whose work has to be presented in the form of 2-D line drawings and 3-D perspective images. STAG offers users a convenient entry into computing technology, with a good upgrade path for expanding computing operations in an office.

STAG offers line styles and color, curves, and hatching, with picture windowing and zooming, repetition, nesting, handing, rotation, stretching and scaling, optional grids that are variable and rotatable, and text fonts. Users control all 2-D and 3-D drawing operations through a display screen, with minimal typing.

No computing skills are required, but users have to think logically about how they organize their drawing operations. Input is direct, via a graphics display. All variables affecting the construction of drawings are under user control. Output is either on the display terminal or via a plotter on paper. Plotted output can be at selected scales; the output procedure is described in the user manual.

STAG is written in the C programming language to run in a UNIX* software environment. On-site expertise in operating with UNIX* or good access to such expertise is required.

The system requires any computer that runs full UNIX* V7, SIII BSD 4.1, or commercially available versions such as XENIX or UNITY. Current smallest configurations include DIGITAL's LSI-11/23 microprocessor with 22-bit addressing, with at least 256Kb memory and 10Mb hard disk, plus back-up media. Available hardware includes more powerful Motorola 68000–based microcomputers, such as the Plessey System 68, at similar cost.

Peripherals include a raster graphics terminal, such as the Westward GT1015 or GT2015; a graphics plotter, such as the Hewlett-Packard 7221 (A3) or 7580/5 (A1/0); and a dot matrix or daisywheel printer. Equipment can be obtained independently of software; consultancy services are offered on selection, purchase, and commissioning of equipment.

STAG is supplied with a data base management system that works efficiently on small computers; it can be used for other computing applications and allows the possibility of adding applications functions. STAG includes error trapping and recovery functions to protect users from accidental loss of files.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.
Price: £5,000 – £11,000
Product Support Available: Yes
Contact: Aart Bijl
       (031) 667 1011 ext. 4598
       EDCAAD, DEPARTMENT OF ARCHITECTURE
       University of Edinburgh
       20 Chambers Street
       Edinburgh EH1 1JZ
       United Kingdom

SUPERDRAW

Operating System: UNIX, VMS
Keywords: • CAD/CAM • Civil engineering • Engineering
          • Mechanical engineering

SUPERDRAW is a comprehensive computer-aided design and drafting system. Its features cut across many disciplines, such as civil and architectural engineering, mechanical engineering, electrical and logic layouts, artwork for documentation, flow charts, slide preparation for sales meetings, and so on. The system is ideal for smaller firms or divisions in which one system has to perform a wide variety of functions.

SUPERDRAW has a full set of graphic data entry and editing commands, similar to systems costing much more. Very strong symbol capability draws on a wide variety of prestore symbols in many disciplines and also enables the user to develop a library of special symbols or functions, which can be selected from the user’s own menu. Two- and three-dimensional capability allows the user complete freedom to develop drawings or designs.

A version of this product is available for the PDP–11 computer.

Price: $4,950 – $9,000
Product Support Available: Yes
Contact: Sales Manager
         (412) 661–2100
         ALGOR INTERACTIVE SYSTEMS, INC.
         Essex House, Suite L1
         Essex Square
         Pittsburgh, PA 15206

TFONT Text Font Design Program

Operating System: ULTRIX, UNIX
Keywords: • CAD/CAM • Presentation aids • Printing
          • Text editing/formatting
TFONT allows users to design their own text fonts and logos, which can then be used by STAG. Designs are built up directly on the display screen, on a 40 x 40 grid, and are stored in font libraries that can be called from other programs.

The system is written in the C programming language to run in a UNIX* software environment. On-site expertise in operating with UNIX* or good access to such expertise is required.

The system requires any computer that runs full UNIX* V7, SIII BSD 4.1, or commercially available versions such as XENIX or UNITY. Current smallest configurations include DIGITAL’s LSI–11/23 microprocessor with 22-bit addressing, with at least 256Kb memory and 10Mb hard disk, plus back-up media. Available hardware includes more powerful Motorola 68000–based microcomputers, such as the Plessey System 68, at similar cost.

Peripherals include a raster graphics terminal, such as the Westward GT1015 or GT2015; a graphics plotter, such as the Hewlett-Packard 7221 (A3) or 7580/5 (A1/0); and a dot matrix or daisywheel printer. Equipment can be obtained independently of software; consultancy services are offered on selection, purchase, and commissioning of equipment.

The data base management system supplied works efficiently on small computers; it can be used for other computing applications and allows the possibility of adding applications functions.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: £1,200
Product Support Available: Yes
Contact: Aart Bijl
(031) 667 1011 ext. 4598
EDCAAD, DEPARTMENT OF ARCHITECTURE
University of Edinburgh
20 Chambers Street
Edinburgh EH1 1JZ
United Kingdom

**VIGL (VS(V)11 Interactive Graphics Library),
Version 1.0**

Operating System: VMS
Keywords: • CAD/CAM • Engineering
• Mechanical engineering • Programming tools
VAX–11 VIGL is a library of FORTRAN-callable graphic subroutines that provide the VAX/VMS user with access to the graphic capabilities of the VS(V)11 graphics subsystem. VAX–11 VIGL graphic facilities provided by the VIGL subroutine library allow the user to create FORTRAN applications programs. The subroutines convert graphics requests into display lists containing VS(V)11–specific graphic instructions and utilize the VS(V)11 Driver to send those display lists to the VS(V)11 graphic subsystem.

Refer to SPD #25.94.1 when requesting further information on this product from your local DIGITAL sales office.

**Price:** $2,500 – $4,250

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office (see Introduction).

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**VS11–VAX Driver, Version 2.2**

**Operating System:** VMS

**Keywords:** • CAD/CAM • Communications • Device drivers/handlers

The VS11–VAX Driver provides all the I/O services required for communication between a VAX/VMS host and a VSV11/VS11 graphics subsystem. The VS11–VAX Driver enables the user to communicate with the VSV11/VS11, using the QIO executive directive in a MACRO assembly language program or a VAX–11 FORTRAN program.

Features are:

• Execution of a display file containing VSV11/VS11–specific graphic instructions
• On-demand use of an auxiliary memory segment that contains VSV11/VS11 instructions, providing extended addressing to the VSV11/VS11
• Reading back of the four VSV11/VS11 device registers
• Execution of STOP/RESUME display file
• Waiting for an interrupt that will be generated when the VSV11/VS11 joystick switch is pressed
• Specifying the QIO complete timeout parameter for display file execution QIOs

Refer to SPD #25.45.04 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office (see Introduction).
VT105 GPA (VT105 Graphics Support Package)

**Operating System:** VMS  
**Keywords:**  • Demos

The VT105 Graphics Package consists of 40 FORTRAN subroutines and 10 demonstration programs. The graphics subroutines perform the necessary functions that enable you to use the VT105 as a graphics terminal; the demonstration programs include examples of some of the graphics subroutines. The package also includes three spline fitting routines that enable you to draw smooth nonlinear curves for data having relationships that cannot be easily defined automatically.

Documentation is on magnetic media. DECUS number VAX–9.

**Price:** $5 – $225  
**Product Support Available:** No  
**Contact:** DECUS (see Introduction)
Language Processors
Ada Compiler

Operating System: VMS
Keywords: • Compilers • Cross-compilers • Documentation
The Ada compiler compiles the full Ada language as specified by ANSI/MIL–STD 1815A for the VAX line of equipment. The compiler features portability, can be modified for use as a cross-compiler, and is feasible even for computers with a limited amount of directly addressable memory. The compiler is written in a subset of Ada and is ported to a new processor via a subset Ada compiler written in the Pascal language. Extensive documentation is available. The compiler will not be available directly to end users, but inquiries from equipment manufacturers, OEMs, and distributors are invited.

Price: Available upon request
Product Support Available: Yes
Contact: George Finckenor
(212) 696–3600
ADVANCED COMPUTER TECHNIQUES
16 East 32nd Street
New York, NY 10016

Animator

Operating System: UNIX, VMS
Keywords: • Compilers • Debugging • Programming tools
• Source code control
Animator is a unique visual programming tool for the development and maintenance of ANSI ’74 COBOL programs. Animator displays the source of the program on the screen and moves the cursor from statement to statement as each statement is executed. Access is provided to a full range of debugging commands.

A version of this product is available for the PDP–11 computer.

Price: $800
Product Support Available: Yes
Contact: Andy Pope or Stacy Beard, Technical/Customer Support
(415) 856–4161
MICRO FOCUS INC.
1860 Embarcadero Road #235
Palo Alto, CA 94303

APL

Operating System: VMS
Keywords: • Interpreters • Language enhancers
• Mathematics • Programming tools
APL–11 is an interpreter for the APL language, a mathematically structured programming language that features many functions that operate on arrays of arbitrary order. APL is used as a general processing language as well as a mathematical tool. APL can define recursive procedures that use local variables. The special APL character set can be used on a terminal that supports it, or it can be simulated with mnemonic escape sequences on non-APL terminals. The user can interact with the APL interpreter to examine and change variables, alter statements without recompilation, and trace program action. The SCI (now SCT), December 1981, consists of the following programs:

- LIBREQ.TOC contains a table of contents, by line number of the MACRO definitions is SYS$LIBRARY:LIB.REQ, and the file SYS$LIBRARY:SYS.STB contains the definitions of most of those symbols. That permits a FORTRAN, MACRO, or other program to declare the symbols as EXTERNAL and then have them supplied by the system. The LIB.REQ printout is about ½-inch thick.
- SCI.APL (Version 2.0) is a reasonably complete, improved subset of APL. The information about the files contained on this program are in README.IST.
- XTOC and SPLIT are useful programs to get a table of contents and to split a set of source code. They may be necessary to generate the individual SUBROUTINES for updating SCI.APL. Their description is at the head of each FORTRAN (.xxx.FOR) program.
- STAT and its required MACRO subroutines, STATMAR, permit a display of the VMS status, similar to DISPLAY. The advantages are that the information is all on one page, the display is relatively device-independent so that it can be used on a hard copy or strange terminal or routed to a file, and the source code is supplied.

More information about this program is contained in the Program and MACRO subroutine package, in addition to the file STATUS.HLP.

Documentation is on magnetic media. DECUS number VAX–31.

Price:  $5 – $225

Product Support Available:  No

Contact:  DECUS (see Introduction)

APL–11

Operating System:  VMS

Keywords:  • Interpreters  • Mathematics  • Programming tools
• Simulation

Memory required: 40K bytes.

APL–11 is an interpreter for the APL language, a mathematically structured programming language that features many functions that operate on arrays of arbitrary order. APL–11 is used as a general
data-processing language as well as a mathematical tool. APL can define recursive procedures that use local variables. The special APL character set can be used on a terminal that supports it or can be simulated with mnemonic escape sequences on non-APL terminals. The user can interact with the APL interpreter to examine and change variables, alter statements without recompilation, and trace program action.


APL–11 for RSX–11 V2.1 has been run in compatibility mode on the VAX but is known to have a problem with terminal I/O coming out double-spaced. This RSX–11 version of APL–11 has updated sources on it (V2.1).

Documentation is on magnetic media. DECUS number 11–SP–25.

A version of this product is available for the PDP–11 computer.

**Price:** $5 – $225

**Product Support Available:** No

**Contact:** DECUS (see Introduction)

### APL, Version 1.1

**Operating System:** VMS

**Keywords:**
- Communications
- Debugging
- File management
- Interpreters

APL (A Programming Language) is a concise programming language that can be used for a wide range of applications. It simplifies the handling of numeric and character data organized as lists and tables.

VAX–11 APL, a native-mode, shareable, reentrant interpreter that runs under the VAX/VMS operating system, provides a built-in function editor, debugging aids, system communication facilities, and a file system. VAX–11 APL can execute lines of code immediately or can store the code for later execution.

VAX–11 APL uses virtual memory to create a "workspace" that can expand dynamically as needed and utilizes the VAX–11 floating-point and character string instructions.

Refer to SPD #25.31.01 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office (see Introduction).
AVL

Operating System: ULTRIX, UNIX
Keywords: • Compilers • File management • Networking

This fourth-generation applications implementation language is intended for rapid prototyping and product development. It is similar in syntax to C, but provides a unique data type similar to that provided by MUMPS.

Functions are dynamically loadable, and program variables may be designated as disk resident, allowing permanent storage and sharing among multiple processes. Many tree-walking functions are provided to facilitate manipulation of data. A variable may be an arbitrarily subscripted array, such as a [1,"string",4], and each node may have a value.

A source level debugger, a data-directed editor, a large run-time library, many utility programs, and extensive documentation are included.

A version of this product is available for the PDP–11 computer.
Price: $1,200
Product Support Available: Yes
Contact: William J. Ezell
(603) 883–9300
SOFTWARE INNOVATIONS, INC.
440 Amherst Street
Nashua, NH 03063

Basic–L

Operating System: ULTRIX, UNIX
Keywords: • Compilers • Programming tools • Translators

Basic–L is a language processor, translating Basic–L code into C, which is then compiled. The Basic–L language is a hybrid of BASIC and C, particularly useful for people moving from BASICS to C and for those who want to combine the "safety" features of BASIC with the advanced control structures of C.

The Basic–L language includes BASIC-style string and matrix manipulation, subscript checking, and GOSUB constructs with C-style if statements; while, do, and for loops; and functions. Basic–L uses regular UNIX* files with no record structure imposed.

Basic–L and C functions may be linked into one executable program. All the facilities of the C preprocessor are available in Basic–L. The package includes a run-time library.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.
BASIC, Version 2.2

Operating System: VMS
Keywords:  • Compilers  • Debugging  • Programming tools
            • Text editing/formatting
VAX–11 BASIC is an interactive, shareable language processor for
the VAX/VMS operating system. VAX–11 BASIC takes full advan-
tage of the VAX–11 floating-point, decimal, and character instruc-
tions.

VAX–11 BASIC provides a high-performance program development
environment for both applications development and timesharing, by
generating in-line VAX native-mode instructions. The interactivity
of immediate-mode program debugging is combined with the power
of a structured programming language integrated with key compo-
nents of the VAX Information Architecture.

Refer to SPD #25.36.09 when requesting further information on this
product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
         (see Introduction).

BLISS–16 Implementation Language, Version 4.0

Operating System: VMS
Keywords:  • Compilers  • Cross-compilers
            • Language enhancers  • Programming tools
BLISS–16 is a high-level, systems implementation language inten-
ted for the development of systems software such as operating
systems, compilers, run-time system components, data base and file
systems, communications software, and utilities for use on PDP–11
hardware systems. An advanced set of language features supports
development of modular software according to structured program-
ning concepts. Access to many of the hardware features of the
PDP–11 is provided in order to facilitate programming of real-time
and/or hardware-dependent applications.
The BLISS–16 cross-compiler runs in native mode under the VAX/VMS operating system. This cross-compiler translates BLISS–16 source programs into relocatable PDP–11 object modules optimized for time and space efficiency.

Refer to SPD #25.19.03 when requesting further information on this product from your local DIGITAL sales office.  

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

## BLISS–32 Implementation Language, Version 4.0

**Operating System:** VMS  
**Keywords:**  
- Compilers  
- Debugging  
- Documentation  
- Source code control

BLISS–32 is a high-level, systems implementation language for VAX–11. BLISS–32 supports development of modular software according to structured programming concepts by providing an advanced set of language features. BLISS–32 provides access to most of the hardware features of the VAX systems to facilitate programming of real-time and/or hardware-dependent applications. BLISS–32 is especially intended for the development of operating systems, compilers, run-time system components, data base file systems, communications software, utilities, and so on, for use on a VAX–11 hardware system.

The BLISS–32 compiler runs in native mode under the VAX/VMS operating system and translates BLISS–32 source programs into relocatable object modules that can be linked for execution. BLISS–32 compiled code is optimized for execution efficiency.

Refer to SPD #25.12.08 when requesting further information on this product from your local DIGITAL sales office.  

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

## BSO/C Compiler

**Operating System:** VMS  
**Keywords:**  
- Compilers  
- Microprocessor development  
- Programming tools  
- Source code control

This compiler is specifically designed for microprocessor software development. The product offers the microprocessor system designer a powerful optimizing compiler that permits fast program creation and
the adept handling of specialized microprocessor hardware/software interfacing.

The compiler features:
- A multiuser system
- Optimizing
- Separate compilation
- An include statement
- Linkage with assembly language modules
- Strong type checking for more accurate programs
- ROM/RAM memory segregation
- Extensive interrupt-handling instructions
- Special variables to permit easy handling of record files

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Joanne Dawson
(617) 894–7800 or TWX: (710) 324–0760
BOSTON SYSTEMS OFFICE, INC.
469 Moody Street
Waltham, MA 02154

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**BSO/Pascal Compiler**

**Operating System:** UNIX, VMS

**Keywords:**
- Compilers
- File management
- Microprocessor development
- Programming tools

The first compiler designed specifically for microprocessor software development is the BSO/Pascal Compiler. The product offers the microprocessor system designer a powerful optimizing compiler that permits fast program creation and the adept handling of specialized microprocessor hardware/software interfacing. Features include ISO Standard conformance, multiuser capability, optimization, separate compilation, and an include statement.

The compiler can be linked with BSO/C or BSO/Assemble object modules, offers strong type checking for more accurate programs, has ROM/RAM memory segregation and extensive interrupt-handling instructions, and has special variables to permit easy handling of record files.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Simon Wieczner
(617) 894–7800 or TWX: (710) 324–0760
BOSTON SYSTEMS OFFICE, INC.
469 Moody Street
Waltham, MA 02154
C–16000 C Cross-Compiler for National Semiconductor 16000

Operating System: ULTRIX, VMS
Keywords: • Compilers  • Cross-compilers  • Microprocessor development

The C–16000 compiler, a fully optimizing compiler for the National Semiconductor 16000-series microprocessors, may be configured as a resident compiler or as a VAX cross-compiler. The compiler performs global optimizations that are commonly found in mainframe compilers — Register Allocation By Coloring, Very Busy Expression Analysis, Copy Propagation, Common Subexpression Elimination, and Strength Reduction — in addition to standard microprocessor compiler optimizations — folding constant expressions, conversion of multiplies to shifts whenever possible, elimination of redundant jumps, and unreachable code.

This compiler generates 30% less code than portable C compiler versions and provides:
• Complete Berkeley C compatibility
• One-pass design, with integrated preprocessor for maximum throughput
• Generated code runs up to four times faster than portable C compiler code
• Extensive loop optimizations
• Advanced compiler techniques to reduce space
• Complete IEEE floating-point support
• Calling sequence compatibility with all Green Hills compilers

Price: Available upon request
Product Support Available: Yes
Contact: Joel Schacht
(617) 491–4180
OASYS, INC.
60 Aberdeen Avenue
Cambridge, MA 02138

C–68000 C Cross-Compiler for Motorola 68000

Operating System: ULTRIX, VMS
Keywords: • Compilers  • Cross-compilers  • Microprocessor development

The C–68000 compiler, a fully optimizing compiler for Motorola 68000 series microprocessors, may be configured as a resident compiler or as a VAX cross-compiler. The compiler performs global optimizations normally found in mainframe compilers — Register Allocation By Coloring, Very Busy Expression Analysis, Copy Propagation, Common Subexpression Elimination, and Strength
Language Processors

Reduction — in addition to standard microprocessor compiler optimizations — folding of constant expressions, conversion of multiplies to shifts whenever possible, elimination of redundant jumps, and unreachable code.

This compiler generates 30% less code than poordable C compiler versions and provides:

- Complete Berkeley C compatibility
- One-pass design, with integrated preprocessor for maximum throughput
- Generated code that runs up to four times faster than portable C compiler code
- Extensive loop optimizations
- Advanced compiler techniques to reduce space
- Complete IEEE floating-point support
- Calling sequence compatibility with all Green Hills compilers
- Interfaces with OASYS M68000 Cross Assembler Development System and other software development tools

Price: Available upon request
Product Support Available: Yes
Contact: Joel Schacht
(617) 491–4180
OASYS, INC.
60 Aberdeen Avenue
Cambridge, MA 02138

C Native and Cross-Compilers

Operating System: UNIX, VMS
Keywords: • Compilers • Cross-compilers
          • Pre- and postprocessors • Programming tools

The C Native Compiler operates in three sequential passes, producing two intermediate files, each comparable in size to the source code being compiled. The installation kit consists of the C Native Compiler, which has the preprocessor (pp), the parser (p1), and the code generator (p2). The C Library, containing the Portable Library (clib), the System Interface Library for the HOST operating systems, and the Machine Interface Library for the HOST machine, are also included in the installation kit.

The C Cross-Compiler includes a C Native Compiler, plus an additional code generator (p2), an assembler (as), and object libraries for the cross-supported target machine. All packages also include the Whitesmiths portable linker and librarian, plus other programming support utilities.

A version of this product is available for the PDP–11 computer.

Price: $500 – $2,200
Product Support Available: Yes


Contact: Christina B. Hanley
(617) 369-8499
WHITESMITHS, LTD.
97 Lowell Road
Millbrook Tarry
Concord, MA 01742

C, Version 1.3

Operating System: VMS
Keywords: • Compilers  • Debugging  • File management
  • Programming tools

VAX–11 C is an extended implementation of the C programming language, originally developed at Bell Laboratories. The VAX–11 C compiler runs under the VAX/VMS operating system and generates optimized, shareable, and position-independent code.

As a native-mode VAX/VMS language, VAX–11 C is integrated into the VAX/VMS common language environment. All VAX/VMS system services are thus available to programs written in VAX–11 C. VAX–11 C supports VAX–11 Record Management Services (RMS), including sequential, relative, and indexed file organizations and associated access methods, in addition to the stream file access conventional among most C implementations. VAX–11 C programs can invoke, as functions, modules written in other VAX/VMS languages. Additionally, programs written in VAX–11 C generate limited debug and traceback records for use with the VAX–11 Symbolic Debugger. The debugger allows the C programmer to set breakpoints, examine and modify the contents of user variables, and selectively halt or continue program execution.

Refer to SPD #25.38.04 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

C68

Operating System: ULTRIX, UNIX, VMS
Keywords: • Assemblers  • Compilers  • Cross-compilers
  • Microprocessor development

C68 is a C compiler that generates compact, efficient, executable object code for MC68000 microprocessors. C68 consists of a macro-preprocessor, compiler, relocatable assembler, linking loader, support library, and utilities. Also included is a symbolic debugger that does MC68000 instruction disassembly, referencing compiler and/or as-
sembler symbolic names. The debugger also provides breakpointing, instruction tracing, and inspect/change facilities. Utility programs are included for down-loading executable programs and symbol tables to the 68000 development board via a serial channel. The C68 system generates programs that execute stand-alone or under operating system control on the 68000. Versions of C68 are available for the LSI–11 and PDP–11 with UNIX*, VAX–11 with UNIX*, VAX–11 with VMS, Tektronix 8560 with UNIX*, and MC68000 with VERSAdos.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $1,295
Product Support Available: Yes
Contact: Bill Allen
         (619) 578–0860
         ALCYON CORP.
         8716 Production Avenue
         San Diego, CA 92121

camic/s (Computer-Aided Microprocessing)

Operating System: ULTRIX, UNIX
Keywords: • Cross-compilers • Microprocessor development
          • Pre- and postprocessors • Text editing/formatting

As a universal development system for microprocessor software, camic/s can be used for all microprocessors on the market; it can be configured to suit all users and their processors.

All products of the software life cycle (documents and programs) are held in a project library, providing access to all information and supporting quality assurance and data security. The system offers Pascal and C cross-compilers with run-time libraries and cross-assemblers for Intel, Motorola, and Zilog processors.

The system includes an efficient test system that supports software testing on a functional level — automatic creation of test frames, assertion processing, and measurement of test coverage — and symbolic debugging with integrated in-circuit emulators.

A version of this product is available for the PDP–11 computer.

Price: DM 60,000 – DM 120,000
Product Support Available: Yes
Contact: Mr. Feiglbinder
         089 92 52 – 2 31
         SOFTLAB:GMBH
         Arabellastrasse 13
         8000 Munich 81, Bavaria
         West Germany
CE (Concurrent Euclid)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Cross-compilers • Diagnostics
          • Microprocessor development • Research

Concurrent Euclid, a programming language designed for implementing software, is efficient, reliable, and portable. CE is particularly suited for implementing operating systems, compilers, and specialized microprocessor applications. It can serve as a basis for producing verifiable system software.

CE has been designed to allow its compiler to be small, fast, and portable. Such a compiler exists, with replaceable high-quality code generators for various machine architectures.

A version of this product is available for the PDP-11 computer.

Price: $300 – $3,000

Product Support Available: Yes

Contact: Phyllis Eve Bregman
         (416) 978-6985
         COMPUTER SYSTEMS RESEARCH GROUP
         University of Toronto
         10 King's College Road
         Toronto, Ontario M5S 1A4
         Canada

COBOL VAX to MC68000 Cross-Compiler

Operating System: ULTRIX
Keywords: • Compilers • Cross-compilers
          • Microprocessor development • Source code control

This cross-compiler permits COBOL compilations on the VAX line of equipment that produce native assembly language for the MC68000. The product is implemented to ANSI Standard X3.23–1974 for Full FIPS COBOL. The Nucleus and 10 functional modules (Table Handling, Sequential I–O, Relative I–O, Indexed I–O, Sort/Merge, Segmentation, Library, Debug, Interprogram Communication, and Communication) conform to full Level 2 Standard.

Deliverables include all the necessary reference and internal manuals, source programs, personnel training, and distribution rights. The compiler will not be available directly to end users, but inquiries from equipment manufacturers, OEMs, and distributors are invited. With modification, the compiler can be conveniently retargeted to other micros.

Price: Available upon request

Product Support Available: Yes
COBOL, Version 2.2

Operating System: VMS
Keywords: • Assemblers • Compilers • File management
          • Text editing/formatting

COBOL is a high-level language for business data processing. VAX–11 COBOL runs under the VAX/VMS operating system, taking full advantage of the system facilities. It is based on the 1974 ANSI COBOL Standard X3.23–1974 and includes features planned for the next COBOL standard.

The VAX–11 COBOL compiler produces an object module from a source program. The compiler can produce a source listing with embedded diagnostics indicating line and position of error, a machine language listing, a cross-reference listing, and maps of file names, data names, procedure names, external program names, and sub-schema information. The cross-reference listing and maps may be produced either in alphabetical order or in order of declaration. The cross-reference listing distinguishes destructive references to data from read-only references.

Object modules produced by the compiler can be linked with native-mode object modules produced by other language processors, including VAX–11 BASIC, VAX–11 FORTRAN, and VAX–11 PL/I. VAX–11 COBOL is supported by both the VAX–11 Common Run-Time Library and the VAX–11 Symbolic Debugger.

Refer to SPD #25.04.06 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
          (see Introduction).

Common Pilot

Operating System: VMS
Keywords: • Computer-aided instruction • Education
          • Interpreters • Text editing/formatting

Memory required: 96KB.

Common Pilot is a language interpreter for delivery of computer-assisted instruction lessons. Lessons are created using any available
text editor and are executed directly from text file format. The language is compatible with the MICROPI Common Pilot available on a variety of microprocessors, minicomputers, and mainframes. The language includes features for creation of highly interactive student-lesson dialog, answer evaluation, pattern matching, text presentation, computation, string manipulation, and branching. Pilot programs developed on one system can be run with little or no damage on any other system that supports Common Pilot. The interpreter is written in Pascal to facilitate future enhancements.

This program is distributed as an executable binary file only. The source is not available from the DECUS Library.

Documentation is on magnetic media. DECUS number VAX-32.

Price: $5 – $225
Product Support Available: No
Contact: DECUS (see Introduction)

Compact Level II COBOL

Operating System: UNIX, VMS
Keywords: • Compilers • Microprocessor development
          • Programming tools • Source code control

Compact Level II COBOL is a mainframe-level compiler for ANSI '74 COBOL programs. It enables microcomputers to compile and run programs written in full High Level GSA Standard COBOL, based on the ANSI '74 COBOL Standard, with minimal source code modification, thereby allowing those with an investment in existing COBOL programs to maintain and execute them on microcomputers.

A version of this product is available for the PDP-11 computer.

Price: $1,600
Product Support Available: Yes
Contact: Andy Pope or Stacy Beard, Technical/Customer Support
        (415) 856-4161
        MICRO FOCUS INC.
        1860 Embarcadero Road #235
        Palo Alto, CA 94303

CONPAX (PDP-11 Assembly Language Conversion Utility)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Assemblers • Data conversion • File management
          • Translators

CONPAX, a utility that converts PDP-11 assembly code to VAX-11 native mode, runs on both PDP-11 and VAX-11 computers and pro-
produces VAX–11 assembler source code in far less time and with fewer errors than manual conversion. Conversion to “native mode” provides the full power of the VAX–11 hardware and software, in contrast to the substantially slower execution speed and limited capabilities of compatibility mode.

In the conversion process, CONPAX uses addressing modes and other information from the PDP–11 assembly code to produce the VAX–11 conversion for each line, including generation of multiline alternatives when appropriate. CONPAX automatically handles details such as octal constants, ASCII literals, and register names and includes a general macro capability that can be invoked at conversion time.

The conversion process is heavily table-driven, and the conversion tables can be tuned by the user to a specific programming environment.

A version of this product is available for the PDP–11 computer.

**Price:** $7,500

**Product Support Available:** Yes

**Contact:** Stephen F. Heffner, President  
(609) 737–2727  
PENNINGTON SYSTEMS INC.  
65 S. Main Street, Building C  
Pennington, NJ 08534

### CORAL 66, Version 1.1

**Operating System:** VMS

**Keywords:**  
- Debugging  
- Diagnostics  
- Programming tools  
- Source code control

This high-level block-structured programming language is the standard, general-purpose language prescribed by the British government for real-time and process control applications. It is defined in the *Official Definition of CORAL 66*, published in 1973 by Her Majesty’s Stationery Office (ISBN 011 4702217).

The language is designed to replace assembly-level programming in modern industrial and commercial applications. It is used for long-life products for which ease of maintenance and flexibility are required.

The VAX–11 CORAL 66 compiler is implemented in accordance with the Official Definition. In addition, the compiler provides the following features:

- BYTE and DOUBLE (64-bit floating point) numeric types
- Generation of reentrant code at the procedure level
- LONG numeric type supported and implemented as a standard VAX 32-bit integer, for compatibility with PDP–11 CORAL
Refer to SPD #25.37.4 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office (see Introduction).

**CORAL 66/VAX to RSX Cross-Compiler,**  
**Version 2**

**Operating System:** VMS  
**Keywords:**  
- Cross-compilers  
- Language enhancers  
- Process control  
- Real time  

CORAL 66, a high-level block-structured programming language, is the standard general-purpose language prescribed by the British government for real-time and process-control applications. It is defined in BS 5905, British standard specification for computer programming language CORAL 66.

The language is designed to replace assembly-level programming in modern industrial and commercial applications. It is used for long-life products requiring ease of maintenance and flexibility.

The CORAL 66/VAX to RSX Cross-Compiler operates under the VAX/VMS operating system. Code generated by the cross-compiler and linked under VAX/VMS with the appropriate OTS supplied with this product may be run under VAX/VMS in compatibility mode or on any PDP–11 running RSX–11M, V4.0, or RSX–11M–PLUS, V2.0. Code generated by the cross-compiler may also be transferred to any PDP–11 running RSX–11M, V4.0, or RSX–11M–PLUS, V2.0 and linked with the PDP–11, V4.0 OTS, to run on that PDP–11.

FORTRAN and MACRO–11 subroutines may be incorporated in CORAL tasks, provided that certain coding conventions are followed.

Refer to SPD #25.69.2 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office (see Introduction).

**Custom**

**Operating System:** ULTRIX, UNIX  
**Keywords:**  
- Assemblers  
- Compilers  
- Cross-compilers  
- Microprocessor development
This package of microprocessor software cross-development tools consists of the custom relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP-11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer's. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP-11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** UniWare Sales  
(312) 620–4830  
NUVATEC/INC., UNIWARE DIVISION  
261 S. Eisenhower  
Lombard, IL 60148

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**DBL (Data Business Language)**

**Operating System:** ULTRIX, VMS

**Keywords:** • Compilers • Debugging • Programming tools

The DBL programming language is a superset of DIGITAL's popular DIBOL–11 language and has many extensions that simplify program development and maintenance. The many DISC-developed enhancements increase the effectiveness of the language and provide modern, structured-language facilities. Use of DBL leads to increased programmer productivity and reduced program development and maintenance costs.

DBL maintains upward compatibility through all versions of DBL and DIBOL, including DIBOL–83. Application programs can, therefore, continue to be used, even as hardware and operating systems are changed.

Features of DBL/VMS include in-line native code generation, RMS file structures, multikey ISAM support, easy access to VMS system service routines and operating system commands, the ability to call the VMS SORT utility directly from a DBL program, identifiers of up to 31 characters, the ability to create "bound" applications made up of many separate programs (eliminating the need for program startup and shutdown during chaining and allowing all programs to access only one set of utility subroutines), and the ability to create shared utility libraries, to access routines written in other languages, and to access DBL routines from programs written in other languages.
A powerful symbolic debugger allows debugging without linking in special code. This feature permits intact debugging of production code while eliminating the need for, and problems associated with, special test code. DBL's debugging facility is easy to use, yet contains sophisticated features.

A version of this product is available for the PDP–11 computer.

**Price:** $300 – $5,300

**Product Support Available:** Yes

**Contact:**
Sales Department  
(916) 363–7385  
DISC  
3336 Bradshaw Road, Suite 340  
Sacramento, CA 95827

**DEBUG/RT (Debugger)**

**Operating System:** ULTRIX, UNIX  
**Keywords:**  
- Debugging  
- Diagnostics  
- Microprocessor development  
- Simulation

DEBUG/RT is an advanced debugger designed to work in conjunction with OS/RT, Destek's real-time, multitasking operating system kernel. DEBUG/RT is used to debug the OS/RT customer's user processes (application code) and on OS/RT itself if custom changes to the OS are being implemented. DEBUG/RT will allow access to control blocks from resources normally hidden from the user, the interception of interrupts, and the simulation of external events. A version of the Debugger is also available to work with Destek's series of optimized cross-compilers for VAX and PDP–11 minicomputers that produce 68000, 8088/86/186, Z8000, and Z80.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes

**Contact:**
Dennis Rieger  
(408) 737–7211  
THE DESTEK GROUP  
830 East Evelyn Avenue  
Sunnyvale, CA 94086

**Des BASIC (BASIC Cross-Compiler)**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:**  
- Cross-compilers  
- Microprocessor development

The Destek Des BASIC cross-compiler system was developed to operate on a VAX or a PDP–11 minicomputer while generating code for the 68000, 8086/88, Z80, and Z8000. The Des BASIC is a complete
BASIC language programming system that includes a BASIC front end, an optimizing back end, an assembler, a linker, and comprehensive run-time libraries. The Des BASIC is compatible with the IBM–PC BASIC and MBASIC from MicroSoft. Support for single- and double-precision floating-point arithmetic is included.

Des BASIC is one of the highest-performance compilers in the marketplace. Destek also offers a run-time library for OS/RT, Destek’s real-time, multitasking operating system kernel. Compiler front ends for C and Pascal are also available.

A version of this product is available for the PDP–11 computer.

Price: $6,000
Product Support Available: Yes
Contact: Dennis Rieger
(408) 737–7211
THE DESTEK GROUP
830 East Evelyn Avenue
Sunnyvale, CA 94086

Des C (C Cross-Compiler)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Cross-compiler • Microprocessor development

The Destek Des C cross-compiler system was developed to operate on a VAX or a PDP–11 minicomputer while generating code for the 68000, 8086/88, Z80, and Z8000. The Des C is a complete C language programming system that includes a C front end, an optimizing back end, an assembler, a linker, and comprehensive run-time libraries. Des C includes the full Kernighan and Ritchie capability (UNIX* V.7) with single- and double-precision floating-point arithmetic included.

Des C is one of the highest-performance compilers in the marketplace. Destek also offers a UNIX*-like run-time library for OS/RT, Destek’s real-time, multitasking operating system kernel. Compiler front ends for BASIC and Pascal are also available.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $6,000
Product Support Available: Yes
Contact: Dennis Rieger
(408) 737–7211
THE DESTEK GROUP
830 East Evelyn Avenue
Sunnyvale, CA 94086
Des Pascal (Pascal Cross-Compiler)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Cross-compilers • Microprocessor development

The Destek Des Pascal cross/compiler system was developed to operate on a VAX or a PDP–11 minicomputer while generating code for the 68000, 8086/88, Z80, and Z8000. The Des Pascal is a complete Pascal language programming system that includes a Pascal front end, an optimizing back end, an assembler, a linker, and comprehensive run-time libraries. The Pascal is based on the ISO standards and contains numerous extensions for business and industrial use. Support for single- and double-precision floating-point arithmetic is included.

Des Pascal is one of the highest-performance compilers in the marketplace. Destek also offers a run-time library for OS/RT, Destek’s real-time, multitasking operating system kernel. Compiler front ends for C and BASIC are also available.

A version of this product is available for the PDP–11 computer.

Price: $6,000
Product Support Available: Yes
Contact: Dennis Rieger
(408) 737–7211
THE DESTEK GROUP
830 East Evelyn Avenue
Sunnyvale, CA 94086

DIBOL, Version 2.0

Operating System: VMS
Keywords: • Compilers • Data dictionary • Debugging
• File management

VAX–11 DIBOL is a high-level procedural language designed specifically for interactive business data processing. It runs under the VAX/VMS operating system, taking full advantage of the system facilities.

VAX–11 DIBOL is based on the DIBOL Standards Organization’s DIBOL–83 definition of the language. VAX–11 DIBOL is highly compatible with DIBOL–83 implementations on other operating systems, including RSTS/E, RSX–11M–PLUS, CTS–300, and P/OS, and also provides VAX–specific extensions and an expansion path for applications requiring the power of VAX/VMS, while retaining the capabilities and advantages of DIBOL–83.

DIBOL provides efficient terminal handling and efficient access to the VAX–11 Record Management Services (RMS). DIBOL–83 sup-
ports a set of language statements commonly referred to as structured constructs. Those statements are designed to complement and facilitate desirable programming practices.

The DIBOL compiler reads a source program and produces a shareable object module. The compiler can produce a source listing with embedded diagnostics and a cross-reference listing. Object modules produced by the compiler conform to the VAX–11 procedure calling standard and may be linked with native-mode object modules produced by other VAX–11 language processors.

The VAX–11 DIBOL product includes a compiler, a run-time library, external subroutine libraries, the DIBOL Debugging Technique, a message manager for communicating between programs, a program to monitor the activities of the message manager, and programs that provide access to the VAX–11 SORT using command files that are compatible with other DIBOL products.

Refer to SPD #25.49.03 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office (see Introduction).

**FOCAL**

**Operating System:** VMS

**Keywords:** • Interpreters • Source code control

Memory required: 20 pages working set.

This implementation of FOCAL was written as a way of learning VAX/VMS and, since full sources are provided, it may be valuable as an example for other people learning VAX. This fully functional implementation of FOCAL has facilities for handling program and data files. Since it is written in VAX native mode, making good use of the native instruction set, FOCAL is reasonably fast for an interpreter. FOCAL has almost unlimited capacity for program and data, since it dynamically expands its virtual memory space as required.

A help file documents special features or deficiencies of this implementation. Modify and Erase commands are not included. Since DIGITAL has supported FOCAL on at least the PDP–5, PDP–8, PDP–11, and PDP–15, no general documentation on the FOCAL language is considered necessary.

The installation procedure is identical to that for any DIGITAL optional software on VAX/VMS.

No documentation is available. DECUS number VAX–1.

**Price:** $5 – $225
FORTRAN 77 VAX to NS16000 Cross-Compiler

Operating System: VMS
Keywords: • Compilers • Cross-compilers
          • Microprocessor development • Source code control

This cross-compiler permits FORTRAN compilations on the VAX line of equipment that produce native assembly language for the NS16000. The compiler is implemented to ANSI Standard X3.9–1978 for full FORTRAN 77 and includes MIL–STD 1753 extensions as an optional feature.

Deliverables include all the necessary reference and internal manuals, source programs, personnel training, and distribution rights. The compiler will not be available directly to end users, but inquiries from equipment manufacturers, OEMs, and distributors are invited. With modification, the compiler can be conveniently retargeted to other micros.

Price: Available upon request
Product Support Available: Yes
Contact: George Finckenor
         (212) 696–3600
         ADVANCED COMPUTER TECHNIQUES
         16 East 32nd Street
         New York, NY 10016

FORTRAN Auditor

Operating System: UNIX, VMS
Keywords: • Compilers • Debugging • Diagnostics
          • Documentation

This program automatically audits FORTRAN programs for compliance with user programming standards, poor programming practices, nonportable code, and deviations from the American National Standards Institute (ANSI) definition of the FORTRAN language. Two versions of the Auditor exist: one audits programs for deviations, using the 1966 ANSI standard definition of FORTRAN; the other uses the 1977 standard. This tool, which also generates automatic program documentation, is a powerful error detector that typically detects many errors that escape commercial compilers.

No modification of any compiler or application program is required. Rather, FORTRAN source programs are accepted and input, and various reports are output. Another feature of the Auditor allows FORTRAN programs intended to run on different target machines to be checked on the host machine where the Auditor is running.
810 Language Processors

This product possesses a strong management orientation and serves as an excellent quality assurance tool, since it presents simple summaries at the end of its clear and detailed output. The Auditor is a member of SOFTOOL®, an integrated set of tools for software management, development, and maintenance.

A version of this product is available for the PDP–11 computer.

Price: $16,000
Product Support Available: Yes
Contact: Bruce Hanna
(805) 964–0560
SOFTOOL CORP.
340 S. Kellogg Avenue
Goleta, CA 93117

FORTRAN IV/VAX to RSX (PDP–11 Cross-Compiler), Version 2.6

Operating System: VMS
Keywords: • Compilers • Cross-compilers
• Language enhancers • Programming tools

FORTRAN IV is an extended FORTRAN implementation based on the former American National Standard (ANSI) FORTRAN, X3.9–1966. The compiler operates in compatibility mode under the RSX–11 AME on VAX/VMS systems. Programs compiled and tasks built can be transported to remote RSX–11M, RSX–11M–PLUS, or RSX–11S target systems or executed on VAX/VMS in compatibility mode.

Refer to SPD #25.17.7 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

FORTRAN Library of Preprocessors

Operating System: UNIX, VMS
Keywords: • Pre- and postprocessors • Programming tools
• Project management • Source code control

This open-ended collection of preprocessors is written using the Structurizer tool. Each preprocessor translates programs written in a different structured language into equivalent programs in a language acceptable to the host FORTRAN compiler. The library includes ADA-like, RATFOR-like, and FORTRAN 77-like preprocessors and the Softool Recommended Preprocessor for FORTRAN.
A version of this product is available for the PDP-11 computer.

**Price:** $4,500  
**Product Support Available:** Yes  
**Contact:** Bruce Hanna  
(805) 964–0560  
SOFTOOL CORP.  
340 S. Kellogg Avenue  
Goleta, CA 93117

### FORTRAN Recommended Preprocessor

**Operating System:** UNIX, VMS  
**Keywords:**  
- Debugging  
- Pre- and postprocessors  
- Programming tools  
- Project management

The Recommended Preprocessor, built with the aid of the Structurizer tool, is the result of extensive programming experience. The preprocessor includes proven error-preventing features.

A version of this product is available for the PDP-11 computer.

**Price:** $4,500  
**Product Support Available:** Yes  
**Contact:** Bruce Hanna  
(805) 964–0560  
SOFTOOL CORP.  
340 S. Kellogg Avenue  
Goleta, CA 93117

### FORTRAN, Version 3.4

**Operating System:** VMS  
**Keywords:**  
- Compilers  
- Diagnostics  
- Language enhancers  
- Source code control

VAX FORTRAN is an implementation of full-language FORTRAN 77 conforming to American National Standard FORTRAN, ANSI X3.9–1978. VAX FORTRAN includes optional support for programs conforming to the previous standard, ANSI X3.9–1966. VAX FORTRAN meets the Federal Information Processing Standard Publication (FIPS–69) requirements for a flagger. The flagger optionally produces diagnostic messages for syntax and/or source form elements, which do not conform to the Full-Level ANSI FORTRAN X3.9–1978 Standard. The shareable, reentrant compiler operates under the VAX/VMS operating system and takes advantage of the VAX floating-point and character string instruction set and the VAX/VMS virtual memory system.

Refer to SPD #25.16.15 when requesting further information on this product from your local DIGITAL sales office.
812 Language Processors

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).

GEPURSTM (General-Purpose Real-Time Software)

Operating System: VMS
Keywords: • Process control • Real time • Simulation

This simulation language for developing models of process and utility plants and their subsystems is a block-structured software system capable of simulating any industrial process dynamically and in real time. Models built with GEPURSTM software are used for checking out control strategies, for tuning loops, and for training operators, engineers, and other personnel in all levels of plant operations.

GEPURSTM offers the following features:
• Configuration through a CRT console, using a fill-in-the-blank format
• Dynamic reconfiguration, using CRT displays
• Dynamic tuning (no compiling and no source programs to update)
• Tabular displays and graphic plots that monitor simulated process variables, for testing a model during integration
• Dynamic control over model execution time
• Selective activation and deactivation of any portion of the model
• Ability to provide an emulated instrumentation interface or be hardwired to any analog or digital instrumentation

GEPURSTM software is used with PROGRESSTM training simulators produced by Combustion Engineering Simcon, Inc., Simulation & Advanced Process Control.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: J. Robinson
(201) 893–2910
COMBUSTION ENGINEERING, INC.
Simulation & Advance Process Control
400 Broadacres Drive
Bloomfield, NJ 07003

HCR/Pascal

Operating System: ULTRIX, UNITY, UNIX, VMS
Keywords: • Assemblers • Compilers • Pre- and postprocessors
HCR/Pascal conforms to the ISO 1981 draft standard and the ANSI standard for Pascal processors. HCR/Pascal lets you use UNIX* system calls, subroutines, and libraries. It contains a UNIX*-compatible implementation of the complete UCSD string package and features efficient compiled code and a macro preprocessor with all the properties of the C preprocessor.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.

**Price:** $1,000 +
**Product Support Available:** Yes
**Contact:** Sales Department
(416) 922–1937
HUMAN COMPUTING RESOURCES CORP.
10 St. Mary Street
Toronto, Ontario M4Y 1P9
Canada

**JOVIAL J73 Support Software Systems**

**Operating System:** VMS
**Keywords:** • Aeronautics/aerospace   • Compilers
• Cross-compilers

The JOVIAL J73 support software system consists of a JOVIAL J73 compiler, a macro assembler, and a linker for two target computers — the ZILOG Z8002 and the MIL–STD 1750A. Written in FORTRAN, the system is transportable and can be conveniently rehosted and retargeted to other processors. The system comes with complete documentation and ongoing support.

**Price:** Available upon request
**Product Support Available:** Yes
**Contact:** George Finckenor
(212) 696–3600
ADVANCED COMPUTER TECHNIQUES
16 East 32nd Street
New York, NY 10016

**LILA (Language Implementation Laboratory)**

**Operating System:** UCSD p-System, UNIX, VMS
**Keywords:** • Compilers   • Development tools   • Query facilities
• Translators

LILA largely automates the writing of translators (compilers, processors, and interpreters). LILA is based on a particular methodology in compiler construction developed at the Computer Science Department of the Katholieke Universiteit Leuven, Belgium.
The LILA input consists of three main parts:

- The definition of the vocabulary of the language — for example, keywords, operators, and separators.
- The definition of the syntax of the language, described in the extended context-free notation. That is a simple yet powerful variant of the Backus–Naur Form.
- The definition of the semantics of the language, which explains how the different statements in the language should be translated. The semantic actions are written in Pascal.

The more sophisticated users of LILA have also access to:

- A very handsome communication between the syntactic and the semantic part by means of the attribute mechanism.
- An automatic recovery mechanism from syntactic and semantic errors in the generated language processor. That is one of the most valuable aspects of LILA.
- All the interfaces between different passes of the translator.

The LILA output is a portable Pascal program that performs the translation.

LILA is used for implementing query languages for data bases, developing new special-purpose languages, designing intelligent command interpreters, and making translators of existing languages for new computer systems. Extensive and elaborate documentation is available. Specific product development with LILA can be realized by the LILA producers.

UCSD p-System™ is a trademark of University of California Regents.

A version of this product is available for the PDP–11 computer.

Price: $8,000 – $40,000
Product Support Available: Yes
Contact: Joost Cardoen
         32/3/235.19.60
         INNOVI N.V.
         Wilrijkstraat 37–45, Bus 3
         2200 Antwerpen
         Belgium

Meta Assembler for Bit-Slice Microprocessors

Operating System: ULTRIX, UNIX, VMS
Keywords: • Assemblers • Microprocessor development
          • Pre- and postprocessors • Programming tools

The Meta Assembler, used with the bit-slice processor such as the 2901 or 10800, consists of three FORTRAN programs that allow users to define their own assembly language. They are the definition program, assembly program, and the prom formatter program.
The definition program allows the user to define instruction mnemonics and their associated formats. Instruction lengths may vary from 1 to 128 bits. An instruction format is defined by breaking the microword into fields and defining the fields as constants, don’t-care bits, or variables filled in at assembly time. The definition file produced by this program is used by the assembly program as a reference when assembling a program.

The assembly program operates like a traditional assembler. A symbolic source program, utilizing the mnemonics and symbols defined in the definition program, is read as input, and a listing and object module are generated as output. The instruction syntax and assembler directives are compatible with those used by AMD in its literature and software products. Additional directives provide for versatile listing and output controls. Conditional assembly statements and full cross-reference tables are provided in both of the programs.

The prom formatter program reads the object module file produced by the assembly program and translates the format into one that can be read by a PROM programmer. BNPF, Data I/O, ASCII hexadecimal, and the STEP engineering format are supported. Microwords in the object module can be broken up into organizations that are compatible with the target PROM/ROM array. Users may specify PROMs of any width and length, as well as the value of don’t-care bits. Any or all PROMs may be listed and/or punched.

The Macro Meta Assembler, an enhanced version of the set of programs above, has implemented a powerful macro facility that enables the user to define multiword microinstructions using a single mnemonic, to encode noncontinuous variable fields, and to create complex overlaid instructions. In addition, character strings may be passed to macros, symbols may be concatenated and declared as local or global, and some arithmetic operators have been added.

Although those enhancements apply to the definition and the assembly programs, even the prom formatter has been enhanced by adding the ability to generate parity bits and to switch and/or overlay specified columns. Taken together, those program improvements represent a significant increase in the power of this program set.

A version of this product is available for the PDP–11 computer.

**Price:** $1,800 – $2,500

**Product Support Available:** Yes

**Contact:** Peggy Hall

(408) 733–2919

MICROTEC RESEARCH, INC.
P.O. Box 60337
505 W. Olive, Suite 325
Sunnyvale, CA 94088
Micro Concurrent Pascal (mCP) Cross-Compiler

Operating System: UNIX, VMS
Keywords: • Assemblers • Compilers • Language enhancers • Programming tools

Micro Concurrent Pascal (mCP) is a high-level language for programming real-time embedded systems. The mCP implements Per Brinch Hansen’s Concurrent Pascal, which supports processes and monitors. Programs compile into either pseudocode (P-code), which may be interpreted, or native assembly language code, for most popular microprocessors. Programs may be compiled on a host computer and the outputted P-code interpreted or native code executed on the target microprocessor.

Designed for microcomputer use, the P-code is reentrant, relocatable, PROMable, and often more space-efficient than assembler. The mCP features include interrupt-handling capabilities with language constructs for writing device drivers, absolute hardware addressing, and assembly language routine calls. The mCP compiler resides on any system supporting sequential Pascal. The mCP compiler source code is available. The interpreter/kernel source is provided for the Z80, 8080/8085, 6809, 1802, Z8000, 8086/8088, LSI-11, and the 68000. An mCP user’s guide and mCP seminar are also available.

A version of this product is available for the PDP-11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Thomas F. Loschiavo
(215) 362-0966
ENERTEC, INC.
19 Jenkins Avenue
Lansdale, PA 19446

Microbench 6800 Cross-Assembly Package

Operating System: ULTRIX, UNIX, VMS
Keywords: • Assemblers • Development tools • Microprocessor development • Programming tools

This series of programs supports application development for the Motorola 6800 through 6803 microprocessors. The programs operate on PDP-11, LSI-11, and VAX computers to provide an economical program development facility.

The software includes a relocating assembler, linking loader, librarian, and down-loader. The assembler supports extensive macro and conditional assembly capabilities, cross-reference listings, floating-point data types, local symbols, and a system macro library. The Microbench 6800 assembler language closely parallels that defined
by Motorola for its assembler running under MDOS. In most cases, existing programs can be assembled by our software without any change to source programs.

The linking loader links separately assembled object modules, resolves external references, and translates relocatable addresses to their absolute values. Linker directives are provided to define start addresses for code (ROM) and data (RAM) segments. Library files produced by the librarian may be used to supply code or data required to resolve external references. Only the modules in the library files that satisfy outstanding external references will be linked.

The librarian provides facilities to create and maintain object files libraries. Object modules can be combined into a library file and subsequently updated or deleted, as required. Facilities are also provided to list the directory of all modules in a library file and the external symbols contained in each.

The down-loader reformats an absolute binary program produced by the linker into any of a variety of formats compatible with popular PROM programmers and emulation systems. Intel, Motorola, Tektronix, Millennium Systems, Data I/O, Prolog, and SMS equipment is supported.

The assembler, linker, and librarian are coded in PDP-11 assembly language for high throughput and memory efficiency. Software distributions are tailored for each operating system, thereby minimizing installation time and expense.

Microbench 6800 software is distributed under a perpetual license and includes two sets of reference manuals and a 1-year software maintenance/update service. Additional reference manuals describing the operation of the Microbench 6800 program development software may be purchased by special order. Software is distributed on RX01/RX02 diskette or 9-track 800 bpi magnetic tape.

A version of this product is available for the PDP-11 computer.

**Price:** $1,900 – $2,900  
**Product Support Available:** Yes  
**Contact:** Nicholas P. Mason, Sales Manager  
(415) 935–4944  
VIRTUAL SYSTEMS, INC.  
1500 Newell Avenue, Suite 406  
Walnut Creek, CA 94596

**Microbench 68000 Cross-Assembly Package**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:**  
- Assemblers  
- Development tools  
- Microprocessor development  
- Programming tools
818 Language Processors

This series of programs supports application development for the Motorola 68000 microprocessor. The programs operate on PDP–11, LSI–11, and VAX computers to provide an economical program development facility.

The software includes a relocating assembler, linking loader, librarian, and down-loader. The assembler supports extensive macro and conditional assembly capabilities, cross-reference listings, floating-point data types, local symbols, and a system macro library. The Microbench 68000 assembler language closely parallels that defined by Motorola for its resident EXORmacs assembler. In most cases, existing programs can be assembled by our software without any change to source programs.

The linking loader links separately assembled object modules, resolves external references, and translates relocatable addresses to their absolute values. Linker directives are provided to define start addresses for code (ROM) and data (RAM) segments. Library files produced by the librarian may be used to supply code or data required to resolve external references. Only the modules in the library files that satisfy outstanding external references will be linked.

The librarian provides facilities to create and maintain object file libraries. Object modules can be combined into a library file and subsequently updated or deleted, as required. Facilities are also provided to list the directory of all modules in a library file and the external symbols contained in each.

The down-loader reformats an absolute binary program produced by the linker into any of a variety of formats compatible with popular PROM programmers and emulation systems. Intel, Motorola, Tektronix, Millennium Systems, Data I/O, Prolog, and SMS equipment is supported.

The assembler, linker, and librarian are coded in PDP–11 assembly language for high throughput and memory efficiency. Software distributions are tailored for each operating system, thereby minimizing installation time and expense.

Microbench 68000 software is distributed under a perpetual license and includes two sets of reference manuals and a 1-year software maintenance/update service. Additional reference manuals describing the operation of the Microbench 68000 program development software may be purchased by special order. Software is distributed on RX01/RX02 diskette or 9-track 800 bpi magnetic tape.

A version of this product is available for the PDP–11 computer.

Price: $2,200 – $3,200

Product Support Available: Yes

Contact: Nicholas P. Mason, Sales Manager
(415) 935–4944
Microbench 6805 Cross-Assembly Package

**Operating System:** ULTRIX, UNIX, VMS

**Keywords:**
- Assemblers
- Development tools
- Microprocessor development
- Programming tools

This series of programs supports application development for the Motorola 6805 microprocessors. The programs operate on PDP–11, LSI–11, and VAX computers to provide an economical program development facility.

The software includes a relocating assembler, linking loader, librarian, and down-loader. The assembler supports extensive macro and conditional assembly capabilities, cross-reference listings, floating-point data types, local symbols, and a system macro library. The Microbench 6805 assembler language closely parallels that defined by Motorola for its assembler running under MDOS. In most cases, existing programs can be assembled by our software without any change to source programs.

The linking loader links separately assembled object modules, resolves external references, and translates relocatable addresses to their absolute values. Linker directives are provided to define start addresses for code (ROM) and data (RAM) segments. Library files produced by the librarian may be used to supply code or data required to resolve external references. Only the modules in the library files that satisfy outstanding external references will be linked.

The librarian provides facilities to create and maintain object files libraries. Object modules can be combined into a library file and subsequently updated or deleted, as required. Facilities are also provided to list the directory of all modules in a library file and the external symbols contained in each.

The down-loader reformats an absolute binary program produced by the linker into any of a variety of formats compatible with popular PROM programmers and emulation systems. Intel, Motorola, Tektronix, Millennium Systems, Data I/O, Prolog, and SMS equipment is supported.

The assembler, linker, and librarian are coded in PDP–11 assembly language for high throughput and memory efficiency. Software distributions are tailored for each operating system, thereby minimizing installation time and expense.

Microbench 6805 software is distributed under a perpetual license and includes two sets of reference manuals and a 1-year software
maintenance/update service. Additional reference manuals describing the operation of the Microbench 6805 program development software may be purchased by special order. Software is distributed on RX01/RX02 diskette or 9-track 800 bpi magnetic tape.

A version of this product is available for the PDP–11 computer.

**Price:** $1,900 – $2,900

**Product Support Available:** Yes

**Contact:** Nicholas P. Mason, Sales Manager  
(415) 935–4944  
VIRTUAL SYSTEMS, INC.  
1500 Newell Avenue, Suite 406  
Walnut Creek, CA 94596

**Microbench 6809 Cross-Assembly Package**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:** • Assemblers • Development tools  
• Microprocessor development • Programming tools

This series of programs supports application development for the Motorola 6809 microprocessor. The programs operate on PDP–11, LSI–11, and VAX computers to provide an economical program development facility.

The software includes a relocating assembler, linking loader, librarian, and down-loader. The assembler supports extensive macro and conditional assembly capabilities, cross-reference listings, floating-point data types, local symbols, and a system macro library. The Microbench 6809 assembler language closely parallels that defined by Motorola for its assembler running under MDOS. In most cases, existing programs can be assembled by our software without any change to source programs.

The linking loader links separately assembled object modules, resolves external references, and translates relocatable addresses to their absolute values. Linker directives are provided to define start addresses for code (ROM) and data (RAM) segments. Library files produced by the librarian may be used to supply code or data required to resolve external references. Only the modules in the library files that satisfy outstanding external references will be linked.

The librarian provides facilities to create and maintain object files libraries. Object modules can be combined into a library file and subsequently updated or deleted, as required. Facilities are also provided to list the directory of all modules in a library file and the external symbols contained in each.

The down-loader reformats an absolute binary program produced by the linker into any of a variety of formats compatible with popular
PROM programmers and emulation systems. Intel, Motorola, Tektronix, Millennium Systems, Data I/O, Prolog, and SMS equipment is supported.

The assembler, linker, and librarian are coded in PDP-11 assembly language for high throughput and memory efficiency. Software distributions are tailored for each operating system, thereby minimizing installation time and expense.

Microbench 6809 software is distributed under a perpetual license and includes two sets of reference manuals and a 1-year software maintenance/update service. Additional reference manuals describing the operation of the Microbench 6809 program development software may be purchased by special order. Software is distributed on RX01/RX02 diskette or 9-track 800 bpi magnetic tape.

A version of this product is available for the PDP-11 computer.

**Price:** $1,900 – $2,900

**Product Support Available:** Yes

**Contact:** Nicholas P. Mason, Sales Manager  
(415) 935–4944  
VIRTUAL SYSTEMS, INC.  
1500 Newell Avenue, Suite 406  
Walnut Creek, CA 94596

**Microbench 8021/8035/8048/8748 Cross-Assembly Package**

**Operating System:** ULTRIX, UNIX, VMS

**Keywords:** • Assemblers • Development tools  
• Microprocessor development • Programming tools

This series of programs supports application development for the Intel 8048 series microprocessors. The programs operate on PDP-11, LSI-11, and VAX computers to provide an economical program development facility.

The software includes a relocating assembler, linking loader, librarian, and down-loader. The assembler supports extensive macro and conditional assembly capabilities, cross-reference listings, floating-point data types, local symbols, and a system macro library. The Microbench 8035/8048/8748 assembler language closely parallels that defined by Motorola for its assembler running under MDOS. In most cases, existing programs can be assembled by our software without any change to source programs.

The linking loader links separately assembled object modules, resolves external references, and translates relocatable addresses to their absolute values. Linker directives are provided to define start addresses for code (ROM) and data (RAM) segments. Library files produced by the librarian may be used to supply code or data re-
quired to resolve external references. Only the modules in the library files that satisfy outstanding external references will be linked.

The librarian provides facilities to create and maintain object files libraries. Object modules can be combined into a library file and subsequently updated or deleted, as required. Facilities are also provided to list the directory of all modules in a library file and the external symbols contained in each.

The down-loader reformats an absolute binary program produced by the linker into any of a variety of formats compatible with popular PROM programmers and emulation systems. Intel, Motorola, Tektronix, Millennium Systems, Data I/O, Prolog, and SMS equipment is supported.

The assembler, linker, and librarian are coded in PDP-11 assembly language for high throughput and memory efficiency. Software distributions are tailored for each operating system, thereby minimizing installation time and expense.

Microbench 8035/8048/8748 software is distributed under a perpetual license and includes two sets of reference manuals and a 1-year software maintenance/update service. Additional reference manuals describing the operation of the Microbench 8035/8048/8748 program development software may be purchased by special order. Software is distributed on RX01/RX02 diskette or 9-track 800 bpi magnetic tape.

A version of this product is available for the PDP-11 computer.

**Price:** $1,900 – $2,900

**Product Support Available:** Yes

**Contact:** Nicholas P. Mason, Sales Manager  
(415) 935–4944

VIRTUAL SYSTEMS, INC.  
1500 Newell Avenue, Suite 406  
Walnut Creek, CA 94596

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**Microbench 8051 Cross-Assembly Package**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:** • Assemblers  • Development tools  
• Microprocessor development  • Programming tools

This series of programs supports application development for the Intel 8051/8351/8751 series microprocessors. The programs operate on PDP–11, LSI–11, and VAX computers to provide an economical program development facility.

The software includes a relocating assembler, linking loader, librarian, and down-loader. The assembler supports extensive macro and conditional assembly capabilities, cross-reference listings, floating-point data types, local symbols, and a system macro library. The Microbench 8051 assembler language closely parallels that defined
by Intel. Op codes, operand formats, and directives are identical with Intel 8051 assembly language, but macros and conditional assembly control statements are processed differently. Additional directives have been included to control relocation.

The linking loader links separately assembled object modules, resolves external references, and translates relocatable addresses to their absolute values. Linker directives are provided to define start addresses for code (ROM) and data (RAM) segments. Library files produced by the librarian may be used to supply code or data required to resolve external references. Only the modules in the library files that satisfy outstanding external references will be linked.

The librarian provides facilities to create and maintain object files libraries. Object modules can be combined into a library file and subsequently updated or deleted, as required. Facilities are also provided to list the directory of all modules in a library file and the external symbols contained in each.

The down-loader reformats an absolute binary program produced by the linker into any of a variety of formats compatible with popular PROM programmers and emulation systems. Intel, Motorola, Tektronix, Millennium Systems, Data I/O, Prolog, and SMS equipment is supported.

The assembler, linker, and librarian are coded in PDP-11 assembly language for high throughput and memory efficiency. Software distributions are tailored for each operating system, thereby minimizing installation time and expense.

Microbench 8051 software is distributed under a perpetual license and includes two sets of reference manuals and a 1-year software maintenance/update service. Additional reference manuals describing the operation of the Microbench 8051 program development software may be purchased by special order. Software is distributed on RX01/RX02 diskette or 9-track 800 bpi magnetic tape.

A version of this product is available for the PDP-11 computer.

**Price:** $1,900 – $2,900

**Product Support Available:** Yes

**Contact:** Nicholas P. Mason, Sales Manager  
(415) 935-4944  
VIRTUAL SYSTEMS, INC.  
1500 Newell Avenue, Suite 406  
Walnut Creek, CA 94596

**Microbench 8080/8085 Cross-Assembly Package**

**Operating System:** ULTRIX, UNIX, VMS

**Keywords:**  
- Assemblers  
- Development tools  
- Microprocessor development  
- Programming tools
This series of programs supports application development for the Intel 8080 and 8085 microprocessors. The programs operate on PDP-11, LSI-11, and VAX computers to provide an economical program development facility.

The software includes a relocating assembler, linking loader, librarian, and down-loader. The assembler supports extensive macro and conditional assembly capabilities, cross-reference listings, floating-point data types, local symbols, and a system macro library. The Microbench 8080/8085 assembler language closely parallels that defined by Intel. In most cases, existing programs can be assembled by our software without any change to source programs.

The linking loader links separately assembled object modules, resolves external references, and translates relocatable addresses to their absolute values. Linker directives are provided to define start addresses for code (ROM) and data (RAM) segments. Library files produced by the librarian may be used to supply code or data required to resolve external references. Only the modules in the library files that satisfy outstanding external references will be linked.

The librarian provides facilities to create and maintain object files libraries. Object modules can be combined into a library file and subsequently updated or deleted, as required. Facilities are also provided to list the directory of all modules in a library file and the external symbols contained in each.

The down-loader reformats an absolute binary program produced by the linker into any of a variety of formats compatible with popular PROM programmers and emulation systems. Intel, Motorola, Tektronix, Millennium Systems, Data I/O, Prolog, and SMS equipment is supported.

The assembler, linker, and librarian are coded in PDP-11 assembly language for high throughput and memory efficiency. Software distributions are tailored for each operating system, thereby minimizing installation time and expense.

Microbench 8080/8085 software is distributed under a perpetual license and includes two sets of reference manuals and a 1-year software maintenance/update service. Additional reference manuals describing the operation of the Microbench 8080/8085 program development software may be purchased by special order. Software is distributed on RX01/RX02 diskette or 9-track 800 bpi magnetic tape.

A version of this product is available for the PDP-11 computer.

**Price:** $1,900 – $2,900

**Product Support Available:** Yes

**Contact:** Nicholas P. Mason, Sales Manager  
(415) 935–4944

VIRTUAL SYSTEMS, INC.  
1500 Newell Avenue, Suite 406  
Walnut Creek, CA 94596
Microbench 8086/8087/8088 Cross-Assembly Package

Operating System: ULTRIX, UNIX, VMS
Keywords: • Assemblers • Development tools
   • Microprocessor development • Programming tools

This series of programs supports application development for the Intel 8086, 8087, and 8088 microprocessors. The programs operate on PDP–11, LSI–11, and VAX computers to provide an economical program development facility.

The software includes a relocating assembler, linking loader, librarian, and down-loader. The assembler supports extensive macro and conditional assembly capabilities, cross-reference listings, floating-point data types, local symbols, and a system macro library. Assembler directives are provided to facilitate use with ROM-based memory and to take maximum advantage of machine architectures by optimizing references within physically contiguous code segments ("grouping"). The assembler language defined is a superset of our 8080/8085 cross-assembler, with op code and operand formats similar to those defined by Intel for the 8086/8087/8088.

The linking loader links separately assembled object modules, resolves external references, and translates relocatable addresses to their absolute values. Linker directives are provided to define start addresses for code (ROM) and data (RAM) segments. Library files produced by the librarian may be used to supply code or data required to resolve external references. Only the modules in the library files that satisfy outstanding external references will be linked.

The librarian provides facilities to create and maintain object files libraries. Object modules can be combined into a library file and subsequently updated or deleted, as required. Facilities are also provided to list the directory of all modules in a library file and the external symbols contained in each.

The down-loader reformats an absolute binary program produced by the linker into any of a variety of formats compatible with popular PROM programmers and emulation systems. Intel, Motorola, Tektronix, Millennium Systems, Data I/O, Prolog, and SMS equipment is supported.

The assembler, linker, and librarian are coded in PDP–11 assembly language for high throughput and memory efficiency. Software distributions are tailored for each operating system, thereby minimizing installation time and expense.

Microbench 8086/8088 software is distributed under a perpetual license and includes two sets of reference manuals and a 1-year software maintenance/update service. Additional reference manuals describing the operation of the Microbench 8086/8088 program develop-
ment software may be purchased by special order. Software is distributed on RX01/RX02 diskette or 9-track 800 bpi magnetic tape.

A version of this product is available for the PDP–11 computer.

**Price:** $2,200 – $3,200  
**Product Support Available:** Yes  
**Contact:** Nicholas P. Mason, Sales Manager  
(415) 935–4944  
VIRTUAL SYSTEMS, INC.  
1500 Newell Avenue, Suite 406  
Walnut Creek, CA 94598

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**Microbench FORTRAN–77 Cross-Compiler for the Intel 8086/8088**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:** • Compilers • Development tools  
• Programming tools • Translators

This package consists of a FORTRAN–77 compiler and 8086/8088 run-time routines to support application development for the Intel 8086 and 8088 microprocessors. The compiler operates on PDP–11, LSI–11, and VAX computers to provide an economical program development facility. The run-time library provided with the compiler operates with Intel 8086/8088 microprocessors to support the execution of FORTRAN applications. The run-time library is provided in two forms: one uses the Intel 8087, and the other simulates the 8087 through 8086 software support.

The FORTRAN language recognized by the compiler conforms to ANSI standard X3.9–1978 at the official subset level. FORTRAN–77 has been approved by the Department of Defense as a programming language for DOD systems. Language extensions have been added to support ROM/RAM memory environments and the full addressing capabilities of the 8086/8088.

The FORTRAN compiler translates FORTRAN programs into 8086/8088 assembly language statements. Those statements are assembled, linked with subprograms and run-time support routines, and down-loaded to an 8086/8088 for execution. For dedicated applications, programs may be stored in PROM, with RAM used for variable data storage. Assembly, linkage, and down-loading facilities are provided by the Microbench 8086/8088 cross-assembly system, also available from Virtual Systems.

Microbench FORTRAN–77 software is distributed under a perpetual license and includes two sets of reference manuals and a 1-year software maintenance/update service. Additional reference manuals describing the operation of the Microbench FORTRAN–77 software may be purchased by special order. Software is distributed on RX01
diskette, RK05 disk pack, or 9-track 800 bpi magnetic tape. Source programs for the run-time library may be purchased by FORTRAN-77 licensees.

A version of this product is available for the PDP-11 computer.

**Price:** $2,000 – $3,000

**Product Support Available:** Yes

**Contact:** Nicholas P. Mason, Sales Manager  
(415) 935–4944  
VIRTUAL SYSTEMS, INC.  
1500 Newell Avenue, Suite 406  
Walnut Creek, CA 94596

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**Microbench Pascal Cross-Compiler for the Intel 8086/8088**

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:** • Compilers • Development tools  
• Microprocessor development • Translators

This package consists of a Pascal compiler and standard run-time procedures to support application development for the Intel 8086 and 8088 microprocessors. The compiler operates on PDP-11, LSI-11, and VAX computers to provide an economical program development facility. The run-time library provided with the compiler operates with Intel 8086/8088 microprocessors to support the execution of Pascal applications.

The Pascal language recognized by the compiler conforms to the proposed ISO standard for Pascal (March 1980). Language extensions have been added to support separate module compilations. Support for ROM/RAM memory environments and the extended address space of the 8086/8088 is also included.

The Pascal compiler first translates Pascal programs into a very dense intermediate language form. Next, extensive optimization of the intermediate form is performed. The intermediate language is then translated to assembly language statements for the 8086/8088. Those statements are assembled, linked with subprograms and run-time support routines, and down-loaded to an 8086/8088 for execution or passed to the Microbench 8086 simulator.

All run-time support routines are reentrant so that multitasking can be supported. For dedicated applications, programs may be stored in ROM, with RAM used for variable storage. Assembly, linkage, and down-loading facilities are provided by the prerequisite Microbench 8086/8088 cross-assembly system, also provided by Virtual Systems.

Microbench Pascal software is distributed under a perpetual license and includes two sets of reference manuals and a 1-year software maintenance/update service. Software is distributed on RX01/RX02
diskette or 9-track 800 bpi magnetic tape. Source programs for the run-time library may be purchased by Pascal licensees.

A version of this product is available for the PDP-11 computer.

**Price:** $1,750 – $2,750  
**Product Support Available:** Yes  
**Contact:** Nicholas P. Mason, Sales Manager  
(415) 935–4944  
VIRTUAL SYSTEMS, INC.  
1500 Newell Avenue, Suite 406  
Walnut Creek, CA 94596

### Microbench Z80 Cross-Assembly Package

**Operating System:** ULTRIX, UNIX, VMS  
**Keywords:** • Assemblers  
• Development tools  
• Microprocessor development  
• Programming tools

This series of programs supports application development for the Zilog Z80 microprocessor. The programs operate on PDP-11, LSI-11, and VAX computers to provide an economical program development facility.

The software includes a relocating assembler, linking loader, librarian, and down-loader. The assembler supports extensive macro and conditional assembly capabilities, cross-reference listings, floating-point data types, local symbols, and a system macro library. The Microbench Z80 assembler language closely parallels that defined by Zilog, with extensions to support macros and relocation. In most cases, existing programs can be assembled by our software without any change to source programs.

The linking loader links separately assembled object modules, resolves external references, and translates relocatable addresses to their absolute values. Linker directives are provided to define start addresses for code (ROM) and data (RAM) segments. Library files produced by the librarian may be used to supply code or data required to resolve external references. Only the modules in the library files that satisfy outstanding external references will be linked.

The librarian provides facilities to create and maintain object file libraries. Object modules can be combined into a library file and subsequently updated or deleted, as required. Facilities are also provided to list the directory of all modules in a library file and the external symbols contained in each.

The down-loader reformats an absolute binary program produced by the linker into any of a variety of formats compatible with popular PROM programmers and emulation systems. Intel, Motorola, Tektronix, Millennium Systems, Data I/O, Prolog, and SMS equipment is supported.
The assembler, linker, and librarian are coded in PDP–11 assembly language for high throughput and memory efficiency. Software distributions are tailored for each operating system, thereby minimizing installation time and expense.

Microbench Z80 software is distributed under a perpetual license and includes two sets of reference manuals and a 1-year software maintenance/update service. Additional reference manuals describing the operation of the Microbench Z80 program development software may be purchased by special order. Software is distributed on RX01/RX02 diskette or 9-track 800 bpi magnetic tape.

A version of this product is available for the PDP–11 computer.

Price: $1,900 – $2,900
Product Support Available: Yes
Contact: Nicholas P. Mason, Sales Manager
         (415) 934–4944
         VIRTUAL SYSTEMS, INC.
         1500 Newell Avenue, Suite 406
         Walnut Creek, CA 94596

Microbench Z8000 Cross-Assembly Package

Operating System: ULTRIX, UNIX, VMS
Keywords: • Assemblers  • Development tools
          • Microprocessor development  • Programming tools

This series of programs supports application development for the Zilog Z8000 microprocessor. The programs operate on PDP–11, LSI–11, and VAX computers to provide an economical program development facility. Both segmented (8001) and unsegmented (8002) versions of the Z8000 are supported.

The software includes a relocating assembler, linking loader, librarian, and down-loader. The assembler supports extensive macro and conditional assembly capabilities, cross-reference listings, floating-point data types, local symbols, and a system macro library. The Microbench Z8000 assembler language closely parallels that defined by Zilog, with extensions to support macros and relocation. In most cases, existing programs can be assembled by our software without any change to source programs.

The linking loader links separately assembled object modules, resolves external references, and translates relocatable addresses to their absolute values. Linker directives are provided to define start addresses for code (ROM) and data (RAM) segments. Library files produced by the librarian may be used to supply code or data required to resolve external references. Only the modules in the library files that satisfy outstanding external references will be linked.
The librarian provides facilities to create and maintain object file libraries. Object modules can be combined into a library file and subsequently updated or deleted, as required. Facilities are also provided to list the directory of all modules in a library file and the external symbols contained in each.

The down-loader reformat an absolute binary program produced by the linker into any of a variety of formats compatible with popular PROM programmers and emulation systems. Intel, Motorola, Tektronix, Millennium Systems, Data I/O, Prolog, and SMS equipment is supported.

The assembler, linker, and librarian are coded in PDP–11 assembly language for high throughput and memory efficiency. Software distributions are tailored for each operating system, thereby minimizing installation time and expense.

Microbench Z8000 software is distributed under a perpetual license and includes two sets of reference manuals and a 1-year software maintenance/update service. Additional reference manuals describing the operation of the Microbench Z8000 program development software may be purchased by special order. Software is distributed on RX01/RX02 diskette or 9-track 800 bpi magnetic tape.

A version of this product is available for the PDP–11 computer.

**Price:** $2,200 – $3,200  
**Product Support Available:** Yes  
**Contact:** Nicholas P. Mason, Sales Manager  
(415) 935–4944  
VIRTUAL SYSTEMS, INC.  
1500 Newell Avenue, Suite 406  
Walnut Creek, CA 94596

**microMAGIC Microprocessor Software Development Package**

**Operating System:** VMS  
**Keywords:** Development tools  
Microprocessor development  
Programming tools

The microMAGIC package allows its users to develop and test software in a multiuser environment for a variety of 16-bit microprocessors, including DIGITAL's LSI–11s and FALCON, Intel's 8086 and 8088, and Motorola's 6809 and 68000. The application task is programmed in the block-structured, standard ALGOL-based high-level language RTL/2 and is compiled on the host minicomputer. The annotated assembler produced by the compilers is assembled and linked on the minicomputer, producing a loadable memory image. Testing of the application is carried out from the host computer via an RS232 link to the attached microprocessor. The test controller utility loads
the user program into RAM on the microprocessor and controls target machine execution. Debugging commands include assembler-level breakpoint setting, single stepping, examination and alteration of registers and memory, and logging of the test session.

The MAGIC Micro Development Package includes standard high-level language; standard real-time executive on target micro, providing multitasking, asynchronous and synchronous message passing, operator communication, and interrupt handling; linker-produced automatic ROM/RAM split; and compressed RAM image optionally produced for ROM insertion and automatic system startup.

The package includes macroprocessor, compiler, assembler, linker, and test controller. A real-time multitasking executive is provided for the target microprocessor.

A version of this product is available for the PDP–11 computer.

Price: $7,500
Product Support Available: Yes
Contact: Robert F. Swanson
(201) 865–6550
INTELLIGENT INDUSTRIAL SYSTEMS, INC.
300 Harmon Meadow Boulevard
Secaucus, NJ 07094

Microtec C Compilers for 8080/8085 and Z80

Operating System: ULTRIX, VMS
Keywords: • Compilers • Cross-compilers
          • Microprocessor development • Programming tools

This software package implements software for embedded microprocessor applications. It is easy to intermix C and assembly-language modules and to replace or customize the run-time library.

Because microprocessor-based systems generally implement separate ROM and RAM memory space, Microtec C permits executable code and constants to be located in one memory section, while data can be relegated to another memory section.

The compiler can produce an intermixed listing of C statements and generated microprocessor instructions. Other compilation switches provide the user with a variety of services from controlling run-time error checking to directing that code be generated with a preference for diminished execution time rather than memory space. Microtec C also contains some extensions; for example, identifiers can be of any length, all characters of nonexternal identifiers are significant, and arithmetic operations on CHAR type data are performed with no conversion to integers.

A version of this product is available for the PDP-11 computer.

**Price:** $3,000 – $7,500

**Product Support Available:** Yes

**Contact:** Peggy Hall
(408) 733–2919
MICROTEC RESEARCH, INC.
P.O. 60337
505 W. Olive, Suite 325
Sunnyvale, CA 94088

**Motorola 68000 Cross-Assembler System**

**Operating System:** ULTRIX, VMS, XENIX

**Keywords:** • Assemblers • Cross-compilers
• Microprocessor development • Programming tools

The M68000 Assembly Development System supplies the professional software developer with a powerful, feature-rich tool for generating M68000 programs. It consists of four components: a macro assembler, a linker, a librarian, and a cross-reference utility.

The system is used to assemble and link Motorola 68000 assembly language instructions to form executable program images designed to run in the M68000 environment. The Assembly system may be run in a cross mode on a host system, where it generates executable code for a target M68000 micro, or in a resident mode, where it is used as the system’s standard assembler/linker. The Macro Assembler is EXORMACS compatible and has been interfaced with several C and Pascal compilers. The load (executable) modules output from the Linker conform to Motorola’s S-record format.

A version of this product is available for the PDP-11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Joel M. Schacht
(617) 491–4180
OASYS, INC.
60 Aberdeen Avenue
Cambridge, MA 02138
Motorola 68000 (M68000) Cross-Development Tools

Operating System: VMS
Keywords: • Assemblers • Cross-compilers
• Microprocessor development • Programming tools

The Motorola 68000 cross-development tools include the following:
• M68000 Pascal Optimizing Cross-Compiler
• M68000 Structured Macro Cross-Assembler
• M68000 Cross-Linker
• M68000 Cross-Object Library Builder
• VAX/VMS ↔ EXORmacs file transfer utility

Those products were derived from the source code for the corresponding resident products on Motorola's development systems and are therefore compatible with Motorola's syntax, documentation, and file formats at all levels.

The products are written in native mode for fast execution.

Price: $995 – $2,995
Product Support Available: Yes
Contact: Ralph Guditz
(415) 962–8080
OCTAL, INC.
1951 Colony Street
Mountain View, CA 94043

NS16032 C Cross-Compiler

Operating System: UNIX, VMS
Keywords: • Assemblers • Compilers • Programming tools
• Source code control

This cross-compiler provides a complete software development package for C programs targeted for the NS16032 microprocessor. Available for most popular multiuser development systems, the cross-compiler provides for down-loading programs to the DB16000 development board. The cross-compiler implements the complete C language as defined by Kernighan and Ritchie.

Taking full advantage of the capability of the 16032's machine architecture, the cross-compiler makes use of up to six 32-bit machine registers for the C language's "register" declaration. Floating-point support is provided in conjunction with the NS16081 floating-point unit.

The cross-compiler package is comprised of both a native code generator for the host development machine and a code generator for the NS16032. Also included is a cross-assembler that optionally produces complete assembly listings with addresses, object code, and assem-
bler source code. Additional programming utilities, including a linker and a librarian, are provided. A comprehensive portable C library with formatted I/O and string-handling routines is provided for both the host development machine and the 16032.

Full documentation is supplied. The C Programmer's Manual includes a description of the C language, the system-independent Portable Runtime Library, and the machine-level interface requirements. The C Interface Manual describes programming utilities and operating system interfaces.

The cross-compiler is based on the family of C compilers from Whitesmiths, Ltd.

A version of this product is available for the PDP-11 computer.

Price: $2,500
Product Support Available: Yes
Contact: Deborah A. Fullam, Technical Support
(215) 657-5660
JMI SOFTWARE CONSULTANTS
1422 Easton Road
Roslyn, PA 19001

PAS–16000 Pascal Cross-Compiler for National Semiconductor 16000

Operating System: ULTRIX, VMS
Keywords: • Compilers • Cross-compilers • Microprocessor development

The Pascal–16000 compiler, a fully optimizing ANSI standard Pascal compiler for the National Semiconductor 16000–series microprocessors, may be configured as a resident compiler or as a VAX cross-compiler. The compiler performs global optimizations that are commonly found on mainframe compilers — Register Allocation By Coloring, Very Busy Expression Analysis, Copy Propagation, Common Subexpression Elimination, and Strength Reduction — in addition to standard microprocessor compiler optimizations — folding constant expressions, conversion of multiplies to shifts whenever possible, elimination of redundant jumps, and unreachable code.

This compiler generates 30% less code than portable UNIX* PC compiler, works with NS16081 floating-point unit, and provides:
• Complete ANSI Pascal compatibility
• Complete IEEE floating-point support
• One-pass design, with integrated preprocessor for maximum throughput
• Generated code that runs up to four times faster than portable UNIX* PC compiler
• Extensive loop optimizations
• Advanced compiler techniques to reduce space
• Calling sequence compatibility with all Green Hills compilers
*UNIX is a trademark of AT&T Bell Laboratories.

Price: Available upon request
Product Support Available: Yes
Contact: Joel Schacht
(617) 491–4180
OASYS, INC.
60 Aberdeen Avenue
Cambridge, MA 02138

PAS–68000 Pascal Cross-Compiler

Operating System: ULTRIX, VMS
Keywords: • Compilers • Cross-compilers
• Microprocessor development • Programming tools

This fully optimizing ANSI standard Pascal compiler for the Motorola 68000–series microprocessors can be configured as a resident compiler or as a VAX cross-compiler. The compiler performs global optimizations that are commonly found on mainframe compilers (for example, Register Allocation by Coloring, Very Busy Expression Analysis, Copy Propagation, Common Subexpression Elimination, and Strength Reduction), in addition to standard microprocessor compiler optimizations (for example, folding constant expressions, conversion of multiplies to shifts whenever possible, and elimination of redundant jumps and unreachable code).

Price: Available upon request
Product Support Available: Yes
Contact: Joel Schacht
(617) 491–4180
OASYS, INC.
60 Aberdeen Avenue
Cambridge, MA 02138

Pascal Cross-Compiler for 8080/8085 and Z80

Operating System: ULTRIX, VMS
Keywords: • Compilers • Cross-compilers
• Microprocessor development • Programming tools

The software package is used for microprocessor-based digital systems design. It is easy to intermix Pascal and assembly-language modules and to replace or customize the Pascal run-time library.

Because microprocessor-based systems generally implement separate ROM and RAM memory space, Microtec Pascal permits executable code and constants to be located in one memory section, while data
can be relegated to another memory section. The compiler translates
nearly the full ISO standard Pascal to native 8080 or Z80 assembly
languages.

The Microtec Pascal extensions to standard Pascal are separate com-
piilation, bit manipulation, interrupt procedures, direct memory ac-
cessing, and 14-digit floating-point (real) numbers. The software in-
terface to the floating-point arithmetic routines is straightforward
and may be easily modified to interface with some other floating-
point process.

The compiler can optionally produce an intermixed listing of Pascal
statements and generated microprocessor instructions. Other compi-
lation switches provide the user with a variety of services, from con-
trolling run-time error checking to directing that code be generated
with a preference for diminished execution time rather than memory
space.

A version of this product is available for the PDP–11 computer.

Price: $3,000 – $7,500
Product Support Available: Yes
Contact: Peggy Hall
(408) 733–2919
MICROTEC RESEARCH, INC.
P.O. Box 60337
505 W. Olive, Suite 325
Sunnyvale, CA 94088

Pascal Native and Pascal Cross-Compilers

Operating System: UNIX, VMS
Keywords: • Compilers • Cross-compilers • Programming tools
          • Translators

The Pascal Native Compiler operates in four sequential passes, pro-
ducing three intermediate files, each comparable in size to the source
code being compiled. The installation kit consists of the C Native
Compiler, which has the preprocessor (pp), the parser (p1), and the
code generator (p2). The Pascal Translator (ptc) and the Pascal sup-
port library are included. The C Library, containing the Portable
Library (clib), the System Interface Library for the host operating
system, and the Machine Interface Library for the host machine, are
also included in the installation kit.

The Pascal Cross-Compiler includes a Pascal Native Compiler, plus
an additional Pascal support library compiled for the second target
machine.

A version of this product is available for the PDP–11 computer.

Price: $700 – $2,200
Product Support Available: Yes
Pascal VAX to MC68000 Cross-Compiler

Operating System: VMS
Keywords: • Compilers • Cross-compilers
• Microprocessor development • Source code control

This cross-compiler permits Pascal compilations on the VAX line of equipment that produces native assembly language code for the MC68000. The compiler supports a large superset of the ANSI/IEEE/ISO standards and can be conveniently retargeted to other micros.

Deliverables include all the necessary reference and internal manuals, source programs, personnel training, and distribution rights. The compiler will not be available directly to end users, but inquiries from equipment manufacturers, OEMs, and distributors are invited.

Price: Available upon request
Product Support Available: Yes
Contact: George Finckenor
(212) 696–3600
ADVANCED COMPUTER TECHNIQUES
16 East 32nd Street
New York, NY 10016

Pascal, Version 2.2

Operating System: VMS
Keywords: • Compilers • Debugging • Documentation
• Source code control

VAX–11 Pascal accepts programs compatible with either level of the ISO Specification for Computer Programming Language Pascal (Draft Proposal 7185). Containing extensions to the draft ISO standard, VAX–11 Pascal generates optimized, shareable code that takes full advantage of the VAX–11 hardware floating-point and character instruction sets and the virtual memory capabilities of the VAX/VMS operating system. The language contains control statements, data types, and predeclared procedures and functions.

Refer to SPD #25.11.11 when requesting further information on this product from your local DIGITAL sales office.
PDL and PDL/81 (Program Design Language)

Operating System: UNIX, VMS
Keywords: • Communications • Documentation • Flowcharts • Programming tools

PDL is both a software design tool and an excellent medium for communication.

• As a software design tool, PDL encourages structured, efficient designs. The final result is code that is cleaner, easier to read, and generated in much less time than normal.

Of particular significance, PDL is truly easy to use. Users need no formal tuition and very little practice. This, and the flexibility of PDL, make it very popular. PDL does not attempt to usurp the design function; rather, it provides a first-rate design methodology that designers want to use.

• As a medium for communication, PDL is a major contributor to successful project control. PDL provides complete documentation before programming begins, and the documentation can be understood by designers, programmers, managers, and end users. Since changes are easily incorporated, the program and the programmer are always kept up to date.

PDL is a complete replacement for flowcharts and is suitable for use with most software design methodologies.

PDL is very widely used and is a thoroughly proven and stable tool for the systematic and reliable design of software.

A version of this product is available for the PDP-11 computer.

Price: £3,300 – £4,700
Product Support Available: Yes
Contact: Graham Evans
(0438) 316311
WP COMPUTERS LTD.
Babbage Road
Stevenage, Herts SG1 2EQ
United Kingdom

PDP–11 FORTRAN–77 DEBUG, Version 1.0

Operating System: VMS
Keywords: • Debugging • Diagnostics • Programming tools • Source code control
PDP–11 FORTRAN–77 DEBUG is a fully symbolic debugger for FORTRAN–77 and MACRO–11 programs running on RSX–11M, RSX–11M–PLUS, RSTS/E, and VAX/VMS under the AME. PDP–11 FORTRAN–77 DEBUG is a tool to aid in finding the location of programming errors in successfully compiled programs that do not execute properly.

PDP–11 FORTRAN–77 DEBUG runs as a 2-task debugger. A small portion of the code, necessary to debug applications, is linked with the user task, and the major portion of the debugger runs as a separate task.

PDP–11 FORTRAN–77 DEBUG provides access to program symbols by reading the symbol table file produced by the task builder on each of the operating systems on which it is supported. PDP–11 FORTRAN–77 DEBUG can understand symbols produced by PDP–11 FORTRAN–77 and MACRO–11.

Refer to SPD #30.33.00 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

### PDP–11 FORTRAN–77/VAX to RSX, Version 5.0

**Operating System:** VMS
**Keywords:** • Communications  • Compilers  • Data conversion  • Networking

PDP–11 FORTRAN–77/VAX to RSX is a compatibility-mode compiler intended to run on VAX/VMS under the AME. Source programs can be compiled and task-built under the AME and then transported to an RSX system for execution.

PDP–11 FORTRAN–77/VAX to RSX is an extended implementation of the ANSI subset FORTRAN–77 standard (X3.9–1978) that runs on the VAX/VMS operating system. PDP–11 FORTRAN–77/VAX to RSX contains all the features of the ANSI FORTRAN–77 subset, many of the full-set language features, and extensions that are not included in the ANSI FORTRAN–77 standard. Switch-selectable support is provided for programs based on the previous ANSI FORTRAN standard (X3.9–1966).

PDP–11 FORTRAN–77/VAX to RSX programs can be optionally executed under control of PDP–11 FORTRAN–77 DEBUG (SPD 30.33.xx), which aids in the location of programming errors in successfully compiled programs that behave abnormally when executed.

Refer to SPD #26.16.00 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:** Consult your local DIGITAL sales office  
(see Introduction).

### PLAIN (Programming Language for Interaction)

**Operating System:** ULTRIX, UNIX  
**Keywords:** Data base management, Data dictionary, Information management, Programming tools

PLAIN, a Pascal-based language to support the development of reliable interactive information systems, provides important features for the development of interactive programs, including built-in relation data type, to support the definition and manipulation of relational data bases; built-in string data type; built-in pattern specification and pattern-matching facilities; and exception definition and handling. PLAIN also supports encapsulated data types (modules).

The implementation of PLAIN uses the Amsterdam Compiler Kit (developed at the Vrije Universiteit, Amsterdam, and distributed in the United States by Unipress, Inc.) as a back end. The Amsterdam Compiler Kit provides back ends for a variety of computer systems. Besides PLAIN, front ends exist for C, Pascal, and BASIC, among others.

PLAIN is part of the University of California, San Francisco, User Software Engineering distribution (see RAPID/USE and Troll/USE). Commercial support and training are provided through Interactive Development Environments, Inc., 44 Monterey Boulevard, Suite 32, San Francisco, CA 94131.

A version of this product is available for the PDP–11 computer.

**Price:** $500 – $1,000  
**Product Support Available:** Yes  
**Contact:** Anthony I. Wasserman  
(415) 666–2951  
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO  
Medical Information Science, Room A–16  
San Francisco, CA 94143
PL/I, Version 2.0

Operating System: VMS
Keywords: • Compilers • Data base management
          • Documentation • Scientific

VAX–11 PL/I is an extended implementation of the ANSI X3.74, American National Standard PL/I General Purpose Subset. VAX–11 PL/I extensions include compatibility features with industry-standard implementations and ANSI full-language features as well as VAX/VMS system-specific features. VAX–11 PL/I consists of a shareable compiler, a HELP facility, and INCLUDE files for system services. The VAX–11 PL/I compiler runs under the VAX/VMS operating system and generates optimized, position-independent machine code.

VAX–11 PL/I is a comprehensive and powerful programming language that supports scientific computation, commercial data handling and data organization, and extensive string manipulation. The block-structuring provided by the PL/I language helps to reduce the costs of program development and support.

Refer to SPD #25.30.07 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

Professional Host Tool Kit FORTRAN–77 DEBUG, Version 1.0

Operating System: VMS
Keywords: • Data conversion • Debugging • File management
          • Programming tools

Professional Host Tool Kit FORTRAN–77 DEBUG is a fully symbolic debugger for FORTRAN–77 and MACRO–11 that run on the Professional 300 Series Applications Development System. Professional Host Tool Kit FORTRAN–77 DEBUG is a tool that aids in finding the location of programming errors in successfully compiled programs that do not execute properly.

Professional Host Tool Kit FORTRAN–77 DEBUG runs as a 2-task debugger. A small portion of the code, necessary to debug applications, is linked with the user task, and the major portion of the debugger runs as a separate task.

Professional Host Tool Kit FORTRAN–77 DEBUG provides access to program symbols by reading the symbol table file produced by the task builder on the host operating system. Professional Host Tool Kit
FORTRAN–77 DEBUG can understand symbols produced by Professional Host Tool Kit FORTRAN–77 and MACRO–11.

Refer to SPD #30.42.00 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office

(see Introduction).

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**Professional Host Tool Kit FORTRAN–77, Version 5.0**

**Operating System:** VMS

**Keywords:** • Data conversion • Debugging • File management • Programming tools

Professional Host Tool Kit FORTRAN–77 is an extended implementation of the ANSI subset FORTRAN–77 standard (X3.9–1978) that runs on the Professional 300 Series Application Development System. Professional Host Tool Kit FORTRAN–77 contains the features of the ANSI FORTRAN–77 subset, many of the full-set language features, and extensions that are not included in the ANSI FORTRAN–77 standard. Switch-selectable support is provided for user programs, based on the previous ANSI FORTRAN standard (X3.9–1966).


An application is compiled on systems running RSX–11M, RSX–11M–PLUS, or VAX/VMS, as part of the Professional Host Tool Kit, and subsequently linked and moved to the Professional 350 with hard disk for debugging and execution.

Refer to SPD #30.38.01 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office

(see Introduction).
Professional Tool Kit COBOL–81, Version 2.0

Operating System: VMS
Keywords: • Compilers • Forms management
• Programming tools • Text editing/formatting

This high-level language for business data processing generates programs for execution under control of the P/OS operating system. Based on the 1974 ANSI COBOL Standard X3.23–1974 and including some of the features planned for the next COBOL standard, this COBOL–81 is compatible with COBOL–81/RSX, shares some common syntax with VAX–11 COBOL, and includes various DIGITAL extensions to COBOL, including screen handling at the source language level.

Refer to SPD #30.31.00 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).

RCA 1802/4/5/6

Operating System: ULTRIX, UNIX
Keywords: • Assemblers • Compilers • Cross-compilers
• Microprocessor development

This package of microprocessor software cross-development tools consists of the RCA 180x relocating cross-assembler with macro preprocessor, linking loader, down-loader, and utilities. The DIGITAL PDP–11 and VAX are supported as host computers.

Assembler instruction syntax follows the manufacturer’s. Expression syntax and lexical features are patterned after C, with extensive macro facilities, conditional assembly, and arbitrary-length symbol names. The linker supports library searching and overlays/banked memory.

For support of other host or target processors, contact Nuvatec.

A version of this product is available for the PDP–11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Contact: UniWare Sales
(312) 620–4830
NUVATEC/INC., UNIWARE DIVISION
261 S. Eisenhower
Lombard, IL 60148
ReadCOBOL™

Operating System: UNIX, VMS

Keywords: • Data dictionary • Language enhancers
        • Pre- and postprocessors • Source code control

ReadCOBOL, a COBOL preprocessor, refurbishes your COBOL source programs, automatically structuring and formatting COBOL statements while sequencing paragraph and section names. ReadCOBOL semiautomatically renames data and paragraph items, as specified by a programmer or data administrator.

ReadCOBOL features a simplified data dictionary with printed directories; COBOL statement formatting and alignment customized to your installation’s standards; automatic, optional paragraph name and section name sequencing; an interactive on-screen presentation of each data and paragraph name for a 1-time replacement with a more descriptive or standardized name; and automatic, optional level number standardization.

The Foundation promises to users of ReadCOBOL these benefits: a new level of formatting standardization for all your COBOL code — achieved automatically; a new level of readability and maintainability for your COBOL programs, regardless of who wrote them or how many times they have been changed; the elimination of the time and drudgery spent by your programmers in following shop standards in their coding — all formatting and paragraph sequencing can be done automatically using ReadCOBOL; and the ability to automatically bring all your COBOL programs up to standard whenever your standards are updated. About one programmer hour is required to learn ReadCOBOL.

The permanent license for ReadCOBOL includes the source code. User references are available upon request.

A version of this product is available for the PDP-11 computer.

Price: $11,250

Product Support Available: Yes

Contact: J. Dwight Minkler II, Executive Director
         (602) 955–1148
         FOUNDATION FOR SOFTWARE ENGINEERING
         4339 North 39th Street
         Phoenix, AZ 85018

Relocatable Macro Assemblers and Linking Loaders for Microprocessors

Operating System: ULTRIX, UNIX, VMS

Keywords: • Assemblers • Microprocessor development
        • Pre- and postprocessors • Programming tools
Relocatable Macro Assemblers and Linking Loaders are written in ANSI standard FORTRAN IV for a wide range of microprocessors, including the 8051, 8080/8085, 8086/87/88/186/188, 8096, 8048 family, 68000, 6809, 6805, 6800/01/02/03/04, Z8, Z80, Z8002, 1802/1804, 6500 family, and TI9900 series. The assemblers provide symbolic addressing, constant generation, and most features found in typical assembly languages. The directives and instruction mnemonics are identical to those used by the manufacturer's literature and software products. Additional directives have been implemented for versatile listing and output controls.

All assemblers provide macroassembly capability as well as conditional assembly. The user may nest both of those features. Each assembler can also print a cross-reference table from the assembler; a separate program is not required.

The relocatable output of the assembler provides features not found in other assemblers. Separate modules may be linked by means of public and external symbols. Some assemblers provide for a COMMON area. The user may specify the program, data, stack, and, for some assemblers, the base page areas of a program. Thus, the assembler provides for a RAM/ROM system. Eight-bit bytes as well as 16-bit addresses may be relocated by means of special operators. In addition, external symbols may be used in expressions.

The Linking Loader allows several independently assembled, relocatable object modules to be combined into a single absolute program. Thus, large programs can be subdivided into smaller units, which reduces assembly time and allows program errors to be corrected in an efficient manner. The user may specify the starting address of any program segment as well as the order of the segments. External symbols may be specified by the user at load time.

The output listing of the Linking Loader includes a load map listing each object module and its starting address, as well as any undefined externals along with the object module in which it is used.

A version of this product is available for the PDP–11 computer.

**Price:** $1,800 – $2,500

**Product Support Available:** Yes

**Contact:** Peggy Hall
(408) 733–2919
MICROTEC RESEARCH, INC.
P.O. Box 60337
505 W. Olive, Suite 325
Sunnyvale, CA 94088
RTL/2 (Real-Time Language)

Operating System: VMS
Keywords: • Assemblers • Compilers • Programming tools
          • Source code control

RTL/2 is a high-level, structured, ALGOL-based Pascal-like language designed for use in real-time computing and is especially suited for the programming of on-line data collection, real-time monitoring, and control. RTL/2 is strongly typed and supports modularity, reentrancy, recursion, multitasking, and assembly language code inserts. RTL/2 is used worldwide at more than 500 installations. The language is British Standard BS5904. The system has no subsets or supersets to affect transportability between different vendor computers. A source code-level Symbolic Debug Package comes with the compiler.

A version of this product is available for the PDP-11 computer.

Price: $3,000
Product Support Available: Yes
Contact: Robert F. Swanson
         (201) 865–6550
         INTELLIGENT INDUSTRIAL SYSTEMS, INC.
         300 Harmon Meadow Boulevard
         Secaucus, NJ 07094

Series IV System

Operating System: VMS
Keywords: • Data base management • Data entry
          • Networking • Programming tools

This application implementation system offers 80% to 90% reduction in development and maintenance over conventional high-level languages. The system is designed for local and remote development and implementation of screen-oriented applications, interactive and batch processing, multiprogramming, and networking. Up to 32 terminals can be used on the same or mixed applications simultaneously. The system permits dynamic attach/detach of terminals. The system provides development for multiterminal and multiscreen use that may be performed on a single terminal and multiterminals called automatically at run time. The system features uses from data entry validation and display to transaction processing, including dynamic files update of its own files, other files, or data base systems. A translation feature for any language use — for example, German, French, Japanese, Arabic, and so on — is available. Security features are also provided. Various terminals and video options are available.

A version of this product is available for the PDP-11 computer.

Price: $8,000 – $22,000
Product Support Available: Yes
Contact: J. Milton, President
022 61 78 21 or 022 61 78 22
SOSY S. A.
5, rue Cesar-Soulie
1260 Nyon
Geneva
Switzerland

SIBOL (Software Ireland Business Oriented Language)

Operating System: UNIX, VMS
Keywords: • Compilers • Debugging • Interpreters
SIBOL is a commercial DIBOL-compatible programming language for the UNIX* operating system. Written in C, SIBOL comprises a compiler, run-time interpreter, symbolic debugger, and library of external utility subroutines. SIBOL can be used as a free-standing language or to convert existing DIBOL programs.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: L. McCloskey
(44) 232 247433
SOFTWARE IRELAND LTD.
26 Linenhall Street
Belfast BT2 8PJ
Northern Ireland

SMC BASIC

Operating System: VMS
Keywords: • Interpreters • Language enhancers
• Programming tools
SMC BASIC is a business-oriented interpreter that runs under RSTS/E Version 7.1 or later. SMC BASIC is compatible with BASIC FOUR BUSINESS BASIC IV at the source level.

SMC BASIC uses RMS, including keyed (index) files, with some limitations. Extensive screen-handling functions are built in as mnemonics for use in INPUT or PRINT directives. Extensive input verification is embedded in the INPUT directive. Program chaining or overlays do not reinitialize data areas unless specifically requested. Thus, all data can be left in common. Commonly used programs or sub-
routines may be written as "public programs" and executed in line by use of the CALL directive. Files and records may be locked. SMC BASIC uses 14-digit precision for decimal arithmetic and floating-point mode for numbers over 14 digits, with automatic rounding to current precision setting, on assignment or output. Programs can be self-modifying. The EXECUTE, MERGE, DELETE, and EDIT directives can be used in-line to write program generators.

SMC BASIC features automatic code conversion — EBCDIC to ASCII, for example — on input or output, by use of the TABLE option. Numeric type conversion is automatic. The programmer uses only numeric or string variables, and the system changes numeric types when needed.

A version of this product is available for the PDP-11 computer.

**Price:** $795 – $2,800
**Product Support Available:** Yes
**Contact:** Jon Coleman, Vice President
(415) 930–9936
COMPUTER SYSTEMS DEVELOPMENT
140 Mayhew Way, Suite 700
Pleasant Hill, CA 94523

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**SpeedCOBOL™**

**Operating System:** UNIX, VMS
**Keywords:** • Data dictionary • Language enhancers
• Pre- and postprocessors • Source code control

SpeedCOBOL, a COBOL preprocessor, expands abbreviations into COBOL reserved words and phrases, data names and paragraph names, condition names, file names, and any other string you wish to abbreviate.

SpeedCOBOL features a simplified data dictionary with printed directories, both shop and programmer-defined abbreviations, a parallel listing showing abbreviated code alongside the expanded full COBOL code, and a statistics page documenting the savings in coding time for each program.

The Foundation promises to users of SpeedCOBOL these benefits: 40%–50% savings in COBOL coding time, more descriptive data names and paragraph names used in programs coded using SpeedCOBOL, and the reduction or elimination of COBOL coding and keying drudgery. A self-learning procedure for SpeedCOBOL requires about one programmer hour.

The permanent license for SpeedCOBOL includes the source code. User references are available upon request.

A version of this product is available for the PDP-11 computer.
Price: $3,750
Product Support Available: Yes
Contact: J. Dwight Minkler II, Executive Director
(602) 955-1148
FOUNDATION FOR SOFTWARE ENGINEERING
4339 North 39th Street
Phoenix, AZ 85018

SUPERMAX

Operating System: ULTRIX, UNIX, VMS
Keywords: • Assemblers • Compilers
• Microprocessor development

SUPERMAX is a family of structured and nonstructured cross-assemblers. Four SUPERMAX assembler versions are available for each of the commonly used microprocessors. All produce ROMable output in any of several commonly used formats, including Intel, Motorola, and Tektronix.

The simplest and least expensive version, LEVEL 0, is an absolute assembler with no macro or conditional assembly capability. The assemblers are relocatable, and a linking loader is provided with each LEVEL 1 assembler. The LEVEL 1 assemblers have no macro or conditional features. The LEVEL 2 packages are provided with both a linking loader and an object module librarian. The LEVEL 3 versions are the most powerful of the family and add the capabilities of the SUPER language to the features of the LEVEL 2 versions. LEVEL 3 packages allow the user to program in either assembly language or SUPER or to intersperse assembly language and SUPER source code within the same program.

SUPER is a high-level Pascal-like language. The SUPER statements are implemented in SUPERMAX in the form of built-in macros (BIMs), which produce optimized, compact code, avoiding the inefficiency in time and amount of code generated usually associated with coding in higher-level languages.

The assembly language features of SUPERMAX are similar to those of the PDP–11 and VAX assemblers, and the directives in SUPERMAX assemblers are a superset of the corresponding MACRO–11 directives.

SUPERMAX assemblers are supported by a linking loader, SUPERLNK, and an object module librarian, SUPERLIB, which allows the user to combine relocatable object files into a special library format object file. The SUPERLNK linker will select only those modules within the library object file referenced by the other files in the link stream.

A version of this product is available for the PDP–11 computer.
Price: $500 – $1,750
**Product Support Available:** Yes
**Contact:** Mark P. White, Vice President, Marketing
(617) 938-0709
CYMRIC COMPUTER SYSTEMS, INC.
13 Henshaw Street
Woburn, MA 01801

**TeleSoft–ADK (TeleSoft–Ada Development Kit)**

**Operating System:** ULTRIX, VMS
**Keywords:** • Compilers • Cross-compilers
• Microprocessor development • Source code control

TeleSoft–ADK, which includes the TeleSoft–Ada Compiler, develops and executes Ada programs. The package also includes the VAX Native Code Translator, Text I/O and Generic Direct and Sequential I/O packages, the Ada Run-Time System with system interface to UNIX* or VMS, a set of Ada demonstration and test programs, and complete system documentation. The compiler operates in three passes, generating fast, native VAX machine code. The files produced are ready for execution. Tools are also available for cross-compiling Ada programs for the MC68000 to be executed from ROM (not under UNIX* or VMS) under TeleSoft’s Run-Time System. TeleSoft’s Ada products and services are used by military as well as commercial systems and software developers for Ada applications.

*UNIX is a trademark of AT&T Bell Laboratories.

Price: $10,905
**Product Support Available:** Yes
**Contact:** TeleSoft
(619) 457-2700
TELESOFT
10639 Roselle Street
San Diego, CA 92121

**Thoroughbred IDOL**

**Operating System:** VMS
**Keywords:** • Data base management • Forms management
• Microprocessor development • Programming tools

The Thoroughbred Data Base Management System, IDOL, brings the full power of larger system software to the 16-bit microcomputer. IDOL is a program development tool designed for both first-time and experienced users.

All the data you define in IDOL can be instantly retrieved as a hard-copy printout. You can design your own custom special-entry screens for data transactions and updates. You can retrieve data from more
than one file when generating a report. A complete daily operator status report enables you to track operator activity. You have access to comprehensive disk storage and file information reports, as well as to any record in your system, through IDOL's inquiry function. You can easily define data, records, and files, using IDOL's complete data dictionary system. By using the Global Dictionary, you can define data once and then use that data in as many files as you choose without having to redefine. IDOL's File Dictionary provides up to 999 files for your use. You can design up to 99 user menus, using IDOL's Selector Dictionary. You can automatically edit and validate information entered into the system during data entry. You can assign value tests, range tests, and numeric tests to any data field you choose. You can produce reports with total, subtotals, sorts on any field, and logical retrieval of certain records or a range of records, using simple English prompts. All data files and user menus can be password protected. Audit trails for each operator of the system are provided.

A version of this product is available for the PDP-11 computer.

**Price:** $795 – $8,000

**Product Support Available:** Yes

**Contact:**
David E. Capel, Vice President  
(415) 930–9932  
COMPUTER SYSTEMS DEVELOPMENT, INC.  
140 Mayhew Way, Suite 700  
Pleasant Hill, CA 94523

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**Turing Language Compiler**

**Operating System:** ULTRIX, UNIX

**Keywords:** • Compilers • Diagnostics  
• Microprocessor development

Turing is a general-purpose programming language that is well suited for teaching programming. Designed to support the development of reliable, efficient programs, Turing incorporates language features that decrease the cost of program maintenance and that support formal verification.

Turing is designed to be supported by a user-friendly compiler and run-time system of modest size; those should insulate the user from vagaries of the underlying hardware and operating system. Turing is a Pascal-like language and incorporates almost all of Pascal's features. However, Turing alleviates many difficulties with Pascal. For example, since Turing provides convenient string handling, it provides modules, its variant records (unions) are type safe, and it has dynamic parameters and arrays.

A version of this product is available for the PDP-11 computer.

**Price:** $1,500 – $11,000
Vanda Z80 C Cross-Compiler

**Operating System:** ULTRIX, VMS

**Keywords:** • Compilers • Engineering • Instrumentation
• Programming tools

The Vanda Z80 C Cross-Compiler is a full implementation of the C language, targeted for the Z80 microprocessor. The compiler can be run on PDP–11, VAX, Z8000, and 68K hosts, as well as on CP/M™ systems. Based on the Whitesmiths compiler, Vanda C offers thorough support for ROM/RAM environments, extremely compact generated code, and the ability to intermix assembly language routines with C routines. An optimizer, Z80 assembler, linker, librarian, and other tools are provided with the compiler, as well as the facility to interface to other cross-compilers. A royalty-free run-time library is available.

CP/M™ is a trademark of Digital Research Inc.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000

**Product Support Available:** Yes

**Contact:** Dwight VandenBerghe
(206) 542–7611 or (800) 426–5248
VANDATA
17544 Midvale Avenue North, Suite 107
Seattle, WA 98133
Operating Systems
C Executive™

Operating System: UNIX, VMS
Keywords: • Data collection • Graphics • Process control
• Real time

C Executive is designed for minimum hardware configurations, where disk subsystems are not appropriate for either economic or environmental reasons. Ideally suited to high-volume, low-cost, board-level products, C Executive may be used for data acquisition, graphic data entry, intelligent terminals, and process control.

C Executive allows multiple C or Pascal tasks to run concurrently with intertask communication, resource coordination, and formatted I/O. The real-time preemptive scheduler is sensitive to both task priority and system events. Multiple user terminals, if needed, can be supported with UNIX* like characteristics.

Included is a comprehensive portable library containing more than 50 routines for memory management, character string manipulation, and I/O. The library has been specially designed for ROM-based systems. Other features are clock support, time-based task scheduling, and other features for real-time applications.

Aside from a few routines dedicated to disk I/O, all Pascal standard procedures and functions and the entire standard UNIX* C library are also supported. C Executive is highly portable, since it is written almost entirely in C.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $300 – $3,000
Product Support Available: Yes
Contact: Deborah A. Fullam, Technical Staff Member
(215) 657–5660
JMI SOFTWARE CONSULTANTS
1422 Easton Road
Roslyn, PA 19001

CP/M–86 for DIGITAL

Operating System: VMS
Keywords: • Communications • File management
• File transfer • Microprocessor development

CP/M–86 for DIGITAL allows UNIBUS machines access to CP/M–86 software. DIGITAL users can now run CP/M–86 application programs simultaneously with their own DIGITAL application programs. CP/M–86 for DIGITAL allows the user to use all the high-quality devices (terminals, disk drives, hard disks, printers, and so on) associated with DIGITAL minicomputers for a CP/M–86 environ-
ment. The package gives the user file-transfer capability. If the user is in CP/M–86 and needs access to a DIGITAL file, the DIGITAL file can be copied to be readable and writable in CP/M–86 format and vice versa. Communication capabilities are also included.

A version of this product is available for the PDP–11 computer.

Price: $2,995 – $6,145
Product Support Available: Yes
Contact: Betty J. Pietrzyk
(603) 888–4448
LOGICRAFT, INC.
3 Graham Drive
Nashua, NH 03060

CP/M® for DIGITAL

Operating System: VMS
Keywords: • Communications • File management
• File transfer • Microprocessor development

CP/M for DIGITAL allows DIGITAL Q–BUS and UNIBUS machines access to CP/M software. DIGITAL users can now run CP/M application programs simultaneously with their own DIGITAL application programs. CP/M for DIGITAL allows the user to use all the high-quality devices (terminals, disk drives, hard disks, printers, and so on) associated with DIGITAL minicomputers for a CP/M environment. The package gives the user file-transfer capability. If the user is in CP/M and needs access to a DIGITAL file, the DIGITAL file can be copied to be readable and writable in CP/M format and vice versa. Communications capabilities are also included.

CP/M® is a registered trademark of Digital Research, Inc.

A version of this product is available for the PDP–11 computer.

Price: $1,495 – $4,395
Product Support Available: Yes
Contact: Betty J. Pietrzyk
(603) 888–4448
LOGICRAFT, INC.
3 Graham Drive
Nashua, NH 03060

DSM, Version 2.0

Operating System: VMS
Keywords: • Data base management • Interpreters
• Language enhancers • Pre- and postprocessors

This multiuser data management system includes DIGITAL Standard MUMPS (DSM). This high-level interpretive language is an
extension of the American National Standard MUMPS specification X11.1–1977; also included are the enhancements to the MUMPS language proposed by the MUMPS Development Committee as of 1982. The shareable, reentrant interpreter operates under the VAX/VMS operating system to take advantage of the packed decimal and character string instruction set, the virtual memory, and the I/O capabilities of the operating system.

The DSM language is directed primarily toward the processing of variable-length string data, making interactive data base systems easier to implement and maintain.

Refer to SPD #25.08.06 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

DT07, Version 1.0

Operating System: VMS
Keywords: • Communications • Device drivers/handlers
          • File management • Pre- and postprocessors

This software allows the VAX/VMS operating system user to electronically connect a section of switchable UNIBUS, together with all attached peripherals, to the user's system. When the DT07 is connected, the switched peripherals operate as if they were permanently attached to that system. When the DT07 is disconnected, the switched peripherals are removed and are then available for connection to another system. Up to four systems can share a single switchable UNIBUS via the DT07.

VAX–11 DT07 consists of two separate parts: a Driver and a Bus Switch Manager. The Driver maintains control of the DT07, monitors its activities, supports the connect and disconnect functions, and handles associated system-level housekeeping tasks for each processor. The Bus Switch Manager provides a link between the user and the DT07 Driver. The Bus Switch Manager also maintains information regarding users who are currently using the switched UNIBUS and the status of operations performed in controlling the switched UNIBUS.

Refer to SPD #25.88.0 when requesting further information on this product from your local DIGITAL sales office.

Price: $100 – $2,500
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).
EZLOG

Operating System: VMS
Keywords: • Accounting • Facilities management
        • File management • Security

EZLOG, an extension to the VAX/VMS log-in procedure, provides a true 3-level accounting of system usage by account, project, and user. In addition, an optional second level of password protection and log-in attempt recording is available to increase system security. EZLOG provides:
• Simple user names and projects encourage user cooperation in specifying projects actually worked on.
• Account managers (rather than the system manager) may grant or deny users access to projects.
• Disk files are easily separated by project or user.
• An optional second level of password protection is provided with optional attempted log-in recording.

EZLOG is designed to address the needs of VAX installations at which individual users wish to spread their computing charges over several projects or cost centers. EZLOG is an add-on option to PACS, a VAX/VMS process accounting and chargeback package from Signal Technology, Inc.

Price: $1,000 – $2,200
Product Support Available: Yes
Contact: Dr. Larry L. Pfeifer
         (805) 683–3771
         SIGNAL TECHNOLOGY, INC.
         5951 Encina Road
         Goleta, CA 93117

EZTRACK (Tracking Resource Accounting System)

Operating System: VMS
Keywords: • Accounting • Data collection
        • Facilities management • Security

This reporting and query utility for tracking VAX/VMS resource usage of the individual session and image level offers a flexible and general approach to resource monitoring, reporting, and summarization of VAX log-in sessions and program images. For those who need chargeback as well as detailed resource tracking, EZTRACK operates hand in hand with Signal Technology’s PACS software. Together, PACS and EZTRACK give a complete picture of what is being done in the system, as well as how much it costs.

Price: $1,800 – $2,400
Product Support Available: Yes
Operating Systems

Contact: Dr. Larry L. Pfeifer  
(805) 683–3771  
SIGNAL TECHNOLOGY, INC.  
5951 Encina Road  
Goleta, CA 93117

Idris/R11

Operating System: Independent, VMS  
Keywords: • Device drivers/handlers  • Disk utilities  
  • File management

Idris is "pin for pin" compatible with UNIX* Version 6 on the PDP–11. Idris implements every system call except "ptrace." Moreover, Idris supports the additional system calls needed to conform to the proposed /usr/group (Uniform) standard for all versions of UNIX*. The Idris resident administers 96K bytes to 4M bytes of memory, using the memory management unit. A console device and at least one disk drive are required to support the resident. Disks supported on the Q–BUS or UNIBUS are RK05, RL01, RL02, and RM02 plus the Fujitsu M2201 series; console is any DL11 or DLV11. Also supported are DZ11, RX02, and TM11. Delivery media is for RX02 or TM11.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $350 – $2,200  
Product Support Available: Yes  
Contact: Christina B. Hanley  
(617) 369–8499  
WHITESMITHS, LTD.  
97 Lowell Road  
Millbrook Tarry  
Concord, MA 01742

MORE/bsd

Operating System: ULTRIX  
Keywords: • Database management  • File management  
  • Programming tools  • Text editing/formatting

MORE/bsd is a UNIX*-derived operating system and collection of languages, software tools, and utilities for VAX-series computers. Derived from the 4.2BSD release of UNIX* system software from U.C. Berkeley ("Berkeley UNIX"), MORE/bsd provides a multiuser operating system, a number of languages — C, Pascal, FORTRAN 77, EFL, and franz lisp — three text editors, two output formatters, many software tools and utilities, and the INGRES data base man-
agement system. Both C and Bourne shells are provided. MT XINU also includes the Source Code Control System from Bell System V UNIX*.

MORE/bsd is available in binary form, with full customer support for VAX-11/730, 11/750, and 11/780 computers. Additional applications programs that run under MORE/bsd are available separately.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** $2,500 – $20,000
**Product Support Available:** Yes
**Contact:** Alan Tobey
(415) 644–0146
MT XINU, INC.
739 Allston Way
Berkeley, CA 94710

**MS/DOS for DIGITAL**

**Operating System:** VMS
**Keywords:** • Communications  • File management
  • File transfer  • Microprocessor development

MS/DOS for DIGITAL allows UNIBUS machines access to MS/DOS software. DIGITAL users can now run MS/DOS application programs simultaneously with their own DIGITAL application programs. The system allows the user to use all the high-quality devices (terminals, disk drives, hard disks, printers, and so on) associated with DIGITAL minicomputers for an MS/DOS environment. The package gives the user file-transfer capability. If the user is in MS/DOS and needs access to a DIGITAL file, the DIGITAL file can be copied to be readable and writable in MS/DOS format and vice versa. Communication capabilities are also included.

A version of this product is available for the PDP–11 computer.

**Price:** $2,995 – $6,145
**Product Support Available:** Yes
**Contact:** Betty J. Pietrzyk
(603) 888–4448
LOGICRAFT, INC.
3 Graham Drive
Nashua, NH 03060

**OS/RT (Real Time O.S. Kernel)**

**Operating System:** None required
**Keywords:** • Communications  • Instrumentation
  • Process control  • Simulation
This real-time multiprocessing operating system kernel for process control, instrumentation, simulation, and communications control applications is fully transportable to a variety of DIGITAL 8-, 16-, or 32-bit processors. OS/RT is developed in a high-level language, C, and is available in object or source code, with unlimited binary rights. OS/RT can be ROM or disk-based and provides the following operating system functions in a well-organized and modular structure: process management, process synchronization management, interrupt handling, memory management, and interprocess communications.

A version of this product is available for the PDP–11 computer.

**Price:** $3,000 – $8,000

**Product Support Available:** Yes

**Contact:** Dennis Rieger  
(408) 737–7211  
THE DESTEK GROUP  
830 East Evelyn Avenue  
Sunnyvale, CA 94086

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**PACS (Process Accounting)**

**Operating System:** VMS  
**Keywords:**  • Billing  • Cost accounting  • File management  
• Report writer

PACS is a software system for billing users, reporting job costs, and monitoring system utilization. PACS automatically collects and organizes disk storage and process accounting information. PACS provides itemized reports on line, on the user’s request. Financial reports, including the final billing, are generated on the request of the system manager or other authorized user. PACS allows for generalized reporting periods such as weekly, monthly, or 4-4-5 cycles. With Chargeback Billing, PACS reports the quantity used, unit cost, and expenditure for each billable resource, such as disk storage, connect time, CPU time, file input/output operations, and so on. Each account may have a different billing algorithm. PACS supports non-prime time charge periods, discounts for large quantity usage, adjustments, fixed periodic charges, minimum charges, and other exceptional billing rules. Budgeting with log-in defeat is possible at the user name level as well as at the account level.

**Price:** $2,500 – $4,900

**Product Support Available:** Yes

**Contact:** Dr. Larry L. Pfeifer  
(805) 683–3771  
SIGNAL TECHNOLOGY, INC.  
5951 Encina Road  
Goleta, CA 93117
PET (Performance Evaluation and Tuning)

**Operating System:** VMS

**Keywords:** • Diagnostics • Disk utilities • Report writer
  • Statistics

PET helps you to better understand, optimize, and control your computer resources. The system allows you to monitor your computer resources in a more efficient manner by giving you reports, both written and graphic, detailing all critical functions of your system. PET collects statistics from the CPU, disks, and all input/output devices to generate these reports.

PET uses very little disk space and places no burden on the CPU. Capacity planning can also be performed by PET by placing an artificial load on the system, allowing total control of response time. This feature is useful in maintaining a consistent operating environment for both large and small system users.

A version of this product is available for the PDP–11 computer.

**Price:** $900 – $4,500

**Product Support Available:** Yes

**Contact:** Cindy Schott  
(614) 231–2130
MBA SYSTEMS AUTOMATION  
3477 East Livingston Avenue  
Columbus, OH 43227

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QUICKSTAR

**Operating System:** VMS

**Keywords:** • Accounting • Facilities management
  • File management • Security

This set of utilities gives VAX/VMS users and managers quick and efficient tools for interacting with the system, communicating with other users, and monitoring system status. QUICKSTAR consists of QUICKCHANGE, QUICKSTAT, and QUICKTALK. QUICKCHANGE allows a VAX user to quickly change from one user name to another without the standard manual log-out/log-in steps. QUICKSTAT is a utility for secure interactive monitoring of VAX system status, users, processes, and devices. QUICKTALK is a utility for rapid and complete interterminal communication on the VAX.

**Price:** $1,700

**Product Support Available:** Yes

**Contact:** Dr. Larry L. Pfeifer  
(805) 683–3771
SIGNAL TECHNOLOGY, INC.  
5951 Encina Road  
Goleta, CA 93117
RSTS/E CCL Emulator

**Operating System:** VMS  
**Keywords:** • Programming tools • Real time • Simulation  
This package is a prototype implementation of the RSTS/E command language on VAX/VMS using DCL procedures. The package is used to provide a somewhat RSTS-compatible command environment on VAX/VMS. The package is both a migration and a coexistence tool; for migration, it helps a RSTS/E user to feel more comfortable on a VAX sooner and allows one to learn DCL at one’s leisure. For coexistence, the package provides a subset compatible command language for RSTS/E and VAX/VMS today. Most of the CCLs that have any VAX/VMS equivalent were implemented. Because CCL/VAX runs on top of DCL, a RSTS/E user can issue RSTS/E commands as well as DCL commands in any order or combination, without changing modes.

Documentation is on magnetic media. DECUS number VAX-10.  
**Price:** $5 – $225  
**Product Support Available:** No  
**Contact:** DECUS (see Introduction)

RT/EMT (RT-11 Emulator)

**Operating System:** UNITY, UNIX, VMS  
**Keywords:** • Compilers • Interpreters • Simulation  
RT/EMT gives you an RT-11 environment under the UNIX* operating system. RT/EMT lets you run RT-11 binary programs unchanged directly at the UNIX* command level. The RT-11 command interpreter supports RT-11 keyboard monitor commands, and RT-11 file systems are implemented by UNIX* directories. RT/EMT runs in user mode. No UNIX* operating system changes are required, and the characteristics of the RT V4 SJ monitor are supported.

HCR supplies only the RT/EMT software. Any RT-11 package requires a license from DIGITAL.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.  
**Price:** $1,750 +  
**Product Support Available:** Yes  
**Contact:** Sales Department  
(416) 922–1937
  
HUMAN COMPUTING RESOURCES CORP.  
10 St. Mary Street  
Toronto, Ontario M4Y 1P9  
Canada
SoftShell

Operating System: ULTRIX, UNIX
Keywords: • Data collection • File management • Operations
• Text editing/formatting

SoftShell is a full-screen interface to the UNIX* system. Users can enter commands either through a friendly form, the screen, or the line-by-line mode, the scroll. The two modes communicate. Even in the scroll, commands can be recalled, edited, and reexecuted. The communication between screen and scroll makes the SoftShell more than just a convenient command interpreter. A user who knows the command, parameters, and options needed can enter them into the scroll. Otherwise, the user can execute a form of the command that prompts him/her for parameters and options, offering information concerning those options.

Pipes, filters, and I/O redirection are available, and special interactive commands can be used.

The SoftShell interface has routines for displaying large trees on small screens. Applications, provided for displaying and traversing some of the most common UNIX* tree-structured objects in, are directory and process hierarchies and documents. In addition, C functions are included for operating on user-defined trees.

No change need be made to the underlying UNIX* programs. Any program can be invoked from the SoftShell. Users can also define their own forms — for example, for data collection — to interface with their applications.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $495 – $995
Product Support Available: Yes
Contact: Anne C. Brink
(617) 864–0137
LOGICAL SOFTWARE, INC.
55 Wheeler Street
Cambridge, MA 02138

SPM (Software Performance Monitor), Version 1.1

Operating System: VMS
Keywords: • Debugging • Diagnostics • Simulation
• Statistics

VAX–11 SPM consists of a set of programs that collect and report performance statistics for VAX/VMS systems. General performance statistics can be collected on a systemwide basis, and detailed statistics can be collected on a per-process basis. Analysis of the perfor-
mance reports gives information relevant to system tuning, avoidance of system bottlenecks, design and development of applications, and system capacity planning.

The program features user-defined parameters for data collection, options for data reduction, and selections for display of data in each performance report; numerical and graphical output; and format of reports ready for performance analysis.

Refer to SPD #SO.16.01 when requesting further information on this product from your local DIGITAL sales office.

Price: $840 – $10,000
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office (see Introduction).

ULTRIX–32™ System, Version 1.0

Operating System: None required
Keywords: • Assemblers  • Debugging  • File management
          • Programming tools

This native UNIX™ operating system for VAX–11 hardware is derived from the 4th Berkeley software distribution (4bsd), Version 4.2. Developed by the Computer Systems Research Group of the Department of Electrical Engineering and Computer Science at the University of California at Berkeley, 4bsd is an augmented version of Bell Laboratories’ UNIX 32V system for VAX–11 hardware. The Berkeley enhancements to UNIX 32V include the addition of support for the VAX–11 virtual architecture and a set of functional additions to the basic Bell Laboratories UNIX product.

The ULTRIX–32 system is an interactive, demand-paged, virtual memory, time-sharing operating system that has a hierarchical file system with demountable volumes, compatible device and interprocess I/O, asynchronous processes, a system command language selectable on a per-user basis, disk quotas, job quotas, more than 200 subsystems, and a high degree of portability among processors.

Along with the functionality of the Berkeley 4bsd system, DIGITAL has added the following features to the ULTRIX–32 product:

• Integrated service offerings
• Repackaged technical documentation
• Installation and configuration without source code
• Direct UNIX sublicensing

The ULTRIX–32 system provides a hierarchy of named directories and subdirectories. The number of levels is limited only by physical space.

The primary function of the shells is to serve as the command language interfaces into the system. Because those interfaces (the C
Shell and the Bourne Shell Version 7) are programmable, they also allow for a tailorable user environment.

The interfaces permit users to create commands for individualized routines that can be run in an interactive environment. Therefore, they can produce their own command lines and command files that assign symbolic names, evaluate numeric and logical expressions, accept parameters, communicate with interactive users invoking the shell script, and perform conditional and branching logic.

The ULTRIX–32 system also includes facilities for text and document processing.

Refer to SPD #26.40.00 when requesting further information on this product from your local DIGITAL sales office.

UNIX™ is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

Uniq™ System V

Operating System: ULTRIX, UNIX, VMS
Keywords: • Assemblers • Device drivers/handlers
• Networking • Source code control

This fully supported and enhanced version of Bell Laboratories’ famous operating system has such advanced features as the VI full-screen editor, complete termcappping facilities, significantly improved performance versus System III in the VAX environment, full support of DIGITAL’s new disk drives, interactive graphics facilities, source code control, RJE facilities to IBM hosts, VPM–virtual protocol machine for network programming of the KMC–11, enhanced network support, and C and FORTRAN 77 compilers as well as compiler development tools.

Uniq supports UNIX* System V on VAX–11 computers for most available peripherals. Uniq’s CTAC (Customer Technical Assistance Center) offers instant access to the UNIX* support team. Consulting and technical training are available from a staff of Bell System–experienced consultants. A full catalog of UNIX* data bases and software is provided. System III, Berkeley, and 7th Edition UNIX* are also available.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: Available upon request
Product Support Available: Yes
866 Operating Systems

Contact:  Sam Bishop, Vice President, Sales
           (312) 879–1008
           UNIQ DIGITAL TECHNOLOGIES
           28 S. Water Street
           Batavia, IL 60510

UNITY™ for VMS

Operating System: UNIX, VMS
Keywords:  ● Compilers ● Disk utilities ● Graphics
           ● Programming tools

The UNITY system allows the UNIX* environment to coexist with
the VMS environment and requires no special permission to run. The
system provides nearly perfect compatibility with standard UNIX*
and allows the VMS programmer to use UNIX* utilities. Name
translation is provided from UNIX* path names to VMS file names.
VAX UNITY under VMS can be installed as a user-level add-on.

The package features full C compiler assembler and linkage editor,
tools for constructing compilers and interpreters, a text-quality
printer, and for phototypesetter, formatting packages for common
document styles, programs to compose tables and mathematical
equations, and programs that assist in checking spelling and con-
structing bibliographies. The package also provides 100 utilities, in-
cluding graphics, electronic mail, computer-aided instruction, system
accounting, and security access software.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price:  $1,000 +
Product Support Available:  Yes
Contact:  Raymond Herpers, Vice President, Sales
           (416) 922–1937
           HUMAN COMPUTING RESOURCES
           10 St. Mary Street
           Toronto, Ontario M4Y 1P9
           Canada

UNIVAC UTS400

Operating System: VMS
Keywords:  ● Data entry ● Networking ● Telecommunications

The UNIVAC UTS400/U200/DCT1000 is a subsystem for UNIBUS-
based computers and includes DIGITAL multiplexer from 8 to 16
channels, DMA data transfer, dual-host support, and full-screen
buffer facility emulated on a VT100 terminal.

A version of this product is available for the PDP–11 computer.
Price: $13,000  
Product Support Available: Yes  
Contact: Mogens Poulsen  
01–200066  
A/S DATALOG  
Rygaards Alle 104  
DK–2900 Hellerup  
Denmark

VAX–11/730 Diagnostic Set

Operating System: VMS  
Keywords:  • Debugging  • Diagnostics  • File management  
• Process control

This package of programs allows users to maintain a VAX–11/730 Central Processor Unit (CPU) and standard VAX–11/730 peripheral devices. The set includes micro- and macrodiagnostic programs required to support Customer Runable Diagnostics (CRDs).

The microdiagnostic programs detect and isolate faults at the module level within the CPU, Floating Point Accelerator (FPA), Integrated Disk Controller (IDC), and Memory. A microdiagnostic monitor and a number of test overlays achieve module-level fault isolation. The macrodiagnostic programs detect and isolate faults within the VAX–11/730 and standard options. The Customer Runable Diagnostics (CRD) feature is a simplified operator interface that sequentially runs the micro- and macrodiagnostic programs.

Refer to SPD #25.93.01 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request  
Product Support Available: No  
Contact: Consult your local DIGITAL sales office  
(see Introduction).

VAX–11/730 Microdiagnostics

Operating System: VMS  
Keywords:  • Debugging  • Diagnostics  • File management  
• Process control

This set of software programs allows users to maintain a VAX–11/730 Central Processor Unit (CPU). Microdiagnostics isolate and detect faults at the module level within the CPU, Floating Point Accelerator (FPA), Integrated Disk Controller (IDC), and Memory. A microdiagnostic monitor and a number of test overlays achieve module-level fault isolation.
Refer to SPD #25.92.0 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** No

**Contact:** Consult your local DIGITAL sales office (see Introduction).

**VAX–11/750 Basic Diagnostic Set**

**Operating System:** VMS

**Keywords:** • Debugging  • Diagnostics  • File management  
• Process control

This package of programs allows users to independently maintain standard VAX–11/750 system hardware and peripheral devices. The package contains the following components:

• VAX Diagnostic Supervisor (VDS): Supplies diagnostic and operator services (loading, starting, and control) as a stand-alone controller or as a layered program of VAX/VMS.

• Diagnostics: Functional-level or repair-level programs that run under control of VDS. Functional-level tests run in stand-alone mode or with VAX/VMS. Repair-level programs run only in stand-alone mode.

• Exerciser: Directs the supervisor to selected functional tests in a specified sequence. The exerciser runs only under VAX/VMS.

Supporting programs included in this package are device drivers.

Refer to SPD #25.91.0 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** No

**Contact:** Consult your local DIGITAL sales office (see Introduction).

**VAX–11/750 Diagnostic Set**

**Operating System:** VMS

**Keywords:** • Debugging  • Diagnostics  • Process control  
• Report writer

This package of programs allows users to maintain a VAX–11/750 Central Processor Unit (CPU) and standard VAX–11/750 peripheral devices. The set includes micro- and macrodiagnostic programs required to fully support diagnosis on VAX–11/750 systems.

The microdiagnostic programs detect and isolate faults at the micro level within the CPU and memory. The microdiagnostic monitor and a number of test overlays achieve module-level fault detection and isolation.
At the start of the microdiagnostic program, a ROM-based TU58 driver routine loads the microdiagnostic monitor from a TU58 tape cartridge into RAM memory located on the VAX–11/750 diagnosis module, LO006–YA. Once the monitor is loaded, the program initialization routine begins. That routine controls program flow, initializes parameters, and invokes the TU58 driver routine to automatically load each of a series of overlays. The microdiagnostic tests are organized to sequentially test the data path hardware, CMI-translation buffer-cache, I-stream buffer, CMI, and the memory controller and first two arrays. All detected faults result in error typeouts indicating the lowest level of modules and/or gate arrays to which the program can isolate the failure.

The macrodiagnostic programs provide fault detection and isolation within the VAX–11/750 CPU and standard options.

Refer to SPD #26.42.00 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** No

**Contact:** Consult your local DIGITAL sales office (see Introduction).

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**VAX–11/750 Microdiagnostics, Version 1.0**

**Operating System:** VMS

**Keywords:** • Debugging • Diagnostics • Language enhancers • Simulation

This set of software programs is used in conjunction with the VAX–11/750 Self Maintenance Microdiagnostics Kit. The programs are extensions of the basic VAX–11/750 diagnostics and are used to assist in the maintenance and repair of the CPU and memory by detecting microlevel faults.

VAX–11/750 Microdiagnostics contains the microdiagnostic monitor and a number of test overlays that exercise a portion of the CPU or memory.

At the start of the microdiagnostic program, a ROM-based TU58 driver routine loads the microdiagnostic monitor from the TU58 tape cartridge into RAM memory located on the VAX–11/750 diagnostic module. Once the monitor is loaded, the program initialization routine begins. That routine controls program flow, initializes parameters, and invokes the TU58 driver routine to automatically load each of a series of overlays. The microdiagnostic tests are organized sequentially from the data path hardware, to CMI-translation buffer-cache, to I-stream buffer, to CMI, and to the memory controller and arrays. All detected faults result in error typeouts indicating the lowest level of modules and/or gate arrays to which the program can isolate the failure.
Refer to SPD #25.61.0 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** No  
**Contact:** Consult your local DIGITAL sales office (see Introduction).

### VAX–11/780 Basic Diagnostic Set, Version 1.0

**Operating System:** VMS  
**Keywords:** • Debugging • Diagnostics • Language enhancers • Simulation

This package of programs supports customer-performed maintenance of standard VAX–11/780 system hardware. The package includes a complete set of diagnostics to cover both the central processing unit options and all standard 11/780 peripherals.

The package consists of the following components:

• VAX Diagnostic Supervisor (VDS): Supplies diagnostic and operator services (loading, starting, and control) as a stand-alone controller or as a layered program under the VAX/VMS operating system.

• Diagnostics: Functional-level or repair-level programs that run under control of VDS. Functional-level tests run in stand-alone mode or with VAX/VMS. Repair-level programs run in stand-alone mode only.

• Exerciser: Directs the Supervisor to selected functional tests in a specified sequence. The exerciser runs under VAX/VMS only.

Supporting programs included in this package are console, microcode, boots, and device drivers.

Refer to SPD #25.60.0 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request  
**Product Support Available:** No  
**Contact:** Consult your local DIGITAL sales office (see Introduction).

### VAX–11/780 Diagnostic Set

**Operating System:** VMS  
**Keywords:** • Debugging • Diagnostics • Process control • Report writer

This package of programs allows users to maintain a VAX–11/780 Central Processor Unit (CPU) and standard VAX–11/780 peripheral devices. The set includes micro- and macrodiagnostic programs required to fully support diagnosis of a VAX–11/780 system.
The microdiagnostic programs detect and isolate faults at the module level within the CPU, floating point, and memory. The microdiagnostic monitor and a number of test overlays achieve module-level fault detection and isolation. Microdiagnostics are executable with the microdiagnostic monitor running in the VAX–11/780 LSI11 console. The console disks provide storage for the microdiagnostic test overlays. Microdiagnostic tests are organized into a bootstrapping sequence for testing the console interface, data path hardware, SBI-Cache-Translation Buffer, I-stream Buffer, SBI, and Memory Controller, arrays, and Floating-Point Accelerator (FPA). All detected faults result in error typeouts that indicate the smallest set of modules to which the program can isolate a failure.

The macrodiagnostic programs provide fault detection and isolation within the VAX–11/780 CPU and standard options.

Refer to SPD #26.41.00 when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request
Product Support Available: No
Contact: Consult your local DIGITAL sales office (see Introduction).

VAX–11/780 Diagnostics Extended, Version 1.0

Operating System: VMS
Keywords: • Data collection • Debugging • Diagnostics
• Report writer

This set of programs allows a customer to enhance the self-maintenance of the system. These extensions to the standard diagnostics are called CPU Microdiagnostics.

Refer to SPD #25.6.2 when requesting further information on this product from your local DIGITAL sales office.

Price: $230
Product Support Available: No
Contact: Consult your local DIGITAL sales office (see Introduction).

VAX/VMS Operating System, Version 3.4

Operating System: VMS
Keywords: • Data base management • File management
• Programming tools • Real time

The VAX/VMS operating system supports all VAX–11 series computers, working reliably and efficiently in both time-sharing and production environments. Time-sharing users can work interactively
with the system and can submit batch jobs. Jobs of all types, including processor-intensive, I/O-intensive, large memory, and real-time, in any mix, perform well on VAX/VMS. The system permits an absolute limit of 8,192 concurrent processes. However, the actual amount of work supported at one time with good performance depends on the types of processing performed as well as on the physical memory and secondary storage available. The practical limit, with moderate per-user work loads, is in excess of 100 concurrent users for a large-scale system.

In addition to the usual services of an operating system in support of program development and operations, VAX/VMS provides the following services that enable nonprogrammers to process data:

- Text processing: The general user requires a few days to learn how to use one of the text editors supplied with the system.
- Mail facility: A personal mail facility permits a user to send messages, reply to them, and forward them. Messages can be examined, printed, filed, and edited at the terminal.
- Phone facility: An interactive communication utility with networking capability (optional DECnet–VAX license is required for multi-node operation).
- Disk I/O: The general user can create and process sequential character files.
- Command-level programming: The general user can create special files called command procedures.

Refer to SPD #25.01.16 when requesting further information on this product from your local DIGITAL sales office.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Consult your local DIGITAL sales office (see Introduction).

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**VAXwatch™**

**Operating System:** VMS

**Keywords:** • Presentation aids • Security • Simulation

This program allows a user to inspect or modify any terminal session under VMS. VAXwatch will connect into the input and output streams of the “watched” terminal and then log all output into a disk file and/or another terminal.

VAXwatch can also be made to observe the terminal from which it was started. That mode of operation is useful for security or operational purposes. For example, if the console was placed in “watch” mode, a perfect console listing of all system events could be captured.
VAXwatch can also be made to passively observe a specific terminal session and dynamically log events to a disk on command without interrupting the current process. The program monitors both local and dial-in terminal sessions and is compatible with DIGITAL layered products such as TDMS and FMS.

**Price:** $495

**Product Support Available:** Yes

**Contact:** Marie C. Murphy  
(201) 798–6400  
ADVANCED SYSTEMS CONCEPTS, INC.  
22 Hudson Place  
Hoboken, NJ 07030

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**VENIX**

**Operating System:** UNIX, VMS

**Keywords:**  
- Compilers  
- Debugging  
- Text editing/formatting  
- Word processing

VENIX, a licensed Bell UNIX* System V with enhancements, provides the tools needed to develop application software. Standard VENIX features include compatible file, device, and interprocess I/O; a tree-structured, hierarchical file system; a sophisticated command language; and a large assortment of compilers, editors, debuggers, and word processing capabilities.

VENIX is an expanded and improved UNIX* system, made to work more efficiently on small machines. Those expanded capabilities are real-time support, asynchronous I/O to handle high-speed data acquisition, shared data to allow many programs to access common memory, semaphores to coordinate activities of multiple programs, and code mapping that expands the virtual address space to allow large programs to run on small machines.

VENIX will run with a variety of hardware devices, including many different disks, tapes, A/Ds, and serial and parallel interfaces. The device drivers can be easily configured into the system.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Customer Service  
(617) 661–1230  
VENTURCOM INC.  
215 First Street  
Cambridge, MA 02142
XENIX® Operating System for Microprocessors

Operating System: XENIX

Keywords: Language processors, Programming tools, Source code control, Text editing/formatting

The Santa Cruz Operation is an alternate source for XENIX, Microsoft’s implementation of UNIX®. XENIX is a true UNIX®-derived product that continues to provide all the portability, flexibility, modularity, and power of UNIX®. XENIX enhancements to UNIX® include file and record locking, greater reliability, improved system administration facilities, and comprehensive documentation. For the OEM or systems integrator, the Santa Cruz Operation offers comprehensive services tailored to individual requirements. Those services include porting and customization of XENIX to a specific system configuration. Also available are full ongoing support services that include bug fixes, problem isolation, and product updates.

XENIX® is a registered trademark of Microsoft, Inc. *UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.

Price: $2,975 – $6,475

Product Support Available: Yes

Contact: Marketing Department
(408) 425-7222
THE SANTA CRUZ OPERATION, INC.
500 Chestnut Street
Santa Cruz, CA 95060
Text Management
BASIS

Operating System: VMS
Keywords: • Data base management • Documentation
• Query facilities • Text editing/formatting

BASIS is a proven, easy-to-use data management system with comprehensive capabilities in information/data retrieval and manipulation involving both textual and numeric data. Users can define new applications and begin loading data within a few days, without the assistance of computer programmers.

Searches are performed, using an inverted index or a sequential search of the actual data records. Proximity searching, index browsing, numeric range searching, and prefix and stem searching are performed, as are hierarchical and universe searches and a full complement of Boolean logic on retrieved document sets.

The system provides on-line input verification and editing or batch input of data records. On-line sort and report modules are provided for on-line or off-line report definition, to read and create non-BASIS-related files. Formatted screens with complete validation capabilities are provided.

Extensive on-line help facilities are available, and an easy-to-use end-user query language is provided with every installation. The system provides complete security at the data base, index, record, and data-element levels. Source code and a complete library of BASIS utilities are provided with every installation.

BASIS supports a wide range of bibliographic, full text, and numeric data bases for library, litigation, scientific, manufacturing, research, publishing, and many other application areas. During the past 10 years of development and enhancements, BASIS has evolved into an internationally recognized DMS with more than 200 sites worldwide.

Price: $26,600 – $38,000
Product Support Available: Yes
Contact: BASIS Coordinator
(614) 424-5524
BATTELLE SOFTWARE PRODUCTS CENTER
505 King Avenue
Columbus, OH 43201

BASIS–DM (Data Base Management System)

Operating System: VMS
Keywords: • Data base management • Data dictionary
• Report writer

BASIS–DM, a complete, sophisticated dictionary-driven data base management system, allows for hierarchical, network, and relational data models. The BASIS–DM software supports both high-level user-
friendly interfaces for end users and host language interfaces for programmers. The system's "inverted list access method" of indexing allows indexes to be easily optimized for on-line retrieval. The method of indexing allows any record to be accessed by using a "primary key" that uniquely identifies that record. BASIS–DM handles long textual elements and supports variable-length data elements, variable-length records, and immediate on-line updating. A user can search for specific words and word patterns and can perform "word proximity" searches.

The BASIS–DM system provides a Report Writer (DMRW) with features that allow the handling of long textual elements. BASIS–DM includes a terminal support module that permits terminal-oriented applications to be easily implemented. Terminal screens can be used to review or modify several records at once. Overall, BASIS–DM provides flexibility, simplicity, and high performance in data base management.

Price: $29,000 – $46,000
Product Support Available: Yes
Contact: BASIS Coordinator
(614) 424–5524
BATTELLE SOFTWARE PRODUCTS CENTER
505 King Avenue
Columbus, OH 43201

CCA EMACS

Operating System: ULTRIX, UNIX, VMS
Keywords: • Documentation  • Education
          • Information management  • Text editing/formatting

CCA EMACS has the greatest combination of power, speed, and functionality of any text editor available for VAX/VMS or UNIX*. With close to 400 built-in commands, CCA EMACS allows virtually any editing task to be accomplished in just a few keystrokes, including tasks that would be difficult or impossible to do using other editors. In addition, a set of more than 60 predefined variables allows each user to customize CCA EMACS to meet various application needs and user styles. A full on-line documentation package assists the user at any point, giving information that ranges from the definition of a single command to manual pages that contain complete explanations of major CCA EMACS features. Yet all of this is available with no sacrifice of efficiency. The efficiency of CCA EMACS is equal to or better than that of any other screen editor; on an overall basis, CCA EMACS is significantly faster than any other EMACS implementation.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.
DECTYPE WORD PROCESSING APPLICATION,
VERSION 3.0

OPERATING SYSTEM: VMS
KEYWORDS: • Disk utilities • Security • Text editing/formatting
• Word processing

DECTYPE is a word processing application permitting concurrent word and data processing in a multiuser environment. This feature extends the data processing system with word processing capabilities.

The DECTYPE editor creates and maintains documents stored on the full range of disk devices supported by CTS-300 and VAX/VMS. Storage available for documents will vary, depending on other data storage requirements on the same disk media.

Refer to SPD #30.32.00 when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the PDP-11 computer.

Price: Available upon request
Product Support Available: Yes
Contact: Consult your local DIGITAL sales office
(see Introduction).

DOC

OPERATING SYSTEM: VMS
KEYWORDS: • Documentation • Programming tools

DOC is a general-purpose programming, system management, and documentation tool that records all input and computer output. DOC can be used to expand one terminal into four effective interactive terminals, to capture a job session in a text file, and to interactively create documentation to train system users.

A version of this product is available for the PDP-11 computer.

Price: $600
Product Support Available: Yes
Contact: Muriel King
(801) 224–5306
DOCLIB (Document Librarian Facility)

Operating System: VMS
Keywords: • Data entry • Documentation
          • Forms management

DOCLIB is a software package that helps organizations that produce and maintain a medium to large number of documents and related forms. DOCLIB is used to organize, document, maintain, and control the document library.

DOCLIB provides the basic structure for organizing a group of documents into a library. The various levels can be assigned as required.

A version of this product is available for the PDP–11 computer.
Price: $4,300
Product Support Available: Yes
Contact: Muriel King
         (801) 224–5306
         CLYDE DIGITAL SYSTEMS, INC.
         3707 N. Canyon Road, Suite 3–E
         Provo, UT 84604

EDPC Utilities Package

Operating System: VMS
Keywords: • Data conversion • Office systems
          • Programming tools

The EDPC Utilities Package consists of the following:
• ADDER causes any video or printing terminal to emulate an adding machine.
• AMORT is used for the displaying and/or printing of an amortization table.
• BADCHR strips files of nonprinting characters.
• CKDIGT develops a series of numbers for a video or a printing terminal user.
• COUNT quickly finds the number of records in a file.
• DISPLAY prints all or limits the number of characters for each record in a file. DISPL3 will print same as DISPLAY but also shows size of record and terminating character.
• DELETM reads a file created by directory and creates an indirect command file to delete certain files more than five days old.
• ELIMINATE creates a file containing only specified records from an existing file.
• GETREC displays a file block by block.
KBFORCE checks to see if a user-supplied file exists.
- LOOK3, LOOK5, and SEARCH allow the user to choose a specific "TARGET."
- LBLENT and LBLPRT create, maintain, and print mailing list labels.
- MAIL allows any terminal user to send a message.
- PAD pads any BASIC–PLUS or DIBOL stream file with trailing spaces after removing nulls and trailing tabs and spaces.
- PRINTM is used for printing files when the user does not want the RSTS/E prompt to appear at the end of printing.
- RANDOM develops a list of random numbers.
- STRIP strips off trailing spaces and tabs from records in a file, thus saving disk space.
- BAKLOG and STAFF.CTL maintain the work backlog by worker and print out the individual backlogs.
- TAPE instructs the computer to back up certain user numbers and files on tape.
- WRITER prints files when the user does not want the RSTS/E prompt to appear at the end of the printing.
- ZEROUT, WIPCMD, and WIPOUT delete selected files.
- CPUMSG is a separate keyboard printer to receive staff and client messages.
- MCRFCH (Microfiche) creates a magtape for microfiche use on certain printers and inserts reader-required tags.
- PHONE keeps a record of phone numbers and overhead account number for analysis or rebilling purposes.
- MIDNIT and Usage Analysis Package provide a nightly takeoff of the RSTS/E "Money" file and create additional reporting on a monthly basis.
- MEMOPAD keeps track of single-line memos of things to do.
A version of this product is available for the PDP–11 computer.

**Price:** $250 – $4,000

**Product Support Available:** Yes

**Contact:** Terry K. Holder or Nathan I. Lieberman
(812) 479–6951

Evansville Data Processing Corp.
1010 S. Weinbach Avenue, P.O. Box 2469
Evansville, IN 47714

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**eh? (Extra Help Facility)**

**Operating System:** UNIX, VMS

**Keywords:** 
- Documentation
- Query facilities

The eh? package allows convenient organization of on-line documentation for UNIX* and RT–11 users. The program displays directories of available documentation and provides means to display or print a multipage on-line document. New documents are incorporated into the eh? directory by editing a text file.
*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** $250

**Product Support Available:** Yes

**Contact:**
- Douglas J. Ross, President
  (613) 548–4355
- ANDYNE COMPUTING LTD.
  P.O. Box 1496
  221 King Street East
  Kingston, Ontario K7L 5C7
  Canada

**Framer**

**Operating System:** VMS

**Keywords:** • Documentation • Presentation aids

Framer allows Clyde Digital Systems’ DOC log file to be played back intelligently, one frame at a time. This results in a simple playback of the run example that looks exactly as it should with frame-by-frame inspection at the trainee’s leisure. Screen-oriented programs present no problem.

A version of this product is available for the PDP–11 computer.

**Price:** $600

**Product Support Available:** Yes

**Contact:** Muriel King
- (801) 224–5306
- CLYDE DIGITAL SYSTEMS, INC.
  3707 N. Canyon Road, Suite 3–E
  Provo, UT 84604

**GRS (Generalized Reporting System)**

**Operating System:** VMS

**Keywords:** • Data base management • Decision support
  • Query facilities • Report writer

GRS is an advanced report writer and query language that enables the user to prepare reports from virtually any data base, utilizing an English-like language. GRS is compatible with the accounting and manufacturing systems from NCA, Transcomm, Interactive Management Systems, Amcor, and Martin Marietta.

Designed for use by nonprogrammers and programmers alike, GRS requires no specialized technical skills. Powerful data retrieval, analysis, and formatting capabilities allow the user to prepare simple reports with as little as one statement and to prepare complex reports involving multiple input files in a matter of minutes.
A version of this product is available for the PDP–11 computer.

Price: $4,800 – $6,500

Product Support Available: Yes

Contact: Kevin J. Merz, Director of Marketing
(212) 972–1860
ENTERPRISE TECHNOLOGY CORP.
305 Madison Avenue
New York, NY 10165

HCR/EDIT

Operating System: ULTRIX, UNITY, UNIX, VMS
Keywords: Programming tools  Text editing/formatting

With the screen editor HCR/EDIT, you use only five standard keys to move around a document, and your fingers do not leave home row. You always see an exact image of your file on the screen. If the system crashes while you are working, the crash recovery mode makes a copy of your working file, and you do not lose any of your work.

HCR/EDIT is a screen editor, but you can also use the standard UNIX* line editor through a window at the bottom of the screen. HCR/EDIT is designed for terminals with cursor addressing and high baud rates that can display all printing ASCII characters and scroll up at the bottom screen line. HCR/EDIT is also available for VAX UNIX* 4.1BSD and can be adapted to other UNIX* configurations for OEMs.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $750 +

Product Support Available: Yes

Contact: Sales Department
(416) 922–1937
HUMAN COMPUTING RESOURCES CORP.
10 St. Mary Street
Toronto, Ontario M4Y 1P9
Canada

INFO™

Operating System: VMS
Keywords: Data base management  Decision support
          Documentation  Text editing/formatting

INFO, developed by Henco, Inc., is a software system for the automation of clerical functions, managerial decisions, and application de-
velopment. With its English-language-like commands, INFO can be used by any level of personnel with a minimum of training.

The system's relational data base management capabilities use logical names and numbers to link files just as they are used in manual systems. INFO's relational structure allows it to readily adapt to changing information requirements. The system uses direct access files and Indexed Sequential Access Method (ISAM) files, not including segmented keys, variable-length records, and individual key lengths greater than 64 bytes. The user has no need to load existing data into an INFO data base. Complex data structures can be accommodated by simultaneously joining up to 10 files, using flat or hierarchical relationships.

DIGITAL distributes this software product under license from Henco, Inc.

Refer to SPD #A0.23.02 when requesting further information on this product from your local DIGITAL sales office.

INFO™ is a trademark of Henco, Inc.

Price: $9,800 – $14,700
Product Support Available: No
Contact: Consult your local DIGITAL sales office
(see Introduction).

OS/ED (Screen Editors)

Operating System: ULTRIX, UNIX
Keywords: • Source code control  • Text editing/formatting

One version of OS/ED is an easy-to-use, easy-to-learn module that permits a programmer to change (edit) sources, documents, data, and program files. The enhanced version is a full word processing–style editor for use in changing sources, documents, data, and program files. That version includes a powerful command set (approximately 70 commands).

OS/ED's primary function is to provide a complete set of text editing capabilities for OS/RT, Destek's real-time, multitasking operating system kernel. OS/ED can be used in any industrial or business application that requires a range of screen/text editing features and can be purchased in either binary or C source code versions.

A version of this product is available for the PDP–11 computer.

Price: $250
Product Support Available: Yes
Contact: Dennis Rieger
(408) 737–7211
THE DESTEK GROUP
830 East Evelyn Avenue
Sunnyvale, CA 94086
REX

Operating System: UNIX, VMS
Keywords: • Documentation • Programming tools • Text editing/formatting

REX, a full-screen text editor for UNIX* users, provides an extensive set of functions for editing text files. Features include macro capabilities, search strings, and character, word, and line commands. REX is comparable in function to such editors as vi (Berkeley) and godot (Queen’s).

The editor is suitable for terminals with direct cursor addressing and some simple facilities such as clear screen, delete line, and so on. REX does not require hardware features such as character or line insert.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $500
Product Support Available: Yes
Contact: Douglas J. Ross, President
(613) 548–4355
ANDYNE COMPUTING LTD.
P.O. Box 1496
221 King Street East
Kingston, Ontario K7L 5C7
Canada

Scribe Document Production System

Operating System: ULTRIX, UNIX, VMS
Keywords: • Office systems • Printing • Text editing/formatting • Word processing

Scribe is an easy-to-use, hardware-independent document production system that meets the needs of both large and small companies. It is user friendly and thus suitable for use by everyone from secretaries to research engineers. Scribe supports a wide range of printing devices and produces beautifully formatted documents, from simple office memoranda to lengthy technical specifications.

Scribe’s principal markets are general commercial, educational, printing, and office automation.

Scribe’s key features are:
• A library of standard document types that can be changed to meet specific needs
• Natural English commands that are easy to understand and easy to use
• Merging figures, charts, and other computer-generated graphics into text
• Mathematical and scientific notations
• Creation of consistent footnotes, tables of contents, citations, and bibliographies
• Numbering of chapters, sections, subsections, figures, footnotes, endnotes, equations, and so on
• Automatic generation of indexes, including multilevel indexes
• Boldface, italics, foreign alphabets, Greek symbols, and a variety of fonts and font sizes to the limits of your printer
• A variety of hyphenation methods
• Full support for color, including color slide production
• Usable on laser printers, photocomposers, high-resolution dot-matrix printers, and letter-quality typewriters

A version of this product is available for the PDP–11 computer.

Price: $3,200 – $49,500
Product Support Available: Yes
Contact: Wayne N. McDaniel
        (412) 621-2277
        UNILOGIC, LTD.
        160 N. Craig Street
        Pittsburgh, PA 15213

SMART Expert Editor

Operating System: ULTRIX, UNIX
Keywords: • Documentation • Quality control
• Text editing/formatting • Word processing

The SMART Expert Editor helps technical writers to write manuals that are clear, concise, and easy to understand. The program uses the SMART Plain English Program (PEP), developed by the Caterpillar Tractor Co., for international product support.

Under UNIX*, manuals are sent to the SMART Expert Editor, which will evaluate them for more than 50 types of errors in grammar, syntax, style, vocabulary, readability, translatability, and legal sufficiency for product liability.

A report is produced that shows the errors found, type, and correction with reference to a writer's handbook.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $4,500 – $7,500
Product Support Available: Yes
Contact: J. Smart
        (212) 486-1894
        SMART COMMUNICATIONS, INC.
        655 Third Avenue
        Box 963, FDR Station
        New York, NY 10150
SMART Translator — English–Deutsch (German)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Documentation • Text editing/formatting • Translators

This program helps technical translators to translate complex technical instructions into German from American/British English. The program is useful for multilingual translation of technical documentation, as it understands how to form compound nouns for CAD/CAM, robotics, and engineering terminology.

Written in C, the program reads a UNIX* or word processor file and automatically translates the contents into German, sentence by sentence. Some postediting (10%) is necessary to add Germanic style.

The program can handle simple and complex sentences; full German verb conjugation, including gerunds and negation; proper nouns, trade names, and German capitalization; and phrasal verbs and prepositions. The program provides automatic agreement of nouns, verbs, and adjectives by case; automatic, complete word reordering, based on German syntax and grammar; placement of German prepositions; compounding of complex German nomenclature; and metric calculation. The program also resolves homonyms and synonyms.

This 1-pass translation system can be run in the background (batch), producing fast, accurate, consistent translation of highly complex material. The program can produce 100 pages a day, versus 3 pages by hand. Thus, human translator productivity is improved dramatically. The program produces automatic output, with umlauts, to lasers and phototypesetters.

This translator program is also available on a monthly basis — $3,500 a month for 36 months.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $85,000
Product Support Available: Yes
Contact: J. Smart
(212) 486–1894
SMART COMMUNICATIONS, INC.
655 Third Avenue
Box 963, FDR Station
New York, NY 10150

SMART Translator — English–français (French)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Documentation • Text editing/formatting • Translators
This program helps technical translators to translate complex technical instructions and messages into Standard Technical French (Canada, France) from American/British English. The program is useful for multilingual translation of technical documentation, as it understands complex technical jargon for CAD/CAM, robotics, and technical manufacturing.

Written in C, the program reads a UNIX* or word processor file and automatically translates the contents into French, sentence by sentence. Some postediting (5% average) is necessary to add elegance and flair.

The program can handle simple and complex sentences; full French verb conjugation, including subjunctive and negation; proper names and trade names; and phrasal verbs and auxiliaries. The program provides adjective number and gender agreement; past and present participles; automatic word reordering, based on French syntax and grammar; French syntax; and some styling and vowel editing. The program also resolves homonyms and synonyms. An option for metric calculation is available.

This 1-pass translation system permits multiple user access and can be run in the background, producing fast, accurate, concise translations of technical material. The customized data base permits very accurate, consistent translations of special terminology. A multilingual Telex language is built in.

The program can produce 100 pages a day, versus 3 pages by hand. The program produces output, with accents, to lasers and phototypesetters.

This translator program is also available on a monthly basis — $3,500 a month for 36 months.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

Price: $85,000
Product Support Available: Yes
Contact: J. Smart
(212) 486–1894
SMART COMMUNICATIONS, INC.
655 Third Avenue
Box 963, FDR Station
New York, NY 10150

SMART Translator — English–Español (Spanish)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Documentation • Text editing/formatting
          • Translators
This program helps technical translators to translate complex technical instructions into Spanish (Spain, Latin America) from American/British English. Different versions are available for each Latin American country and Castillian standard. Ideal for the transfer of technology, the program is useful for multilingual translation of technical documentation, as it understands complex technical jargon for CAD/CAM, robotics, and manufacturing.

Written in C, the program reads a UNIX* or word processor file and automatically translates the contents into Spanish, sentence by sentence. Some postediting (5%) is necessary to add elegance and flair.

The program can handle simple and complex sentences; full Spanish verb conjugation, including the verb "to be" and negation; proper nouns and trademarks; and phrasal verbs and sentence fragments. The program provides automatic number/vendor agreement on adjectives; past and present participles; automatic word reordering, based on Spanish syntax and grammar; some styling and vowel editing; and metric calculation. The program also resolves homonyms and synonyms.

This 1-pass translation can be run unattended in the background (batch). The customized data base permits very fast, accurate, consistent translations.

The program can produce 100 pages a day, versus 3 pages by hand. The program produces output, with accents, to lasers and phototypesetters.

This translator program is also available on a monthly basis — $3,500 a month for 36 months.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP-11 computer.

Price: $85,000
Product Support Available: Yes
Contact: J. Smart
(212) 486–1894
SMART COMMUNICATIONS, INC.
655 Third Avenue
Box 963, FDR Station
New York, NY 10150

Superscript

Operating System: VMS
Keywords: • Graphics • Office systems
          • Text editing/formatting • Word processing

Superscript is a native-mode shared-resource word/text processing system that allows any user with a VT100 terminal (advanced video
not required) to produce high-quality technical documents. The system produces complex mathematical expressions, Greek and other special symbols, as well as graphics, mixed with the text. The graphics may be generated by a graphics package or entered from a bit pad.

Any editor, including EDT, may be used for manipulating the text. All commands are ASCII strings (no "invisible" codes) and may be manipulated with other text or generated by another program, making list processing easy and flexible.

All standard text processing features are supported, plus multicolumn text, automatic change of print style anywhere in the text (without touching the printer), and many more typesetting features.

The equation printing system makes it easy to type Greek and mathematical symbols right in with the text and to format complex functions. The size of parentheses, integral signs, and so on, is automatically adjusted for the size of the expression involved.

Enhancements to Superscript will drive laser printers and photocomposition machines.

Price: $4,000 – $20,000
Product Support Available: Yes
Contact: Mike Storie
(206) 827-0460
MATHEMATICAL SCIENCES NORTHWEST, INC.
2755 Northrup Way
Bellevue, WA 98004

TED (The NDSU Terminal Editor)

Operating System: ULTRIX, UNIX
Keywords: ● Communications ● File management
● File transfer ● Text editing/formatting

The TED editor is a 2-dimensional screen-oriented editor for UNIX* systems using ANSI 3.64 (VT100) terminals. Full cursor positioning, cut-and-paste operations, and multiple file editing are supported. Operation is similar to the Rand NED editor. Communication between the host and the user terminal is optimized, resulting in about one-third the communication overhead of NED. Files are edited in memory, thus eliminating the disk overhead of NED; however, file size is also limited to about 40K bytes. Source code written in C is included in the distribution. Several small utilities are also included. This editor can be ported to systems other than UNIX*, with little modification. Distribution is on 9-track tar format tape 800 bpi or 1,600 bpi.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.
VAX/VMS CLE (Command Line Editor)

Operating System: VMS
Keywords: • Data entry • Language enhancers
• Text editing/formatting • Word processing

CLE's design function is to save keystrokes. Features include the ability to recall and edit command lines, to define 1-button commands, and to keep a log of issued commands. Editing features are compatible with DIGITAL's EDT screen editor for VT100 and VT52 terminals. A printing terminal version is also provided. CLE comes with a user's guide plus on-line help for its keypad layout and each keystroke function. Installation is performed with a standard VAX VMSUPDATE procedure.

CLE eliminates the need to retype an entire line every time a small mistake is made. The command line may at any time be edited with CLE's keypad screen editor. Previously issued commands may be recalled with one keystroke, edited if desired, and reissued by pressing the RETURN key. Frequently used commands may be issued with a single keystroke by using CLE's define-key capability, also used to rearrange the CLE editing keypad.

Price: $1,050
Product Support Available: No
Contact: Eve M. Goldfarb
(617) 876–7993
RUBEL SOFTWARE
215 First Street
Cambridge, MA 02142

VFM (Viking Forms Manager)

Operating System: UNIX, VMS
Keywords: • Data collection • Data entry • Development tools
• Forms management

VFM interactively creates, operates, and maintains the data entry part of programs and maximizes programmer and computer efficiency. VFM consists of four parts:
• The VFM Forms Development Facility creates and modifies screen formats separately from the program logic. The forms are compiled into object modules that are linked with the application program. Appropriate documentation is automatically generated.

• The VFM Execution Time Subroutines Library lets the programmer address the data on a terminal screen as a single logical record. The terminal operator is supported with a wide range of special function keys and immediate data validity checks.

• The VFM Execiser lets the user test the human engineering and validation features to ensure that the forms are logically correct, efficient, and aesthetically pleasing.

• The VDE Data Entry System is a complete program to perform generalized data entry functions from a CRT terminal. VDE brings all the functionality of a stand-alone key-disk machine to the user's computer. In most cases, no programming is required. The screen forms and menus are defined and modified interactively along with the record description of the output file.

A variety of user-written exit routines may be incorporated to enable VDE to perform extremely complex functions, such as data base maintenance, on-line order entry, or inventory systems.

VDE can create new files, update existing files, and key verify existing files. VDE has an examine mode for inquiry-only applications. VDE has a flexible search mechanism to locate any record in the file.

The advanced human engineering features of VDE significantly increase operator productivity. A variety of terminal types are supported.

A version of this product is available for the PDP–11 computer.

**Price:** $750 – $10,500

**Product Support Available:** Yes

**Contact:** John R. Haley, President
(918) 745–6550

VIKING SOFTWARE SERVICES, INC.
2815 E. Skelly Drive, Suite 816
Tulsa, OK 74105

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**VOILA!**

**Operating System:** VMS

**Keywords:** • Programming tools  • Report writer
• Source code control  • Text editing/formatting

VOILA! is a multifile free-format report-generating system that can be used by both programmers and nonprogrammers to quickly and easily create ready-to-use business-oriented report programs and the source code for those programs in a variety of DIGITAL-based operating systems and language compilers.
VOILA! enables its users to visualize and manipulate the format of text and data that will appear on the final generated report while the report is being created and prior to program generation.

Text and data manipulation is accomplished by use of special function keys, which can put the user into any one of nine modes. Whenever the VOILA! user enters a specific mode, all the text or data created and/or repositioned on the CRT screen relates to that mode.

VOILA! can readily be superimposed over any existing data file structure.

A version of this product is available for the PDP–11 computer.

Price: $1,250 – $2,500

Product Support Available: Yes

Contact: David Supinski, Sales Representative
(412) 262–5507
INFORMATION AND SYSTEMS RESEARCH, INC.
410 Rouser Road, Building #1
Airport Office Park
Coraopolis, PA 15108

VSH

Operating System: VMS

Keywords: • Documentation • Programming tools • Security
• Text editing/formatting

VSH, a command line editor and shell, provides command editing, using EDT keypad commands, and command recall, as well as the UNIX* shell facilities for concatenation of commands delimited by \, I/O redirection with < and >, and pipelining of commands delimited by |.

VSH accepts commands in an EDT keypad editing mode and retains those commands on a dynamic stack for later recall and editing. Command editing implements that portion of the EDT VT100 keypad mode appropriate to a single line: command stack searching (Search For/Find Next); character-, word-, and line-delete buffers; cursor movement by character, word, or line; and full EDT-style on-line help at any time during command editing. EDT commands that effect interline movement (arrow keys, backspace, new line) cause movement through and recall from the command stack.

The command stack may be displayed at any time, and a previous command line may be retrieved directly by number. The command stack may be cleared (for example, for security) at any time. The size of the command stack defaults initially to 16 commands but may be decreased for fewer or increased to a limit of 36 commands at any time. In the same manner that comments are placed in command files, commands prefixed with an exclamation point (!) may be placed
onto the stack, without execution, for later recall and editing. Similarly, commands prefixed with a dollar sign ($) are passed directly to DCL, bypassing all processing by VSH.

A version of this product runs on the PDP–11 computer.

**Price:** $70 – $250  
**Product Support Available:** Yes  
**Contact:**  
Dan Dill  
(617) 353–4277  
BOSTON UNIVERSITY  
Chemistry Department  
675 Commonwealth Avenue  
Boston, MA 02215

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**WCC CAT (Computer-Assisted Translation and Multilanguage WP System)**

**Operating System:** VMS  
**Keywords:**  
• Documentation  
• Text editing/formatting  
• Translators  
• Word processing  

This system is designed for the foreign language translation of documents. Software is available to translate English to Spanish, German, French, Portuguese, and Arabic. Software is also available in the following language directions: Spanish to English, German to English, and French to English. Soon to be available will be software accommodating both directions of Japanese and English. Printed output is in draft or high-quality print form. The system can accept manually keyboarded text, computer input, or OCR input. Final, edited output may be printed, stored on disk or tape, or routed to other computer processing systems. Translation output has been tested at more than five times the rate of manual methods.

A version of this product is available for the PDP–11 computer.

**Price:** Available upon request  
**Product Support Available:** Yes  
**Contact:**  
Robert Adams  
(312) 564–8122  
WEIDNER COMMUNICATIONS CORP.  
500 Skokie Boulevard, Suite 270  
Northbrook, IL 60062

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**WORD–11® Encryption Option**

**Operating System:** VMS  
**Keywords:**  
• Data conversion  
• Documentation  
• Security  
• Word processing
The DMG Encryption Option protects WORD-11 documents by storing them in encrypted form. Each document can be coded and decoded, using an operator-selected key. For RSTS/E, link to the Encryption Option is via the main WORD-11 menu. For VMS, encryption is performed externally to WORD-11. Two master keys are provided so that responsible management personnel can decode all documents. The master keys must be used together, and either one can be changed by its authorized holder.

WORD-11 is a proprietary product owned by Data Processing Design, Inc., 1400 North Brasher Street, Anaheim, CA 92807. Digital Management Group Ltd. supply and support WORD-11 in Canada. WORD-11® is a registered trademark of Data Processing Design, Inc.

A version of this product is available for the PDP-11 computer.

Price: $1,200
Product Support Available: Yes
Contact: Ken Allsopp
(416) 225-7788
DIGITAL MANAGEMENT GROUP LTD.
4800 Yonge Street
Willowdale, Ontario M2N 6G5
Canada

XDA (Document Assembly Package)

Operating System: ULTRIX, UNIX, VMS
Keywords: • Data entry • Documentation • Office systems
          • Text editing/formatting

The XDA template assembler is a sophisticated document assembler that operates from the XED menu processor and that accesses the entire range of XED office system programs.

XDA allows the operator to create a template that specifies mnemonic references to portions of other files; left- and right-margin information, with optional right-margin justification, may be specified for each mnemonic entry. XDA assembles documents from files specified in the template, merges up to 500 floating data fields, and reformats the document while implementing automatic pagination, widow/orphan elimination, automatic page and paragraph numbering, autohyphenation, and footnote control.

The completed document may be printed on either draft- or letter-quality printers by direct selection from the print menu of the XED menu processor.
XED office system programs are designed and coded for UNIX* Version 7, System III, System V, and Berkeley 4.1 and 4.2 and contain a terminal description file and a printer definition and proportional spacing increment table (both user definable) to provide maximum installation flexibility and efficiency in a multiuser environment. XED is loaded in the UNIX* multitasking operating system as a shared text file.

*UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for the PDP–11 computer.

**Price:** $2,000 – $15,000

**Product Support Available:** Yes

**Contact:** Ted Ferguson
(818) 884–2000
COMPUTER METHODS, LTD.
P.O. Box 709
Chatsworth, CA 91311

**XTE Programmer’s Editor**

**Operating System:** ULTRIX, UNIX, VMS

**Keywords:** • Documentation • Programming tools
• Text editing/formatting • Word processing

This sophisticated general-purpose full-screen ASCII text editor uses the same command structure as the XED word processor. The program is available in two versions: XTE, which operates under the XED menu processor and shares several modules with it, and TE, which is a stand-alone version.

The XTE Programmer’s Editor (in either version) allows direct text insertion, block moves and copies, direct insertion of external files, and block write capabilities to external files, as well as full document display utilizing forward and reverse vertical screen scrolling and horizontal scrolling out to 340 columns. Search and replace capabilities add to the editor’s flexibility for programmers. The commands and functions are the same as those used in the XED word processing system.

XED office system programs are designed and coded for UNIX* Version 7, System III, System V, and Berkeley 4.1 and 4.2. The programs contain a terminal description file and a printer definition and proportional spacing increment table (both user definable) to provide maximum installation flexibility and efficiency in a multiuser environment. XED is loaded in the UNIX* multitasking operating system as a shared text file.

*UNIX is a trademark of AT&T Bell Laboratories.
A version of this product is available for the PDP-11 computer.

**Price:** Available upon request

**Product Support Available:** Yes

**Contact:** Ted Ferguson

(818) 884-2000

COMPUTER METHODS, LTD.
P.O. Box 709
Chatsworth, CA 91311
Part III
Cross-Reference Guides
# Keyword Cross-Reference Guide

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<th>Hardware</th>
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(a) Circle the following list of keywords/industries:

- None - Independent
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- RT-11 - Ultrasparc - None - Independent
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