Large Computer Group

# BUY-LINE

May 1983

Special In This Issue

Announcing PASCAL-20

Special Q4 Booking Opportunity: -2020 Repricing

Win A Rainbow: Contest for LCG Customers

SMP Controlled Release Plan Now In Effect



digital

# BUY-LINE MAY 1983
# TABLE OF CONTENTS

## LCG ORGANIZATION



## PRODUCT INFORMATION



## GENERAL INTEREST



## SALES AND APPLICATION NOTES



## COURSES, SEMINARS, SYMPOSIA



## LITERATURE AND SALES AIDS



*Errata*

With regard to the April 1983 BUY-LINE article entitled "Improving DECsystem-10 and -20 Performance", please note the following: pp 3-4: Figures 1 and 2 should be reversed; and p 7: the special price on RP07s was meant to lapse end Q3, and not Q4 as stated.

**BUY-LINE** is published monthly by the Large Computer Group, Marlboro.

**Editor:** Barbara Holtz, MRO2-2/8D2, Ext. 4996
**Publishing Council:** Don Mallinson, Jim Miller, Don Waite.

**BUY-LINE** is compiled on the DIGITAL WT200 Word Processing System by Gail Breslin.

**Typeset** by Corporate Communications, Concord, MA.

**PRINTER** is Commonwealth Publishing Co. of Boston, Mass.

**LAYOUT and CIRCULATION SERVICES** are performed in Northboro, coordinated by Jack Decesare.

Upon request (see mailer card in this issue), the following will be added to the **BUY-LINE** mailing list:

Field Service Managers
Sales Managers
Marketing Managers
Sales Representatives
Operations Committee Members
Service Group Managers
Software Support Managers
Product Managers
Software Specialists

# NEW LCG ORGANIZATIONAL STRUCTURE

Rose Ann Giordano

The following LCG structure is organized to add value to our base products, provide application solutions for our targeted industrial segments, propose field support programs and services, and formulate strategic market and product plans to insure that our DECsystem-10/-20 customers and prospects can grow with DIGITAL.

**STRATEGIC MARKETING:**

Per Hjerppe.
Per and his group will be responsible for product strategy; the formulation of strategic plans to insure integration of short term activities for the achievement of long term objectives; external acquisition of product, and long range planning and forecasting. He will also be responsible for the Marketing Communications function.

**APPLICATION/INDUSTRY MARKETING:**

Rich Whitman. Rich and his group will be responsible for developing and implementing marketing programs and application solutions for our targeted user segments. This includes continuation and increased emphasis on our joint marketing and third party relationship. The customer visits program, add-on and refurb business management is also included. Until the end of FY83, the primary responsibility of this group is the FY'83 bookings and revenue plan.

**INTERNATIONAL MARKETING:**

Jim Miller. Jim and his group will be responsible for communicating the LCG strategy to the five geographic management areas: GIA, Europe, and the three U.S. management centers. It will be their responsibility to smoothly manage us through the transition to the new DIGITAL.

**PRODUCT MARKETING and PRODUCT SUPPORT:**

Open (Rose Ann acting).
The current base product marketing and technical services functions will constitute this group. The base product marketing group, headed by Ray Ochester, will continue its current activities of interfacing with engineering, competitive analysis, product marketing, DECUS, etc., plus pricing responsibilities.

The technical service function will continue to provide technical expertise to all segments of the organization including support to the field, training, product positioning, etc. In addition, they will continue to manage the Marketing Data Center.

**FINANCE and ADMINISTRATION:**

Open (Larry Ricci acting). The finance function will continue to be responsible for financial planning and analysis; business models; analysis; decision support; and the MIS function. This also includes management of the sales service and credit and collection transition.

**PERSONNEL:**

Annette Albright. Annette will continue to serve in the capacity of Personnel Manager for the LCG group.

**BUSINESS MANAGEMENT:**

A new business management function will be created to help us define and implement a total high-end business strategy.

These seven functions report to me, effective at the beginning of Q4.

We are committed to providing you with a strategy and with programs aimed at responsiveness to our LCG customer base.

# ANNOUNCING PASCAL VERSION 1 FOR TOPS-20


Large Systems Engineering announces PASCAL-20 Version 1. This product is an extended implementation of the PASCAL language that provides a modular systematic approach to computerized problem solving. PASCAL-20 is a reentrant, fully native mode compiler for the DECSYSTEM-20, particularly designed for instructional use. This general purpose programming language also readily adapts to system and research applications.

PASCAL-20 is an extended implementation of the PASCAL language as defined in the "PASCAL User Manual and Report", K. Jensen and N. Wirth (2nd edition, Springer-Verlag, New York 1974). Version 1 meets the third draft of the proposed ISO/DP standard (DP7815, dated 1981-11-04) and is a compatible subset of VAX-11 PASCAL Version 2.

In addition, PASCAL-20 provides many user debugging aids, including an interactive, runtime debugger that permits source code debugging (PASDDT), optional bounds checking for indices, arrays and sets, and user selection of warning and non-standard messages at compile-time.

**Features**

- Standard PASCAL language features, including REPEAT and WHILE loops, IF-THEN-ELSE, BEGIN-END, and GOTO statements. Thus PASCAL-20 is easy to learn and is comparable to other ISO standard complying processors
- Extensions to standard PASCAL, such as additional predefined types, functions, and procedures. These allow more flexibility in program design
- Separate module compilation which provides for creation of user libraries and fast program development
- PASCAL-20 Symbolic Debugger for faster and easier program development
- A variety of compile-time options, including DEBUG and CROSS
- A logical name mechanism to make PASCAL files device independent
- PASCAL-specific Run-Time Library routines for commonly used routines, including common FORTRAN and PASCAL math routines
- INCLUDE statements allow source code to be taken from alternate files

**Description**

The PASCAL-20 compiler is a one-pass compiler that executes in native mode. it produces object files which are input to link and optionally produces listing files. the listing files contain source code listings, information about compilation errors, and optional items, such as cross reference and machine code listings.

A program written in the PASCAL-20 language is organized into blocks of code called procedures. Procedures may be internally nested or externally invoked.

Procedures may be recursive; that is, they may call themselves. Block structuring provides for programs that are easier to understand and less error prone.

The PASCAL language's block structure and data structure facilities encourage modular programming. In modular programming, the solution to a problem is divided into individual parts that can be developed relatively independently. The block structure promotes the translation of these program parts in to subprograms.

**Standard PASCAL**
PASCAL-20 language contains standard PASCAL features. Major features of the language include:

- INTEGER, REAL, CHAR, BOOLEAN, user-defined, and subrange scalar data types
- ARRAY, RECORD, SET, and FILE structured data types
- Constant identifier definition, which yields more readable code
- FOR, REPEAT, and WHILE loop control statements
- CASE and IF-THEN-ELSE conditional statements
- BEGIN...END compound statement
- GOTO statement
- GET, PUT, READ, WRITE, READLN, and WRITELN I/O procedures
- Standard set of functions and procedures commonly used in industrial and educational environments
- Dynamic sizing of formal array parameters

**Extensions**
PASCAL-20 Version 1 has many useful extensions, some of which are common in other PASCAL implementations. For a list of major extentions, refer to the May 23 "Sales Update" article.

**Separate Module Compilation**
The PASCAL-20 language permits the separate compilation of procedures and functions. Such compilation units are termed modules, and several routines may be part of a single module. A module is similar to a main program, except that it has no value initialization section and no executable section.

**Compiler Options**
The PASCAL-20 language provides a variety of compile-time options at run time.

**File Organization**
The PASCAL-20 language supports the RMS sequential file organization containing fixed or variable length records.

**PASCAL-Specific Run-Time Library**
Routines in the pascal-specific run-time library primarily provide I/O interfaces to the record management services (RMS), memory management, exception handling, error reporting, common FORTRAN and PASCAL math routines, etc.

**Additional Information**
Documentation provided for PASCAL-20 is the TOPS-20 PASCAL Primer and the TOPS-20 PASCAL Language Manual. Also available are the TOPS-20 PASCAL Reference Card and the TOPS-20 PASCAL Installation Guide.

---

# SCOPE:

## FORMS MANAGEMENT SYSTEM FOR DECsystem -10s AND -20s

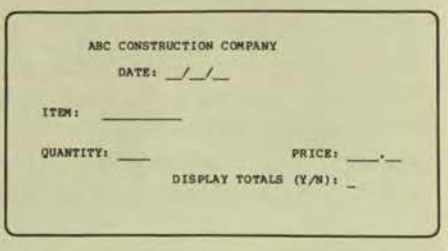
DIGITAL has announced the availability of SCOPE thru the DIGITAL External Applications Software Library. Developed by Interactive Systems Inc of Burlington, Mass., SCOPE is a forms management system that executes under TOPS-10 and TOPS-20 operating systems.

An interactive programming aid, SCOPE provides all the tools necessary to easily create terminal screen formats and to quickly put them into use with new or existing application programs.

SCOPE controls the process by which data is entered at the terminal. Data entry error checking is performed by SCOPE based on individual screen item definitions and their SCOPE assigned attributes.

Data validation, data duplication, and bounds checking facilities along with an automatic 'help' option facilitate the data entry efforts.

SCOPE includes an interactive editor which allows the applications programmer to easily define, generate, and change screen formats. Working within the SCOPE editor, a particular format may be created by simply "painting" it onto the video terminal. SCOPE supports a wide selection of video terminals and offers COBOL and FORTRAN program interfaces. The totally interactive screen format definition process is also supported on hard copy terminals producing screen format documentation automatically.



# CHASE A RAINBOW... CATCH A COMPUTER

**Integration of PCs and Mainframes**

Many DECsystem-10/-20 users are in the process of integrating PCs and microcomputers into their operations. As users progress through the phases of integration, they may recognize a new set of opportunities and needs resulting from the synergy of coupling the PC to the DECsystem-10/-20. Many PC users have already expanded into the next phase of applications and are recognizing the added functionality they can achieve through the use of the DECsystem-10/-20 mainframes.

Along with the many benefits of PC to mainframe synergy, associated limitations also exist. A major limitation is the need for PC to mainframe software packages.

With this in mind, LCG polled DECsystem-10/-20 users and found that several customers have implemented solutions—from PCs emulating terminals on the DECsystem-10/-20, to file transfers, to program interaction.

## Special Contest for LCG Customers

Based on the innovative feedback LCG has obtained from that random poll, LCG has decided to hold a drawing for customers. The prize? A DIGITAL Rainbow personal computer. The date of the drawing: June 30, 1983. *DIGITAL employees are not eligible.*

The questionnaire—or Feedback Form— will be the entry blank for the drawing. Unlike magazine sweepstakes in which changes may be one in 20 million, your customers' chance to win this drawing is one in a few thousand. All forms need to be received in Marlboro no later than June 30, 1983. The winner will be notified by phone and will be announced in the June/July issue of the LCG customer newsletter "Large Systems News".

The following configuration will be the prize:

| ITEM # | DESCRIPTION | MLP |
|---|---|---|
| PC100A | RAINBOW CPU | $2675 |
| PK1K1-AA | COUNTRY KIT | 245 |
| VR201-A | VIDEO TERMINAL | 325 |
| PC1XX-AB | 192KB MEMORY | 1095 |
| QV0120AB | CP/M SOFTWARE | 250 |
| | TOTAL MLP | 4590 |

The April/May issue of "Large Systems News" contains a copy of the PC to DECsystem-10/20 Feedback Form. If you wish to have a copy of the newsletter, or the form, please phone BUY-LINE editor, Barbara Holtz, at DTN 231-4996, or "Large Systems News" editor, Don Waite, at DTN 231-5256.

Good Luck!

# DECSYSTEM-2020 Q4 BOOKING OPPORTUNITY

Here is a great Q4 booking opportunity for you.

In order to provide you with additional flexibility in configuring low-end -2020 systems, LCG is reducing price on DECSYSTEM-2020s using RP06s.

**Seize the Opportunity!**
These reduced prices will enable you to custom configure a -2020 system to meet your prospects' needs, while offering them a substantial discount.

LCG is offering a 32% product group allowance on the following -2020 packaged systems:

- 2020-SE (KS10, 256K Memory, RP06, LA120, 16 lines, TOPS-20)
- 2020-SG (KS10, 256K Memory, RP06, LA120, 16 lines, TOPS-10)

MLP is currently $144,800. With the 32% product group allowance, the sale price is $98,464!!!

**Sale conditions are:**

- The order must book and ship in Q4 FY83
- No trade-ins
- Any additional equipment order with these packages will be @ MLP (less any appropriate QDA)
- The 32% is a P/G allowance, and is applied after any existing QDAs.

**Sow Those Seeds!**
Because the DECSYSTEM-2020 is totally upward compatible with the rest of the DECSYSTEM family, offering your prospects an almost unlimited growth path, the -2020 is an ideal "starter system" for the timesharing market place. Moreover, it meets the needs of those applications that must be off-loaded from larger mainframes.

These new pricing opportunities will help you increase the LCG installed base, close critical accounts, and will help guarantee consistent growth in LCG business.

If you have any questions, please call your marketing specialists.

In the meantime, GREAT SELLING!

# REPRICED DECSYSTEM-2040 COST OF OWNERSHIP

The recent 23% reduction in purchase price for DECSYSTEM-2040 packaged systems aggressively positions this excellent time-sharing system against IBM.

To illustrate, we have prepared a cost of ownership comparison of the DECSYSTEM-2040 vis-a-vis the IBM 4341-10 in a 40-to-48 user configuration.

The systems were configured with 48 communications lines and should support up to 40 time-sharing users. More specifically:

**DECSYSTEM-2040:**
- 1 MW memory
- 1 RP06
- 2 RP07
- 1 TU77
- 1 LP27
- TOPS-20 operating system

**IBM 4341-10:**
- 4 MB memory
- 4 3370 Disk (571 MB)
- 1 3420 tape drive
- 1 600 LPM Printer
- 32 local comm lines
- 16 remote comm lines and associated controllers
- VM/CMS operating system and required options.

The results, summarized below, show us in an excellent winning position:

| | -2040 | 4341-10 |
|---|---|---|
| Purchase Price | $ 479,355 | $ 573,890 |
| H/W monthly | $ 3,652 | $ 2,644 |
| S/W monthly | $ 925 | $ 2,862 |
| Total 5 year cost | $ 740,244 | $ 888,326 |
| 5 year cost of ownership | $ 367,378 | $ 442,814 |

Result: **THE DECSYSTEM-2040 IS 20 % LESS**

Additional information available on request.

# LCG ACCESS TO CP/M PUBLIC SOFTWARE LIBRARY

*Note:* This article was excerpted from the *CP/M Library Bulletin.* Copies of the complete bulletin may be obtained from LCG Applications Marketing.

DIGITAL Equipment Corporation's Large Computer Group originally started the CP/M Library as a service to DIGITAL Equipment employees who had VT180 microcomputers at home and who needed a convenient central distribution point for the large quantity of public CP/M software available. In addition, the non-standardized floppy storage format can make software exchange between different CP/M systems problematical. LCG, in conjunction with the Rainbow Business Group, has the inhouse hardware/software to read a broad base of CP/M floppy formats (8½ and 5¼ inch floppies).

For its customers owning CP/M systems, LCG is now offering access to its Library of Public CP/M software. The CP/M library resides on MARKET, the LCG DECSYSTEM-20 timesharing system; software kept in the library can be transferred to a micro computer, using KERMIT-80, the CP/M Version of KERMIT, a file transfer program developed by Columbia University.

KERMIT can transfer files between the DECSYSTEM-20 mainframe and any of the following CP/M systems:

DEC-VT180 (Robin)
DEC-PC100 (Rainbow)
IBM-PC running PC DOS
APPLE II with the CP/M softcard and D.C. Hayes Micromodem
APPLE II (native) - in development
HEATH/Zenith-89
Ohio Scientific
Intertec Superbrain
Vector Graphics

KERMIT Host versions are available for the following systems:

KERMIT-20 (for TOPS-20)
KERMIT-10 (for TOPS-10)

Sources for a UNIX-VAX C-version are available.

## Using The Public CP/M Library

After dialing up the LCG MARKET system, typing a couple of CONTROL-Cs (^C) will show the following banner on your screen:

Market - LCG's Timesharing System, TOPS-20 Monitor 5.3 (xxxx)
@

Whenever you see a "@", it means that the TOPS-20 operating system is waiting for you to type in a command.

To Log into the DECSYSTEM-20:

At the "@", log in typing:

@LOG LCG.KERMIT KERMIT

To make it easy for TOPS-10 users, file-names are limited to 6 characters and extensions to 3 characters in length.

If you do not yet have a copy of the KERMIT file transfer program, and need instructions on how to get KERMIT onto your VT180 type:

TYPE C:INSTAL.TXT

To get a brief explanation on how to use KERMIT, type:

TYPE C:KERMIT.HLP

For additional details, you can use KERMIT to transfer this very long file to your VT180 for perusing:

TYPE C:KUSER.DOC

...or if You want to know all about the KERMIT-Protocol, type:

TYPE C:KPROTO.DOC

Using KERMIT to Transfer a File from the DECSYSTEM-20 to Your Micro:

*NOTE:* This account CANNOT be used for File-transfers via DECnet or other existing NETs. However, if you came over via a NET, KERMIT will run for you over the NET-connection.

When you transfer files out of the library area to your micro, KERMIT-20 automatically defaults to the correct byte-size.

These examples assume that you have dialed up the LCG MARKET system. In these examples, commands that you (the user) type are in all capital letters, while echoes from the computer are in normal upper and lower case. Explanatory comments are preceded by a semi-colon (;).

```
KERMIT-80>CONNECT                ;connects you to the host DECSYSTEM-20
@LOGIN LCG.KERMIT KERMIT         ;log into CP/M library area
@KERMIT                          ;run host side of KERMIT
Kermit-20>SERVER                 ;go into SERVER-state, where you will see
                                 ;the following message:
[Kermit Server running on DECSYSTEM-20 host. Please type your escape sequence to return to your local machine. Shut down the server by typing the Kermit BYE command on your local machine.]
                                 ;Type Control-Backslash C (letter) to get
                                 ;back to the VT180

Kermit-80>RECEIVE C:SD.COM       ;to receive file on the VT180
                                 ;Wait until you see the prompt again
Kermit-80>LOGOUT                 ;Finish session on DECSYSTEM-20
```

# SMP CONTROLLED RELEASE PLAN NOW IN EFFECT

In the Fall of 1982 it was decided, after much deliberation, that those hardware and software upgrades which create TOPS-10 SMP should be made Controlled Release products.

This article explains what a Controlled Release means, and how it affects those persons who need to deal with these products.

The first impression is that the products involved are deficient, and should not be stressed in the marketplace. Nothing could be farther from the truth; SMP has been and still is DIGITAL's largest offering into the mainframe and high-availability market. What it DOES mean is that the nature of such customers makes it very important that we understand the support needs **before** the systems are sold and installed.

Placing any product on Controlled Release simply means that a Plan will exist, outlining those concerns which caused the product to become Controlled, and the exit criteria to be met in order for shipment to take place.

**Controlled Release Task Force**

In the case of TOPS-10/SMP, a Task Force was created to study the situation; to create the Controlled Release Plan (which is mailed to LCG-interested readers along with this month's BUY-LINE); and to make general recommendations on other actions needed to minimize risk of problems with these systems.

This task force consisted of: representatives from the LCG Product Group; Hardware & Software Engineering; Hardware & Software CSSE; and area Field Service support.

The concerns which brought about the Task Force stemmed from a small number of isolated problem situations. The Task Force devoted a large amount of time analyzing these problems. The findings included the fact that SMP is an extremely reliable product; however, training and documentation in the field is insufficient, thereby minimizing the proper support. The Controlled Release Plan addresses these concerns.

The intent of the Task Force, of the LCG Product Group, and of CSSE is that the Release Plan's requirements should be flexible within reasonable bounds, yet ensure low-risk situations.

**Meeting Exit Criteria**

When concerns exist over the Plan's stated requirements (missing training courses for instance), discussions should include the Marketing Specialist in the LCG Product Group responsible for the account. This is the person ultimately responsible for arranging for the approval of alternate methods of meeting the Exit Criteria.

For example, if the Software Specialist providing the Installation and Warranty has not attended the Networks Course, but the course is scheduled sometime before the installation is to occur, there is no reason that the Release Plan cannot be signed off locally, with the notation that such training will occur by a specified date.

The Task Force has also created the SMP SUPPORT NOTEBOOK (a compendium of information previously not available in one place). I have copies of the SMP SUPPORT NOTEBOOK for those persons interested; copies are automatically shipped when LCG becomes aware of an SMP sales effort. Much of this information will also become a part of the KL10 Maintenance Guide used by Field Service. Additional copies are available from LCG.

The responsibility at the local office level for coordinating the Controlled Release Plan (and the Local Office Signoff Sheet) lies with the Sales Account Representative.

The responsible individual at the corporate level for coordinating the overall Controlled Release Plan effort is the Marketing Specialist responsible for the account. This is the person who will collect the required signatures on the Corporate Level Signoff Sheet, as well as assist with any anomalies.

With respect to the need on the part of the Software Specialist for SMP experience, I have begun developing a 5-day SMP Support Training Seminar, which will be offered from time-to-time as the need arises. Other alternatives include working with SMP customers which might exist locally and putting together a one or two week "residency" with the TOPS-10 maintenance group here in Marlboro.

One final note concerns the inclusion in TRI-SMP sales of bundled consulting for Software Services. The purpose is to compensate for the fact that no software product, and therefore no installation and warranty service, is included in such sales (the SMP software product is purchased when the customer installs DUAL-SMP).

This bundled consulting is intended specifically to aid Field Service in the installation and warranty effort for the new processor(s).

Hopefully this article has cleared up some misconceptions about TOPS-10 SMP and the Controlled Release Plan associated with it. Questions concerning the Plan should be directed towards the Marketing Specialists in the LCG Product Group, or to me. The goal is the installation of highly reliable systems into well supported situations.

# DECSYSTEM-2060 PRICE/PERFORMANCE TRENDS

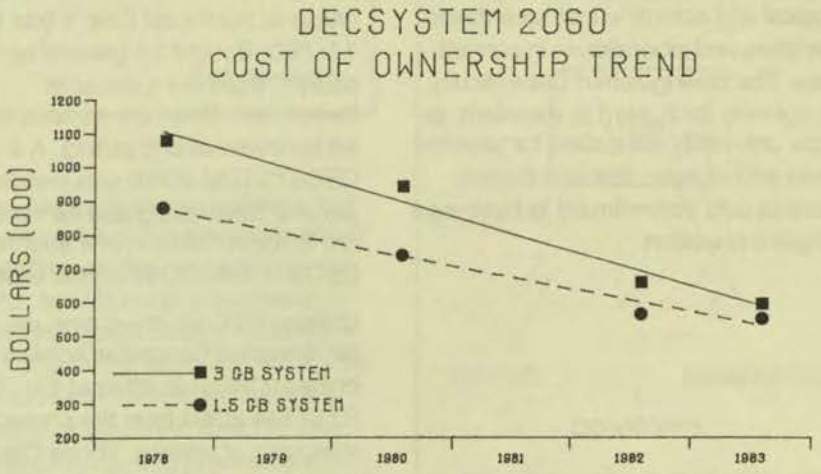
LCG Product Marketing recently completed a study tracking the cost of ownership for DECSYSTEM-2060s from their introduction to the present time.

The result of this analysis might surprise you, and could prove valuable in pursuing add-on and upgrade sales.

The graph below shows the downward trend in five year cost of ownership for two typical large configurations. The first trend line is for a system configured with 3 G-bytes of disk, and the second line shows a 1.5 G-byte configuration. In both cases, the systems also include 1 MW of memory, two 1600/6250 bpi tape drives, a single line printer, and front-end communications options for 64 lines.

There are three major components to the five year cost: CPU, memory, and mass storage. Since a large part of the downward trend can be attributed to the improvements in mass storage, it is clear that upgrading older disks (RP04s, RP06s) can provide significant cost savings for our customers.

For more detail on this subject, please refer to the April 1983 BUYLINE, "Improving DECsystem-10 and DECSYSTEM-20 System Performance" on page 3.



# NETWORKS FOR PRODUCTIVITY: -2060s at CWRU

Case Western Reserve University, founded in 1826, is one of the USA's leading independent research universities. Through its two undergraduate colleges and eight graduate/professional schools, CWRU offers education to nearly 9000 students in more than 60 fields.

Since its founding in 1880, Case Institute of Technology has developed its educational curricula to include: comprehensive and contemporary undergraduate and graduate programs in science, engineering, natural science, mathematics and management; and to include internationally recognized interdisciplinary research centers.

The Institute maintains a prestigious physical plant within Cleveland Ohio's unique University Circle cultural setting. The campus contains some of the most advanced technological and scientific instrumentation, facilities and laboratories in current use. The distinguished Case faculty is not only dedicated to excellent, private university education for talented men and women, but also demonstrates avid commitment to basic and applied research.

The Case Alumni Association today records 14,000 Case alumni throughout the world - serving in many fields including business, industry, academia and government. DIGITAL alumni include: Joel Schwartz; Grant Saviers; Julius Marcus; seven managers in the Cleveland office; and many other employees.

Currently Case Western Reserve University has approximately 127 DIGITAL processors installed. Soon the proliferation of 150 personal computers will double this count. It is now interesting to note that DIGITAL's product dispersion includes: three DECSYSTEM-2060s; five VAX-11s; 22 PDP-8s; 16 MINCs; 34 DECmates; 35 PDP-11s; and a variety of LSI mixtures.

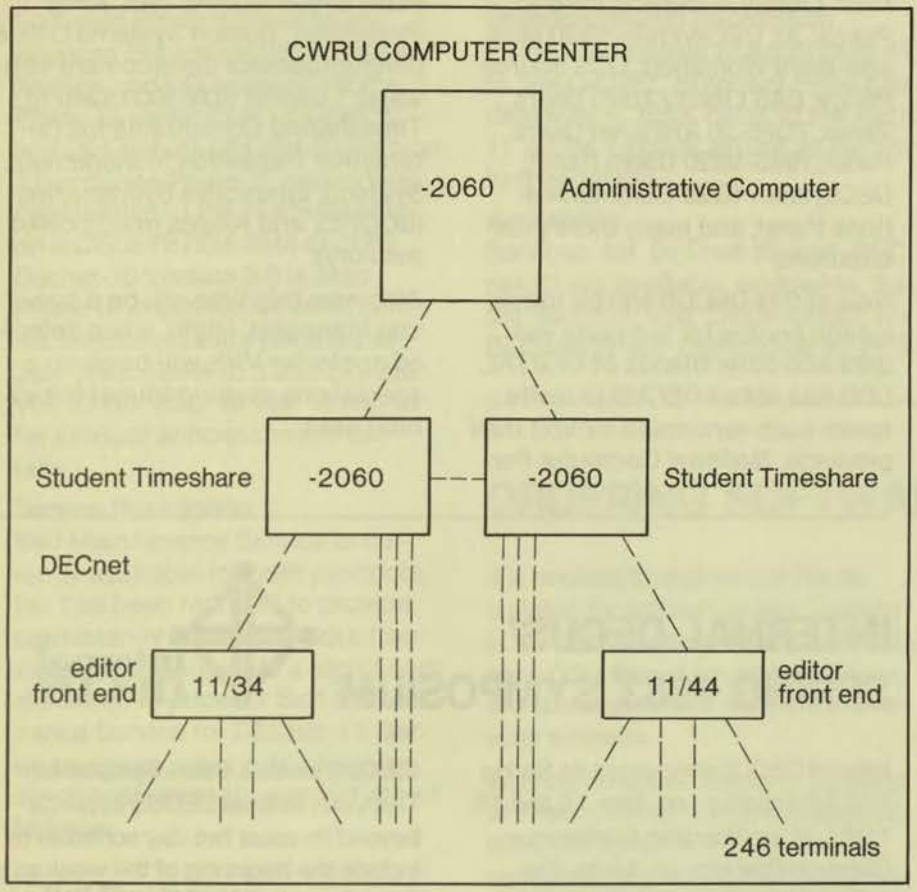
The recent growth of campus computing began in 1978 with the purchase of Northeast Ohio's first VAX-11/780. Bought for general research, it proved a valuable investment. Soon the campus decided to review all computing. A $1.3M DECSYSTEM-2060 was installed for general timesharing and its success led to the installation of a second DECSYSTEM-2060 a year later.

Utilizing DECnet, the Computer Center designed Computer Access Machines (CAMs) to off-load the DECSYSTEM-2060 from the character interrupts of editors. These CAMs were expanded to include a link to the Ohio College Library Consortium (OCLC) which was implemented to reduce the costs associated with library cataloging.

As the success of DIGITAL computers spread across campus, departments got into the act. The School of Management bought ten DECmates for administrative use and then so did the English Dept. The combined use of the DECmates for word processing and terminals into the DECSYSTEM-2060 made them highly visible. A few more departments added DECmates and learned the power of using the DECSYSTEM-2060 for administrative tasks. The campus began a new major review: administrative computing. After a hotly contested competition in this traditional IBM space, the administration chose the DECSYSTEM-2060.

With this much DIGITAL expertise on campus, a new area has become important. DIGITAL and Case have recently signed two joint research projects: 1) Artifical Intelligence has long been an interest of the Department of Electrical Engineering. The inclusion of an -11/782 with ten VAXstations will greatly enhance Case's (and DIGITAL's) research work on machine intelligence.

2) With the help of Joel Schwartz, vice president of marketing for DIGITAL's Personal Computer Group, Case Institute's Department of Computer Engineering has established a PC350 teaching laboratory. In addition to being used as a model for computer education research, the computers in the laboratory will help streamline the information flow between professors and students.



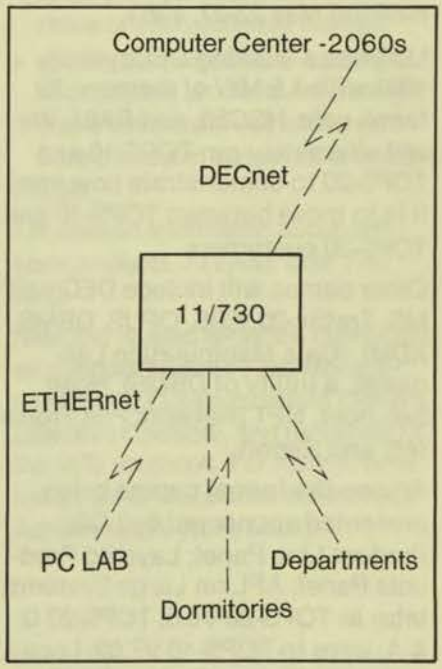

CWRU Computer Center Network Topology

The science and engineering departments will design homework assignments via their PC350s and will deposit them on the -11/730. Students will then use laboratory and dormitory facilties to complete their assignments. After submitting these back through the -11/730, the professor can grade them on-line for a "100% paperless" environment.

Computer Engineering believes that this unique teaching environment not only enhances the education at CWRU, but off-loads the expensive computing facility of the DECSYSTEM-2060. This computer lab will be used to teach 1000 freshman and sophomore students, next fall. The juniors, seniors, and graduates will then have more computer power left open for them on the DECSYSTEM-2060s.

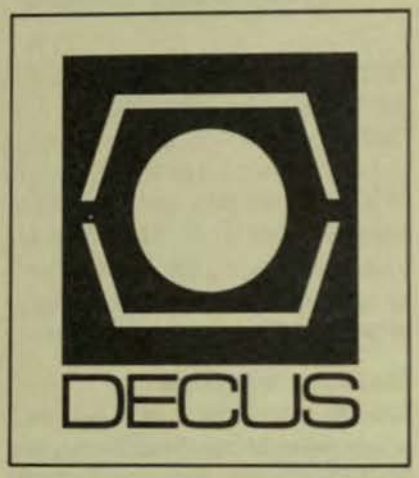
With its most recent acquisitions (some aided by a grant from DIGITAL), Case Western Reserve University has a full spectrum of DIGITAL computers, from its three mainframe DECSYSTEM-2060s, to VAX-11s including the -11/782 and its ten graphics processors, to its network of 50 personal computers.

The Case administration believes that students will enjoy the power, ease of use, friendliness, and flexibility of computers manufactured by Digital Equipment Corporation, which is equally committed to the advanced of computer science education.




CWRU Personal Computer Literacy Network

# DECUS COMES TO ST. LOUIS




In the shadow of the St. Louis Gateway Arch lies the Cervantes Convention Center, which is the site of the U.S. Spring DECUS meeting May 23-27, 1983.

LCG has a working DECsystem-1091 with 1.5 MW of memory, 32 termi- nals, HSC50, and RA81. We will alternately run TOPS-10 and TOPS-20 to demonstrate how easy it is to move between TOPS-10 and TOPS-20 customers.

Other demos will include DECmail/MS, Traffic-20, FPS, OPUS, DBMS, XDML (Data Manipulation Language, a utility of DBMS), Host/Set- host, NFT (Network File Transfer), and Kermit.

Among the formal papers being presented sponsored by LCG: Product Line Panel; Layered Products Panel; APL on Large Systems; Intro to TOPS-20 V6.0; TOPS-20 Q & A; Intro to TOPS-10 V7.02; Loosely Coupled Large System Configurations; DECsystem 10/20 Software Clinic; Programming in APL for the DECSYSTEM-20; 10/20 VAX Math Library Accuracy; Intro to Pascal-20; DECsystem-10/20 Manage- ment Workshop; LCG Source Policy; EAS Library 10/20 Users Panel; TOPS-20 ARPAnet Users Panel; RMS-10/20 Users Panel; DECsystem-10/20 Communications Panel; and many more presentations.

New at this DECUS will be formal exhibit booths for 3rd party vendors and other friends of DIGITAL. LCG has asked DECUS to invite seven such vendors to exhibit their products: National Computer Performance Co. (NCP calc); Floating Point Systems (FPS 190L Array Processor); Boston Systems Office (Microprocessor development software); Linkabit (IDX-3000 switch); Timesharing Consultants Inc (Interactive Transation Management System); Interactive Systems, Inc. (SCOPE); and Ampex (multiported memory).

Also new this time will be a special Managers' Night, when selected customer VIPs will be given a special one evening tour of the exhibit area.

---

# INTERNAL DECUS' SPRING 1983 SYMPOSIUM


Internal DECUS announces its Spring 1983 Symposium on June 15 and 16, 1983, at the Sheraton Conference Center in Boxborough, Mass. The symposium will inform internal users about DIGITAL's newest technical development, future product planning, and marketing strategies.

Keynotes speaker will be Bob Hughes, Group Manager of BOS (Business and Office Systems). Over 40 sessions will be conducted as workshops, panel discussions, and tutorials designed for manager, end users, and techical personnel.

Symposium sessions will include new product announcements as well as the latest information about personal computing, artificial intelligence, videotex, networks, software tools, operating systems, and much more. Included in the program are several LCG presentations: TOPS-20 R6; DIL (Data Interchange Library); and FTS-20 (File Transfer Spooler).

**IDECUS as Mini Sales Symposium**

This year, Internal DECUS expands beyond its usual two day schedule to include the beginning of the week as a "Mini Sales Symposium".

On Monday June 13, the New England Region Sales force is invited to participate in presentations, demos, and discussions. Key speakers during the afternoon and evening will be: Chick Shue, Manager, Northeast States Area; Bob Hughes, BOS Group Manager; and Joel Schwartz, VP Marketing, Personal Computers.

On Tuesday June 14, the Sheraton Conference Center will provide a forum for salespersons and customers who wish to view equipment and to talk with field reps and marketing management.

LCG will join forces with many other DIGITAL product groups exhibiting at Symposium booths in order to demo our product offerings, to tell our story, and to close important Q4 business.

# ANNOUNCING AVAILABILITY OF SOFTWARE PRODUCT SERVICES FOR DECnet-10 AND DECnet-20

Software Product Services announces the availability of Basic Service and DECsupport for the Phase III versions of DECnet-10 and DECnet-20. DECnet-20 Version 3.0 provides Phase III networking capabilities to the TOPS-20 user on a DECSYSTEM-2040 or-2060. Decnet-10 Version 3.0 is also Phase III implementation of DECnet with availability targeted at July 1983. (Refer to *Sales Update* Vol. 13 No. 23 or to Vol. 14 No. 13 for product announcement details.)

**Service Description**

Self-Maintenance Service is currently available for both products, but has been repriced to provide consistency between product services. This represents a significant reduction in price for Self-Maintenance Service for DECnet-10. Service components of the three levels of post-warranty support are as follows:

**Self-Maintenance**

Software Product and Documentation Updates

Software Performance Report Responses

Program Change Orders

**Basic**

Self-Maintenance Service

Telephone Support

**DECsupport**

Basic Service

Periodic Preventive Maintenance

On-site Remedial

**Ordering/Pricing Information**

Pricing will appear in Addendum #1 to the Q4 DEC Standard Price List date May 4, 1983. Refer to the April 11 *Sales Update* article (p.23) for further details.

**Availability**

Services for DECnet-10 and DECnet-20 are available worldwide. Basic Service and DECsupport for DECnet-10 will commence at FCS of Version 3.0 Telephone support for U.S. Area and Canada within GIA will be offered via CSC/Colorado Springs.

For other details on service availability in other countries within GIA and the European area, please contact your local Software Service Manager.

---

# ORDERING SOFTWARE PRODUCTS

It is possible to misinterpret the description for software product options in the **DEC Standard Price List (DSPL)** and **LCG's Price List**; all descriptions are abbreviated to fit within a 29-character limitation.

With the continued activity in repricing and restructuring software product options, the software Product Description **(SPD)** remains the most complete source of order information regarding each software product.

The **DSPL** *does:*

- give the MLP of each software product option and specifies the applicable SPD number for more information.

The **DSPL** and the **LCG Price List** *do not*:

- organize each software product with all of its available options;
- describe each software product option;
- specify the prerequisite first purchase of each software product;
- specify the prerequisite hardware and software products necessary to insure successful use of the software product in its intended environment.

For detailed information about software products, *PLEASE USE THE SPD*!

New and revised **SPDs** are distributed on a regular basis to Field Management, Sales Communications Centers, Literature Contacts, and recipients of the SPD notebook. For more information about SPDs, please contact SDP Administration, RCS: MP37.

# ANNOUNCING DOCUMENTATION UPDATE SERVICE*

Software Product Services announces a Documentation Update Service. This service provides Software Product Services customers a means of obtaining additional copies of documentation they currently receive as part of their service offering.

This service is available for most 16-, 32-, and 36-bit operating systems and for a selected subset of dependent products. The Documentaion Update Service option is purchased on a per product basis. Each order of the Documentation Update Service for a particular product provides one copy of all documentation sent as part of a Self-Maintenance, Basic or DECsupport service for that product. Since an existing service option provides for additional copies of Software Dispatchers, they are not included with this service.

**Benefits**

- Provides customers an easy method of keeping additional sets of manuals up to date.
- Customers automatically receive documentation when it is released, without the necessity and expense of placing separate orders.
- Convenience of budget documention costs on a monthly or yearly basis.

**Product Audience**

This service will appeal to both single and multi-system customers with the need for multiple copies of a product's documentation. The single system customer may have several programmers, each with his/her own documentation that needs to be kept current. The one copy supplied by the service contract needs to be supplemented by the copy or copies supplied by the Documentation Update Service. Multi-system customers may have systems at other sites requiring additional documentation. The Documentation Update Service can assist these customers in keeping up to date documentation at these other sites.

**Prerequisite**

The customer must have an existing Software Product Service contract with DIGITAL (either Self-Maintenance, Basic or DECsupport). The Documentation Update Service should run concurrently with the existing service.

**Product Description/Availability**

The Documentation Update Serivce is a yearly subscription service that is purchased to provide one additional copy of all documentation delivered as part of a Software Product Service for a particular product. Multiple copies of documentation may be obtained by ordering the associated quantity of the Documentation Update Service.

The documentation delivered with either the Documentation Update Service or supplied by a service offering will only be the portion of the product documentation that was changed or revised since the last release. Software Dispatches, newsletters and Software Product Descriptions (SPDs) are not provided by the Documentation Update Service. Customers who need a complete set of documentation should purchase the -GZ Kit and then subscribe to the Documentation Update Service.

* Excerpted from *Sales Update* March 28, 1983

---

# SOFTWARE PRODUCT SERVICES ANNOUNCES LCG SOURCE UPDATE SERVICE

Software Product Services (SPS) announces a Source Update Service for TOPS-20 Operating System, EXEC and Front-End sources. This convenience service provides SPS customers who have previously purchased TOPS-20 Operating System, EXEC and/or Front-end sources with source updates and new releases of the products as they are released.

**Benefits**

- Customers who purchase sources will automatically receive source updates and new releases when they become available without the expense of purchasing out-of-service update kits.

**Product Audience**

- The Source Update Service is designed for TOPS-20 customers who purchase sources on an "as is" basis and need to be provided the latest revisions of the products on an on-going basis.

**Pre-requisite For Service**

Customers with the following criteria are eligible to purchase the Source Update Service:

- Customers who have purchased a source license for TOPS-20 Operating System, EXEC and/or Front-End software and are currently in-service with either an SMS, Basic or DECsupport agreement.

**Product Description Availability**

The Source Update Service is a yearly subscription that provides:

- Source modified modules, i.e., AUTOPATCH equivalent;
- New versions of sources as they become available

The Source Update Service is available worldwide; pricing information listed in the May 9 *Sales Update* is for the U.S. Area only.

# UNLEASH YOUR DEC-20s BY TYING THEM TOGETHER

Introducing Digital's System Interconnect Architecture. A unique way to link mainframes so users can simultaneously share all processing and storage resources.

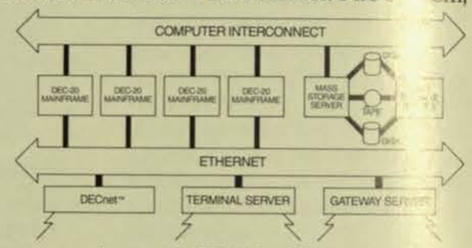
DSIA gives you the power of multiprocessing and the convenience of distributed networking. It lets you create a single virtual file system for complete data control. It increases CPU performance by off-loading tasks to intelligent outlying peripherals. Best of all, it allows you to add or subtract computing and storage resources independently of one another.

Whenever and wherever you need them.

It's the flexibility in system design you've been waiting for.

**ANNOUNCING THE END OF INFORMATION ISOLATION.**

Now you can loosely couple up to four DECSYSTEM-20s™ through a 70 Mb/s hardware bus. Put our new intelligent mass storage server on the bus. The Common File System,




an extension to the TOPS-20™ operating system, takes over file management tasks. The information on up to hundreds of disk and tape subsystems* becomes available at any terminal, through any host. You don't need duplicate files

so you save both space and money. Redundant data paths protect against lost information. And all data access is transparent to the user.

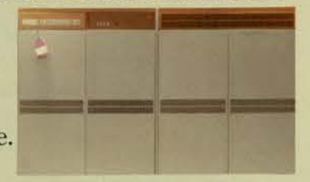
Soon TOPS-20 will be extended further. To intelligent communications servers that will off-load communications tasks from the hosts. This will allow multiple DECSYSTEM-20s to be linked to local area networks, remote DECnet™ networks and foreign networks beyond. In any configuration.

**THE INDUSTRY'S FIRST LONG-TERM COMPUTING STRATEGY.**

With DSIA, you can build a network with independent computing, storage and communications modules. Each does what it does best. And collectively they perform like a single multiprocessing system. Without the hardware restrictions that limit traditional multiprocessing schemes. Or the performance trade-offs associated with conventional networking.

So as system manager you can spend your time deciding what needs to be done. Little time figuring out how. And no time asking if. At the same time, you'll enjoy lower maintenance, less operational overhead and simplified system control.

Digital's System Interconnect Architecture. It's the industry's first long-term computing strategy because it sets the system designer free.



Find out more.

**Digital Equipment Corporation,** Large Computer Group, MR2-2/8D2, One Iron Way, Marlboro, MA 01752. Tel 1-800-DIGITAL
European Headquarters: 12 Av. des Morgines, CH-1213 Petit-Lancy/Geneva.
International Headquarters: 100 Nagog Park, Acton, MA 01720 U.S.A.

*Our RA60 and RA81 disk and TA78 tape drives presently supported.



digital

# DIGITAL REFERENCE SERVICE (DRS): ORDER PROCESSING/PROMOTIONAL ACTIVITIES*

The Digital Reference Service (DRS) is currently the only single-source document that describes the entire range of the company's products and services. A subscription to the Service entitles the subscriber to a multi-volume set of binders and four quarterly updated packages. Current subscribers include OEM's, EDP consultants, software and system houses, purchasing agencies, information services, volume customers of DIGITAL products, as well as DIGITAL employees.

A new addition for our United States subscribers is a quarterly updated price list option, keyed to the Systems and Options Catalogs. The Service has undergone a complete reorganization and expansion of its contents, and in now updated in a perfect-bound book format to allow for greater ease in updating and for more expansion flexibility.

The business aspects of the DIGITAL Reference Service are now being conducted entirely from within New Products Marketing. Order fulfillment and update distribution of the Service continues to take place under our direction by an external letter shop and mail order company. Accessories and Supplies is currently handling the billing process. All this is being coordinated by our new Customer Service Representative. This addition to the DRS staff has enlarged the scope of customer assistance and facilitated order processing procedures. She can be reached at DTN: 251-1632 (617) 264-1632 or at the address listed below, and can provide you with any additional ordering information you may require.

We now offer the Service with/without the price list, and in multiple-year discounted packages.

| | Description |
|---|---|
| ED-23800-18 | One-year service - $295 |
| ED-23821-18 | Additional price list option* - $35/year |
| ED-23815-18 | Two-year subscription - $525 |
| ED-23818-18 | Three or more years - $245/year |
| ED-23822-18 | Replacement binders - $8/each |

*The price list is automatically included at no additional charge with all United States Digital employee subscriptions.

**New U.S. Order Processing Procedures**

These changes have resulted in the following new procedures:

All orders are sent directly to me, Lynn Feinzig, at

Digital Equipment Corporation
Digital Reference Service
CFO1-2/K21
200 Baker Avenue
Concord, MA 01742

Internal Digital Employees interested in the Service may phone the Customer Service Representative and will be mailed a special internal order form.

All Subscribers now receive a five-letter series of renewal notices beginning before the last shipment of their subscription has been made.

**Promotional Efforts**

An increased subscriber base is actively being pursued through both internal and external marketing and advertising. You may obtain for your customers a newly prepared four-color brochure, from Northboro; Part No: EZN-052194, with a U.S. Order Form enclosed. We are currently sending a new Direct Mail package to Datamation subscribers and EDP consultants.

A European marketing campaign is currently in the planning stages. European and GIA order procedures are being established. For ordering information concerning Europe, please contact your local Educational Services Training Center (the price varies according to each country). For GIA, contact your local sales office.

DRS maintains a database of all inquiries about the Service which we receive. Therefore, as an additional service, we are now able to provide you with a list of our present customer base in your region/district and a list of inquiries we received from prospective clients in your area.

* Portions reprinted from March 14, 1983 "Sales Update"

# DECUS ANNOUNCES PUBLICATIONS SUBSCRIPTION SERVICE

One of the primary services performed by DECUS, the DIGITAL Equipment Computer Users Society, is the publishing of technical newsletters to aid in the information exchange that is so vital in this market. These newsletters are written and edited by volunteer members of the user community — the people actually using the DIGITAL systems on a day-to-day basis.

The information contained in the newsletters is of value to all users. The newsletters contain question and answer sections for novices as well as experts; they also contain bug fixes, innovative uses of system, and much more.

All of this information is compiled into completely commercial-free publications.

In order to continue to publish these newsletters on a regular and timely basis, DECUS is announcing a Publications Subscription Service. The introductory offer, available until July 1, 1983, is open to all customers and to DIGITAL employees.

DECUS NEWS March 83

**DECUS U.S. CHAPTER ANNOUNCES SUBSCRIPTION SERVICE**

*See page 2 for details.*

*Troubled Refugees*
Many Hmong, Puzzled By Life in U.S., Yearn For Old Days in Laos

Major Finds Part-Time Job, Still Depends on Family; Providence Isn't Paradise

Did 34 Die of Culture Shock?

What's News—

*Business and Finance*

*World Wide*

You no longer must be a member of DECUS in order to take advantage of this service.

Subscription Service order forms and price information are available through: the DECUS office, Subscription Service Group, 1 Iron Way, MR02-1/C11, Marlboro, MA 01752. Phone is: 617-467-4274, (DTN: 231).

Don't delay; take advantage of this new service today!

# LCG's 1983 AD CAMPAIGN

As many of you read in the April BUY-LINE, LCG's 1983 Ad Campaign promotes the theme "DIGITAL's Mainframe Family Expands" with domestic ads featuring Digital System Interconnect Architecture.

Headlines for each ad are:

"Introducing DECSYSTEM-20. The Network" (first ad)
"Unleash Your DECSYSTEM-20s by Tying Them Together." (second ad)
"TOPS-20. Now There is No End of the Line." (third ad)

The first ad was reprinted in last month's BUY-LINE. The second ad (reprinted in this issue) details the hardware aspects of DSIA, and the third as is about DSIA software.

Our audience includes DP/MIS managers, the organizational function which you approach in your sales calls. Our media schedule for all three of these ads targets the following publications:

*Computerworld*
*Infosystems* and
*Information Systems News*

Our purpose in hyping DSIA is to maintain — and to increase interest in — our products. We also want to show that we are developing new products, to provide a growth path for TOPS-20 users, and to lay the ground work for a KL follow-on system announcement.

A new aspect of this campaign is LCG's use of a toll-free 800 phone number. Anyone calling the number that appears in the ad will be sent three pieces of sales literature within 24 hours. Why not test the system yourself?

# LARGE COMPUTER GROUP
# LCG SOFTWARE REFERRAL CATALOG
# THIRD EDITION ANNOUNCEMENT

The third edition of the Large Computer Group *Software Referral Catalog (SRC)* is now in production, and will be available in late May or June. The third edition contains descriptions and contacts for 448 DECsystem-10 and DECSYSTEM-20 application software products, including Digital software products and 91 new third party software product descriptions. The following is a list of some of the new software product listings:

ACCENT-R
CP/M® EMULATOR FOR DECSYSTEM-10 AND DECSYSTEM-20
DEMAND 92
ELISP — EXTENDED ADDRESSING LISP
INFO
KERMIT
NCP CALC®
PASCAL (RUTGERS PASCAL)
PL/I COMPILER
PLATO
PROBE/DSS
SB-5 COBOL PROGRAM GENERATION AND DEVELOPMENT SYSTEM
SLAM II®

As before, the *SRC* will contain a Table of Contents by application area and, following the product descriptions, Alphabetical Indices by both vendor name and product name. Software product listings are included and ordered in the following major application areas:

**ACCOUNTING**
Accounts Payable
Accounts Receivable
Banking and Finance
Cost Accounting
Cost Accounting
General Ledger
Payroll & Personnel
Real Estate and Lease Analysis

**DATA BASE MANAGEMENT**
Applied Data Base Management
CODASYL Data Base Management
File Management
General Data Base Management

**EDUCATION**
Computer Assisted Instruction
Financial Services
Student Services

**ENGINEERING**
Chemical Engineering
General Civil Engineering
Civil Engineering Design & Analysis
Electronic Layout
Electronic Simulation
Finite Element Analysis
General Mechanical Analysis
General Mechanical Engineering
Mechanical Design and Drafting
Piping Analysis and Design

**GRAPHICS & MAPPING**
Graphics
Mapping

**LANGUAGES & UTILITIES**
Compilers & Interpreters
Data Entry
Data & Program Conversion
Language Enhancements
Mini & Micro Computer Utilities
Programming Utilities
Query Languages & Report Writers

**MANAGEMENT DECISION SUPPORT**
Financial Modeling & Planning
Project Management & Control
Spread Sheet Analysis

**MANUFACTURING, PRODUCTION & DISTRIBUTION**
Distribution
Inventory Control
Production & Quality Control

**MATHEMATICS & STATISTICS**
Applied Statistics
Mathematics
Statistical Analysis Systems
Statistical Subroutines & Libraries

**OFFICE AUTOMATION**
Document Preparation
Electronic Mail
Information Management
Word & Text Processing

**SIMULATION & MODELING**
Continuous Systems Simulation
General Simulation
Linear Programming
Logistics

**SYSTEM UTILITIES**
Disk Utilities
File Transfer
General System Utilities
System Accounting
Tape Utilities

Everyone who regularly receives the **BUYLINE** will receive a copy of the *LCG Software Referral Catalog*. Additional copies may be ordered through Northboro Printing and Circulation.

Customers may order copies of the *LCG Software Referral Catalog* by writing to:

LCG Software Referral Catalog
Large Computer Group Applications Mktg.
Digital Equipment Corporation
MRO2-2/8D2 1 Iron Way
Marlboro, MA 01752

Comments and suggestions for both the *LCG Software Referral Catalog* and the *LCG Applications Update*, which is published periodically between editions of the full SRC, are welcome. Please call me if you have any questions or require further information.

# LCG LITERATURE LIST

EDITOR'S NOTE: You may order these publications by contacting Jane Fitzgerald at P&CS in Northboro. The DTN is 234-4325. Mail stop is: NR2-2/W3, RCS code is NR12 (for telexes).

If you find an item to be out of stock or incorrectly numbered, please phone me or Gail Breslin at DTN: 231-4996 or 231-4013, and we'll try to help you out.

ATTENTION ! ! ! This list (and order numbers) supersedes all prior lists.

## HARDWARE OPTION BULLETINS

| | |
|---|---|
| CD20 Card Reader | ED 23999 61 |
| DN20 Communications Front-End Subsystem | ED 20504 26 |
| DN200 Remote Station | ED 22987 61 |
| IDX-3000 Integegrated Digital Exchange (Linkabit Switch) | EC 24075 61 |
| LP20-A/B Line Printer Systems | ED 19I37 26 |
| LP20-C/D Line Printer Systems | ED 19I35 26 |
| LP100-B Line Printer Systems | ED 19I39 26 |
| LP100-F/H Line Printer Systems | ED 19677 26 |
| LP200-B Line Printer System | ED 24013 61 |
| RP07 Disk Subsystem | ED 21997 61 |
| RTP20 Disk System | ED 19725 26 |
| TU72 Magnetic Tape Subsystem | ED 19763 26 |
| TU77 Magnetic Tape Subsystem | ED 17400 26 |
| TU78 Magnetic Tape Subsystem | ED 23003 82 |

## SOFTWARE DATA SHEETS

| | |
|---|---|
| ALGOL | ED 17156 18 |
| APL/APL-SF | ED 21774 81 |
| BASIC-PLUS-2 | ED 18885 26 |
| BLISS-36 | ED 19208 26 |
| COBOL | ED 22109 61 |
| CFS-20 | EC 23858 61 |
| CPL | ED 15659 63 |
| DECmail/MS | ED 24000 61 |
| DECnet-10 Phase III | ED 24056 61 |
| DECnet-20 Phase III | ED 22835 61 |
| DBMS-10 | ED 21782 81 |
| DBMS-20 | ED 21827 61 |
| FORTRAN-10/20 V.7 | ED 24054 61 |
| IBM RJE E/T | EC 24057 61 |
| IQL | ED 15660 63 |
| TOPS-20 PSI Gateway | ED 24053 61 |
| TOPS-20 Supported Utilities | ED 22933 61 |
| TOPS-10 V7.02 | EZ C5532 44 |
| TOPS-20 V6.0 | EZ C5532 45 |

## TECHNICAL SUMMARIES

| | |
|---|---|
| DECsystem-10 Technical Summary | EE 21041 26 |
| DECSYSTEM-20 TECHNICAL SUMMARY | EA 20415 18 |
| LCG Product Summary - April '83 | EJ 24660 61* |
| LCG Price List - April '83 | EE 24661 61* |

* New order numbers for recently produced editions

## LCG BROCHURES

| | |
|---|---|
| TOPS-20 Multiprocessing | EA 24237 61* |
| Introducing TOPS-20 Multiprocessing | EC 24046 61 |
| DECSYSTEMS: The Users Choice | EA I8366 26 |
| DECsystem-10 Family | EA 20572 26 |
| DECSYSTEM-20 Family | EA I8724 26 |
| Develop Microprocessor Applications Faster | EA 22895 61 |
| TOPS-10/20 Data Networking | EC 22813 61 |
| LCG Software Referral Catalog (2nd Ed.) | EJ 22780 61 |
| Symmetric Multi-Processing | ED 24089 61 |
| The Personal Mainframe/Electronic Mail | EA 22872 61 |
| The Personal Mainframe/Office Automation | EA 22076 61 |

## MARKET SPECIFIC BROCHURES

Education:

| | |
|---|---|
| LCG Education Market Brochure | |
| "Well-Schooled as Digital") | EC 22752 61 |
| Wesleyan Univ. | EA 20271 87 |
| Univ. of Vermont | EA 20270 87 |
| Univ. of Pittsburgh | EA 19633 87 |
| Columbia Univ. Teachers Coll: | EA 19630 87 |
| Hamilton Cty. Office of Ed. | ED 19577 87 |
| Carnegie-Mellon Univ. | ED 20467 87 |

Engineering:

| | |
|---|---|
| Monenco: Engineering for Excellence | EA 23075 16 |

Banking:

| | |
|---|---|
| Bankers Trust: Partners in Success | EA 23155 11 |

## AUDIO VIDEO

| | |
|---|---|
| LCG Users Tape (10 min.) | loan request |
| Benchmarking/CPU Analysis with Brochure | loan request |
| DEC-10/20 Overview Slide Show | K. Stanton |
| LCG DECSYSTEM-20 Timesharing Testimonial Slide Show Kathie Stanton, Bedford MA, DTN 249-4068 | |
| Supplementary Slide Package | Memo Don Waite MR2-2/8D2 |
| Large Systems Slide Presentation (Modules 1 thru 7) | K. Stanton |

## CORPORATE BROCHURES

| | |
|---|---|
| Digital's Ethernet | EA 22710 18 |
| Digital Introduces DECnet/SNA Gateway | EA 22703 18 |
| Digital Storage Architecture Product Summary | ED 23981 18 |

* New order numbers for recently produced editions

### PHOTO BULLETINS

| | |
|---|---|
| DECsystem-10/20 Fact Sheet | EJ 19596 26 |
| DECsystem-10 Family At A Glance | EJ 19595 26 |
| Digital System Interconnect Architecture | ED 24668 61 |

### GENERAL MATERIALS

| | |
|---|---|
| DECNET-10 Phase III Press Kit Folder | EJ 23998 61 |
| BUY-LINE Compendium (Vol.2: 1981-82) | EZ 09016 82 |
| Digital's Systems Interconnect Folder | EJ 24741 61 |

### POSTERS

| | |
|---|---|
| 1983 Smooth Sailing Calendar | EJ 21823 61 |
| Chart Your Course Sailing Poster | EJ 21623 61 |
| LCG Personal Mainframe Poster | EJ 21652 61 |

### SITE PREPARATION GUIDES

Corporate Field Service's Generic Site Planning Kit, available worldwide, enables site planners to do floor layouts and site planning for all DIGITAL products including the DECsystem-10 and-20 product set. This Kit is designed to be Field Service's standard Site Planning tool. The new Kit's order number is EK-SPKIT-SP, available from P&CS, Northboro.

### SALES AIDS

Sales Aids are ordered by sending a memo/TWX to Gail Breslin (MRO2-2/8D2) containing your name, badge number, cost center, shipping address, and the signature of your cost center manager. Minimum charge for an order is $100.00. The mugs cost $2 each and are packed in boxes of 12. Pens are $2 each.

MUGS: Large Computer Group Mugs - sand colored china with blue sail boat design.
PENS: White No-Nonsense Pens.

# ORDERING PROCEDURES FOR TOPS–10 AND TOPS–20 SOFTWARE DOCUMENTATION

We have received feedback that the procedures for ordering TOPS–10/20 software documentation are not known to many of you. The following paragraphs describe the ordering procedures. Note that these procedures differ depending on if the order is for DIGITAL employees or for DIGITAL customers.

### DIGITAL Employee Orders

DIGITAL personnel can order TOPS–10 and TOPS–20 software manuals through the Order Processing Group in the Software Distribution Center (SDC). Contact Denise Magoon (DTN 234–4478) to place orders for TOPS–10/20 software manuals. She will need your cost center and badge number in order to cross–charge for the order.

### Customer Orders

Customers order software manuals through the Accessories and Supplies Group (headquarters in Nashua, New Hampshire). Orders can be placed by phone or by purchase orders.

### TOLL FREE ORDERING

**Continental USA (8:30 a.m. to 6:00 p.m. ET), call 800–258–1710**

In New Hampshire, call
603–884–6660
(8:30 A.M. to 6:00 P.M. ET)

In Chicago, call
312–640–5612
(8:15 A.M. to 5:00 P.M. CT)

In San Francisco, Alaska & Hawaii, call
408–734–4915
(8:15 A.M. to 5:00 P.M. PT)

### DIRECT MAIL ORDERS

Purchase orders should be mailed directly to:

U.S. Customers
**DIGITAL EQUIPMENT CORPORATION**
**P.O. Box CS2008**
**Nashua, NH 03061**

In San Francisco:
DIGITAL EQUIPMENT CORPORATION
Accessories & Supplies Center
632 Caribbean Drive
Sunnyvale, CA 94086

In Chicago:
DIGITAL EQUIPMENT CORPORATION
Accessories & Supplies Center
1050 East Remington Road
Schaumburg, IL 60195

International Customers:
DIGITAL EQUIPMENT CORPORATION
Accessories & Supplies Center
A&SG Business Manager
c/o Digital's local subsidiary

The Accessories and Supplies Group publishes a semi–annual Documentation Products Directory that contains complete and detailed ordering instructions and guidelines. We recommend that you refer to this Directory for more information.

# TOPS–10 SOFTWARE PUBLICATIONS

**May 1983**

## ◆ MANUALS AVAILABLE

| | |
|---|---|
| *AID Manual* (V1) | DEC–10–NAIDA–A–D |
| *ALGOL Programmer's Guide* (10/20) (V1A) | AA–0196C–TK |
| *APLSF Language Manual (V2)* | AA–H200A–TK |
| *APL Reference Card* (APL–SF and APL–11) | AV–K879A–TK |
| *Autopatch Procedures Reference Manual* (V1) | AA–H729A–TK |
| *BASIC Conversational Language Manual* (V17D) | DEC–10–LBLMA–A–D |
| *BASIC Language Reference Card* (V17D) | DEC–10–XBRCA–A–D |
| *Batch Reference Manual* (V4) | AA–H374A–TK |
| *Batch Reference Manual* Update (V4.1) | AD–H374A–T1 |
| *BLISS–10 Programmer's Reference Manual* (V4) | DEC–10–LBRMA–A–D |
| *BLISS Language Guide* (V3) | AA–H275C–TK |
| *BLISS–36 User's Guide* (V3) | AA–H712C–TK |
| *BLISS–36 Installation Notes* (V3) | AA–J937C–TK |
| *BLISS Pocket Guide* (V3) | AV–H289C–TK |
| *COBOL–68 Language Manual* (V12B) | AA–5057B–TK |
| *COBOL–74 Language Manual* (V12B) | AA–5059B–TK |
| *COBOL–74 Reference Card* (V12B) | AV–L854A–TK |
| *COBOL Conversion Utility Guide* (V12B) | AA–M586A–TK |
| *COGO–10/20 User's Manual* (V1) | AA–5510A–TK |
| *COGO–10/20 Installation Guide* (V1) | AA–5511A–TK |
| *Commands Quick Reference Guide* (V7.01) | AV–K729A–TB |
| *CPL–10/20 User's Manual* (V1B) | DEC–10–LCPLA–B–D |
| *Crash Analysis Guide* (V7.01) | AA–H206B–TB |
| *Data Interchange Library User's Guide* (V1) | AA–M581A–TK |
| *DBMS Administrator's Procedures Manual* (V5) | AA–0899C–TB |
| *DBMS Programmer's Procedures Manual* (V5) | AA–0901C–TB |
| *TOPS–10/20 DDT Reference Card* (V42) | AV–M272A–TK |
| *DDT11 Manual* (DDT11 V5) | AA–J495A–TB |
| *TOPS–10/20 DECmail/MS Manual* (V10) | AA–M840A–TK |
| *DECsystem–10 Technical Summary* | EE–21041–26 |
| *DIGITAL Standard RUNOFF User's Guide* | AA–J268A–TK |
| *DN92 Remote Station User's Guide* | AA–5711A–TB |
| *Documentation Directory* | AA–0858C–TB |
| *DX Product User's Guide* (V1) | AA–D870A–TK |
| *DX/TOPS–10 Installation Guide* | AA–D882A–TB |
| *FORTRAN IV (F40) Programmer's Reference Manual* (V27) | DEC–10–LFLMA–B–D |
| *TOPS–10/20 FORTRAN Language Manual* (V7) | AA–N383A–TK |
| *TOPS–10/20 FORTRAN Reference Card* (V7) | AV–P529A–TK |
| *TOPS–10 FORTRAN Installation Guide* (V7) | AA–P345A–TB |
| *Getting Started with Batch* (TOPS–10) (V2) | AA–D303A–TB |
| *Getting Started with DECsystem–10* (V6.02) | DEC–10–XGSDA–A–D |
| *Getting Started with TOPS–10 Commands* (V6.02) | DEC–10–OTSCA–A–D |
| *IBM Emulation–Termination* | AA–D612C–TB |
| *Interactive Query Language User's Guide* (V3) | AA–H282A–TK |
| *Introduction to Interactive Query Language* (V3) | AA–0947B–TK |
| *Introduction to TECO* (V23) | DEC–10–UTECA–A–D |
| *KL System Reference Card* | EK–OKL10–RC–001 |
| *TOPS–10 LINK Reference Manual* (V5.1) | AA–0988D–TB |
| *MACRO Assembler Reference Manual* (V53) | AA–C780C–TB |
| *MACY11 Assembler User's Guide* | DEC–10–LMACA–A–D |
| *MAKLIB User's Guide* (V2B) | AA–M472A–TB |

*Monitor Calls Quick Reference Guide* (V7.01) . . . . . AV–0978D–TB
*Monitor Calls Manual* – Volume 1 (V7.01) . . . . . AA–0974D–TB
*Monitor Calls Manual* – Volume 2 (V7.01) . . . . . AA–K039A–TB
*Monitor Calls Manual* Update – Volume 2 (RP20) . . . . . AD–K039A–T1
*Monitor Installation Guide* (V7.01) . . . . . AA–5056B–TB
*Monitor Installation Guide* Update (RP20) . . . . . AD–5056B–T1
*Monitor Installation Guide* Update (RSX–20F) . . . . . AD–5056B–T2
*Monitor Installation Guide* Update (RP07) . . . . . AD–5056B–T3
*Monitor Installation Guide* Update (7.01A) . . . . . AD–5056B–T4
*Networks Software Installation Guide* . . . . . AA–5156E–TB
*Networks Software Installation Guide* Update . . . . . AD–5156E–T1
*Operating System Commands Manual* (V7.01) . . . . . AA–0916D–TB
*Operating System Commands Manual* Update (GALAXY) . . . . . AD–0916D–T1
*Operator's Guide* (V7.01) . . . . . AA–H283A–TB
*Operator's Guide* Update (RP20) . . . . . AD–H283A–T1
*Operator's Guide* Update (RSX–20F) . . . . . AD–H283A–T2
*Operator's Guide* Update (RP07) . . . . . AD–H283A–T3
*Operator's Guide* Update (GALAXY) . . . . . AD–H283A–T4
*Operator's Command Language Reference Manual* (GALAXY) . . . AA–H599A–TB
*TOPS–10/20 OPR Commands Reference Card* (V4.1/V4.2) . . . . . AV–P380A–TK
*PCS–10/20 Installation Guide* (V1) . . . . . AA–5513A–TK
*PCS–10/20 Project Control System Reference Manual* (V1) . . . . . AA–5512A–TK
*DEC–10/DEC–20 Processor Reference Manual* . . . . . AA–H391A–TK
*DEC–10/20 Processor Reference Manual* Update . . . . . AD–H391A–T1
*RSX–20F System Reference Manual* (V14–45) . . . . . AA–H352B–TK
*SORT/MERGE User's Guide* (V4C) . . . . . AA–M063A–TB
*SOS Reference Manual* . . . . . AA–D598A–TB
*SOS Reference Card* . . . . . AV–D578A–TB
*TOPS–10/20 SPEAR Manual* (V1) . . . . . AA–J833A–TK
*TOPS–10/20 SPEAR Reference Card* (V1) . . . . . AV–M752A–TK
*SYSERR Manual* . . . . . AA–D533B–TK
*System Reference Card (KA/KI)* . . . . . DEC–10–XSRCA–B–D
*Tape Processing Manual* (V4.1) . . . . . AA–L412A–TB
*TECO Reference Manual* (V23) . . . . . DEC–10–ETEE–D
*TECO Reference Manual* Update (V23B) . . . . . DEC–10–UTPRA–A–DN1
*TOPS–10 Remote Station Guide* . . . . . AA–D783B–TB
*USAGE File Specification* (V4) . . . . . AA–4181B–TK
*USAGE File Specification* Update (V4.1) . . . . . AD–4181B–T1
*Utilities Manual*
(includes DDT, SOUP, LINED, PIP, FILEX, CREF) . . . . . DEC–10–UTILA–A–D
*Utilities Manual* Update . . . . . DEC–10–UTILA–A–DN1
TOPS–10 Software Notebooks . . . . . QHK20–KZ
TOPS–10 Software Notebook Update #88
(includes GALAXY 4.1 documentation) . . . . . AD–J010A–88

◆ **COMING ATTRACTIONS**

*TOPS–10/20 Common Math Library Reference Manual* (V7) . . . . . AA–M400A–TK

# TOPS–20 SOFTWARE PUBLICATIONS

**May 1983**

## ◆ MANUALS AVAILABLE

| | |
|---|---|
| *ALGOL Programmer's Guide* (10/20) (V1A) | AA–0196C–TK |
| *APLSF Language Manual* (V2) | AA–H200A–TK |
| *APL Reference Card* (APL–SF and APL–11) | AV–K879A–TK |
| *Autopatch Procedures Reference Manual* (V1) | AA–H729A–TK |
| *BASIC–PLUS–2 Language Manual* (V2) | AA–H654A–TM |
| *Batch Reference Manual* (V4) | AA–H374A–TK |
| *BLISS Language Guide* (V3) | AA–H275C–TK |
| *BLISS–36 User's Guide* (V3) | AA–H712C–TK |
| *BLISS–36 Installation Notes* (V3) | AA–J937C–TK |
| *BLISS Pocket Guide* (V3) | AV–H289C–TK |
| *COBOL–68 Language Manual* (V12B) | AA–5057B–TK |
| *COBOL–74 Language Manual* (V12B) | AA–5059B–TK |
| *COBOL–74 Reference Card* (V12B) | AV–L854A–TK |
| *COBOL Conversion Utility Guide* (V12B) | AA–M586A–TK |
| *COGO–10/20 Installation Guide* (V1) | AA–5511A–TK |
| *COGO–10/20 User's Manual* (V1) | AA–5510A–TK |
| *TOPS–20 Commands Reference Manual* (V4) | AA–5115B–TM |
| *TOPS–20 Commands Reference Manual* Update (V5) | AD–5115B–T1 |
| *TOPS–20 Commands Reference Manual* Update (V4.1/V5.1) | AD–5115B–T2 |
| *TOPS–20 Commands Reference Card* (V4.1/V5.1) | AV–L704B–TM |
| *CPL–10/20 User's Manual* (V1B) | DEC–10–LCPLA–B–D |
| *Data Interchange Library User's Guide* (V1) | AA–M581A–TK |
| *DBMS–20 Documentation Directory* (V6) | AA–J876A–TM |
| *DBMS–20 User's Guide* (V6) | AA–H229A–TM |
| *DBMS–20 Data Manipulation Language Reference Manual* (V6) | AA–H232A–TM |
| *DBMS–20 Data Description Language Reference Manual* (V6) | AA–H231A–TM |
| *DBMS–20 Utilities Manual* (V6) | AA–H228A–TM |
| *DBMS–20 Release Notes* (V6) | AA–J877A–TM |
| *DBMS–20 Error Message Manual* (V6) | AA–J878A–TM |
| *DBMS–20 Installation Guide* (V6) | AA–J875A–TM |
| *DBMS–20 DML Programmer's Reference Card* (V6) | AV–H230A–TM |
| *DBMS–20 Data Base Administrator's Reference Card* (V6) | AV–J879A–TM |
| *DBMS–20 Documentation Kit* (V6) | QT008–GZ |
| *TOPS–10/20 DDT Reference Card* (V42) | AV–M272A–TK |
| *TOPS–10/20 DECmail/MS Manual* (V10) | AA–M840A–TK |
| *Introduction to DECnet* | AA–J055C–TK |
| *TOPS–20 DECnet–20 Programmer's Guide and Operations Manual* (V2) | AA–5091B–TM |
| *TOPS–20 DECnet–20 Programmer's Guide and Operations Manual* Update (V2.1) | AD–5091B–T1 |
| *TOPS–20 DECnet–20 User's Guide* (V3) | AA–J679A–TM |
| *TOPS–20 DECnet–20 System Manager's and Operator's Guide* (V3) | AA–J678A–TM |
| *TOPS–20 DECnet–20 Network Generation and Installation Procedures* (V3) | AA–K905A–TM |
| *DECSYSTEM–20 Technical Summary* | EA–20415–18 |
| *Introduction to DIGITAL Standard RUNOFF (DSR)* (V2) | AA–N388A–TK |
| *Introduction to DIGITAL Standard RUNOFF (DSR)* Update (V2) | AD–N388A–T1 |
| *TOPS–20 DIGITAL Standard RUNOFF (DSR) User's Guide* (V2) | AA–N389A–TM |
| *TOPS–20 DIGITAL Standard RUNOFF (DSR) Pocket Guide* (V2) | AV–N390A–TM |
| *TOPS–20 DN200 Remote Station Guide* (V1) | AA–H786A–TM |
| *DX Product User's Guide* (V1) | AA–D870A–TK |
| *DX/TOPS–20 Installation Guide* (V1) | AA–D877A–TM |
| *EDIT Reference Manual* (V3) | AA–5415A–TM |
| *EDIT User's Guide* (V1B) | DEC–20–UEUGA–A–D |
| *EDIT Reference Card* (V3) | AV–D310A–TM |
| *EXEC Message Manual* (V4) | AA–J857A–TM |
| *FTS–20 Reference Manual* (V1) | AA–M252A–TM |
| *TOPS–10/20 FORTRAN Language Manual* (V7) | AA–N383A–TK |
| *TOPS–10/20 FORTRAN Reference Card* (V7) | AV–P529A–TK |
| *TOPS–20 FORTRAN Installation Guide* (V7) | AA–P344A–TM |

*Getting Started with Batch* (TOPS–20) (V3) . . . . . AA–C781B–TM
*Getting Started with TOPS–20* (V4) . . . . . AA–4187D–TM
*IBM Emulation–Termination* . . . . . AA–5095C–TM
*Introduction to IQL* (V3) . . . . . AA–0947B–TK
*TOPS–10/TOPS–20 IQL User's Guide* (V3) . . . . . AA–H282A–TK
*KL System Reference Card* . . . . . EK–OKL10–RC–001
*LINK Reference Manual* (V5) . . . . . AA–4183C–TM
*TOPS–20 LINK Reference Manual* Update (V5.1) . . . . . AD–4183C–T1
*MACRO Assembler Reference Manual* (V53) . . . . . AA–4159C–TM
*Monitor Calls Reference Manual* (V5) . . . . . AA–4166E–TM
*Monitor Calls Reference Manual* Update (V5.1) . . . . . AD–4166E–T1
*Monitor Calls Quick Reference Guide* (V5.1) . . . . . AV–P173A–TM
*Monitor Calls User's Guide* (V5) . . . . . AA–D859B–TM
*TOPS–20 Operator's Guide* (V4) . . . . . AA–4176D–TM
*TOPS–20 Operator's Guide* Update (RP20) . . . . . AD–4176D–T1
*TOPS–20 Operator's Guide* Update (V5) . . . . . AD–4176D–T2
*TOPS–20 Operator's Guide* Update (V4.2) . . . . . AD–4176D–T3
*TOPS–20 Operator's Command Language Reference Manual* (V4) . . . . . AA–H600A–TM
*TOPS–20 Operator's Command Language Reference Manual* Update (V5) . . . . . AD–H600A–T1
*TOPS–20 Operator's Command Language Reference Manual* Update (V4.2) . . . . . AD–H600A–T2
*TOPS–10/20 OPR Commands Reference Card* (V4.1/V4.2) . . . . . AV–P380A–TK
*PCS–10/20 Project Control System Installation Guide* (V1) . . . . . AA–5513A–TK
*PCS–10/20 Project Control System Reference Manual* (V1) . . . . . AA–5512A–TK
*DEC–10/DEC–20 Processor Reference Manual* . . . . . AA–H391A–TK
*DEC–10/20 Processor Reference Manual* Update . . . . . AD–H391A–T1
*RSX–20F System Reference Manual* (V14–45) . . . . . AA–H352B–TK
*SORT/MERGE User's Guide* (V4C) . . . . . AA–M064A–TM
*TOPS–20 KL10 Model B Installation Guide* (V5) . . . . . AA–M229A–TM
*TOPS–20 KL10 Model B Installation Guide* Update (V5.1) . . . . . AD–M229A–T1
*TOPS–20 KS/KL Model A Installation Guide* (V4.1) . . . . . AA–P346A–TM
*TOPS–10/20 SPEAR Manual* (V1) . . . . . AA–J833A–TK
*TOPS–10/20 SPEAR Reference Card* (V1) . . . . . AV–M752A–TK
*System Manager's Guide* (V4) . . . . . AA–4169F–TM
*System Manager's Guide* Update (RP20) . . . . . AD–4169F–T1
*System Manager's Guide* Update (V5) . . . . . AD–4169F–T2
*Tape Processing Manual* (V4) . . . . . AA–H180A–TM
*TOPS–20AN Monitor Calls User's Guide* (101B) . . . . . AA–4963A–TM
*TOPS–20AN Monitor Calls User's Guide* Update (V3) . . . . . AD–4963A–T1
*TOPS–20AN Monitor Calls User's Guide* Update (V4) . . . . . AD–4963A–T2
*TOPS–20AN User's Guide* (V3) . . . . . AA–5221A–TM
*TOPS–20AN User's Guide* Update (V4) . . . . . AD–5221A–T1
*TRAFFIC–20 Programmer's Manual* (V2) . . . . . AA–H296A–TM
*TV Editor Manual* (V4) (includes one reference card) . . . . . AA–H181A–TM
*TV Reference Card* (V4) . . . . . AV–J341A–TM
*USAGE File Specification* (V4) . . . . . AA–4181B–TK
*USAGE File Specification* Update (V4.2) . . . . . AD–4181B–T1
*TOPS–20 User's Guide* (V4) . . . . . AA–4179C–TM
*TOPS–20 User's Guide* Update (V5) . . . . . AD–4179C–T1
*TOPS–20 User's Guide* Update (V4.1/V5.1) . . . . . AD–4179C–T2
*TOPS–20 UETP Procedures Reference Manual* (V2) . . . . . AA–D606B–TK
*User Utilities Guide* (V4) . . . . . AA–D850A–TM
*User Utilities Guide* Update (MAKLIB V2B) . . . . . AD–D850A–T1
*User Utilities Guide* Update (DUMPER V4.1, PLEASE V4) . . . . . AD–D850A–T2
TOPS–20 Software Notebooks (includes 1–year update service) . . . . . QT018–KZ
TOPS–20 Software Notebook Update #17 (includes TOPS–20 Version 5.1/DECnet–20 Version 3 documentation) . . . . . AD–J020A–17

◆ **COMING ATTRACTIONS**

*TOPS–10/20 Common Math Library Reference Manual* (V7) . . . . . AA–M400A–TK
*TOPS–20 DECnet–20 System Manager's and Operator's Guide* Update (PSI V1) . . . . . AD–J678A–T1
*TOPS–20 PSI Installation Guide* (PSI V1) . . . . . AA–N819A–TM
*TOPS–20 PSI User's Guide* (PSI V1) . . . . . AA–J533A–TM

# U.S. LCG COORDINATORS

| DISTRICT | NAME | LOCATION | TELEPHONE NO. |
|---|---|---|---|
| **NORTHEAST** | | | |
| Metro Boston | Jim Roche | Boston (BXO) | 224-2319 |
| New England | Dave White | Bedford,NH (MHO) | 263-2140 |
| Conn. | Bob Nolin | Bridgeport (SCO) | 254-5265 |
| Upstate | Pete Lilley | Rochester (RCO) | 252-2322 |
| **CENTRAL** | | | |
| Chicago | Helen Godfrey | Rolling Meadows (RLO) | 421-5660 |
| Mid America | Nari Bawa | St. Louis (STO) | 314-991-6400 |
| Great Lakes | Scott Benson | Detroit (FHO) | 313-348-8900 |
| No. Central | Frank Delmont | Minneapolis (MPO) | 612-853-9605 |
| **SOUTHERN** | | | |
| Southeast | Ed Janusz | Orlando (ORO) | 305-660-2100 |
| Mid South | Bill Martin | Knoxville (KXO) | 615-690-1521 |
| Charlotte | Cliff Spatz | Chapel Hill (NCO) | 919-493-2531 |
| Houston | Larry Brown | Dallas (DLO) | 214-620-2051 |
| **WESTERN** | | | |
| Santa Clara | Toby Arnold | Santa Clara (WRO) | 521-2484 |
| San Francisco | Vatche Sogomonian | San Francisco (SZO) | 415-397-8670 |
| Rocky Mtn. | Bill Krause | Denver (DVO) | 553-2214 |
| Northwest | Ron Quarles | Seattle (SEO) | 206-453-5500 |
| **NY/NJ** | | | |
| NY Comm. | Alan Vitolo | One Penn Plaza (NYO) | 333-3913 |
| NY Tech. | Ned Barber | Westchester (WHO) | 333-3940 |
| New Jersey | Chet Sherer | Piscataway, NJ (KYO) | 323-2383 |
| NJ Comm. | Pete Buttacavoli | Piscataway, NJ (KYO) | 323-2465 |
| **SOUTHWEST** | | | |
| So. Cal. | Ivan Strashoon | Costa Mesa (CWO) | 714-979-2460 |
| Los Angeles | Frank Calderon | Culver City (LAO) | 213-417-4351 |
| Albuquerque | Bob Hughes | Albuquerque (AQO) | 552-3021 |
| **MID ATLANTIC** | | | |
| *Washington | Clyde Blassengale | Washington D.C. | (DCO)341-2248 |
| *Maryland | CLYDE COVERS BOTH WASHINGTON & MARYLAND DISTRICTS. | | |
| Philadelphia | Lou Goglia | Blue Bell, PA(PHO) | 337-2520 |
| Ohio Valley | Jim Fate | Columbus (CSO) | 614-868-1900 |

*Washington & Maryland now have one coordinator for both areas.

# BUY-LINE APPLICATION

NAME:

MAIL STOP:

BADGE:

COST CENTER:

DEPT:

OFFICE LOC:

( ) Please add my name to the BUY-LINE mailing list.

( ) Please delete my name from the mailing list.

My responsibility is in:

( ) LCG Sales

( ) LCG Marketing

( ) LCG Service

( ) Another product line or corporate function

Please detach and mail to Barbara Holtz, MR02-2/8D2. Thank you.

**BARBARA HOLTZ**

**MR02-2/8D2**


digital

DIGITAL EQUIPMENT CORPORATION
MARLBOROUGH, MASSACHUSETTS 01752

Large Computer Group

# BUY-LINE

June 1983

Special In This Issue

LCG Among DIGITAL's Six Marketing Organizations

Array Processing For TOPS-20

LCG Presence at Q4 Sales Train

For Internal Use Only

digital

# BUY-LINE JUNE 1983
# TABLE OF CONTENTS

## LCG ORGANIZATION



## PRODUCT INFORMATION



## GENERAL INTEREST



## COURSES, SEMINARS, SYMPOSIA



## LITERATURE AND SALES AIDS



***ATTENTION!***

***Prices and availability quoted in BUY-LINE - unless explicitly stated to the contrary - apply to Continental USA only; for other locations, please contact your local LCG Marketing Representative.***

**BUY-LINE** is published monthly by the Large Computer Group, Marlboro.

**EDITOR:** Barbara Holtz, MR02-2/8D2, Ext. 4996
**PUBLISHING COUNCIL:** Don Mallinson, Jim Miller, Don Waite.

**BUY-LINE** is compiled on the DIGITAL WS200 Word Processing System by Gail Breslin.

**TYPESET** by Digital's Corporate Communications, Concord, MA.

**HAND-DRAWN** illustrations are done by Stanley Roberts of Media Services, Bedford, MA.

**LAYOUT AND ARTWORK** are by Lori Fearebay, Berlin, MA.

**PRINTER** is Commonwealth Publishing Co. of Boston, MA.

**CIRCULATION SERVICES** are performed in Northboro, coordinated by Jack Decesare, of P&CS.

Upon request (see mailer card in this issue), the following will be added to the **BUY-LINE** mailing list:

- Field Service Managers
- Marketing Managers
- Operations Committee Members
- Software Support Managers
- Software Specialists
- Sales Managers
- Sales Representatives
- Service Group Managers
- Product Managers

# LCG IS AMONG DIGITAL's SIX MARKETING ORGANIZATIONS

*Rose Ann Giordano*

*The following article is excerpted from Ken Olsen's memo of May 10, 1983 describing the new DIGITAL Marketing Organization. We of LCG are pleased to have had our responsibility extended to include high end systems, in addition to our DECsystem-10s and -20s. We are pleased to be part of this dynamic new marketing operation, and look forward to working with you to meet the challenges of the '80s.*

*Rose Ann Giordano*

A major component of DIGITAL's success in the '80s is its ability to have competent, highly visible, and strong marketing programs. To achieve this, we have decided to realign Marketing into six market groups that will report directly to me. These groups will plan the company's business in our key markets. To help with this process, I have asked Ed Kramer to be Corporate Vice President of Marketing, reporting to me.

The six marketing group managers are:

- Rose Ann Giordano, who will be in charge of a new group responsible for large systems marketing, which includes the Large Computer Group;
- Bob Hughes, who remains in charge of the Business and Office Systems Group;
- Bill Long, vice president, Technical Group, who will be in charge of the Laboratory Products, Educational Systems and Medical Systems Groups;
- Ward MacKenzie, vice president, OEM Group, who continues in charge of the OEM, Chips and Boards Groups;
- Joel Schwartz, vice president, who will be in charge of Terminals and for marketing personal computers through distributors and resellers such as Computerland (this "resellers" market does not include DIGITAL's Centers or DEC Dealers); and
- Peter Smith, who will be in charge of the newly formed Computer Integrated Manufacuring (CIM) Group, which includes the Engineering Systems and Manufacturing, Distribution and Control Groups.

As Corporate Vice President of Marketing, Ed Kramer will take a leadership role with the six marketing group managers to ensure that the following goals are achieved:

- Each Marketing group has a comprehensive, succinct, and timely message about DIGITAL and its products, and how the products meet customer needs;
- The individual marketing groups have a process in place to clearly define the applications and product needs of their targeted customers;
- The Marketing function has a well-coordinated, integrated strategic plan;
- The Marketing function standards, roles, measurements and career paths are clearly defined and understood; and
- The individual marketing functions are organized to reinforce cooperative efforts and support these goals.

With the start of Fiscal '84, the initial phase of our Professional and Rainbow Personal Computer Programs will be well established. Andy Knowles, vice president, whose career at DIGITAL has mainly focused on many successful start-up operations—including the PDP-11 program, the Components Group (the Terminals and LSI-11 Program), and the Small Systems Group (personal computers and terminals)—will move to Hudson to again become involved in the development and marketing of DIGITAL's next generation of technologies. He will be a member of the Product Strategy and Marketing/Sales Strategy Committees.

# U.S. LCG COORDINATORS

| DISTRICT | NAME | LOCATION | TELEPHONE NO. |
|---|---|---|---|
| **NORTHEAST** | | | |
| Metro Boston | Jim Roche | Boston (BXO) | 224-2319 |
| New England | Dave White | Bedford,NH (MHO) | 263-2140 |
| Conn. | Bob Nolin | Bridgeport (SCO) | 254-5265 |
| Upstate NY | Pete Lilley | Rochester (RCO) | 252-2322 |
| **CENTRAL** | | | |
| Chicago | Helen Godfrey | Rolling Meadows (RLO) | 421-5660 |
| Mid America | Nari Bawa | St. Louis (STO) | 314-991-6400 |
| Great Lakes | Scott Benson | Detroit (FHO) | 313-348-8900 |
| No. Central | Frank Delmont | Minneapolis (MPO) | 612-853-9605 |
| **SOUTHERN** | | | |
| Southeast | Ed Janusz | Orlando (ORO) | 305-660-2100 |
| Mid South | Bill Martin | Knoxville (KXO) | 615-690-1521 |
| Charlotte | Cliff Spatz | Chapel Hill (NCO) | 919-493-2531 |
| Houston | Larry Brown | Dallas (DLO) | 214-620-2051 |
| **WESTERN** | | | |
| Santa Clara | Toby Arnold | Santa Clara (WRO) | 521-2484 |
| San Francisco | Vatche Sogomonian | San Francisco (SZO) | 415-397-8670 |
| Rocky Mtn. | Bill Krause | Denver (DVO) | 553-2214 |
| Northwest | Ron Quarles | Seattle (SEO) | 206-453-5500 |
| **NY/NJ** | | | |
| NY Comm. | Alan Vitolo | One Penn Plaza (NYO) | 333-3913 |
| NY Tech. | Ned Barber | Westchester (WHO) | 333-3940 |
| New Jersey | Chet Sherer | Piscataway, NJ (KYO) | 323-2383 |
| NJ Comm. | Pete Buttacavoli | Piscataway, NJ (KYO) | 323-2465 |
| **SOUTHWEST** | | | |
| So. Cal. | Ivan Strashoon | Costa Mesa (CWO) | 714-979-2460 |
| Los Angeles | Frank Calderon | Culver City (LAO) | 213-417-4351 |
| Albuquerque | Bob Hughes | Albuquerque (AQO) | 552-3021 |
| **MID ATLANTIC** | | | |
| *Washington | Clyde Blassengale | Washington D.C. | (DCO)341-2248 |
| *Maryland | CLYDE COVERS BOTH WASHINGTON & MARYLAND DISTRICTS. | | |
| Philadelphia | Lou Goglia | Blue Bell, PA(PHO) | 337-2520 |
| Ohio Valley | Jim Fate | Columbus (CSO) | 614-868-1900 |

*Washington & Maryland now have one coordinator for both areas.

# TOPS-20 UPDATE

*Sharon M. Lipp*

Several major TOPS-20 software products have been submitted and released from the SDC (Software Distribution Center) within the last several weeks. This article will discuss the following:

TOPS-20 V4.1
TOPS-20 V5.1
TOPS-20AN V4.1
TOPS-20AN V5.1
DECnet-20 V3.0
GALAXY V4.2

**TOPS-20 V4.1/GALAXY V4.2**

TOPS-20 V4.1/GALAXY V4.2 has been released to the SDC with a FRS of June 1983. This is a maintenance release of the TOPS-20 Operating System and GALAXY batch subsystem. This release supports KL10 Model A and the KS20 processors.

**TOPS-20 V5.1/GALAXY V4.2/ DECnet-20 V3.0**

TOPS-20 V5.1/GALAXY V4.2/DECnet-20 V3.0 has been released from the SDC. This release of TOPS-20 V5.1 will support Phase III DECnet-20. TOPS-20 V5.1 supports only KL10 Model B; DECnet-20 requires a 128 K DN20. In addition to DECnet Phase III, this release of the TOPS-20 Operating System is a maintenance release, and includes a maintenance release of GALAXY V4.2. Customers should be advised that DECnet-20 V3.0 is suitable for use only with TOPS-20V5.1 and GALAXY V4.2.

**TOPS-20 V4.1/TOPS-20 V5.1**

Customers should be aware of the following with these releases of TOPS-20:

a) A new version of GALAXY (GALAXY V4.2) is included in this release.

b) The version of DUMPER included with this release is the same as with TOPS-20 V5.0.

c) The version of ARPA included with this release is the same as with TOPS-20 V4.0/V5.0 (NCP).

**TOPS-20AN (ARPA) — Controlled Release**

TOPS-20 AN is the same as the TOPS-20 monitor with the added ability to communicate on the ARPAnet. ARPA (Advanced Research Projects Agency) made a change in the protocol used by their network (ARPAnet) on January 1, 1983.

The new protocol (called TCP) is incompatible with the old protocol (called NCP), and because TOPS-20AN V4.1/V5.1 are distributed with the old protocol, a new customer receiving this package will not succeed in communicating on the ARPAnet.

To insure that customers are alerted to the differences in the protocol, TOPS-20AN will be provided under a Controlled Release. For those customers who wish to communicate on the ARPAnet, contact Customer Service System Engineering (Gary Blenis in MRO1-1) for further information on the Controlled Release Plan.

Customers who wish to run the standard TOPS-20AN V4.1/V5.1 software using the NCP protocol with DECnet may need to use a non-standard monitor build procedure. The Software Specialist should contact the Large Systems Corporate Operations Group (hot line) prior to attempting to install this configuration.

For order information, including details on the correct and current SPD and Q-numbers, please refer to the article (of this same title) in the June 6 1983 "Sales Update".

# LCG REFURBISHED EQUIPMENT

*Connie Davis*

Refurbished equipment undergoes a comprehensive inspection and upgrade during which all field effort ECOs are incorporated and checked or acceptance procedures are run. The following information is current as of this issue, but is subject to change.

**Availability**

- Equipment presently refurbished by LCG follows. Additional LCG equipment may be available on a limited basis. Call Installed Base Marketing for price and availability.
- Availability inquiries should be directed to LCG Sales Service or Installed Base Marketing.

**Prices**

Pricing information is available from LCG Sales Service or Installed Base Marketing. All prices are F.O.B. DIGITAL's plant in Massachusetts, and apply in the continental United States only. Prices do not include shipping or transit insurance.

Refurbished equipment will not be subject to additional discount, but the dollar value will be added to the aggregate level.

**Equipment Reservations**

Refurbished hardware can be reserved in anticipation of a customer's purchase order.

To reserve equipment, contact the appropriate LCG Sales Service Representative and provide the following information:

- Salesperson's name, location, badge number, and booking center, P/L, FAC, CODE, F/S branch and customer code.
- Customer's name and address.
- Requested equipment which includes software, any inter-product line options and the requested delivery date.
- NOTE: Refurb activity will not begin until the purchase order is received by Order Administration in Marlboro.

**Booking Information**

The following information is required to book an order:

- An exception TWX from LCG Sales Service Manager is required to book an order. (This is because of the non-standard pricing.)

Outlined below are the policies on cables for systems and add-ons:

- Refurbished System Orders: Cable/floor plan information must be received at least 60 days prior to shipment.
- Refurbished Add-on Orders: Cable information, when applicable, must be submitted with the Master Order Form and Contract or Purchase Order 30 days prior to ship date.

**Installation and Warranty**

- Field Service installation costs for add-on hardware orders are not included in the option price. Please add them to your order.
- Installation and basic maintenance charge are available in the Maintenance Section of the DIGITAL Standard Price List or from your local Field Service Marketing Specialist.
- Warranty for refurbished system orders is 90 days from the date of Installation completion and 30 days for add-on orders.

**Important**

- ALL REFURBISHED ORDERS ARE SUBJECT TO EQUIPMENT AVAILABILITY.
- NO QUOTES SHOULD BE GIVEN WITHOUT AN EXCEPTION TWX FROM THE LCG SALES SERVICE MANAGER.

| Option | Description |
|---|---|
| **Disks** | |
| RM03-AA(AB) | SINGLE ACCESS 67 MBYTE, 3600 RPM |
| RP06-AA(AB) | 176 MBYTE, MEM. DISK PACK & DRIVE, SINGLE ACCESS |
| RP06-BA(BB) | 176 MBYTE, MEM. DISK PACK & DRIVE, DUAL ACCESS |
| RP07-AA(AB) | RP07 3 PHASE 60HZ SINGLE ACCESS |
| RP07-BA(BB) | RP07 3 PHASE 60HZ DUAL ACCESS |
| **Communications** | |
| DC10-B | 8-LINE GROUP |
| DC20-AA | 8-LINE BASIC ASYNCH GROUP |
| DC20-CC | CABLES & DIST CAB FOR DC20-AA |
| DC20-CD | CABLES & DIST CAB FOR DC20 |
| DC20-DA | 8-LINE ASYNCH EXPANSION GROUP |
| DC20-EA(EB) | COMMUNICATION EXPANSION CAB |

| Option | Description |
|---|---|
| DC20-EC(ED) | COMMUNICATION EXPANSION CAB |
| DF10-CA(CB) | DATA CHANNEL (22-BIT) |
| DIB20 | DIA20 & BACKPLATE AND HARDWARE |
| DK10 | REALTIME CLOCK |
| DL10-AA(AB) | DATA LINK (PDP-11 TO PDP-10 MEMORY) |
| DL10-C | ADDITIONAL PDP-11 UNIBUS PORT |
| DN20-BA | 2.4K to 19.2K BAND SYNC SINGLE LINE W/CONT. |
| DN20-BB | BASIC 2.4K TO 19.2K BAND SYNC LINE EXPANDER |
| DN20-CA(CB) | BASIC SYNC. COMM CAB, 11/34A, 32 KW CORE MEMORY[1] |
| DN20-CC(CD) | DN20-CA W/BLUE COSMETIC[2] |

[1] **MUST HAVE DN20-MU UPGRADE**
[2] **RECOMMEND DN20-MU UPGRADE**

| Option | Description |
|---|---|
| DN20-MA | DEC-20 128 KW FRONT END |
| DN20-MU | DN20-C TO DN20-M UPGRADE |
| DN21-DA(DB) | 56K BAUD SYNC COMM EXPANSION DRAWER |
| DN22-AA | TOPS-20 IBM FRONT END FOR 2020 |
| DN25-EA(EB) | EIA ASYNCH COMM EXP CABLES CAB, DN25-DA |
| DN25-EC(ED) | DN25-EA(EB) W/BLUE COSMETIC |
| DN81-EA(EB) | ASYNCH LINE CAB EXP |
| DN81-EC | ASYNCH LINE GROUP (DDCMP) DH11-AA, DM11-BB |
| DN81-ED | ASYNCH LINE GROUP (DDCMP) DH11-AC, DM11-BB |
| DN81-FB | EIA MODEM 8-LINE GROUP: 2 DM11-DB |
| DN81-FC | EIA MODEM 8-LINE GROUP: 2 DM11-DC |
| DN81-H | NPR SYNC EIA |
| DN87S-AA | UNIVERSAL COMM. FRONT END, 120V WITH DTE20 |
| DN87S-AB | UNIVERSAL COMM. FRONT END, 240V WITH DTE20 |
| DNHXX-AA(AB) | BASIC UNIT RECORD EXPANSION CAB |
| **Central Processor Units** | |
| KI10 | I/O ARITHMETIC PROCESSOR, DK10 |
| KL10-FA(FB) | KL10-A WITH LA120 CONSOLE TERMINAL |
| KS10-PA | KS10, 4 MS10-BA, RH11-C |
| **Controllers** | |
| RH10-A | MASSBUS INTERFACE |
| RH20 | MASSBUS CONTROLLER |
| TD10-CA(CB) | CONTROL W/SPACE FOR 3 TU56 |
| **Tape Systems** | |
| TAU45-EC(ED) | RH11-C & TU45-EA(EB) |
| TU45A-EC(ED) | TM03-CE(CF) & TU45-EH(EJ) |
| TU45A-EH(EJ) | TU45A-EE, BLUE, USED ON TM02 |
| TAU77-EC(ED) | RH11-C & TU77-CB(CD) |
| TU77-CB | TM03-CN & TU77-AF |
| TU77-AF | 9 TRACK AUTOLOAD, 125 IPS |
| TU78-AB(AD) | SINGLE ACC MASTER 240V 60HZ |
| TU78-AF(AJ) | 1600/6250 SLAVE DRIVE 240/60 |
| **Miscellaneous** | |
| BA10 | WIRED CAB FOR CR10, LP10, XY10 |
| CR10-D | CARD READER, 1000 CPM |
| CR10-E | CARD READER, 300 CPM |
| **Memory** | |
| MB20-E | 64K EXPANSION MODULE |
| MB20-GA(GB) | 64K BASIC MEMORY |
| MB20-HA(HB) | 128K BASIC MEMORY |

| Option | Description |
|---|---|
| MB20-HC(HD) | 128K SECOND MEMORY |
| MB20-LA(LB) | 256K BASIC MEMORY |
| MB20-LC(LD) | 256K SECOND MEMORY |
| MC10-F | EXTRA MEMORY PORT |
| MC10-G | PAIR EXTRA MEMORY PORT |
| MF10-E | 32K EXPANSION MEMORY |
| MF10-G | 64K MEMORY MODULE |
| MF20-E | 256K EXPANSION (4 MF20-M) |
| MF20-LA(LB) | 256K INTERNAL BASIC MEMORY |
| MF20-LC(LD) | 256K INTERNAL SECOND MEMORY |
| MG10-E | 32K 37 BIT EXPANSION (4 MA20-M) |
| MG10-HA(HB) | 128K MEMORY, CONTROL, CAB |
| MH10-E | 64K CORE MEMORY EXPANSION (4 MB20-M) |
| MH10-LA(LB) | 256K MEMORY, CONTROL & CAB |
| MS10-BA | 64K ECC MOS MEMORY |
| **Lineprinters** | |
| LP100-Bx | LP100 CONTROLLER & LP07-BX |
| LP100-Dx | LP100 CONTROLLER & LP05-VX |
| LP100-Ex | LP100 CONTROLLER & LP05-WX |
| LP100-Fx | LP100 CONTROLLER & LP14-VX |
| LP100-Hx | LP100 CONTROLLER & LP14-WX |
| LP20-Ax | LP20 CONTROLLER & LP05-VX |
| LP20-Bx | LP20 CONTROLLER & LP05-WX |
| LP20-Cx | LP20 CONTROLLER & LP14-VX |
| LP20-Dx | LP20 CONTROLLER & LP14-WX |
| LP20-Fx | LP20 CONTROLLER & LP10-JX |
| LP20-Hx | LP20 CONTROLLER & LP10-KX |
| LP200-Bx | LP20 CONTROLLER & LP07-BX |
| LP10-Fx | (NEED BA10) |
| LP10-Hx | (NEED BA10) |
| LP07-YA | CHARABAND FOR LP07 64/64 EDP |
| LP07-YB | CHARABAND FOR LP07 96/96 EDP |
| LP07-YC | CHARABAND FOR LP07 64/96 EDP |

**x-Denotes designator to be specified**

## TRADE-IN AMOUNTS

Trade-ins are available for most options sold by LCG.

Please call Installed Base Marketing (DTN 231-4291), Sales Service (DTN 231-4420) or your designated Marketing Specialist for details.

# TOPS-10/-20 2780/3780/HASP PERFORMANCE

*Sharon M. Lipp / Doug Ruby*

The new maintenance release of the TOPS-10/-20 2780/3780/HASP Emulation and Termination product provides a sound basis upon which our current and future LCG customers can build IBM oriented networks. Not only does the HASP capability represent new functionality for the TOPS-10 sites, but in fact the new product provides substantially enhanced reliability and performance.

On top of the many good reports from the field test sites about 2780/3780/HASP (hereafter referred to as IBMCOM) performance, extensive testing was done under controlled circumstances to measure the performance of the new product. The results of this testing are described below. The following conclusions can be drawn concerning the product's performance:

1. IBMCOM provides adequate to excellent performance under all supported configurations. This includes up to 6 lines at 19.2 KBd for 2780/3780 and up to 2 lines at 19.2 KBd for HASP.
2. Under typical loads, it takes only about fifteen per cent (15%) of a KL to drive 6 lines at 19.2 KBd on DECSYSTEM-2060s using 3780.
3. While 6 lines are supported and work reliably at 19.2 KBd for 2780 and 3780, the DN20 front end is running at the limit of its buffer space. This will tend to product somewhat variable performance under heavy load conditions.

**Performance Test**

In order to generate a reproducible test system for IBMCOM, a DECSYSTEM-2060 running TOPS-20 Version 5.0, GALAXY Version 4.2, and 2780/3780/HASP Version 2.0 was tested. A DN20-MA with 6 KMC/DUP lines was used for the front end. Since the TOPS-10/-20 IBMCOM product does both Emulation and Termination (that is, it emulates a 2780 style RJE station to a host as well as terminates those stations by looking like an IBM host), the test methodology was based on looping Emulation lines into termination lines.

For the 6 line test, this means that 3 emulation lines were looped through null modems into 3 termination lines, and data was sent back and forth for a total of 6 lines. In the 1 line case, another remote DECSYSTEM-20 was used as the target system. While this mode of running is *not* representative of how customers use our product, it does provide a good measure of the performance and compute cost of the product.

Table 1, below, presents the results of this test. In order to generate this information, a one megabyte file of incompressible data (3780 and HASP can "compress" repeated data such as trailing spaces or repeated characters, thus increasing apparent throughput) was sent from the termination lines to the emulation lines. The data was then sent from the emulation lines to the termination lines. The aggregate speed of the data transfer across all of the DN20 lines was averaged for the two test cases to produce the results shown below.

**TABLE 1**
**IBM Communication Throughput (in Bytes per second)**

| Protocol | Line Speed KB | Number of Lines 1 | 2 | 4 | 6 |
|---|---|---|---|---|---|
| 2780 | | | | | |
| | 4.8 | 500 | 1000 | 1000 | 1200 |
| | 9.6 | 750 | 1400 | 1800 | 1300 |
| | 19.2 | 1000 | 2000 | 2600 | 1350 |
| 3780 | | | | | |
| | 4.8 | 450 | 1000 | 1000 | 1300 |
| | 9.6 | 850 | 1500 | 1800 | 1350 |
| | 19.2 | 1100 | 2000 | 2800 | 2200 |
| HASP | | | | | |
| | 4.8 | 450 | 950 | | |
| | 9.6 | 800 | 1250 | | |
| | 19.2 | 1050 | 2200 | | |

This data represents the actual file transfer rate in bytes per second, using the defined protocols and line speeds. In real world environments, 3780 and HASP data compression would tend to improve apparent throughput. Also, in real world environments, it would not necessarily be typical that all lines on DN20 would be active at any one time as is the case here.

Further, since we used null modems for this test, the bisynchronous modem delay was set to zero (the time it takes to turn around a line from receive to send). This would be non-zero, where dial-up or leased lines are used. In that case, throughput would be slightly lower.

Experience in competitive benchmarks has shown that it takes about fifteen per cent (15%) of a KL to drive six lines at up to 19.2 KB with the TOPS-20 3780 product.

Finally, a particular customer might run combinations of HASP, 2780 and/or 3780, both Emulation and Termination, which are not outlined above. Since there are imponderables which can affect performance both positively and negatively, this data should be used as *a guideline only* and *not* as a guarantee to your customer. Software Services should be consulted when configurating an IBM system, to insure a supported configuration.

**Availability**

The TOPS-10 and TOPS-20 IBM communication products will be available from the SDC in the June/July 1983 time frame. The TOPS-10 and TOPS-20 IBMCOM has been removed from Controlled Release, and may be ordered directly from the SDC.

Prerequisite software for the KL10 and KI10-based systems is TOPS-10 Operating System Version 7.01A with GALAXY V4.1.

Prerequisite software for KL10-based systems is TOPS-20 Operating System V5.1 with GALAXY V4.2, and for KS10-based systems is TOPS-20 V4.1 with GALAXY V4.2.

Details concerning ordering information and Q-numbers may be obtained from the article (of the same title) in the June 6 1983 issue of "Sales Update".

# ARRAY PROCESSOR CAPABILITIES NOW AVAILABLE ON TOPS-20

*Michael Flitterman*

## Announcing the AP-20 Array Processor Package

Now, high performance array processing is available on TOPS-20, as the result of a cooperative marketing agreement just signed between DIGITAL and Floating Point Systems Inc. (FPS) of Beaverton, Oregon.

The AP-20 Array Processor Package consists of the following major components:

1. FPS' AP-190L array processor;
2. A hardware interface package that physically allows connection of the AP-190L to the DECSYSTEM-2060
3. A series of software subroutines and a modified TOPS-20 monitor, available from DIGITAL's Northern California Software Services District.

This package provides your customers' DECSYSTEM-2060s with very high-speed computing capabilities for a price/performance ratio unequalled in the marketplace. It is available wherever FPS has a service organization.

Each of the components listed above must be purchased as separate line items. The array processor comes directly from FPS; the second and third items are ordered from local DIGITAL sales reps.

The AP-190L is an array processor specifically designed for users who call FORTRAN programs to calculate a great abundance of data or to perform any high speed arithmetic calculations. The AP-190L does high speed FORTRAN calculations and FFTs (Fast Fourier Transforms), as well as array manipulations. With such operations and calculations performed by the array processor, users can better benefit from their DECSYSTEM-2060s powerful performance capabilities in general-purpose interactive timesharing.

*Array processors help geophysicists locate potential oil fields, by analyzing seismic data—such as these cross-sectional views of the earth's crust.*

The DECSYSTEM-2060 and the AP-190L form an integrated system that has the best of both worlds: the array processor coupled with the DECSYSTEM-2060 for high performance computing power, and with the TOPS-20 Operating System for ease of use, high productivity, and timesharing power.

This integration means that your customers' DECSYSTEM-2060s now have the capability of running CPU-intensive applications such as: simulation, modeling, high volume data analysis, circuit design and design rule checking, physical analysis and computations, and seismic processing. Yet, the -2060s continue their traditional strengths in information management, financial modelling, and engineering computations. The DECSYSTEM-2060 can now be a "power box", running administrative departments of major research corporations!

The design for interfacing the DECSYSTEM-20 with the AP-190L consists of using a direct memory access (DMA) path between FPS' AP-190L and the DECSYSTEM-2060 CPU. A section of external memory is dual ported and shared between the DECSYSTEM-20 and FPS -190L. This gives extremely high bandwidth for data transfer between the array processor and the host system.

In addition, a link between the DECSYSTEM-20 I/O bus to the array processor provides complete control of the array processor. Once a user has assigned the array processor then s/he can control the array processor in a wide variety of ways, including front panel control, booting, and other special functions such as loading or reading registers.

A standard variety of higher level functions are also provided as part of the TOPS-20 Array Processor software package. Due to the interface of the AP-190L into the DECSYSTEM-2060 memory and I/O bus, significant reduction in throughput is achieved, making the FPS' AP-190L more attractive for applications that in the past, based upon the size of a compute-bound task, could not justify the use of an array processor.

Sales support will be provided by FPS from their branch offices in order to help you qualify your prospects. For more information on sales support for the AP-20 Package, please contact your marketing specialist in the LCG Product Group.

# MICRO-10/20:
## CP/M* Emulator for DECsystem-10 and DECSYSTEM-20

*Bernie Eiben*

MICRO-10/20 allows the DECsystem-10 and DECSYSTEM-20 to run personal computer software, including the popular CP/MTM operating system and the large quantity of inexpensive programs that run under it. With no additional hardware investment, each terminal of a TOPS-10 or TOPS-20 system can operate as if it were a fully-configured microcomputer, and at the same time have the full power of the DECSYSTEM available.

**Applications:**

MICRO-10/20 allows CP/M and CP/M-based programs as well as stand-alone programs to run on the DECSYSTEMs. Except for their speed, such programs run exactly as they do on a microcomputer. Thus, MICRO-10/20 provides several important capabilities not otherwise available to TOPS-10 and TOPS-20 systems:

- A huge amount of free or very inexpensive software can be run. This includes software for spreadsheets, accounting and bookkeeping, data base management, games, etc.
- Data and programs can be easily exchanged between the DECSYSTEM and the micros within an organization, providing a degree of compatibility not previously possible.
- Educational institutions can teach classes in personal computing without any additional hardware investment.
- Personnel who are familiar with microcomputer software can become instant users of the DECSYSTEM with no further training. As their needs dictate, they will gradually learn to use the DECSYSTEM to its best advantage.
- Program development can be done quickly and easily using advanced debugging tools provided by MICRO-10/20 as an option.
- Data can be extracted from a DECSYSTEM data base using one of its DBMSs and then further manipulated by the end user with a micro DBMS, thus producing results customized to individual user's needs.
- The explosive proliferation of different types of microcomputers within an organization can be controlled, standardizing on CP/M-based machines, now that compatibility with the DECSYSTEM is assured.
- If a microcomputer goes down, the DECSYSTEM can be used as a back-up.
- When an application running on a microcomputer exceeds its available disk space, it can be transferred to the larger DECSYSTEM and run with no changes to the program or data whatsoever.
- The DECSYSTEM peripherals such as high-speed printers, plotters, letter-quality printers, etc., are available to each microcomputer application.

**Standard Features:**

MICRO-10/20 is a program. That is, there is no actual microcomputer hardware...it is all simulated. Programs running under CP/M interact with this simulated hardware by executing CP/M monitor calls, just as on a real micro. Users interact with the simulated hardware by entering commands through a TOPS-20 style command interpreter which is entered by typing a special (user-resettable) escape character. For example, a user pushes the simulated write-lock button on simulated disk drive "A" by typing the "LOCK A:" command. All such commands can be entered at any time, regardless of the state of the running microcomputer program. Their effect will be the same as if the operation had been performed on the actual microcomputer hardware.

The "hardware" consists of an 8080/8085 or Z80 microcomputer with 64K bytes of main memory; 16 disk drives, each one capable of holding a 2 megabyte demountable "floppy" disk; paper tape reader; paper tape punch; console terminal; and printer. In addition, all 256 I/O ports can be connected to devices as data or status ports.

Floppy disks, which are simulated as files on the DECSYSTEM disks, can be created, deleted, renamed, write-protected/enabled, mounted, dismounted, and sifted through (as one would do when hunting for a particular floppy in a container of floppies).

Commands exist to push the RESET button, check on the status of I/O devices (eg: to see what floppies are mounted and where), set terminal characteristics, exit back to the DECSYSTEM, and perform a variety of other useful tasks.

MICRO-10/20 executes in native mode under both TOPS-10 and TOPS-20. The TOPS-20 style command scanner operates on both systems, providing "?" and "HELP" facilities as well as command prompting and completion. In addition, MICRO-10/20 can be initialized at start-up time to have specified floppies mounted, terminal characteristics set, etc., and re-initialization of the same or different configuration can be done at any time.

Facilities for transferring information between the simulation micro and TOPS-10 or TOPS-20 are provided. While this feature is highly useful, it and some companion features can be disabled when it is desired to protect microcomputer program or data from unauthorized copying.

**The "Tool" Option:**

A powerful debugging aid called the "TOOL", is provided as an option that can be used to debug programs running stand-alone, or where a debugging program running under CP/M would interfere with program operation, or when more advanced debugging features are required.

An outstanding facet of the TOOL is that it does not reside within the simulated micro, but rather is external to it, completely invisible to the executing micro program. As a result, the TOOL provides several sophisticated debugging facilities not normally available to microcomputer programmers:

- The ability to interrupt a running program at any time, without the need for a pre-defined breakpoint.
- The ability to have a break occur when a memory location is deposited into.
- The maintenance of a history list of instructions and program counters so that when a break of failure occurs, it is possible to trace the program flow backwards to find the problem.
- The gathering of statistics (number of instructions executed, run time, etc.)

These features make MICRO-10/20 particularly valuable to users who are doing program development work as well as to others who want access to microcomputer application software on the DECSYSTEM.

**Ordering Information:**

Information on obtaining a perpetual license for MICRO-10/20 is available from:

FEL Industries, Inc.
200 Wakelee Road
East Dover, Vermont 05341
(802) 348-6644

* (CP/M is a trademark of Digital Research, Pacific Grove, California)

# LANGUAGE FUNDAMENTALS MANUAL

*Bill Keating*

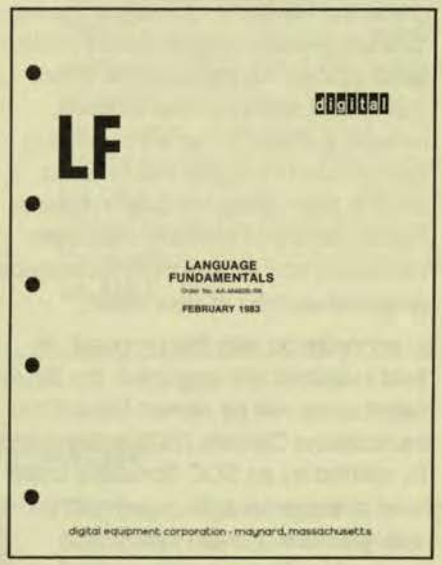
The new version of the Language Fundamentals manual, dated February 1983, has been released. The manual is a reference guide to eleven of DIGITAL's major programming languages: APL, BASIC, BLISS, COBOL, DIBOL, DSM, FORTRAN, PASCAL, PL/I, and C. Its tabulated format simplifies the comparison of one language's features across the various operating systems, and comparison between different languages. Languages for TOPS-10 and TOPS-20 are covered extensively. Additionally, five sections, BASIC, COBOL, DSM, FORTRAN and PL/I, include ANSI (American Standards Institute) comparison.

The information is provided by the software engineers specializing in languages. For information regarding hardware and software requirements and product ordering instructions, please refer to the appropriate Software Product Description (SPD).

Language Fundamentals has been sent, via automatic distribution, to all literature contacts, to software support personnel who have requested the publication, and to an additional group of subscribers. Language Fundamentals, published annually, is a companion manual to System Software Information (SSI), published semiannually. (System Software Information provides tabulated information concerning operating systems, software, software documentation and hardware support. Early issues of SSI included the material now published in Language Fundamentals.)

**Subscribing Ordering Information**

To subscribe to Language Fundamentals and SSI, software support personnel should refer their requests to the CLAS contact in their district (the publication code is SSI). Other DIGITAL personnel can subscribe by writing or calling Gladys Pannell, MLO12-3/A62, dtn 223-5860.




If you wish to order without subscribing, please request your Literature Contact to place your order with the Software Distribution Center.

Software identification codes:

Language Fundamentals
AA-M460B-RK
System Software Information
AA-5074H-RK
(A new issue of SSI will be available June 1983).

**CAUTION**

The manual is for DIGITAL internal use only and is NOT to be given to customers unless a non-disclosure agreement has been signed. In order to protect this confidentiality, manuals will be mailed only to DIGITAL offices, at the request of DIGITAL personnel.

# SALES COMMUNICATIONS CENTERS

*Gary Buegel*

The Corporate Sales Communications Group announces a program to upgrade the literature rooms and training libraries presently established in field sales offices. To increase the effectiveness of sales communications, members of our group will be visiting field offices during the next year to provide floor plans, hardware requirements, details of available corporate resources and a sales communications proposal specific to your office.

In accordance with the proposal, as field locations are upgraded, the designated areas will be named Sales Communications Centers (SCCs) and will be staffed by an SCC Specialist under local management. Our goal is to provide you with a single information source for all new and current sales tools as well as reliable ordering information.

This means that beginning July 1983, all LCG literature will be provided via your SCC Specialist, and that SCC libraries will have copies of Corporate or marketing group literature current as of each issue. You will be able to continue receiving certain publications by subscription such as BUY-LINE, "Large Systems News", "Sales Update", etc.

**Current Program**

Literature Contacts, currently established in 278 field offices worldwide, are your interface for sales communications. Through a polling process, they determine the quantitites necessary to provide the local Sales Team with new product announcement literature and corporate publications.

Weekly Literature Flashes (sent from our office via RCS and EMS) keep your Literature Contact up to date on new publications and on a wide variety of available sales tools, such as videotapes, training aids, and customer presentation packages. They are also informed of general interest items including product line messages, DECUS, seminars, training and awards programs. Single copies of many documents are kept on hand for reference or perusal prior to ordering.

**SCC Program**

Our new program will build upon this base and expand the services offered to and by your Specialist. Specifically, upon completion of the terms of the proposal, a Sales Communications Center in yor office will offer:

**Features**

- A professional and effective communications environment
- A stock of frequently requested items and a display of new items
- Information regarding the newest literature and its availability
- A reference of all corporate groups supplying sales tools
- A reference of all available literature and sales tools
- An individual responsive to your need for information
- An individual to place your orders and monitor fulfillment
- A clearing-house for facility literature requirements and literature sources.

**Benefits**

- Reduced literature costs (via SCCs — no charge; via P&CS — shipping charges)
- Less time spent by salesperson searching for the source of information
- Less time spent by salesperson ordering information
- Immediate access to the newest and most requested literature
- More reliable ordering information and procedures, less confusion
- A local contact dedicated to sales communications.

To qualify as a Sales Communications Center, certain criteria must be met:

- A clean, designated area to display and store new sales tools
- Appropriate equipment (shelving, seating, etc.) required for effective use
- An accountable Specialist to administer SCC (hours based on office size)
- Region, district or branch management support of SCC program.

In some locations, a full commitment to the SCC program may require:

- An appropriate A/V viewing room with necessary equipment
- Computer terminal with communications capability
- A full-time Specialist
- Region, district, or branch management funding of SCC.

**We Deliver**

If you are a member of the field sales team and desire more information on how we can improve your sales communications,

...OR...

If you are responsible for supplying information to the sales team and wish to explore how your message can make the greatest impact,

Contact:
Nora Fleming-Peaslee
DTN: 276-9949
(617) 496-9949

# NEW FROM DIGITAL PRESS: YOUR FIRST BUSINESS COMPUTER

*Peter Kraus*

YOUR FIRST BUSINESS COMPUTER, by Peter Luedtke and Rainer Luedtke, is now available from Digital Press. The first publication in the new "Desktop Computer Series", the book helps businesspeople choose the right small computer for their business needs. It provides an understanding of computer capabilities, evaluates business goals and work environments, and prepares the reader to explore the marketplace. A final chapter shows how to integrate the computer system into the business. The Desktop Computer series will feature short, succinct books on computer capabilites and applications for the business market.

Using the comprehensive checklists and worksheets in YOUR FIRST BUSINESS COMPUTER, readers can evaluate their current business operations and pinpoint weaknesses and critical areas before automation. This also helps establish priorities for computerization.

Small computers and their capabilities are discussed in a systems context, as well as how the different parts of a computer system affect one another and contribute to the effectiveness of the entire system. Readers will be able to sort through technical jargon, talk with computer retailers and determine which computer systems would be most appropriate.

Case studies and an illustrated glossary provide a lively background to help the reader make the right decision. Table of Contents include:

1. Getting Started
2. Avoiding the Hardware Jungle
3. Avoiding the Software Swamp
4. Understanding What Makes a Good System
5. Evaluating Your Business
6. Deciding What You Really Need or Want
7. Weighing Costs & Benefits
8. Selecting the Right System
9. Making the Most of Your Computer System

ORDERING INFORMATION: 1983, paperback, 220 pages. The order number for YOUR FIRST BUSINESS COMPUTER is EY-00008-DP. The internal transfer price (ITP) is $5. Employees may order Digital Press titles through their cost center by sending a TWX (RCS code: BKLG) or memo (mailstop: BKO). The TWX or memo should include: name, badge number, cost center, mailing address, and cost center manager name. The customer list price is $15 per copy. All orders should be sent to Digital Equipment Corporation, 12A Esquire Road, Billerica, MA 01862.

---

# LCG's 1983 AD CAMPAIGN

*Don Mallinson*

As many of you read in the April BUY-LINE, LCG's 1983 Ad Campaign promotes the theme "DIGITAL's Mainframe Family Expands" with domestic ads reaturing Digital System Interconnect Architecture.

Headlines for each ad are:

"Introducing DECSYSTEM-20. The Network" (first ad)
"Unleash Your DECSYSTEM-20s by Tying Them Together." (second)
"TOPS-20. Now It all Hangs Together." (third ad)

The first ad was reprinted in the April BUY-LINE. The second ad (reprinted in the last issue) detailed the hardware aspects of DSIA; the third ad, reprinted in the centerfold of this issue, is about DSIA software.

Our audience includes DP/MIS managers, the organizational function which you approach in your sales calls. Our media schedule for all three of these ads targets the following publications:

"Computerworld"
"Infosystems" and
"Information Systems News".

Our purpose in hyping DSIA is to maintain and increase interest in our products. We also want to show that we are developing new products, and providing a growth path for TOPS-20 users.

A new aspect of this campaign is LCG's use of a toll-free 800 phone number. Anyone calling the number that appears in the ad will be sent three pieces of sales literature within 24 hours. Why not test the system yourself?

# LCG PLAYS MAJOR ROLE
# N.Y. "COMPUTER SOLUTIONS FOR THE 80's" SEMINAR

*Ned Barber*

Long Island New York customers and prospects had a chance to view some of DIGITAL'S finest, and to hear our current users discuss us at a seminar entitled "Computer Solutions for the 80's", held May 9th in Uniondale, L.I.

Several hundred customers and prospects heard Rod Sutherland, DIGITAL's roving ambassador, discuss the Corporation's present evolution. They then eagerly thronged to the trade show area, where they saw and touched a wide variety of Corporate products. The products displayed and demonstrated ranged from PCs all the way to a fullblown DECSYSTEM-2020 which was provided courtesy of LCG.

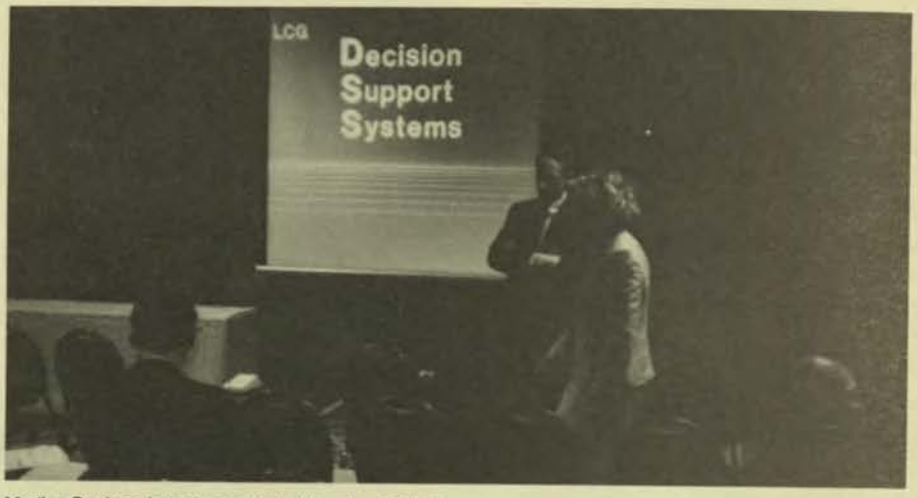
The LCG booth, the largest one there, housed a -2020 with dual RM03s, and eight VT100 terminals, giving visitors a chance to try out such software products as System 1022, BPT, TCI Financial Software, and NCP Calc.

All the software was accessed through the OPUS package, which provided a menu based format for trying things out. The Office Automation capabilities of OPUS were demonstrated to many potential OA customers.

A relatively unknown piece of software which drew a lot of attention was BPT, an internal modeling package which works with the 1022 database and allows interactive modeling upon information in the database, as well as automatic plotting of results.

Local color was provided by several GIGI displays running a series of OPUS related presentation slides, and an exciting Videotex demo run by Marilyn Davison. The graphics of the Videotex caught the eye of many visitors to the booth who then stayed to hear more.

During the day-long symposium, the attendees also had a chance to sit in on a number of presentations on DIGITAL related issues. Two of the seven breakout sessions were




*Marilyn Davison Introduces Kavin Moody of Gillette.*

*In front of DECSYSTEM-2020, Users View Software House's Demo.*

focused on LCG. Kavin Moody from Gillette held forth on the benefits of "end user computing", which includes Decision Support. His description of Gillette's three DECsystem-10s and the applications they run appeared to be of significant interest to the corporate executives in the audience. Larry Vifquain and Marilyn Davison shared Kavin's session, presenting DSS as defined and used by our customers.

Randy Moran, of the Republican National Committee, discussed his use of the DECSYSTEM-20 to handle all the financial and fund raising work of the committee. The software packages he uses, 1022 and TCI, were both on display in the LCG booth.

Overall the LCG area was one of the most heavily "trafficked"; it is hoped that some interest was generated which will lead to future business. The participation of the LCG staff, which besides Marilyn included Larry Vifquain, Ira Machefsky, and Don Waite, was a great help in booth presentation and in making introductory presentations for the breakout sessions.

# LCG PRESENCE at Q4 SALES TRAIN

*John Loether*

DIGITAL's Q4 Sales Train just completed a fast paced trip across the U.S., talking about all the new exciting ETHERnet products which add to our power of communication with the DNA (Digital Network Architecture). Attendance was very high and the students very involved and anxious to learn.

Through our networking products, we can see the benefits of tying systems together so that they become more powerful, faster, and smoother. We have done well in the past, and now we add even more flexibility than before. And that is one of the keys of the DNA (Digital Network Architecture) — DECnet's embracing of multiple forms of communications techniques, thus allowing flexibility in configurations from *LANs to LANs, and now *WANs to WANs and WANs to LANs. The customers' investment is protected, as they need change none of their applications.

Material covered in class showed that LCG fits within this program, as its products touch the ETHERnet through the DECSA router and then tie to the ETHERnet directly, as planned for next year.

We covered different technologies,understanding that PBXs (Public Broadcast Exchanges) are also LANs from a terminal concentration perspective. One can see that LCG extends a unique opportunity in talking to customers about a very high performance concentration technique in the IDX-3000 - non - blocking, high speed CABX (Computer Assisted Broadcast Exchange), smarter and faster than PBX.

*Don Turner and Toby Arnold in front of LCG booth.*

Using the IDX-3000 to tie terminals to DIGITAL and non-DIGITAL systems and also to the terminal server on the ETHERnet, provides many flexible kinds of configurations.

The VAXcluster program was recently announced. We now see VAX joining the concept that started with LCG in loosely coupling the systems together to get greater horsepower, optimization of function by tuning engines to specific tasks, and yet doing inter-CPU communication at high speeds over the CI and between other systems over the NI.

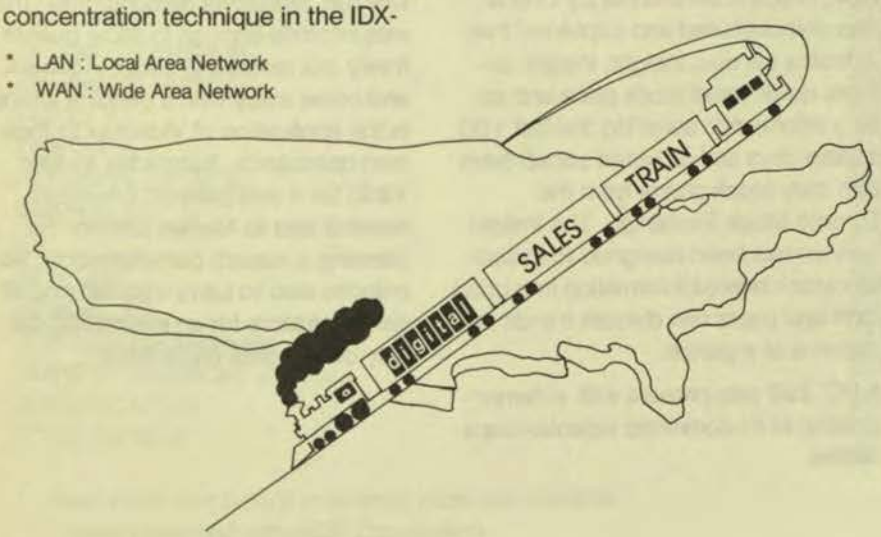
LCG also can take advantage of and can share the latest peripherals on the HSC50 and the MASSBUS disks within a homogeneous cluster as well. Having these groupings of systems from the VAX-11/750 all the way up to the KL10 provides a broad range of system power and flexibility. With the advent of the ETHERnet we can tie these VAXclusters to the KL DSIA systems over the ETHERnet, thus giving customers a higher bandwidth of communication than they have had in the past.

After the first day of the Sales Train, we had an evening session called the Roundhouse, in which several product lines participated in bringing information and people out to the salesforce to discuss new directions and plans for the upcoming year.

The Roundhouse as an open forum was based on the success of the Symposium held for sales management in Boston in January, 1982. The Roundhouse witnessed a great turnout; LCG participated, and we were pleased by the many folks who came around the booth to talk about the opportunities with the loose coupling of the KLs and with the IDX-3000.

The bottom line: one fast and successful roadtrip; we only wish that all the salesforce could have been there.

* LAN : Local Area Network
* WAN : Wide Area Network



# NEW YORK VIDEOTEX DEMONSTRATION
## DECSYSTEM Users Find Out What Videotex is - at Wall Street

*Don Waite*

Many video terminal users connected to DECSYSTEMs still have no concept of the dynamic and colorful world of Videotex and how it enlivens displays and distributes information in a user-friendly manner. Guests and LCG customers in the Manhattan Commercial District were invited to a videotex demonstration May 10th, co-sponsored by LCG Sales Representatives in the Commercial District and LCG's Videotex marketing managers.

The well-attended demonstration included 36 customer guests from major banks and investment firms in New York's commercial district. Guests were greeted at the door (by Alan Vitolo, the Large Computer Group's New York Coordinator) and then invited to a buffet breakfast served in the demonstration area allowing individuals the opportunity to freely ask about Videotex.

Opening remarks were given by Marilyn Davison, LCG Principal Marketing Specialist, who gave a brief overview of Videotex and invited all to attend a Videotex demonstration in Toronto, June 14th. Marilyn stated that the June Videotex seminar would attract a large gathering of advanced Videotex users and demonstrators, since Canada, and specifically, Toronto are presently "hot spots" of Videotex products. Marilyn then introduced several guest speakers who come from the Toronto area.

One of the speakers included in the Videotex demonstration was Alan Burke, from Infomart, who explained and demonstrated the capabilities of a BASIS videotex combination product and Teleguide (a 15,000 page tourist directory developed for the Toronto area). Alan further explained that BASIS is a very sophisticated relational database with powrful keyword search capabilities.

*Guests and DECSYSTEM users listen intently to the Videotex demonstration on Wall Street.*

*Alan Burke explains what his company, Infomart, has done with Videotex.*

Guest speakers from Mcleod Young Weir, Bruce Bolin and Nancy Urekar, also demonstrated and explained their Videotex service, Insight. Insight delivers quick visual stock price and activity information covering the last 100 trading days and provides subscribers with daily stock charts from the Toronto Stock Exchange. The Insight Service has been designed to assimilate stock related information into chart form and users can discern trends and patterns at a glance.

A PC 350 was present with a demonstration of its commited videotex capabilities.

The culmination of this effort was a well run, high level demonstration that was informal enough to allow guests to freely ask questiong about Videotex, and come away with a genuine interest in the application of Videotex to their own operations. Accolades to Alan Vitolo for a well planned breakfast seminar and to Marilyn Davison for planning a superb demonstration. Accolades also to Larry Vifquain and all demonstrators for an interesting display of Videotex capabilities.

# LCG LITERATURE LIST

## HARDWARE OPTION BULLETINS

| | |
|---|---|
| CD20 Card Reader | ED 23999 61 |
| DN20 Communications Front-End Subsystem | ED 20504 26 |
| DN200 Remote Station | ED 22987 61 |
| IDX-3000 Integegrated Digital Exchange (Linkabit Switch) | EC 24075 61 |
| LP20-A/B Line Printer Systems | ED 19I37 26 |
| LP20-C/D Line Printer Systems | ED 19I35 26 |
| LP100-B Line Printer Systems | ED 19I39 26 |
| LP100-F/H Line Printer Systems | ED 19677 26 |
| LP200-B Line Printer System | ED 24013 61 |
| RP07 Disk Subsystem | ED 21997 61 |
| RTP20 Disk System | ED 19725 26 |
| TU72 Magnetic Tape Subsystem | ED 19763 26 |
| TU77 Magnetic Tape Subsystem | ED 17400 26 |
| TU78 Magnetic Tape Subsystem | ED 23003 82 |

EDITOR'S NOTE: Until July 1, 1983, you may order these publications by contacting Jane Fitzgerald at P&CS in Northboro. The DTN is 234-4325. Mail stop is: NR2-2/W3, RCS code is NR12 (for telexes). In Q1 FY84, your SCC (Sales Communications Center) Specialist will order your LCG Literature.

If you find an item to be out of stock or incorrectly numbered, please phone me or Gail Breslin at DTN: 231-4996 or 231-4013, and we'll try to help you out.

ATTENTION ! ! ! This list (and order numbers) supersedes all prior lists.

## SOFTWARE DATA SHEETS

| | |
|---|---|
| ALGOL | ED 17156 18 |
| APL-SF-10 | ED 24841 61 |
| BASIC-PLUS-2 | ED 18885 26 |
| BLISS-36 | ED 19208 26 |
| COBOL | ED 22109 61 |
| CFS-20 | EC 23858 61 |
| CPL | ED 15659 63 |
| DECmail/MS | ED 24000 61 |
| DECnet-10 Phase III | ED 24056 61 |
| DECnet-20 Phase III | ED 22835 61 |
| DBMS-10 | ED 21782 81 |
| DBMS-20 | ED 21827 61 |
| FORTRAN-10/20 V.7 | ED 24054 61 |
| IBM RJE E/T | EC 24057 61 |
| IQL | ED 15660 63 |
| NCP Calc | EC 24656 61** |
| PASCAL-20 | EJ 24759 61* |
| TOPS-20 PSI Gateway | ED 24053 61 |
| TOPS-20 Supported Utilities | ED 22933 61 |
| TOPS-10 V7.02 | EZ C5532 44 |
| TOPS-20 V6.0 | EZ C5532 45 |

* New order numbers for recently produced editions

** Joint Marketed with NCP Corporation

## TECHNICAL SUMMARIES

| | |
|---|---|
| DECsystem-10 Technical Summary | EE 21041 26 |
| LCG Product Summary - April '83 | EJ 24660 61 |
| LCG Price List - April '83 | EE 24661 61 |

## PHOTO BULLETINS

| | |
|---|---|
| DECsystem-10/20 Fact Sheet | EJ 19596 26 |
| DECsystem-10 Family At A Glance | EJ 19595 26 |

## LCG BROCHURES

| | |
|---|---|
| Don't Let the Software Blues Get You Down | EA 24773 61* |
| TOPS-20 Multiprocessing | EA 24237 61 |
| Introducing TOPS-20 Multiprocessing | EC 24046 61 |
| DECSYSTEMS: The Users Choice | EA I8366 26 |
| DECsystem-10 Family | EA 20572 26 |
| Develop Microprocessor Applications Faster | EA 22895 61 |
| TOPS-10/20 Data Networking | EC 22813 61 |
| LCG Software Referral Catalog (2nd Ed.) | EJ 22780 61 |
| Symmetric Multi-Processing | ED 24089 61 |
| The Personal Mainframe/Electronic Mail | EA 22872 61 |
| The Personal Mainframe | EA 24546 61 |

## CORPORATE BROCHURES

| | |
|---|---|
| Digital's Ethernet | EA 22710 18 |
| Digital Introduces DECnet/SNA Gateway | EA 22703 18 |
| Digital Storage Architecture Product Summary | ED 23981 18 |

## MARKET SPECIFIC BROCHURES

Education:

| | |
|---|---|
| Wesleyan Univ. | EA 20271 87 |
| Univ. of Vermont | EA 20270 87 |
| Univ. of Pittsburgh | EA 19633 87 |
| Columbia Univ. Teachers Coll. | EA 19630 87 |
| Hamilton Cty. Office of Ed. | ED 19577 87 |
| Carnegie-Mellon Univ. | ED 20467 87 |

Engineering:

| | |
|---|---|
| Monenco: Engineering for Excellence | EA 23075 16 |

Banking:

| | |
|---|---|
| Bankers Trust: Partners in Success | EA 23155 16 |
| "Will the Street Bypass Time Sharers?" (reprint from "Institutional Investor") | EJ 24696 61 |

* New order numbers for recently produced editions

**GENERAL MATERIALS**

| | |
|---|---|
| DECNET-10 Phase III Press Kit Folder | EJ 23998 61 |
| BUY-LINE Compendium (Vol.2: 1981-82) | EZ 09016 82 |
| Digital's Systems Interconnect Folder | EJ 24741 61 |
| DECision Systems Folder | EJ 24658 61 |

**POSTERS**

| | |
|---|---|
| 1983 Smooth Sailing Calendar | EJ 21823 61 |
| Chart Your Course Sailing Poster | EJ 21623 61 |
| LCG Personal Mainframe Poster | EJ 21652 61 |

**SITE PREPARATION GUIDES**

Corporate Field Service's Generic Site Planning Kit, available worldwide, enables site planners to do floor layouts and site planning for all DIGITAL products including the DECsystem-10 and-20 product set. This Kit is designed to be Field Service's standard Site Planning tool.

The new Kit's order number is EK-SPKIT-SP, available from P&CS, Northboro. **SALES AIDS**

* Sales Aids are ordered by sending a memo/TWX to Gail Breslin (MRO2-2/8D2) containing your name, badge number, cost center, shipping address, and the signature of your cost center manager. Minimum charge for an order is $100.00. The mugs cost $2 each and are packed in boxes of 12. Pens are $2 each.

MUGS: Large Computer Group Mugs - sand colored china with blue sail boat design.
PENS: White No-Nonsense Pens.

* New order numbers for recently produced editions

**AUDIO VIDEO**

| | |
|---|---|
| LCG Users Tape (10 min.) | loan request |
| Benchmarking/CPU Analysis with Brochure | loan request |
| DEC-10/-20 Overview Slide Show | K. Stanton |
| LCG DECSYSTEM-20 Timesharing Testimonial Slide Show Kathie Stanton, Bedford MA, DTN 249-4068 | |
| Supplementary Slide Package | Memo Don Waite MR2-2/8D2 |
| Large Systems Slide Presentation (Modules 1 thru 7) | K. Stanton |

# INDEX of MAJOR LCG ARTICLES in BUY-LINE FROM JANUARY 1982 THROUGH JUNE 1983

| Category/Title | Issue Date |
|---|---|
| PASCAL-20 | May 1983 |
| DECsystem-1090 SMP Controlled Release | " |
| SPS for DECnet-10/-20 | " |
| SCOPE | " |
| CP/M Public Software Library | " |
| TOPS-10/-20 IBM Comm | June 1983 |
| TOPS-20 Update | " |
| Array Processing for DECSYSTEM-20 | " |
| MICRO-10/20 | " |

## Performance Analysis, Positioning, Bench Marks, and Competitive Analysis

| | |
|---|---|
| RP07 Price/Performance | Jan.- Feb. 1982 |
| Cost of Ownership Analysis | July 1982 |
| Benchmarking Policies & Procedures | September 1982 |
| Benchmark Guidelines | " |
| LCG Competitive Analysis: CDC 170/800 | " |
| LCG Competitive Analysis: UNIVAC 1100/60 | October 1982 |
| TOPS-20 R 4 & 5 Performance Analysis | January 1983 |
| VMS/TOPS Positioning | February 1983 |
| Positioning the HSC50 | " |
| KI to KL Benchmark | March 1983 |
| LCG Competitive Analysis: Honeywell DPS 88 | " |
| Improving DECsystem-10/-20 Performance | April 1983 |
| Competitive Analysis: Honeywell & Pricing | " |
| Repriced DECSYSTEM-2040 Cost of Ownership | May 1983 |
| DECSYSTEM-2060 Price/Performance Trends | " |
| TOPS-10/-20 2780/3780/HASP Performance | June 1983 |

## Cooperative Marketing Agreements

| | |
|---|---|
| NCP Calc Available for DECsystem-10s/-20s | Mar.- Apr. 1982 |
| NCP Calc on TOPS-10 | May - June 1982 |
| Digital Signs Marketing Agreement with BSO | July 1982 |
| A Burst of Sales Leverage from TCI | August 1982 |
| NCP Calc Now Offered | " |
| BSO Expands Support | September 1982 |
| Interest in Spread Sheet Calculators | October 1982 |
| Agreement With M/A-COM Linkabit | November 1982 |
| Linkabit IDX-3000 Sales | January 1983 |
| A Message from M/A-COM Linkabit | " |
| Announcing SCOPE | May 1983 |
| FPS' AP-190L Array Processor for TOPS-20 | June 1983 |

## Artificial Intelligence

| | |
|---|---|
| G & IR Activates AI Markets | May - June 1982 |
| AI: From Toybox to Toolbox | September 1982 |
| Good News for AI Research | October 1982 |
| AI Gains Visibility Commercially | January 1983 |
| LCG News Clips (-2060s for AI in Japan) | April 1983 |

## ARPAnet

| | |
|---|---|
| The ARPAnet as a Sales Lever | May - June 1982 |
| ARPAnet Technology Replaces Autodin II | " |
| LCG's EDU/ARPA Program | November 1982 |

| Category/Title | Issue Date |
|---|---|
| **Decision Support Systems** | |
| DSS and LCG Applications Packages | Jan.- Feb. 1982 |
| Flying Tigers Road Show | July 1982 |
| DECsystem-10s/-20s and Decision Support | February 1983 |
| Customer Survey: DSS on DECSYSTEMS | April 1983 |
| **Office Automation** | |
| What Makes a Mainframe Personal? | Mar.- Apr. 1982 |
| DECnet-20 Phase III & Personal Mainframe | May - June 1982 |
| LCG's Office Automation Message | " |
| LCG's Place Under the Office Plus Umbrella | " |
| Spring DECUS articles | July 1982 |
| OA Executive Seminar in Washington DC | " |
| Personal Computers & Personal Mainframe | " |
| Deliver the LCG Electronic Mail Message | " |
| LCG Strategy for Office Automation | September 1982 |
| Office Productivity User Software | November 1982 |
| Brighten Up Your OA with Graphics | February 1983 |
| **Graphics** | |
| LCG Graphics Planning Group | October 1982 |
| Plotting Programs at Caltech | November 1982 |
| Brighten Up Your OA with Graphics | February 1983 |
| LCG Graphics Demo Center | April 1983 |
| **DECUS - Seminars** | |
| Fall DECUS 1981 | Jan. - Feb. 1982 |
| Helmsman Award: Washington DC | Mar. - Apr. 1982 |
| Spring DECUS 1982 | July 1982 |
| Executive Breakfast in Washington | " |
| Flying Tigers Roadshow Part I | " |
| Flying Tigers Roadshow Part II | August 1982 |
| NY Higher Education Seminar | " |
| Fall DECUS 1982 Review | January 1983 |
| DECUS, USA & Japan | February 1983 |
| LCG Sales Train | March 1983 |
| LCG at DIGITAL Sales Symposium | " |
| LCG Presence at Q4 | June 1983 |
| NY Seminar on "Computer Solutions for 80s" | " |
| **Application Stories** | |
| DECSYSTEM-20s Thrive in Idaho | Jan.- Feb. 1982 |
| How DECSYSTEM-2060 Came to Atlas Steels | Mar.- Apr. 1982 |
| CAD Software (-2060 at Hughes Aircraft) | " |
| -2040 at Sweetwater Union H.S. District | " |
| -1091 at Crown Zellerbach | " |
| -1091 at Rockwell (Autonetics) | " |
| -1090 at Teledyne-Ryan | " |
| DECSYSTEM-2060 Sale at U. of Rochester | May - June 1982 |
| New York Daily News is User Friendly (-2060s) | " |
| Linkabit's DECSYSTEM-20s Network | " |
| A Decade with DEC (U. of Pitt.) | " |
| DECSYSTEM-20s at Bayer/Leverkusen | " |

| Category/Title | Issue Date |
|---|---|
| -2060s at ICI (Informa. Consult. Inc.) | July 1982 |
| INSEAD Uses DECSYSTEM-20s | " |
| DECSYSTEM-20 Aids Erasmus Univ., Holland | " |
| DECSYSTEM-20 at Liverpool Polytechnic | August 1982 |
| DECsystem-10 Wins a Road Race | " |
| Kingston Polytechnic Picks -2060 | " |
| DECSYSTEM-2060 Conquers Nigeria | September 1982 |
| DECSYSTEM-2060s at Bankers Trust | October 1982 |
| DECSYSTEM-2060s at Teknowledge | January 1983 |
| The Entrepreneurial DEC-20 (Datability) | March 1983 |
| DECSYSTEM-2060s at Case Western Reserve | May 1983 |

---

## BUY-LINE APPLICATION

NAME: MAIL STOP:

BADGE: COST CENTER:

DEPT: OFFICE LOC:

( ) Please add my name to the BUY-LINE mailing list.

( ) Please delete my name from the mailing list.

My responsibility is in:

( ) LCG Sales

( ) LCG Marketing

( ) LCG Service

( ) Another product line or corporate function

Please detach and mail to Barbara Holtz, MR02-2/8D2. Thank you.

**BARBARA HOLTZ**

**MR02-2/8D2**


digital

DIGITAL EQUIPMENT CORPORATION
MARLBOROUGH, MASSACHUSETTS 01752

Large Computer Group

# BUY-LINE

September 1983

Special In This Issue

Integration Commitments:
Response to Large Systems Customers

LSM at 1983 Sales Symposium

LSM Market Data Center

For Internal Use Only

digital

# BUY-LINE SEPTEMBER 1983
# TABLE OF CONTENTS

## LARGE SYSTEMS MARKETING



## SYMPOSIA, COURSES, SEMINARS

**LSM Sales Symposium Breakout Sessions:**



## LARGE SYSTEMS PRODUCT INFORMATION



## SALES/APPLICATION NOTES



## GENERAL INTEREST



## EMERGING MARKETS/TECHNOLOGIES



## LITERATURE & SALES AIDS



***ATTENTION!** Prices and availability quoted in BUY-LINE - unless explicitly stated to the contrary - apply to Continental USA only; for other locations, please contact your local Large Systems Marketing Representative.*

**BUY-LINE** is published monthly by the Large Computer Group, Marlboro.

**EDITOR:** Barbara Holtz, MR02-2/8D2, Ext. 4996
**PUBLISHING COUNCIL:** Don Mallinson, Jim Miller, Don Waite.

**BUY-LINE** IS COMPILED ON THE DIGITAL WS200 WORD PROCESSING SYSTEM BY GAIL BRESLIN.

**LAYOUT AND ARTWORK** ARE BY LORI FEAREBAY, BERLIN, MA.

**PRINTER** IS COMMONWEALTH PUBLISHING CO. OF BOSTON, MA.

**CIRCULATION SERVICES** ARE PERFORMED IN NORTHBORO, COORDINATED BY JACK DECESARE, OF P&CS.

Upon request (see mailer card in this issue), the following will be added to the **BUY-LINE** mailing list:

- Field Service Managers
- Marketing Managers
- Operations Committee Members
- Software Support Managers
- Software Specialists
- Sales Managers
- Sales Representatives
- Service Group Managers
- Product Managers

# A MESSAGE FROM LSM's MANAGER

*Rose Ann Giordano*

*The following remarks are excerpted from the August "Sales Journal" which was videotaped several weeks prior to the International Sales Symposium and prior to the printing of this BUYLINE issue:*

We had excellent feedback from worldwide customer response to the Large Systems SIG Survey which was sent out after U.S. Spring DECUS (*for particulars, please refer to articles in the July and August BUY-LINEs*). The Survey is an extremely important vehicle for continued communication with our DECsystem-10 and -20 customer base. Through it, we can prioritize the incremental tools which we intend to provide our customers.

Our Corporate strategy is to integrate DECsystem-10 and -20 products into the overall distributed systems architecture. Through the Survey response, we can help our customers obtain the best solutions for their needs. We want our customers to continue to grow with DIGITAL's products using current TOPS-10 and TOPS-20 applications. We also wish to provide them with an opportunity to grow with the full spectrum of DIGITAL products: VAX, VAX Workstations, clusters of VAXs, PCs - all computing resources interconnected via DECnet and via local area networks. We feel certain that our customers can take full advantage of DIGITAL's product breadth with no disruption to their current environment.

In Q4 FY83, we announced our commitment of substantial resources to place more TOPS/VMS integration tools at the disposal of our customers. As of this printing, an engineering budget has been identified and management is in place; responses to the Survey have been correlated; a customer advisory board has been established; and we have instituted field support teams on a district and regional basis, providing expertise in TOPS-10, TOPS-20, VMS, and communications. These teams provide selected customer sites with business and technical assistance vital to incremental growth with DIGITAL products. To ensure the proper business perspective, we instituted an Account Review process involving DIGITAL's area management.

Regarding new product direction, we will be concentrating upon integration tools, communications, ease of use, and data transportability among our various architectures. In mid-August, we will be communicating to the sales force a customer letter (*further in this issue*); our message is that we will continue to enhance TOPS-10 and TOPS-20 products and will support them for a long time to come. Support of our customer base is an ongoing process, with individual attention paid to each account.

Our pricing is indeed competitive. At the end of August, announcements reflect aggressive re-pricing with respect to the DECSYSTEM-2060, the DECsystem-1091, Common File System (CFS-20), and other important products. Our pricing policy reflects our movement to support the new integration strategy, and is a major mechanism by which customers can grow in the TOPS-10 and TOPS-20 space.

The major goal of our strategy is to provide a clear growth path using DIGITAL products. What this means is for customers to use their current applications using DECsystem-10s and -20s which we will continue to support and enhance. We want to provide customers with the opportunity to grow with the full spectrum of DIGITAL products - from personal computers to workstations to mainframes.

A key concern is protection of third party software which our customers are currently using. The Large Systems Marketing group is negotiating with key vendors so that they will commit to transportability tools and documentation to allow software packages to be run on VMS, TOPS-10 and -20, and other operating systems.

As a Corporation and as a marketing group, we intend to increase market share of high end systems to preserve DECsystem-10 and -20 customers. We also want to provide Large Systems customers with the opportunity to grow with all DIGITAL products. We want to make sure that our customers play a significant part in this growth.

# LARGE SYSTEMS MARKETING BREAKOUT SESSION MESSAGES

### General Session

*Ira Machefsky*

Speaking at the International Sales Symposium General Session, Large Systems Marketing group manager Rose Ann Giordano explained the charter, direction, and purpose of Large Systems Marketing as one of DIGITAL's recently formed strategic marketing groups.

LSM focuses upon the high end market segment of the computer industry. Rapid changes are occurring in the high-end space, due in large part to the advent and ubiquity of personal and desk-top computers. These small systems for personal and business use will increase the demand for large systems; they are moving computing in the high end toward interactive, end-user systems typified by decision support style of applications.

Interactive systems for decision support is the area where DIGITAL's strengths have always been prominent. This opportunity in high end system sales represents the chance for great personal benefits to the sales force.

New opportunities to the sales force as well as to our customers are opened via DIGITAL's commitment to the high end, as shown by heavy investment in new products, integration of DECsystem-10s and -20s, the recent agreement with Trilogy Ltd., and the recent strategic focus provided by LSM, the Large Systems Marketing group.

### Corporate & International Account Managers Session

*Rich Whitman*

Our purpose in presenting this session was to establish a more effective dialogue/feedback mechanism between the Large Systems Marketing group and Corporate & International Account Management. The latter two groups are, for the most part, responsible for DIGITAL's largest accounts, and as such, are closest to the our largest customers; thus, it is to our mutual benefit to review and implement an aggressive high end market strategy.

Speakers from the LSM group presented our goals,responsibilities, and programs with particular regard to increasing market share in the high end market.

The evolution of Large Systems' Marketing role was discussed in a historical perspective. Starting in FY84, LSM's role includes: market analysis, market strategy, product direction, and marketing programs in an arena that is estimated by the industry at 25-40% growth in the end-user segment.

Among LSM group's objectives are:

- to understand the computer industry's high end market with regard to functionality, competition, segmentation, customer needs;
- to identify DIGITAL's high end market opportunities and to develop plans for attacking these opportunities;
- integrate high end product requirements for engineering;
- support the delivery of these products to market;
- understand the needs of DIGITAL's very large accounts, and to establish effective marketing programs (such as executive seminars) in order to fill these needs.

As these marketing programs are approved in the near future by Corporate and International Account management, they will be implemented by DIGITAL's sales force throughout the world.

### Integration Session

*Don Turner*

The Large Systems Marketing's Integration Session presented information on growth paths for DECsystem-10 and -20 customers, and allowed sales representatives to understand the tools available to assist these customers in integrating their DECsystem-10s/-20s into DIGITAL's high end distributed product offerings.

Some of these integration tools are:

- support and protection of operating system investment;
- third party applications solutions;
- account review process;
- customer training;
- integration support teams; and
- the customer feedback process.

With the new Large Systems Marketing charter, including VAX, VAX clusters, and DECsystem-10s/-20s, we of Large Systems are ready to assist the sales force in being successful in the high end market segment.

We believe the DECsystem-10/-20 customer base to be critical to DIGITAL's success in this portion of the market.

In an effort to address this opportunity, Large Systems marketing and DIGITAL's Area Management Centers have started the first of the Critical Account Reviews with the appropriate team leaders. We have seen an interest on the part of the customer base to work with DIGITAL to provide solutions to their growth needs.

We look forward to working with you and to supporting you in exploring new opportunities in the high end market.

# LARGE SYSTEMS INTEGRATION COMMITMENTS TO OUR CUSTOMERS

*(The following is a copy of the August 15, 1983 letter and document sent via EMS to DIGITAL's international sales force, country managers, and AMC personnel. Contents are self explanatory. In addition, an outline of the Account Review Team process was provided, indicating the procedures whereby weekly meetings will be held in Marlboro to assess DIGITAL's most important large systems accounts.)*

Dear DECsystem-1020 Customer:
In May 1983, DIGITAL announced its new high-end strategy and how it fits into DIGITAL's Integrated Computing Environment. A change in strategy usually has some impact on current plans. As described in this letter, we see several key benefits for our DECsystem-10/-20 customers.

**Our Installed Base: Integration's Leading Edge**

Just as our DECsystem-10/-20 customers have pioneered with time-sharing/interactive systems, we now see them taking a leading role in DIGITAL's Integrated Computing Environment. In the integrated VMS and TOPS-10/20 environment, the DECsystem-10/-20 customers will be able to continue to use all their existing DECsystem-10/-20 software while benefitting from our extensive developments in networks, clusters, personal computers, VAX and communications.

**Development/Enhancements**

Development for existing DECsystem-10/-20 products will continue for a minimum of 5 years, including extensive communication capabilities, associated hardware and software support for the TOPS-10 and TOPS-20 operating systems, and a set of mass storage products. Work is under way to enhance the CPU performance and cost effectiveness of KL10 based systems.

The recently announced HSC/RA81 mass storage offering provides both a significant cost/MB as well as a significant floor space reduction. These DIGITAL development activities will help to maintain state of the art capabilities at competitive pricing through the 80's.

**Large Systems SIG Questionnaire**

In order to solicit customer input on what is important in this integrated environment, a questionnaire was developed by the LSG SIG. This questionnaire was mailed to the 1600 DECsystem-10/20 customers who were registered in the DECUS mailing database.

Out of the total mailing, we received 250 responses. These responses have been consolidated, tabulated, and later reviewed with a representative group of LCG customers, selected by the LSG SIG executive board, in order to get clarification and more information.

The enclosed attachment provides our integration strategy statement and project direction for the DIGITAL Integrated Computing Environment. We have been guided by the responses to the questionnaire and by numerous interactions with various customers.

At Fall DECUS (October 24, 1983), we will have further details on integration tools and projects to present to you.

We appreciate the time and effort our customers have taken to communicate with us. We are looking forward to an equally open and fruitful interaction in the future.

Sincerely,
Rose Ann Giordano
Product Group Manager
Large Systems Marketing

Bill Johnson
Vice President
Systems and Communications Engineering

---

# LSM CUSTOMER LETTER: A Tool for Understanding

*Per Hjerppe, Don Turner*
*& the Large Systems Integration Team*

**Overview**

Integration is a planned, stepwise growth into a distributed computing environment. It is a way to start using the newest products while protecting your investment and maximizing the effectiveness of your existing equipment.

To achieve this potential, however, it is important that we at DIGITAL and that our LCG customers have a common understanding of how integration will occur.

This document is a tool for that understanding.

Our planning thus far has resulted in some developments that are committed in specific terms, others that are committed in concept and need further detailed planning, and still other areas that are open for further consideration. Thus, not all product areas can be discussed to the same level of detail.

DIGITAL is in a very competitive industry; due to business and legal requirements, we cannot (in this letter) be as specific as either of us might like.

**Strategy**

Overall, we expect current TOPS applications to remain on the systems for which they were written. We will support this by providing continued development of TOPS-10 and TOPS-20 systems while making DIGITAL's product offerings the premier distributed processing environment in the industry.

Massive conversion is always a time consuming and wasteful effort. Integration will minimize the need for conversions by making it possible to use current and latest technologies in concert. Where conversion to VAX is desirable, one of the integration goals is to make the transition as easy as possible.

In the short term (less than two years), we expect new applications to be written for VAX/VMS or for TOPS-20, whichever is the most cost effective. VAX/VMS will be favored where the large library of VMS software can be used to advantage, and where the TOPS machine can be off-loaded by writing independent applications for VMS.

We expect new applications to be written on the TOPS machine when the application fits in tightly with existing applications and where sharing of data at disk speed is necessary.

Over time, the cost effectiveness of developing new applications will favor VAX/VMS solutions. This will be prompted by reduced cost of computing on the VAX, higher capacity VAX processors, and faster distributed file access capabilities.

Our development plan for integration will provide the products necessary to meet these short and long term needs. The products and enhancements needed for the TOPS-10 and TOPS-20 systems are such that we will provide development for these integration products for another five years.

Hardware and software maintenance will continue for at least ten years. Other DIGITAL products, notably VAX/VMS, are also addressing LCG integration needs. Some of these enhancements will be delivered in the near term, i.e. operating systems, utility and compiler releases, while others require longer development projects.

**Product Direction**

In order to meet the strategy outlined above, we have established an integration charter for each major work area. This indicates how development in that area will contribute to the integration strategy.

**DECsystem-10/-20 Documentation, Languages, and Operating Systems Development**

Development for KL10 based TOPS-10/-20 systems will continue for a minimum of five years.

The primary focus areas will be ensuring that TOPS-10/-20 will participate in the current and future DIGITAL Integrated Computing Environment in such a way that customers can add incremental compute power from a personal computer up to a mainframe.

The TOPS-20 based languages will focus on VMS compatible RMS-implementation and syntax compatibility with VMS languages as well as the current standards. Hardware enhancements will ensure that new CI/HSC based mass storage devices will be supported.

**DECsystem-10/-20 Operating Systems, Networking**

DIGITAL's basic network strategy is to develop and maintain a link independent architecture and to support all proven communication technologies within that architecture.

Currently the Digital Network Architecture is capable of supporting X.25 and Ethernet networks and of coexisting with SNA via gateways and access routines.

It is our direction to make such gateways accessible from DECsystem-10s and -20s. We are considering adding X.25 support for TOPS-10, and SNA support for TOPS-20.

TOPS-10 and TOPS-20 will be upgraded to support the CI and Ethernet (NI). This includes support for the HSC-50, the RA81, the RA60 and DECnet Phase IV.

Our strategy also includes support for multi-CPU systems by both TOPS-10 and TOPS-20. The TOPS-10 strategy is to support the SMP and TRI-SMP configurations. This will be upgraded so that the CI/HSC-50 and its disks are accessible from any CPU in the SMP or TRI-SMP configuration.

The TOPS-20 strategy is to support a CI based Common File System configuration. This configuration will also include support for DECnet-20 over the CI to provide communications between the DECSYSTEM-20s in the cluster.

Following this both TOPS-10 and TOPS-20 will have further development and maintenance releases.

**Languages**

We expect to concentrate on providing DECsystem-10/-20 compilers that meet today's standards. FORTRAN-10/20 meets the current subset ANSI-77 standard and also supports most of the additional features of the full ANSI-77 standard.

COBOL-10/20 fully meets the ANSI-74 standard. In addition to these already existing products, we plan another COBOL-20 release that contains some new features expected to be included in the COBOL-8x standard and a FORTRAN-20 release that supports both extended addressing and support for the full ANSI-77 standard.

These efforts have both been underway for over a year and are nearing completion of the development phase. Maintenance support for all of our other language products will continue.

In order to guarantee continued compatibility between the DECsystem-10/-20 languages and the VAX languages, the VAX development group will incorporate the DECsystem-10/-20 compiler syntax test programs in their own test procedures.

### Data Management

The ability to access data across systems is critical in an integrated environment. This includes the ability to manipulate records or files, and the ability to convert between the internal data formats of the individual machines.

The Data Interchange Library (DIL-10/20) is our first integration product in this area. This currently available product supplies subroutines for data conversion and remote file access. We are using the DIL as the basis for a Data Interchange Utility (DIU-10/20).

The DIU will make DIL features available from command level. We are also considering extending the DIU to operate with tape to provide a tape interchange facility.

On the DECSYSTEM-20, we are planning further RMS releases with DAP support for file access to the PC300/350, VAX, and PDP-11 families. This version of RMS-20 would be capable of handling all file types supported by the FAL on the remote system.

Development is also underway on a distributed Datatrieve product for TOPS-20 to permit inter-system database access in a heterogeneous environment.

Distributed data access for DECsystem-10/-20 is planned to be coupled with the Ethernet product for high speed operation. Our focus for the CI is to first understand and support homogeneous systems — TOPS-10-TOPS-20 and VMS.

When we have solid working systems in these areas, we will explore the possibility and possible advantages of TOPS-10/20 and VMS sharing a common HSC controller on the CI with dedicated system disks.

Our goal still remains to provide price competitive mass storage solutions in the integrated environment.

### Documentation

We will provide documentation to show our customers how to function in a multi-system environment. This information will address concerns of system operators, system managers, and other operation staff members.

It will include configuration guidelines, installation details, management of system procedures, differences of system philosophies and concepts, integration decisions concerning users, program development, and similar topics.

We have identified the following key areas to be addressed by the integration documentation:

- Language Compatibility and Comparison

  Languages for which comparison information will be done are:

  FORTRAN, COBOL, PASCAL, APL-SF, BASIC-PLUS-II, and system calls.
- Networks, Communications, Data Management
- Operating Systems and Utilities

### KL10 Enhancements

To enhance the KL10 used in current DECsystem-10/-20 systems, we are developing a larger cache, larger pager translation buffer and we are rewriting areas of the CPU microcode to improve CPU performance in the area of complex instructions.

In addition, development is underway to both cost reduce the memory subsystem and eliminate the need for external MOS memory expansion cabinetry, helping footprint reduction.

The KL10 peripheral hardware developments will continue to be a priority. Hence, DIGITAL's future disk products offering both price/performance and footprint advantages will be available for DECsystem-10/-20 systems.

We have just completed the engineering necesary to ensure that the KL10-E complies with the U.S. FCC regulations. This way, we will continue the manufacturing of KL10 based systems and ensure its long term availability.

### VMS Direction

With the introduction of larger VAX computers, we have specific plans, both short term and long term, to extend VMS's widespread acceptance into the mainframe markets.

In addition, DIGITAL has chartered a team of marketing and advanced development engineering personnel to identify the unique needs of mainframe users and ensure that these requirements are factored into future VAX hardware and software products.

Building from our long experience with our DECsystem-10/-20 installed base, we will continue to improve all areas of the VAX/VMS software offering, including additional enhancements to VMS in the areas of:

- Ease of Use, Human Interface
- System Management Tools, Operator Interface
- System Security and Protection
- Job Control, Print Control, and Batch Facilities
- Commercially Oriented Features (e.g. tape control, SORT)

We will continue to make improvements in VMS and DECnet-VAX to extend our industry leadership in the areas of communications, networking, and clusters. We will also continue to improve existing, as well as add many new, layered VMS system software products, such that VAX/VMS continues to be one of the richest and most integrated software environments in the industry.

A key focus area for VMS development is information/data base management. We already have a very extensive integrated product set — DATATRIEVE, FMS, DBMS-32, ACMS, CDD, RMS — and we will continue development for future state-of-the-art database tools and products.

Both now and in the future, we see VMS based systems playing a key role as the Information Resource Manager, both in the cluster environment and local area network environment.

**VAX Direction**

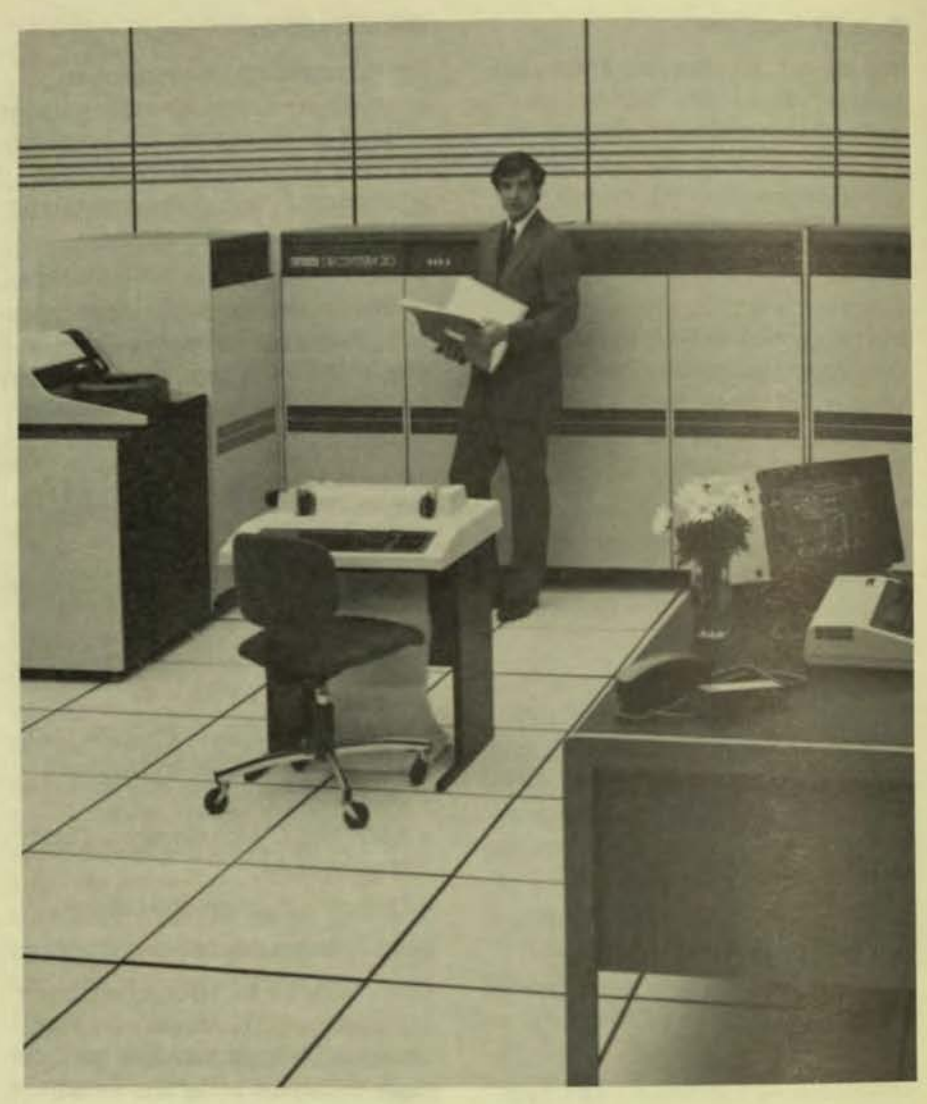
DIGITAL has specific plans to address the mainframe needs of its customers, through a series of significantly more powerful VAX systems.

DIGITAL recently signed an agreement with TRILOGY to use high-speed state-of-the-art VLSI technology for future high-end product development. In addition, these systems will be incorporated within the VAXcluster concept to give shared concurrent access to support even larger applications and more users.

DIGITAL is particularly aware of the requirements of high-end customers. We are taking steps to provide solutions for large numbers of terminals being connected to our processors, and continued enhancement of our leadership products in disk storage.

We are also planning further enhancements for future Tape Storage products to better respond to our customers needs.

DIGITAL will continue to increase its VAX product offerings to offer a broader range of fully interconnected cost effective computing resources, from large Central and Departmental systems, to Personal Computers and Workstations.



**Customer Services Support**

DIGITAL believes Customer support is a integral part of our customer commitment. We see our support as an ongoing effort, available for not less than 10 years for the 36- bit systems. This includes hardware and software maintenance support and educational training support.

Field Service is committed to continue to provide the same high quality service to its DECsystem-10/-20 users.

This high level of service will also be provided for our high-end VAX systems. We are doing this by continuing our dedicated DECsystem-10/-20 branches, and integrating our high-end VAX products with these branches.

DIGITAL is planning enhanced field service offerings for the integrated environment.

For software, Software Services will continue to provide the high level of quality services now offered. Further, we will enhance, package, and develop services in a fashion so as to meet our Large Systems customer's needs, regardless of the DIGITAL architecture.

Educational Services will continue the development and delivery of training programs for DECsystem-10/-20 users in DIGITAL's Integrated Computing Environment. These programs comprise a mix of lecture/lab and packaged instruction.

Educational Services is committed to insuring that these courses will continue to be made available at selected DIGITAL Training Centers or customers' premises.

**DECsystem-10/-20 Pricing**

In order to maintain a competitive price/performance for the DECsystem-10/-20, we announced the availability of the corporate RA81, RA60 disk products. These mass storage products now provide industry competitive cost/MB as well as industry leadership in reduced floor space requirement.

By participating in the corporate mass-storage program, we will be able to continue to provide industry leadership mass storage products.

In addition, we recently announced several price reductions for DECsystem-10/-20 based systems, in the areas of base system prices, add-on memory pricing, as well as the common file system pricing for TOPS-20.

We significantly reduced the price of buying a DN20-based synchronous front end, to run DECnet. For further information about the latest pricing, please contact your sales representative.

**Electronic Mail System**

Large Systems Marketing has installed a TOPS-20 system in Marlboro whose sole purpose is to act as a mail system, which will provide the mechanism for continued communication among and between the groups involved in the Integration effort.

There will be accounts generated on this system for:

1. Customers
2. US area Software Services districts
3. All individual Software Specialists (worldwide) who submit requests
4. All individuals on Integration Support Teams
5. Various individuals from the Product Group & Engineering

User groups and mailing lists will be created to facilitate mail communications between the various groups on the system. In addition, lists will be created for the system as requested by any user (all customers interested in magtape compatibility, for instance).

This system is currently installed, and fully operational. The general account for sending mail to is <INTEGRATION>, whose mail will be read daily, and whose messages will be passed along to the appropriate persons. Requests for forwarding mail to specific persons (in terms of name or function) will be honored whenever possible.

In order to receive an account on this system, please send the following information to Reed Powell, Digital Equipment Corp., MRO2-2/D13, 1 Iron Way, Marlboro, Mass. 01752.

Name of Requestor
Name of Company
Address of Company & Requestor
Telephone Number
Account Name desired (6 characters minimum)
Password desired
Mailing List topics you might be interested in

Please plan on a 7-to-10 day turnaround time before your account is created.

Telephone numbers for access to this system are: (617) 467-7020, -7021, -7024, -7025, -7046, -7047, -7048, -7049, -7051, -7054

**SUMMARY**
**DECsystem-10/-20 INTEGRATION DIRECTIONS**

| | TOPS-20 | TOPS-10 |
|---|---|---|
| **OPERATING SYSTEMS** | | |
| CI/HSC/RA81 | X | X |
| MULTI-CPU SYSTEM | CFS | SMP |
| NI/ETHERNET | X | X |
| DECnet PHASE IV | X | X |
| ANF | | X |
| **GATEWAYS** | | |
| ROUTER | X | X |
| IBM | 2780,3780,HASP<br>SNA considered | 2780,3780,HASP<br>SNA considered |
| X.25 | X | Under Consideration |
| **LANGUAGES** | | |
| COBOL | -74,-8X (Subset) | -74 |
| FORTRAN-77 | Full | Subset |
| PASCAL | X | |
| APLSF | X | X |
| BLISS-36 | X | X |
| **DATA MANAGEMENT** | | |
| DIL | X | X |
| DIU | X | X |
| DATATRIEVE | X | |
| RMS | V2, V3 | COBOL/ISAM |
| DBMS | V6, V7 | V5 |
| **DOCUMENTATION** | | |
| LANGUAGE COMPATIBILITY | X | X |
| NETWORK FACILITIES | X | X |
| O/S AND UTILITIES DIFFERENCES | X | X |
| SYSTEM MANAGEMENT DIFFERENCES | X | X |

# LARGE SYSTEMS SIG CUSTOMER SURVEY QUESTIONNAIRES AVAILABLE for SALES REPS

*Gail Breslin*

Large Systems Marketing has recently compiled three reference volumes of over 200 customer responses to the DECUS Large Systems SIG (Special Interest Group) surveys that were distributed to users of DECsystem-10s and -20s.

You will find listed below an index of Large Systems accounts contained in each of the three volumes. Redundant account listings indicate the presence of more than one customer response.

If you find your own account(s) listed in one of these volumes, and if you think that reading their reply will better enable you to "know your customers", then please EMS me, and I will send you a copy, as per your request.

**Volume I**

American Bankers Assoc.
Gregg Corp.
Marmon Group, The Hartford Board of Education
Tartan Labs
Chicago Bridge & Iron
American Breeders Service
Rider College
Univ of Texas at Arlington
Texas Instruments
Sweet Briar College
Air Force Avionics Lab—Wright Patterson
General Mills Inc.
Irving Trust Company, Timesharing Center
Coordinated Management Systems
Sparks Commodities
Hughes Helicopters
Univ of Illinois—Physics
ToxiGenics, Inc.
Harry Diamond Labs
Fresno Community Hospital & Medical Center
Schlumberger—Doll Research
Univ of Texas Health Science Center at San Antonio, Dept. of Anesthesiology
WR Grace Restaurant Group
Bain & Company
Hughes Helicopters, Fixed Base Data Station
Edgcomb Steel of New England
Robert N. Barry, (possible new customer)
Morgan Construction Co
US Railway Assoc
WR Grace, Natural Resources Group
Texas Women's University
Lehigh University
Electro Scientific Industries
Baptist Memorial Hospital
Brookhaven National labs
Univ of Southern California—ISI
Knolls Atomic Power Lab
NDC/Rapidata
Brookings Institution
University of Utah
Tillinghast, Nelson & Warren
University of Chicago, Graduate School of Business
Weber State College
Yavapai Community Hospital
First Church of Christ, Scientist
GA Technologies
National Cancer Institute
Bonnevile Power Administration
Intersil Inc
Ford Sci-Lab
Univ of Pittsburgh Computer Center
University of Oregon
Alcoa Labs
Colorado School of Mines, Computer Center
Hughes Helicopters, Inc. Mesa, AZ
National Computer Network
Digital Communications Associates
Brookhaven National Lab—Online Data Facility
Storage Technology Corp
Univ of Texas, Austin, RDCTE
"other" (2020, anon)
"other: (2xKA10)
Environmental Protection Agency
SWL (Warrenton, VA)
US Air Force, Hill AFB

**Volume II**

Energy Enterprises—GEISCO
Dept of Health & Human Services (NIH)
Norden Systems
Associated Press
Wheaton College
CompuServ, Inc.
CH2M-HILL, Corvallis, Oregon
Courier Journal
Chabot College—South Counth Community College
Homesteak Mining
MDSI
Univ of Southern Cal.—Engineering Computer Lab
West Texas State University
State Purchasing & General Services Administration
Electrotechnical Laboratory
Jorgensen Steel
MIT-XX
Univ of Chicago, Graduate School of Business
New York Daily News
Union Carbide Computer Science
Lawrence Livermore National Laboratory
Stevens Institute of Technology
Naval Research Lab
Princeton Plasma Physics
Arnold AFSTA, Tenn.
Stanford University—Computer Science Dept Computer Facilities
General Motors Corp—GMISCA
GA Technologies, Inc.
Univ of Penn, Medical School Computer Facility
GM Corp—Delco Remy Div.
Alexander & Alexander, Inc—Anistics Div.
Woodward Communications Inc.
GE Space Systems Division, Lanham, MD
DOT/FAA Technical Center
San Mateo County Office of Education
Ohio Dept. of Education

AFDSC Pentagon
ICCSI
Univ of Rochester
Cerritos Community College
Gallaudet College
Univ of Southern Cal—ISI
Uninet, Inc.
American Express Co.
Univ of Louisville
Claremont Unified School District
Western Electric—Newark
Hewlett-Packard
El duPont, Experimental Station
El duPont, Experimental Station
Univ of Arizona, Computer Center
BPA (Bonneville Power Admin.)
Anistics, Inc.
Digital Communications Associates
CompuServe, Inc.
Citishare Corp
Personal Products Company
Pfizer, Inc.
Univ of Montana
New England Power Service Company
Pima Community College
Bonneville Power Administration
Cornell University, Laboratory of Nuclear Studies
Euclid Industries, Inc.
Black Hawk College
Bonneville Power
Administration—Dittmer Control Center
Stanford University—LOTS Computer Facility
Beckman Instruments, Inc.
Univ of Delaware Computer Services
Musashino Electrical Communication Lab
Inland Steel Research Labs
Beckman Instruments
National MFE Computer Center (LLL)
Placentia Unified School District
Eaton Corp—AIL Division
Boeing Computer Services
United Way of Massachusetts Bay
Fort Hunter Liggett

**Volume III**

Eastern Montana College, Computer Center
IUPUI—Dept of Computing Services
Western Electric—Engineering Research Center (Princeton, NJ)
Stanford University—LOTS
Beckman Instruments
Computerized Business Systems
National MFE COmputer Center
Musashino Electrical Communication Lab—NTT
University of Delaware Computing Services
Eaton Corp—AIL Division
Case Western Reserve—AR Jennings Computing Center
Tufts University
Northeast Utilities—Convex AGC/SCADA System
WR Grace & Co
Boston Systems Office, Inc
New York Daily News
San Mateo County Office of Education
Electro Scientific Industries
Hughes Aircraft—Radar Systems Group
Rutgers University
Nalco Chemical
Irving Trust Company—timesharing center
Fort Hunter Liggett
WR Grace & Co.
University of Chicago, Graduate School of Business
Trammell Crow Company
American Mathematical Society
Univ. of Rochester—MCCF
Bowling Green State University
Univ of Texas at Austin—Computation Center
Board of Water Supply
Texas Instruments—Computer Science Lab, CRL
Union Texas Petroleum
Interactive Computing Facility
Tymshare
Eastern Montana College
Burns & McDonnell Engineering Company
Kyoto University—Research Institute for Mathematical Sciences
Univ of Penn—Wharton Computer Center
Univ of California at Irvice, Dept. of Information & Computer Science
Goodyear Aerospace Corp
Syracuse University
Carnegie Mellon University—Computation Center
Vermont Dept. of Health
CESA #16 (Cooperative Educational Services Agency, Data Processing Services) State of Wisconsin
Univ of California at Irvine—Computing Facility
Pan American University
South Central Power Co.
University of Texas Health Science Center at Dallas
Black Hawk College
Ball State University
New York University
Federal Judicial Center
Academic Computer Center
Broome Community College
Emerson Electric Co.
Miller, Mason & Dickson, Inc.
Interactive Computing of Vermont
Central Arizona College

# LARGE SYSTEMS MARKETING's DATA CENTER

*Ammie Herring Jr.*
*Jim Rehill*

Large Systems Marketing's Data Center continues to be a vital resource to our sales representatives, to our marketing group, and to various groups within Central Engineering. Located in Marlboro, in a lab better known as the "Fishbowl", the Data Center is administered by Dave Backman, Manager of LSM's Technical Services.

Computer Operations supplies five-day, 24 hour coverage for the Data Center, and provides many day-to-day processing needs and services. Some of our services include:

- Timesharing for field sales and software staff, useful in:
  - — Problem resolution (MARKET system runs field image software);
  - — Home office communication (mail, etc.);
  - — Preliminary work for benchmarks;
  - — Remote benchmarks oriented towards functionality tests rather than towards performance specifications.
- General timesharing, a resource for all members of Large Systems Marketing as well as for Engineering;
- Standalone machine for benchmarks and for the testing of new software and hardware;
- ARPAnet: DEC-MARLBORO, the Corporate gateway, provides mail, network virtual terminal services, and file transfer services;
- Magtape reproduction for the SDC;
- Maintaining directories of Third Party software for demonstration purposes for ourselves and for our customers;
- Maintaining a Tape Library and securing users' files both onsite and offsite, daily;
- Maintaining a Terminal Room for our users and customers, with some of the latest terminals.

**Market Data Center Staff**

Our staff is available to assist you. For further information about the services we offer, please contact us at the numbers listed below:

| | | |
|---|---|---|
| Ammie Herring Jr. | Operations Supervisor | DTN: 231-5963 |
| Carol Orton | Lead Computer Operator | DTN: 231-6107 |
| Hilton Yorston | Computer Operator (1st shift) | DTN: 231-6107 |
| Wayne Garber | Computer Operator (2nd shift) | DTN: 231-6107 |
| Pat Flister | Computer Operator (3rd shift) | DTN: 231-6107 |
| Jim Rehill | Software Support Specialist | DTN: 231-5562 |

**Benefits to Large Systems Sales Force**

How can the LSM Data Center best serve your needs?

For "starters", the Center—in running very current field image software—provides you with the opportunity to explore new software (languages, compilers) before your installation of it;

MARKET allows you to "get on the system and play with it", enabling you to stay current with products under development as well as with current products;

We (and you) see new products before the field actually sees them—affording you the advantage of being prepared for sales calls and unexpected questions.

**Hardware Resources**

The Data Center hardware resources consist of eight systems: 3 DECSYSTEM-20s, 2 DECSYSTEM-2020s, 2 PDP-11/44s, and a DECsystem-10.

- System 2244 (MARKET), a -2060 with 1.8 MW of memory, is our general timesharing system, running Field Image software at all times;
- System 2123, a -2060 with 4 MW of memory, includes MF20, AMPEX, and MH10 memory. It is our benchmarking and demonstration system, and has a floating point system;
- System 2241 (MRCSSE), a -2060, provides general timesharing for the CSSE group;
- System 1322 (MRSMEG), a -1090, provides general timesharing for CSSE and for Education Services;
- System 4145, a -2020, provides timesharing for CSSE running TOPS-10;
- System 4580 is used as a customer Mail System;
- Systems 6436 and 11530 (RTE I and II), PDP-11/44s, can simulate up to 128 lines each. Each has 3/4 MW of memory.

Supporting the Data Center's eight systems are: 38 disk drives (35 RP06s, 1 RP07, 1 RM03, 1 RP20); and 24 magtape drives (8 TU45s, 6 TU70s, 7 TU72s, 1 TU77, 2 TU78s). The disk and tape drives can accomodate tapes at 9 track dual density, 800, 1600, or 6250 BPI.

# ANNOUNCING DEC/CMS-20 VERSION 1.0*

*Diana Miller*

DEC/CMS-20 (Digital Equipment Corporation Code Management System) is a software tool that helps manage and control files of an ongoing software development project.

Running under the TOPS-20 operating system, DEC/CMS-20 is designed to handle ASCII text files generated by most standard editors using standard programming languages. This means that little change is required in programmer work habits. In addition, users of DEC/CMS-20 and VAX-11 DEC/CMS will find the same functionality in going from one system to the other.

**Product Description**

DEC/CMS-20 is a program librarian for software development that can be used for both new projects and for projects already in the development or in maintenance phase. This software was designed to minimize the coordination problem of software development and thus to increase programmer productivity.

Each DEC/CMS-20 command is invoked from the TOPS-20 Operating System's command level to perform a specific function, such as reserving a file for modification or obtaining a report for development status. Each command returns to the operating system's command level, where the user may edit, compile, and test in the usual manner.

**Selling/Marketing Strategy**

DEC/CMS-20 is valuable to DECSYSTEM-20 users who do their own software development. DEC/CMS-20 Version 1.0 provides our customers with a set of key productivity tools missing on the DECSYSTEM-20; it also provides a product that is compatible with its companion offering under VMS.

The benefits and features of DEC/CMS-20 are presented in promotional literature: a Data Sheet, order number ED-25444-61 and a brochure entitled "Track Software Changes Without Tracking Them Down", order number EA-25362-61; these are available from your Sales Communication Specialist.

**DEC/CMS-20 Highlights**

- Increases programmer productivity;
- Works with ASCII text files;
- Stores current and historical generations of files;
- Monitors access to the files in a project library;
- Reports changes to files line by line;
- Merges multiple version of files.

**Features/Benefits**

The text files for a project are stored in a project library. Each project has its own library, which the user identifies at the beginning of the session. ASCII text files, including source programs, command files, documentation, and test data may be stored in the project library.

Within the project library is a collection of elements, each consisting of one or more related files. For example, a source file, together with the command file that translates from source to object code could constitute an element of the library. DEC/CMS-20 commands generally operate on entire elements, retrieving or storing all files of an element at the same time.

Historical element generations of source and other text files are stored efficiently because only the differences between successive generations are kept. The programmer can edit, compile, and test until satisfied with the results. By saving only the meaningful results, the library does not become cluttered with versions that do not work. The storage of differences also enables DEC/CMS-20 to report the generation or origin of each line of a file.

A history is kept of all movements of files into and out of the project library. In addition, a list of reservations is kept for all modifications that are in progress at any time.

**Performance Considerations**

The most important consideration in DEC/CMS-20 is the safety and accuracy of the user's files. The user might not be aware of all the checking and processing done for certain DEC/CMS-20 operations, so the performance might appear to be less than expected. The best performance measure for DEC/CMS-20 is the total time the user takes to complete a project—time which can be dramatically reduced.

**Availability**

The planned timeframe for First Customer Ship (FCS) is Q2/FY84 for the U.S. and Q3/FY84 for GIA and Europe. Pricing will appear in October 3rd DSPL (DEC Standard Price List) Addendum.

**Documentation/Ordering Information**

DEC/CMS-20 comes with complete documentation including: a tutorial manual; a DEC/CMS-20 Reference Manual; a Pocket Guide; and the DEC/CMS-20 Installation and System Manager Guide. For further details concerning documentation and pricing, please refer to the August 29 "Sales Update".

**Competition**

There are no third party products runningunder TOPS-20 that provide the features or functions of DEC/CMS-20. There are similar products on other hardware vendors:

IBM: LIBRARIAN, VOLLIE, SLICK/OWL
CDC: UPDATE
UNIVAC: Symbolic UPDATE
Honeywell: SOLOMAN, LIBMAINT

Those with similar functionality are priced between $10,000 and $30,000. For more detailed information refer to a document, "DEC/CMS Competitive Analysis Report" (EJ-22227-81), available from Printing and Circulation Services in Northboro.

* Portions reprinted from "Sales Update", August 29, 1983.

# APPLICATIONS of ARTIFICIAL INTELLIGENCE RESEARCH

*Mitchell D. Perlitch*

The following article continues the series begun in the July BUY-LINE, listed in the section entitled "Emerging Markets/Technologies". For further information, please refer to page 23 of the July issue, and page 16 of the August issue.

Artificial intelligence (AI) research is getting a lot of press these days. "Fortune" Magazine ran one of the first articles showing that some companies were already using AI applications (DIGITAL was one of the firms mentioned). The series of articles entitled "Thinking Machines" ran May 17, May 31, and June 14, 1982. Since then articles on this subject have appeared in a number of publications, including "Business Week", "Scientific American", "National Geographic", and others.

To date, most of the "commercial" AI applications are "expert systems" and "natural language systems" (described below).

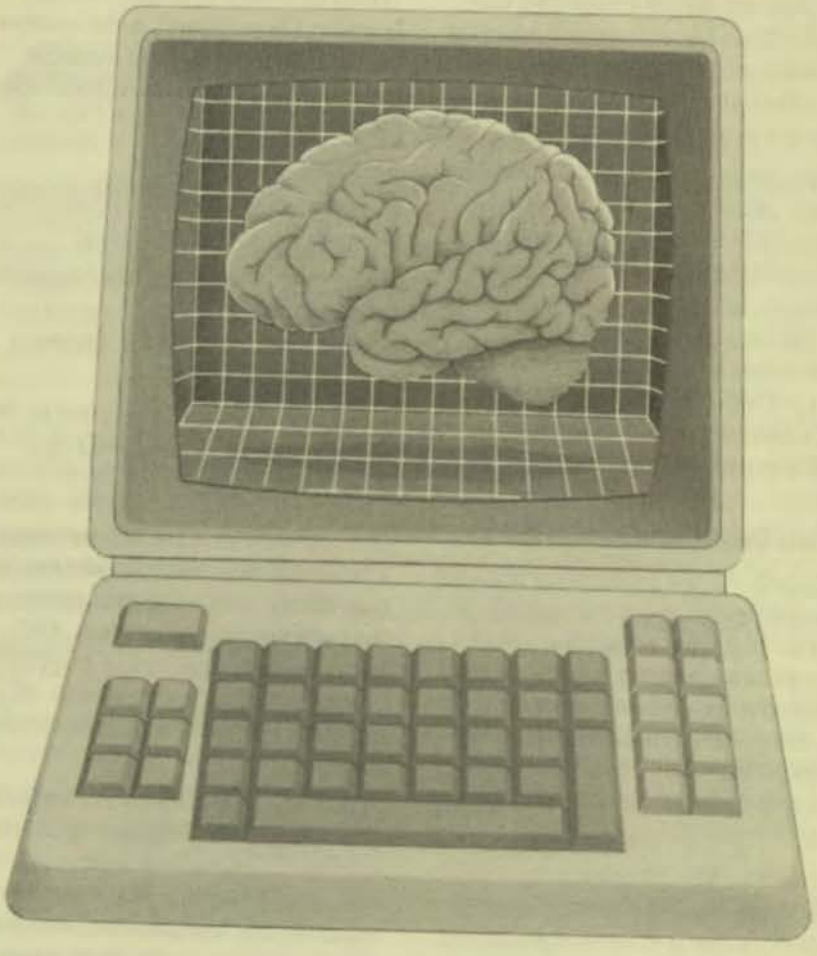
People's perceptions of what AI is vary greatly. Most often, we think of robotics when AI is mentioned. Robots are clearly the most tangible of AI applications; however, other applications seem to have more importance in the short term.

**Expert Systems**

Popularly referred to as "expert systems", knowledge-based (also rule-based) systems are AI applications that have implemented the expertise of some person(s) in a particular field, on a machine.

Tools for knowledge entineering are presently limited. There are several areas involved in an expert system:

- Knowledge Acquisition: schemes for transferring knowledge from the expert to the applications. Optimally, this would be a natural language interface that would allow the expert in the field to casually "discuss" his/her knowledge with the application.



- Knowledge Representation: systems for structuring a knowledge base in a usable fashion. Knowledge is dynamic. Existing information changes, given new facts. Relationships between facts are continually modified. The representation scheme must be sufficiently flexible to allow for continual growth of the knowledge base.
- Heuristics: the processes in an expert system that allow it to learn from itself (from experience) as well as from the human expert.
- Problem Solving: procedures for the actual process of solving a problem in a particular knowledge domain. Those alternatives which are the most likely to succeed must be considered, here; teaching the expert system to make logical choices about probable solutions. This function of an expert system is generally termed the "Inference Engine".
- Result Explanation: often used to aid in "debugging" expert systems, it is the application tracing its steps in reaching an answer, i.e. explaining how it reached the conclusion that it did.

Expert systems today do the best job when there is much information in their knowledge base and when the domain of problems to be solved is small, i.e., the problems are well defined.

Companies such as Teknowledge are applying the principles of knowledge engineering to the task of generating tools which will simplify the production of new expert systems. Due to the cost and the paucity of "experts" in many technical fields, expert systems will, in all probability, be highly marketable products.

Historically, expert systems have been designed with two principal resources: an expert in the field, and a LISP (LISt Processing) programmer. In the future, the knowledge acquisition facilities of expert systems should be sufficiently easy to use so as to minimize the need for a "programmer" to transfer the knowledge from the expert to the system.

Some of the better known examples of expert systems are: PROSPECTOR, MYCIN, INTERNIST, and MACSYMA, described more fully in the "AI Overview" from which this article is excerpted.

**Natural Language Systems**

A "natural language system" is an AI application that interacts with a person in his/her own native language. Natural language systems have obvious importance in man-machine interactions.

Current schemes for simplifying the use of computer systems take various forms from menus to transaction processing. These approaches are somewhat effective in making computers easier to use. However, people must still learn to use them, and they are limited to dealing with certain subsets of computer applications.

A complete natural language system would recognize vague, common terminology and would infer from the context of a "conversation" what questions actually mean. In order for a natural language system to converse as freely as a human being, it would need to understand the language. This is presently far beyond the horizon.

One thing that is possible today is a "truncated" natural language system—which can deal with a subset of a naturally occurring human language in a particular context.

For example, a natural language system could be made that understands the jargon of the financial community. This system could be used as the interface to a financial database. Accountants, etc., could converse "naturally" with this system to accomplish tasks which today require generating reports, writing models, etc.

A truncated natural language system could act as the interface for all sorts of traditional computing applications including database queries, transaction processing, etc. There are some companies now offering limited, truncated natural language systems on small computers. Artificial Intelligence Corporation sells a natural language system called "Intellect" for IBM systems.

**Pattern Recognition**

It is important to note the differences among recognition, understanding, and natural language processing. Recognition comes first. Understanding requires a familiarity with the context of the information under consideration. "Human" understanding is far beyond the capabilities of today's systems.

One example of pattern recognition is routinely used in the intelligence community. NSA uses AI applications to decode radio transmissions. Deducing the encryption scheme used on coded messages in order to decipher their contents is of obvious interest in the intelligence community. NSA uses a DECSYSTEM-20 to perform most of this work. Patterns within a message are analyzed by a system of programs.

Similarly, AI applications can be used to "clean up" transmissions that have been disturbed by interference. A pattern may be discerned amonst the noise, and the noise can be filtered out. Thus, garbled messages may be unscrambled.

From this example, two uses of pattern recognition are apparent, one in decoding or deducing (inferring), and one in enhancement. Image recognition and voice recognition are applications of pattern recognition of particular interest to industry.

**Robotics**

This multi-faceted application involves many of the previously mentioned areas of AI research. Simple robots perform relatively basic, pre-programmed functions. They have simple "hands"—generally two-fingered devices—that can hold an object.

Robotics research today is considering the problems of grasping (as a human hand does) and touch sensitivity. These problems are only one part of robotics, i.e. touch manipulation. Many other areas exist in which much research is being done.

In the realm of image recognition, robots are being developed to recognize one object from others so that they can do more generalized work. Also, a robot should be able to determine the spatial orientation of an object, so that it can be manipulated into the proper position before a task is performed.

Robots have some obvious uses. In general, they should be used where the tasks are particularly tedious or dangerous for humans, thereby improving the quality of jobs performed by people.

Robots used for performing multiple or complex tasks—such as welding and painting—need to be taught in a series of simple steps how a task is performed. The knowledge of how to perform a task must be represented in some (database) form and must be accessible on some type of command, e.g. voice.

This article is excerpted from the "AI Overview", mailed in July to BUY-LINE readers. Watch forthcoming BUY-LINE issues for additional articles on this exciting new field in which DECSYSTEM-20s play a significant role.

# SYSTEM 1032 DATABASE MANAGEMENT SYSTEM

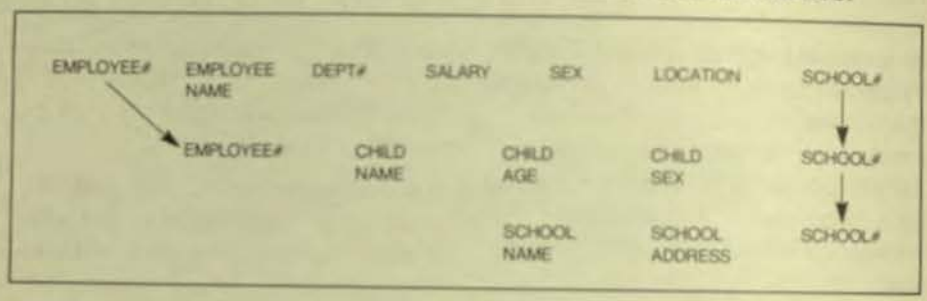
*Dee Ramee*

Software House, developer of System 1032, the widely used database management system for the DECsystem-10/DECSYSTEM-20, has released a new database management system for the VAX, System 1032.

Released in May 1983, System 1032 is written in VAX-11 MACRO and runs on all VAX computers running VMS V3.1 or later.

Both System 1022 and System 1032 have relational designs with inverted file structures and table structured datasets. Database design is flexible, enabling the creator to design the database to match the natural organization data.

**DIAGRAM SHOWING THE RELATIONSHIP BETWEEN THREE DATASETS:**




### User Features

To the end user familiar with System 1022, the System 1032 interface provides a conversational query language which is easy to learn and understand, and very similar to that of System 1022, although some functionality is different. The System 1032 command formats have been tailored to be compatible with the VMS command language, whereas System 1022 is tailored to a TOPS-20 style interface.

Command choice, help and recognition are offered as keypad commands. Typing the ADD command followed by the choice key provides the user with a menu of arguments to the ADD command and their descriptions. And, if an incomplete command is given, rather than rejecting it, System 1032 prompts the user for the arguments required to complete it.

Command recall journals your previous command, allowing easier correction of errors in commands. When the user starts to enter a new record to the database, he is prompted for each attribute.

Multiple users can query the database simultaneously, although a LOCK command prevents update by multiple users. Files on a remote VAX can be accessed over DECnet and update of remote files is a planned enhancement.

As something new, System 1032 features default output columns, using the field names as the default headings. This makes simple report generation easy, and ad hoc query of the database more easily viewed on the screen.

A screen formatter is planned, and should be available somewhere around the end of the year.

Data types for System 1032 have been extended, and include integer, real, text, packed decimal, double-precision real, double-precision integer, logical, date-time, time-span. Record attributes may be organized in arrays or hierarchical groups.

```
EX  ATTRIBUTE FILM_STARS ARRAY(2) OF GROUP OF
      FIRST_NAME TEXT 12
      SURNAME TEXT 12 KEYED
```

Data attributes, common to two or more datasets within the database, enable separate datasets to be related at any time by "mapping" (MAP is a basic 1022/1032 command) from one dataset to another through these common fields.

New datasets can be added later, and still maintain their relational structure through these common attributes, allowing databases to grow in a network structure, without rewriting existing applications programs.

The System 1032 software supports millions of records. Database size is limited only by the installation's hardware and memory configuration.

System 1032 includes a command language designed to simplify application development, that includes PASCAL-like conditional statements, to be used in conjunction with System 1032 commands.

The Host Language Interface allows System 1032 use from any VAX language using VAX/VMS procedure calling standards, including FORTRAN, MACRO, COBOL, PASCAL, BLISS, BASIC, PL/I, C and APL.

### Integration and Conversion

For those System 1022 users, who have A VAX or are planning to integrate VAXs into their system, and who would like to offload new System 1022 applications to System 1032 on the VAX, Software House is planning to provide documentation to aid in conversion, and a program for converting System 1022 data description files to System 1032.

Host language programs will require the same considerations and care in conversion as any other source programs being converted from one machine to another.

Although System 1022 and System 1032 will never be completely identical in functionality, some of the new features found in System 1032 will be implemented in future releases of System 1022.

Sixty day System 1032 trials are available for a fee of $85.00 and include documentation. For more information on trials contact:

Betsy Ziegler
Software House
1105 Massachusetts Avenue
Cambridge, MA 02138
(617) 661-9440

# OPUS SELLS at ICI INC.
# OA PACKAGE BOOSTS DATA SERVICES PRODUCTIVITY

*Barbara Holtz*

Information Consultants Inc. (ICI), a timesharing house in downtown Washington DC, was one of the first DECSYSTEM-20 customers in the Washington area; DIGITAL's association with this data services company began in the mid-1970's.

Currently, ICI employs a large technical staff noted for their expertise in large user data base development, support, and special services worldwide, as well as in data base applications for government, commercial, and scientific industries. ICI is a privately held company.

ICI has two DECSYSTEM-2060 CPUs each with 768 KW memory, and with 100-120 comm lines per machine. Eight RP06s and seven RP20s are installed, there.

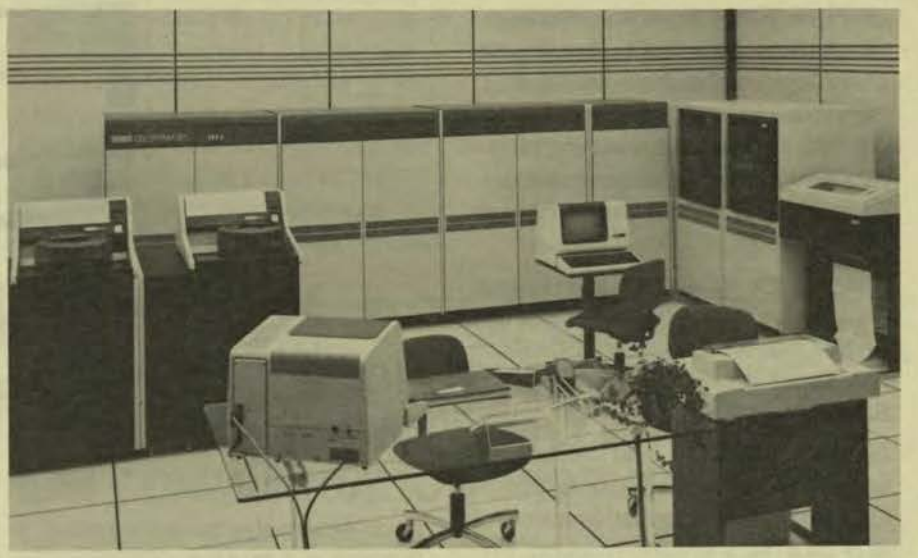
**OPUS Attracts; DIGITAL Demonstrates**

OPUS first came to ICI's attention when this Office Automation layered product on TOPS-20 was announced last December at US Fall DECUS in Anaheim, California.

Deb Mitchell, DIGITAL's Maryland District Sr. Sales Rep., and Hamid Kianipur, TOPS Software Specialist, made a "demo call" to ICI in Feburary 1983, in order to demo OPUS on the customer's DECSYSTEM-20s.

Present at this demo initially were ICI's vice president of technical operations, Ken Miller, as well as staff members involved with creating and supporting customer applications.

Debbie reports that the customer was enthused by OPUS' menu-driven user interface, its help facility, its interface to application software, its simplified access to decision support software, its calendar, memo, and calculator facilities.



The customer was interested in how everything could be tied together with DIGITAL's word processing software. ICI paid OPUS a compliment in calling it "slick".

"We were dialed directly into the NY DECSYSTEM-2060, located within NY's Software Services group," says Hamid. Together, we and the customer spent about an hour, "playing" on the system, trying things out, seeing the capability of WPS, calendar, seeing how it worked.

Debbie added, "We gave them a two-month loan of a tape - from mid-March to mid-June, so that ICI could assess their potential market and could view their own current customer base interest.

"During this time period, ICI was designing their own rudimentary demos and the capability to demo a product which their customers could use in a timesharing environment. As part of the testing, they understood the menu's capability, how well user applications programs interface to the menu, and they developed application programs such as user data bases.

In July 1983 we received a PO".

**Behind the Win**

Debbie has been on the ICI account for one year, and finds her customer to be particularly sophisticated and technically well-informed. "Since ICI is a timesharing house, it made sense for us to emphasize a tool which simplifies access to information and applications for their customers; that was the primary rationale behind the visit which Hamid and I initiated", she says.

"Because my customers are technically oriented, I tend to follow a loan of product strategy, which allows them to experiment with new software and to see the advantages up front. As a tool for layering applications onto a menu, OPUS is ideal. It proved to be exactly what ICI needed.

"OPUS" menu orientation gives ICI's developers and customer base a productivity tool, and an easier way to tie applications programs together without writing a lot of code," Hamid added.

OPUS, they both noted, is the only DIGITAL software product which has Office Automation functions similar to those of the very popular and in-demand All-in-1, which runs on the VAX.

# FIELD SERVICE SITE PLANNING KIT FOR LARGE SYSTEMS ENVIRONMENT

*Bob Cummings*

Last spring, DIGITAL's Field Service introduced a generic Site Planning Kit containing visual and informational tools to assist in site preparation and in planning (for example, planning for data centers and for seminars/road shows). To date, about 450 Kits have been shipped.

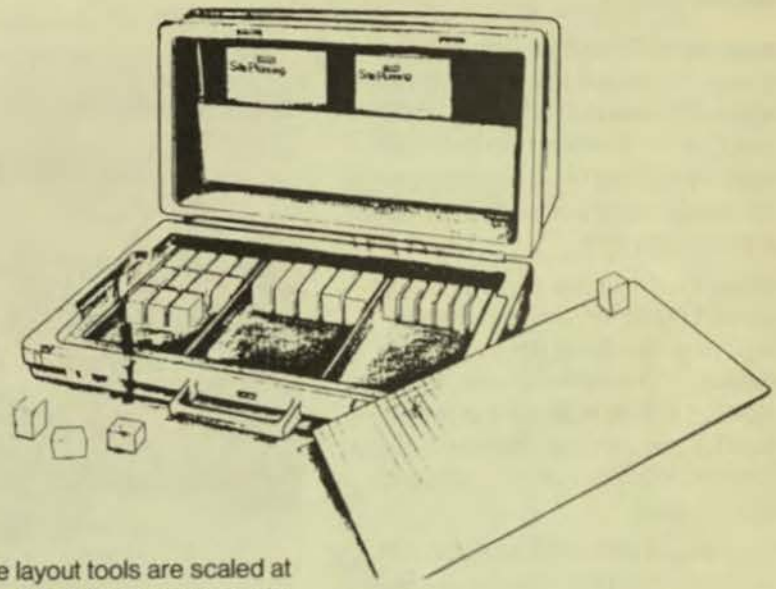
Recently, the Kit was useful in internal planning for the FS/Sales Seminar in Denver, and for the entire DECtown floor layout at DIGITAL's Worldwide Sales Symposium in Boston.

Available to DIGITAL field service offices worldwide, the Kit supports your efforts to produce layout alternatives for all of DIGITAL's existing products, including the DECsystem-10, DECSYSTEM-20, and VAX-11 systems, as well as for newer products such as the FCC-compliant KL.

The Site Planning Kit provides flexibility in site layout formats and comprehensive checklists for environmental considerations. It also offers a standardized delivery technique for site planning of all DIGITAL products.

**Site Planning Kit Contents**

- Template set, including templates for cabinets, mass storage devices, terminals, and office furniture;
- "Peel & stick" vinyl stick-down models which are reusable; These are useful for planner/customer participation in considering a variety of different floor plans;
- Three dimensional models, which enable customers to visualize the site layout as it will look when completed.



All of these layout tools are scaled at 3/8 inch = 1 foot (on a metric scale, this is roughly equivalent to 1 sq. centimeter), allowing a facility with dimensions of 9.6 m. x 19.8 m. (31 feet x 48 feet) to be illustrated. By simply adding grid sheets, the plan can take on any dimension.

**Checklists and Documentation**

Checklists and supporting documentation are included, to ensure that environmental considerations, service clearances, fire protection, media storage, and traffic flow are adequately planned.

- Checklists are written in a question and answer format, with space for note-taking. This allows the site planner and customer to tailor the information to the site and to system requirements.
- Supporting documentation is provided to help illustrate isolated ground techniques, plug and receptacle requirements, and other necessary information in a simple, consistent manner.

**Availability**

The Site Planning Kit is available only to Field Service personnel. However, the "Site Planning for Computer System Installations" brochure is available to all sales personnel, to assist in customer presentations.

You may order these items from P&CS in Northboro under the following part numbers:

EK-SPCSI-IN-001:
Site Planning for Computer System Installations (brochure)
EK-SPKIT-01:
Site Planning Kit.

**Upgrade Kit Planned**

Currently, we are in the process of producing an Upgrade Kit, which will provide site planning capability for more—and newer—DIGITAL products, targeted for availability in Q2 FY84. The Upgrade Kit will update existing illustrations and reference materials useful for site planning in the field, as well as internally. Ordering information will be disseminated to the field when it becomes available.

**The Kit is an Award-Winner**

Recently, the Boston Art Directors Club awarded the Kit's creators, DIGITAL's Industrial Design group in Hudson, Mass., and Jim Neill of Corporate Field Service, the 1983 Silver Award for industrial design excellence.

# DIGITAL to ACQUIRE TECHNOLOGY and an EQUITY POSITION from TRILOGY LIMITED

In a joint announcement dated August 2, 1983, Kenneth H. Olsen, President of Digital Equipment Corporation, and Dr. Gene M. Amdahl, Chairman of Trilogy Limited, disclosed that DIGITAL has agreed to acquire an option to license advanced semiconductor technology from Trilogy Limited.

DIGITAL also agreed to acquire preferred stock representing an approximate nine per cent equity interest in Trilogy.

DIGITAL will pay a total of $26 million for the shares and the technology license option. Additional details of the agreement, or specific terms of the option, were not disclosed.

Mr. Olsen said, "Trilogy's unique approach to high performance, ultra-reliable semiconductor devices represents an important breakthrough in circuit integration and packaging that should result in significant improvements in reliability and performance. The integration of this semiconductor technology in DIGITAL's larger computer systems is consistent with our philosophy of introducing advanced technology in high quality, reliable products."

The companies further disclosed that an agreement had been reached whereby Trilogy, at DIGITAL's option, could develop a new semiconductor manufacturing facility in California. A portion of the facility's capacity would be used to supply semiconductors incorporating the Trilogy technology to DIGITAL. Specific terms of this agreement were not disclosed.

Dr. Amdahl said, "We are particularly pleased that DIGITAL, an acknowleged leader in the computer industry, has chosen the Trilogy technology for inclusion in its products. The development of a semiconductor manufacturing facility would be a significant step in applying the Trilogy technology to a growing list of potential opportunities.

The facility would contain necessary computer and semiconductor equipment to allow the design and manufacture of Trilogy modules using the proprietary Trilogy design automation system and our new wafer scale semiconductors."

---

# SOFTWARE PRODUCT SERVICES for TOPS-10 and TOPS-20 IBM COMMUNICATION PRODUCTS*

*Don Holden*

Software Product Services (SPS) announces the availability of Basic Service and DECsupport of the TOPS-10 and TOPS-20 2780/3780 and HASP Emulator/Terminal products. The TOPS-10 and TOPS-20 2780/3780 and HASP Emulator Terminator allow DECsystems to transmit and receive data and job control files with an IBM system by appearing as a 2780, 3780, or HASP workstation.

DECsystems may also act as host terminators to IBM 2780, 3780, or HASP workstations.

Self-Maintenance Service is currently available for both products, but has been repriced to provide consistency between product services. This represents a significant reduction in price for Self-Maintenance Service for these products. Service components of the three levels of post-warranty support are as follows:

**Self-Maintenance**

- Software Product Documentation Updates
- Software Performance Report Responses
- Program Change Orders

**Basic**

- Self-Maintenance Service
- Telephone Support

**DECsupport**

- Basic Service
- Periodic Preventive Maintenance
- On-Site Remedial

**Pricing/Ordering/Availability**

Pricing appeared in Addendum #1 to the Q1 DSPL dated August 1, 1983. Please refer to the article on page 45 of the July 18 "Sales Update" for details concerning prices/"Q numbers".

Basic Services for these Emulator/Terminators are available worldwide. DECsupport is offered where the local office has capability to support the product. Telephone support for the U.S. Area and Canada within GIA will be offered via CSC/Colorado Springs. For details on service availability in other countries within GIA and the European area, please contact your local Software Services Manager.

For more information, refer to article in the June 6 "Sales Update" entitled "TOPS-10/-20 2780/3780/HASP Performance and Availability".

* Portions excerpted from the July 18, 1983 "Sales Update" article on pages 45-6.

# NEW SYSTEM SOFTWARE INFORMATION MANUAL AVAILABLE*

*Bill Keating*

The latest version of SSI—"System Software Information"—has been released, and is available for internal use. This manual contains DIGITAL software product information gathered from SPDs (Software Product Descriptions), BOMs (Bills of Material), and from software developers and maintainers, concisely presented in a format that aids easy reference.

**The SSI Manual provides:**

- A catalog of the operating systems on DIGITAL's various CPUs (DECsystem-10, DECSYSTEM-20, VAX-11, PDP-8, PDP-11), the software products related to the operating systems, and the software manuals related to the products;
- Software support of hardware, presented in a format that permits easy comparison among operating systems;
- DECnet, Emulator, and Packetnet options, described both in their own sections and in the sections covering the systems upon which they operate;
- Information on (DIGITAL's) software for the Professional Personal Computers.

The Languages Features sections, which were included in earlier versions of SSI, are published in a separate manual, titled "Language Fundamentals".

SSI has been sent via automatic distribution to all SCCs (Sales Communications Centers) to software support personnel who have requested the publication, and to a group of additional subscribers. Subscription to SSI includes subscription to "Language Fundamentals".

To subscribe to both manuals, Software Support personnel should refer requests to the CLAS contact in your disctrict (the publication code is SSI). Other DIGITAL personnel may subscribe by writing or calling Gladys Pannell, MLO12-3/A62, DTN:223-5860 or 617-493-5860.

If you wish to order without subscribing, please request your SCC (or Literature Contact) to place your order with the SDC (Software Distribution Center).

**Software Identification Codes:**

System Software Information
AA-5075I-RK
Language Fundamentals
AA-M460B-RK

**Caution**

*These manuals are for DIGITAL internal use only, and are NOT to be given to customers unless a non-disclosure agreement has been signed. In order to protect this confidentiality, the manuals will be mailed only to DIGITAL offices at the request of DIGITAL personnel.*

* Reprinted from "Sales Update", page 61, August 1, 1983.

# LCG LITERATURE LIST

**HARDWARE OPTION BULLETINS**

| | |
|---|---|
| CD20 Card Reader | ED 23999 61 |
| DN20 Communications Front-End Subsystem | ED 20504 26 |
| DN200 Remote Station | ED 22987 61 |
| IDX-3000 Integegrated Digital Exchange (Linkabit Switch) | EC 24075 61 |
| LP20-A/B Line Printer Systems | ED 19l37 26 |
| LP20-C/D Line Printer Systems | ED 19l35 26 |
| LP100-B Line Printer Systems | ED 19l39 26 |
| LP100-F/H Line Printer Systems | ED 19677 26 |
| LP200-B Line Printer System | ED 24013 61 |
| TU72 Magnetic Tape Subsystem | ED 19763 26 |
| TU77 Magnetic Tape Subsystem | ED 17400 26 |
| TU78 Magnetic Tape Subsystem | ED 23003 82 |

EDITOR'S NOTE: You may order these publications by contacting Jane Fitzgerald at P&CS in Northboro. The DTN is 234-4325. Mail stop is: NRO2-2/W3, RCS code is NR12 (for telexes).

You may order ***new LCG Literature*** via your SCC (Sales Communications Center) Specialist. The Literature List in BUY-LINE will asterisk the very latest items.

If you find an item to be out of stock or incorrectly numbered, please phone me or Gail Breslin at DTN: 231-4996 or 231-4013, and we'll try to help you out.

ATTENTION ! ! ! This list (and order numbers) supersedes all prior lists.

** Joint Marketed with NCP Corporation

**SOFTWARE DATA SHEETS**

| | |
|---|---|
| BASIC-PLUS-2 | ED 18885 26 |
| BLISS-36 | ED 19208 26 |
| COBOL | ED 22109 61 |
| CFS-20 | EC 23858 61 |
| CPL | ED 15659 63 |
| DECmail/MS | ED 24000 61 |
| DECnet-10 Phase III | ED 24056 61 |
| DECnet-20 Phase III | ED 22835 61 |
| DBMS-10 | ED 21782 81 |
| DBMS-20 | ED 21827 61 |
| FORTRAN-10/20 V.7 | ED 24054 61 |
| IBM RJE E/T | EC 24057 61 |
| IQL | ED 15660 63 |
| NCP Calc | EC 24656 61** |
| PASCAL-20 | EJ 24759 61 |
| TOPS-20 PSI Gateway | ED 24053 61 |
| TOPS-20 Supported Utilities | ED 22933 61 |
| TOPS-10 V7.02 | EZ C5532 44 |
| TOPS-20 V6.0 | EZ C5532 45 |

**TECHNICAL SUMMARIES**

| | |
|---|---|
| DECsystem-10 Technical Summary | EE 21041 26 |
| DECSYSTEM-20 Technical Summary | EA 20415 18 |
| LCG Product Summary - April '83 | EJ 24660 61 |
| LCG Price List - April '83 | EE 24661 61 |

## PHOTO BULLETINS

| | |
|---|---|
| DECsystem-10/20 Fact Sheet | EJ 19596 26 |
| DECsystem-10 Family At A Glance | EJ 19595 26 |

## LCG BROCHURES

| | |
|---|---|
| Don't Let the Software Blues Get You Down | EA 24773 61 |
| TOPS-20 Multiprocessing | EA 24237 61 |
| Introducing TOPS-20 Multiprocessing | EC 24046 61 |
| DECSYSTEMS: The Users Choice | EA I8366 26 |
| DECsystem-10 Family | EA 20572 26 |
| Develop Microprocessor Applications Faster | EA 22895 61 |
| TOPS-10/20 Data Networking | EC 22813 61 |
| LCG Software Referral Catalog (2nd Ed.) | EJ 22780 61 |
| Symmetric Multi-Processing | ED 24089 61 |
| The Personal Mainframe/Electronic Mail | EA 22872 61 |
| The Personal Mainframe | EA 24546 61 |

## CORPORATE BROCHURES

| | |
|---|---|
| Digital's Ethernet | EA 22710 18 |
| Digital Introduces DECnet/SNA Gateway | EA 22703 18 |
| Digital Storage Architecture Product Summary | ED 23981 18 |

## MARKET SPECIFIC BROCHURES

### Education:

| | |
|---|---|
| Wesleyan Univ. | EA 20271 87 |
| Univ. of Vermont | EA 20270 87 |
| Univ. of Pittsburgh | EA 19633 87 |
| Columbia Univ. Teachers Coll. | EA 19630 87 |

### Engineering:

| | |
|---|---|
| Monenco: Engineering for Excellence | EA 23075 16 |

### Banking:

| | |
|---|---|
| New York City Bankers Choose Timesharing | EJ 24794 61* |
| Bankers Trust: Partners in Success | EA 23155 16 |
| "Will the Street Bypass Time Sharers?" (reprint from "Institutional Investor") | EJ 24696 61 |

## GENERAL MATERIALS

| | |
|---|---|
| DECNET-10 Phase III Press Kit Folder | EJ 23998 61 |
| BUY-LINE Compendium (Vol.2: 1981-82) | EZ 09016 82 |
| Digital's Systems Interconnect Folder | EJ 24741 61 |
| DECision Systems Folder | EJ 24658 61 |

## POSTERS

| | |
|---|---|
| 1983 Smooth Sailing Calendar | EJ 21823 61 |
| Chart Your Course Sailing Poster | EJ 21623 61 |
| LCG Personal Mainframe Poster | EJ 21652 61 |

## SITE PREPARATION GUIDES

Corporate Field Service's Generic Site Planning Kit, available worldwide, enables site planners to do floor layouts and site planning for all DIGITAL products including the DECsystem-10 and-20 product set. This Kit is designed to be Field Service's standard Site Planning tool. The new Kit's order number is EK-SPKIT-SP, available from P&CS, Northboro.

## AUDIO VIDEO

LCG Users Tape (10 min.): loan request
Benchmarking/CPU Analysis: loan request with Brochure
DEC-10/20 Overview Slide Show
K. Stanton, Bedford MA
LCG DECSYSTEM-20 Timesharing Testimonial Slide Show
Kathie Stanton, Bedford MA, DTN 249-4068
Supplementary Slide Package: Memo Don Waite MR2-2/8D2
Large Systems Slide Presentation: (Modules 1 thru 7)
K. Stanton

* New order numbers for recently produced editions

## LARGE SYSTEMS COORDINATORS

| DISTRICT | NAME | LOCATION | TELEPHONE NO. |
|---|---|---|---|
| **NORTHEAST** | | | |
| Metro Boston | TBA (To be Announced) | | |
| New England | Dave White | Bedford,NH (MHO) | 263-2140 |
| Conn. | Bob Nolin | Bridgeport (SCO) | 254-5265 |
| Upstate | Pete Lilley | Rochester (RCO) | 252-2322 |
| **CENTRAL** | | | |
| Chicago | Helen Godfrey | Rolling Meadows (RLO) | 421-5660 |
| Mid America | Nari Bawa | St. Louis (STO) | 314-991-6400 |
| Great Lakes | Scott Benson | Detroit (FHO) | 313-348-8900 |
| No. Central | Frank Delmont | Minneapolis (MPO) | 612-853-9605 |
| **SOUTHERN** | | | |
| Southeast | Ed Janusz | Orlando (ORO) | 305-660-2100 |
| Mid South | TBA | | |
| Charlotte | Cliff Spatz | Chapel Hill (NCO) | 919-493-2531 |
| Houston | Larry Brown | Dallas (DLO) | 214-620-2051 |
| **WESTERN** | | | |
| Santa Clara | Toby Arnold | Santa Clara (WRO) | 521-2484 |
| San Francisco | TBA | | |
| Rocky Mtn. | Bill Krause | Denver (DVO) | 553-2214 |
| Northwest | Ron Quarles | Seattle (SEO) | 206-453-5500 |
| **NY/NJ** | | | |
| NY Comm. | Alan Vitolo | One Penn Plaza (NYO) | 333-3913 |
| NY Tech. | Ned Barber | Westchester (WHO) | 333-3940 |
| New Jersey | Chet Sherer | Piscataway, NJ (KYO) | 323-2383 |
| NJ Comm. | Pete Buttacavoli | Piscataway, NJ (KYO) | 323-2465 |
| **SOUTHWEST** | | | |
| So. Cal. | TBA | | |
| Los Angeles | Frank Calderon | Culver City (LAO) | 213-417-4351 |
| Albuquerque | Bob Hughes | Albuquerque (AQO) | 552-3021 |
| **MID ATLANTIC** | | | |
| *Washington | Clyde Blassengale | Washington D.C. | (DCO)341-2248 |
| *Maryland | CLYDE COVERS BOTH WASHINGTON & MARYLAND DISTRICTS. | | |
| Philadelphia | Deane Curran (acting) | Pittsburgh (PTO) | 422-2250 |
| Ohio Valley | Jim Fate | Columbus (CSO) | 614-868-1900 |
| **BELGIUM** | Roland Matthys | Evere (BRO) | (32)-(2)-2425095 |
| **ENGLAND** | Geoff Beacroft | Reading (REO) | (44)-(734)-868711 |
| **DENMARK** | David Barlow | Gentofte (DMO) | (45)-(2)-889666 |
| **FINLAND** | Lars Lindstrom | Espoo (FNO) | (358)-(0)-423511 |
| **FRANCE** | J-L Delafraye | Rungis (PAO) | (33)-(1)-6872333 |
| **GERMANY** | Erwin Weiss | Munich (RTO) | (49)-(89)-95910 |
| **NETHERLANDS** | G. van Ruiten | Utrecht (HOO) | (31)-(30)-631222 |
| **NORWAY** | Alan NcDowell | Oslo (NWO) | (47)-(2)-160290 |
| **SWEDEN** | Cyril Malm | Solna (SOO) | (46)-(8)-7300200 |
| **SWITZERLAND** | Urs Hainfeld | Petit Lancy (OUO) | (41)-(22)-713434 |
| | J-P Mueller | Kloten (ZUO) | (41)-(1)-816911 |
| | Bob Taylor | Geneva (GEO) | (41)-(22)-933311 |
| | Norm Valentine | Geneva (GEO) | (41)-(22)-933311 |

## BUY-LINE APPLICATION

NAME: MAIL STOP:

BADGE: COST CENTER:

DEPT: OFFICE LOC:

( ) Please add my name to the BUY-LINE mailing list.

( ) Please delete my name from the mailing list.

My responsibility is in:

( ) LCG Sales

( ) LCG Marketing

( ) LCG Service

( ) Another product line or corporate function

Please detach and mail to Barbara Holtz, MR02-2/8D2. Thank you.

**BARBARA HOLTZ**

**MR02-2/8D2**


digital

DIGITAL EQUIPMENT CORPORATION
MARLBOROUGH, MASSACHUSETTS 01752

Large Computer Group

# BUY-LINE

October 1983

Special In This Issue

Integration Products:
FTS-20 File Transfer, DECnet

The First Step in Integrating
Your Accounts—Account Reviews

Upcoming DECUS



digital

# BUY-LINE OCTOBER 1983
# TABLE OF CONTENTS

## LARGE SYSTEMS MARKETING



## SYMPOSIA



## LARGE SYSTEMS PRODUCT INFORMATION



## SALES/APPLICATION NOTES



## EMERGING MARKETS/TECHNOLOGIES



## LITERATURE & SALES AIDS



***ATTENTION!*** ***Prices and availability quoted in BUY-LINE – unless otherwise stated – apply to Continental USA only; for other locations, please contact your Large Systems Marketing Representative.***

**BUY-LINE** is published monthly by the Large Computer Group, Marlboro.

**EDITOR:** MR02-2/8D2, Ext. 4013

**PUBLISHING COUNCIL:** Don Mallinson

**BUY-LINE** IS COMPILED ON THE DIGITAL WS200 WORD PROCESSING SYSTEM BY GAIL BRESLIN.

**LAYOUT AND ARTWORK** ARE BY LORI FEAREBAY, BERLIN, MASS.

**PRINTER** IS COMMONWEALTH PUBLISHING CO. OF BOSTON, MASS.

**CIRCULATION SERVICES** ARE PERFORMED IN NORTHBORO, COORDINATED BY JACK DECESARE, OF P&CS.

Upon request (see mailer card in this issue), the following will be added to the **BUY-LINE** mailing list:

- Field Service Managers
- Sales Managers
- Marketing Managers
- Sales Representatives
- Operations Committee Members
- Service Group Managers
- Software Support Managers
- Product Managers
- Software Specialists

# A MESSAGE FROM LSM's MARKETING MANAGER

*Rose Ann Giordano*

Since our last Buy-Line issue LSM has focused its activities on meeting our commitments to our LCG customers. As promised, a letter was sent to all LCG customers via our sales force outlining the corporations support and enhancement plans for DEC-10s and DEC-20s.

The field support teams are progressing well with individualized customer audits. These account audits are reviewed each week in Marlboro. (See account review article this issue.) Results show that the idea of the audit is being well received by customers. They provide an excellent opportunity for Digital to understand the customers short and long term computing requirements. With this knowledge, Digital is able to recommend the best business and technical solutions to satisfy our customers needs.

The corporate reviews are attended by VMS and TOPS software professionals, the account manager, engineers, area management and members of the product group. The purpose of the reviews is to ensure that our customer's needs are communicated throughout the organization and to ensure that we are offering our customers the best possible growth paths.

Since preservation of software investment and cost effectiveness of incremental computing are key issues, we are addressing both areas. The key element of our integration strategy is directed at the former. We have re-vamped our pricing strategy to address the latter.

Another key element in protecting our customers' software investment involves third party software. Based upon user input we have prioritized the third party packages most widely used on DECsystems-10s and DECSYSTEMS-20s. We are currently talking to the suppliers of these packages to learn if these products exist on other DEC products such as VAXs and PCs and to encourage them to do so in as compatible a manner as possible. Results so far are very promising. Eight out of the top 10 packages do already exist on VAX.

We continue to talk to customers and field people throughout the world to explain and refine our integration strategy and products. At the recent Australian DECUS meetings, representatives from LSM and Large Systems Engineering talked to representatives of our major accounts from that country and New Zealand. LSM members were accompanied by Bill Johnson, VP of Engineering, Dave Braithwaite and David Dyer-Bennett from Large Systems Engineering.

In the same week, similiar presentations and discussions were held at European DECUS. The team for European DECUS was headed by Win Hindle, VP of Operations and included among others, Walter Manter, Manager of Large Systems Engineering, Peter Hurley, Software Engineering, Per Hjerppe and Peter Gray of LSM.

At both symposiums we reinforced the important points of the integration strategy. We reiterated the continuing corporate commitment for our DEC-10/20 customers and products. We committed support for DEC-10/20 systems for a minimum of 10 years and software enhancements for a minimum of 5 years. We discussed potential growth paths for customers through VAX and -20 clusters. And the inter-connection of the full spectrum of Digital products via DECnet and Ethernet.

We had the opportunity to extend our congratulations to the field teams involved in the sale of seven 2060 systems for use in Japan's 5th generation development program. The 2060s were selected because of their excellent reputation in the Artificial Intelligence Research community and the availability of PROLOG, a symbolic manipulation language used widely in Europe and Asian Artificial Intelligence work. We found a very positive attitude at the recognition ceremony for the sales people.

# ACCOUNT REVIEWS— THE FIRST STEP FOR YOUR TOP ACCOUNTS

*Don Turner*

How can you best help your DECsystem-10 and -20 customers implement the Integration Strategy and leverage additional sales at the same time? By bringing your top accounts through an Account Review.

Every Wednesday, LSM (Large Systems Marketing) holds Account Review Meetings for three accounts. Meeting are held in Conference Room 17A (MR02-2/17A).

The Account Review—a total review of the top 100 national accounts—is an important step in the Integration Strategy. An Account Review concludes with recommendation on how a customer can best grow with Digital products by providing account-specific solutions.

During the Wednesday review meeting, a team leader, account manager, or technical support representative from the field meets with Large System strategic and tactical marketing representatives, an AMC revenue manager, and an engineer. The committee reviews customer applications, their system uses, and functionalities. Customers are advised on how to protect their current investment while planning a path for continuous growth with Digital products.

In turn, Digital gains a better understanding of customer needs and concerns.

In the week before the meeting, an account audit is reviewed giving the team leader and the District Sales Manager time to discuss alternative solutions.

Coordinate an Account Review through your AMC contact listed below:

| AMC | AMC Contact | Large System Marketing |
|---|---|---|
| Chic Shue | Terry Riddle 264-3945 | Bob Todisco 231-4201 |
| Harvey Weiss | Oscar Boreth 231-8146 | Peter Gray 231-5829 |
| Dave Granger | George Harlow 231-4455 | Michael Flitterman 231-6971 |

# INTERNAL DECUS–ALL YOU NEED PLUS...

*Kathleen Baine*

Want to know how one of Digital's largest customers—its own internal users—are using Digital's products like DECsystem-10/DECSYSTEM-20? Want an update on the latest corporate products, applications and technologies? If you've never been to an Internal DECUS Symposium, you won't want to miss this one. You'll get answers to these questions and find out how other Digital employees may have already solved *your* problem!

The next Internal DECUS - Fall 1983 Symposium will be held November 17 and 18 at the Sheraton Conference Center in Boxborough, Massachusetts. More than 50 sessions including workshops, panel discussions, and tutorials—designed for managerial and technical audiences—are planned on personal computing, manufacturing systems, networks, office automation, new products and many other topics.

The latest office and professional computers will be displayed. Demonstrations will include personal computing tools, new terminals, business graphics, software, and Videotex, to name only a few. Information booths will be staffed by the Internal Equipment Group, Internal Software Services, In-House Field Service, Educational Services and other support groups.

Preregistration is required for the symposium. Registration cut-off is November 9. THERE WILL BE NO WALK-IN REGISTRATION.

To accommodate schedules and interests, Internal DECUS offers four registration options. Attendees may register for the full day, for the morning, or for the afternoon only. Half-day registrations do not include lunch. You may also register for the Exhibit Hall only, 3-5 p.m. each day.

Internal DECUS now offers you the convenience of registering on-line through an automatic dial-up system. Or, send in the registration form you received in the mail.

For more information contact Internal DECUS at DTN 273-3388.

# IBM-GLENDALE — THE LATEST UPDATES

*Peter Wysocan*

September 15 of this year, IBM announced new processors, communications options, upgraded disk, and selective price reductions. The following is a preliminary overview of the announcement. A much more detailed analysis will be published in the November 1983 Competitive Update.

**Processors:**

The 4361 Model Group 4 and 5 appear targeted at the scientific market place dominated by superminis; the 4381 Model Group 1 and 2 fill the gap between previous 43XX machines and the 308X family. Significantly, the 4381 is the first non 308X series machine to support MVS/XA, IBMs premier operating system for commercial applications. The following table summarizes these products.

| | 4361-4 | 4361-5 | 4381-1 | 4381-2 |
|---|---|---|---|---|
| Estimated MIPS | .8-2.5 | 1.1-2.6 | 1.7-2.2 | 2-4 |
| Timesharing Users VM/CMS environment | 60-70 | 70-80 | 120-130 | 180-200 |
| Memory (MB) | 2-12 | 2-12 | 4-16 | 4-16 |
| CPU Price $ with min memory | $150K | $200K | $370K | $500K |
| Memory Price $ per MB | $7.5K | $7.5K | $10K | $10K |
| General Availability | Q2CY84 | Q1CY84 | Q3CY84 | Q1CY84 |
| XA SUPPORT | NO | NO | YES | YES |

***NOTES:*** *4361 is available as an upgrade to 4331-X machines. This requires two CE's and 16 hours, indicating it is a complete CPU swap. The machine is particularly meant for scientific applications, achieving its performance through the use of a multiplication accelerator, hardware implementation of certain instructions, and a High Accuracy Arithmetic Facility which adds 20 new floating-point instructions. Additionally, the 4361 utilizes a separate Channel Processor Unit to offload I/O from the CPU.*

*4381 is a processor that offers a lower entry price to MVS/XA than was previously available on 3083-X machines allowing large installations to distribute their processing but maintain a single operating system environment. The 4381, of course, is quite capable as a small central system in its own right, and seems targeted at IBM PCM vendors and other mainframes. IBM appears ready to go after these aggressively as shown by their new leasing policy, which allows a customer to finance the cost of breaking his previous lease with another vendor.*

***CAUTION — The MIPS ratings shown are only estimates based on the data released by IBM. Performance information was presented relative to IBM 4331 and 4341 processors, with the low end of the range reflecting typical commercial batch environments, and the high end representing scientific batch workloads.***

***With such a broad range of performance numbers, it is extremely difficult to characterize the new processors exactly, until we perform some realistic benchmarks. Meanwhile, caution is advised, unless we understand the proposed job-mix and workload very well.***

***The timesharing user numbers are based on mean estimated performance in a VM/CMS environment.***

**Communications**

IBM also announced the 4994 ASCII Device Control Unit, essentially a comm front end supporting almost any ASCII terminal. Features include full duplex capability with type ahead, and direct connection of RS-232 devices.

The 4994 may be attached to a block multiplexer channel on any 4331, 4341, 4361, and 4381 machines running VM/CMS.

The software required is the Host Loaded Yale ASCII Communication System, which is downloaded from the VM host. The cost is $3,700 — a one-time charge.

**Pricing and Availability:**

| | |
|---|---|
| 4994-A (16 lines) | $16,735 |
| 4994-B (32 lines) | $25,850 |
| 4994-C (48 lines) | $32,300 |

First customer ship is planned for March 1984.

**Mass Storage**

IBM announced enhancements to the 3370 Disk, increasing storage capacity by 27% to 729.8 MB. This disk is available for 4341, 4361, 4381 and SYS38. The new disk may be mixed in a string with older 3370s.

**Pricing and Availability:**

| | |
|---|---|
| 3370-A2 (master) | $35,480 |
| 3370-B2 (slave) | $26,600 |

Availability Q2CY84

The price performance of these disks approaches the RA81 when comparing add-on drives $/MB, however total subsystem cost is still somewhat higher than HSC/RA combinations.

**Pricing Moves**

In conjunction with these new product announcements, IBM also reduced the prices of selected 4331 and 4341 processors by up to 12%, and on 308X processors by up to 14%. These actions are designed to bring the relative price-performance of older models more in line with the new processors.

There is currently some overlap in performance between old and new 43XX systems, and we can expect some thinning out of the product line.

# FTS-20 — THE LATEST FILE TRANSFER SOFTWARE

(There's a snazzy new data sheet just off the press explaining the latest file transfer software, FTS-20, for the DECSYSTEM-20. The following includes some of the important points in the data sheet.)

In a nutshell, FTS-20 is the software that transfers files between systems—only systems located on DECnet nodes with file access capabilities.

And what does that mean?
Let's take one step back.
Through computer networks and network software, messages are transferred and information is shared, increasing the efficiency of communications. Networked systems, using network software such as DECnet, can expand and integrate the power of individual systems, and increase productivity through the use of shared CPU resources. FTS-20 on a DECSYSTEM-20 capitalizes on these resources and boosts the communications process through file related services. FTS-20 aids Digital's operating systems that support Phase II or Phase III DECnet products.

Sounds like a capital idea?
Well, there's more. Let's consider what file transfer does.

- Requests made through FTS are handled in either of two ways: immmediately, or by a queued request.
- FTS-20 provides spooled transfers of sequential access disk files between a local node and accessable nodes in a DECnet environment, including DECSYSTEM-20, VAX, and PDP-11 nodes.
- File transfer includes remote on-line help, file deletes, file renames, file appends, file printing, batch submissions, and directory listings.

FTS-20 provides spooled transfer of sequential access disk files between a local node and accessable nodes in a DECnet environment, including DECSYSTEM-20, VAX, AND PDP-11 nodes.

In a spooled environment FTS-20 offers the following features:

- Extensive system and optional user-level transaction logging
- Automatic re-queueing of service requests when network or resource errors prohibit completion
- Intelligent job request scheduling for more efficient resource use. For example, FTS-20 will not transfer a file to a host when the host is off-line.
- Clean and functionally complete program interface library for MACRO-20 and BLISS-36
- Specific priority for requests
- Queue mainipulation functions allowing queue inspection, modification, and queue element deletion

### Time Savings

FTS-20 saves customers lots of time because it frees them to do other tasks. For example, if an FTS request is issued in the queued mode, users can proceed to another task while FTS processes the request. Neither the user, nor the CPU, need be tied up to complete a file transfer request, enabling a more productive and efficient system load. With FTS, users can easily define and request the queued mode by typing "/QUEUE," which is also the default.

### The 'Innards' of a Queued Request

For queued requests, FTS-20 accepts and places them in the FTS service queue. FTS then takes requests from the queue and executes them. If the request involves a remote node, FTS executes the request in conjunction with FAL, File Access Listener, at the remote node. FAL, the standard DECnet File Access Listener, acts as a server task for FTS. FTS performs only the file transfer functions that the remote FAL supports.

If the queued request is for the local node, FTS executes the request with the local FAL or directly through the local file system. FTS uses the local FAL to complete a request when a local node name is included in the FTS command. FTS uses the local file system directly, when the node name is omitted.

If a queued request should fail because of a temporary network or node failure, it is automatically requeued. To inform users of the status of queued requests, FTS automatically creates an FTS.LOG in the connected directory and writes status messages to it.

### Immediate Requests

Users requiring a direct response may request the immediate mode and wait for its completion. For immediate mode requests, FTS bypasses the queue and goes directly to FAL and/or the local file system to execute the request. Immediate mode is specified by "/QUEUE:NO or /NOQUEUE".

Regardless of the mode selected, FTS requests can be issued to complete any of the following:

- Append to files on a node
- Copy files to or from a node
- Delete files on a node
- Obtain an account's directory
- Print files on a node
- Rename files on a node
- Submit files on a node

### Dependable System Security

Access control information is the mechanism used to protect a user's files on a remote node from unauthorized access or accidental deletion. Access control information is similar to a user logging in and consists of the same basic information: user identification, password, and account.

Just as a system checks the login information when a user attempts to access the system, FAL checks the access control information that is included in a command when FTS attempts to access files on a node. If a user has access privileges, the request is honored. If a user does not have access privileges, the request is rejected. Although a user may normally be a privileged user, automatic access at a remote TOPS-20 node may not be possible.

**Constructing an FTS Command**

FTS commands use the general TOPS-20 format of a command name followed by arguments. An FTS command can be abbreviated as long as the abbreviation is unique. For example, the DELETE command can be abbreviated to DEL.

FTS commands can be continued on to another line by using the continuation character (–). An FTS command, however, cannot exceed 256 characters.

Command arguments vary from command to command and are optional or required as determined by the command. Command arguments consist of switches, node specifications , file specifications, node names, user names, job names, and request numbers.

An FTS switch allows users the ability to define access control information, to specify when a request is to be processed, and to specify data type and record format information. Switches, as with commands, can be abbreviated as long as the abbreviation is unique. For example, /AFTER can be abbreviated to /AFT.

Switches can apply to the entire command or to an individual file. To specify that a switch applies only to an individual file, the switch is placed immediately after the file specification.

Node specifications, including node names and user names, identify nodes in a network, whether it be a local node or a remote node. The local node is the system a user is logged into and where FTS is running. The remote node is any other system in the network. In an FTS command a user may choose to include or omit the local node name. If the local node name is included, it requires access control information.

File specifications identify existing files or files to be created. File specifications can also be local or remote. A local file specification identifies a file on the local system. A remote file specification identifies a file on a remote node.

Node specification (node: :) and file specifications (file[,file...]) are arguments that identify the nodes and files that FTS is to use in processing a request. These specifications take on the added characteristics of source and destination by their placement in the file transfer command.

Node names, user names, job names, and request number are arguments that identify the user requests in the queue. Node names refer to the nodes used in the command. User names refer to the user that issued and owns the command. Job names are derived from the first six characters of the destination file or, if the destination file does not exist, the source file.

**Software Environment**

FTS-20 is supported on the DECSYSTEM-20 and is engineered to be installed by the customer.

Software requirements for an FTS-20 installation include both the TOPS-20 operating system (KS systems should have Version 4.1 and KL systems should have Version 5.1, or later) and DECnet-20 (Version 2.1 for KS systems or Version 3.0, or later for KL systems).

# DECnet OFFERS NEW COMMUNICATIONS POSSIBILITIES

*Don Waite*

As part of the new integration strategy, Digital offers a new level of communications possibilities for DECSYSTEM-20 users with multiple-system environments. The coupling of services provided by the FTS-20 (File Transfer Spooler) and DIL (Data Interchange Library) with the communications capabilities of DECnet allows users an unequalled Digital systems approach to sharing resources.

**Speeds and Expands Information Transfer Coupled with FTS-20 and DIL**

The advantage of networks, or interconnected computer systems, is that they allow users to transfer messages, share information, and integrate the power of individual systems in the network by using shared CPU resources. Now, DECnet software makes it easy to share information and transfer files from a DECSYSTEM-20 mainframe, by coupling its resources with those of other DECSYSTEM-20s or with VAX/VMS and PDP-11 processors.

Combined with Digital's powerful new software tools, FTS-20 and DIL (Data Interchange Library), DECnet software—the data interface—links Digital computers and operating systems to solve processing problems efficiently, whether the information is stored in local or remote locations.

**Increases Productivity**

In a computer network, the processing of information is distributed across various systems in a network, from local to remote systems. With a DECnet network, the user can not only expand but integrate his individual Digital system's resources, increasing their combined efficiency. DECnet lets individual systems do what they do best, so the result is increased system and user productivity.

DECnet assures the user of:

- better management control of resources
- reduced communications costs
- system security and reliability
- consistency: all Digital systems use the DECnet network standand

**Data Interchange Library Protects System Investments**

The Data Interchange Library (DIL) is a set of callable subroutines that provide VAX/VMS and DECSYSTEM-20 programmers access to information of different word lengths stored on both homogeneous or heterogeneous computer systems that are linked via DECnet.

DIL makes use of COBOL or FORTRAN to perform:

- data conversion
- remote file access
- task-to-task communication

DIL offers the following benefits:

- protects present system investments by allowing easy data access between heterogeneous systems
- allows users on multiple systems to share information in a homogeneous environment
- eases the process of transporting programs between different system types because of compatible program access, for efficient use of resources
- allows users to transfer select information from a file, at less cost and effort than moving the entire file
- combines the resources of VAX/VMS systems and DECSYSTEM-20 mainframes, protecting system investments and providing more efficient use of resources

**DIL in Homogeneous or Heterogeneous Environments**

To use the DIL in a multiple computer environment, the computers must be connected by DECnet (Phase II, or later) to form a network. That network can be homogeneous or heterogeneous; that is, one that consists of two or more systems of the same type or of different types.

The DIL subroutine can communicate between VAX/VMS systems and DECSYSTEM-20 mainframes in a network. (The Data Conversion portion of the DIL can also be used on a DECsystem-10 computer.)

The network may also contain other types of systems, but users won't be able to communicate with them by using the DIL.

### Accessing Remote Information

With DIL, information can be transferred between programs on different systems, and files on other systems can be accessed directly. Transporting an entire file can be costly and time consuming, particularly when dealing with a large file. For example, it would not be cost effective to transfer an entire company personnel file to your system when you only require data for one employee. Smaller systems may not even be able to store a larger file.

With the DIL, users may write a program to access select records in a file, and then request its services from programs throughout the network. The DIL can also be used to access certain types of remote files directly.

### Task-to-Task Routines

Task-to-Task Routines allow users to move information between programs on different systems. To use these routines, a network connection between two application programs must be established. A program can use Task-to-Task Routines to:

- open a network connection to another program
- wait for another program to request its services
- get information about network connections
- accept a connection request from another program
- receive information from another program over a network connection
- send information to another program over a network connection
- close a network connection

### Remote File Access Routines

Remote File Access Routines allow users access to information in a sequential ASCII file on another computer.

Remote File Access Routines can be used to:

- open a file for reading, writing, or appending
- read a record from a file
- write a record to a file
- close or delete a file
- print or submit a file for batch processing

### Data Conversion Routines

Data Conversion Routines provide for translating fields from one data type to another. When moving information through a heterogeneous network, data conversion is essential, since data formats on different types of systems are usually not compatible.

### Efficient File Transfers with a DECSYSTEM-20, VAX/VMS, or PDP-11

With FTS-20, files can be transferred locally and to any accessible node in a DECnet network, whether it's a DECSYSTEM-20, VAX/VMS, or PDP-11, so that users can share information located at any point throughout the network.

Users can pick the best system for the task at hand—whether it be a DECSYSTEM-20, VAX/VMS, or PDP-11—to easily share and process data files on this system. Using the FTS-20 saves the user both time and money, and insures that the right tool is used for the right job.

### Immediate or Queued Transfer Requests

File transfer requests can be processed immediately, for a direct response, or issued in the queued mode. When awaiting a queued response, the user can proceed to another task while FTS processes the request. The user's terminal is not tied up waiting for completion of a file transfer. Queued requests also allow file transfers during off-peak hours, for more productive and efficient system use.

### Higlights

With the FTS-20 Spooler, files can be:

- transferred between DECSYSTEM-20 mainframes and different types of systems within a DECnet network
- transferred immediately, or
- queued, allowing the best utilization of systems and resources

### System Security

DECnet access control information maintains system security by protecting a node's files from unauthorized access or accidental deletion.

### FTS Commands

FTS commands use the general TOPS-20 format of a command name, followed by arguments. This means that users have no need to learn new formats; rather, they can just follow the well-known TOPS-20 format.

# ANNOUNCING COBOL-20 VERSION 13 WITH SORT VERSION 5 AND DECSYSTEM-20 SORT/MERGE VERSION 5

*Laura Gawronski Software Product Manager, Large Systems Engineering MR01-1/M23*

COBOL is a powerful and flexible high-level business-oriented data processing language. Over the last 20 to 25 years COBOL has established itself as the dominant programming language in the computer industry. Programs written in COBOL are much more readable and maintainable than those written in other, less English-like languages. Massive investments in COBOL written application systems continue to make COBOL a very viable programming language, especially in the commercial marketplace.

COBOL-20 Version 13 conforms to the ANSI-74 standard as required by FIPS PUB 21-1 and contains most of the new functionality of the Draft Proposed ANS standards (BSR X3.23-198X). COBOL-20 programs can be compiled and executed in both interactive and batch mode.

The new COBOL-20 Compiler runs in native mode. COBOL-20 has full TOPS-20 command/switch recognition, and supports full-word switches and "?"(Help) use. This product contains all the features of previous TOPS-20 COBOL releases of ANSI-74 COBOL plus many new features to enhance programming techniques and practices.

COBOL-20 Version 13 and SORT/MERGE Version 5 are supported in KL Model B processors running TOPS-20 Version 5.1 or later.

In a nutshell, the Cobol-20 highlights are:

- Support for relative and indexed files for RMS-20.
- On-line debugging with COBDDT to reduce debugging time.
- Multiple library use with the COPY statement, and the library utility, CPYLIB.
- Full support of character representations in ASCII, EBCDIC, and SIXBIT.
- Accurate single and double precision arithmetic with the aid of single and double precision floating-point number manipulation (COMPUTATIONAL-1 and COMPUTATIONAL-2).

### Simultaneous Update

The COBOL Simultaneous Update facility enables multiple programs to access and update COBOL controlled data files at the same time. Simultaneous update supports RMS and non-RMS relative files, and single or multikey indexed files.

Simultaneous update provides two methods for COBOL coding conventions:

Method 1 allows the use of the COBOL statements RETAIN and FREE to lock records for simultaneous update with the COBOL object time system handling the locking and unlocking of records. (This method is valid with RMS Version 2.)

Method 2 allows the sharing of RMS files written with BASIC-PLUS-2 programs for simultaneous update with RMS handling the locking and unlocking of records. (This method is valid with RMS Version 1 as well as Version 2.)

### Enhanced RMS File Handling Features

The RMS file facility is a powerful data management tool which is included with the TOPS-20 operating system. This facility enables creating sequential, relative and indexed files of variable or fixed length records which can then be accessed by the values stored in the records. One or more "key" fields can be assigned when an indexed file is created. This key field information enables access to records by specifying the value stored in one or more of these fields. In addition, COBOL-20 programs can access RMS files created by other program language systems.

### SORT/MERGE

The stand-alone SORT/MERGE utility runs in a non-zero section to make use of the greater address space available via extended addressing, thus allowing more space for user programs.

COBOL programs can now reorder all RMS and non-RMS file types containing ASCII, EBCDIC, and SIXBIT data. SORT/MERGE can reorder a file based on the value of several keys, each a different data type.

### Report-Writer

Based on the 74-standard, COBOL Report Writer coded programs allow the user to easily specify report headings, footings, page breaks, and page control information for multiple reports in a single program. These reports can be written out to a single data file until it is convenient to print them.

**Debugging COBOL Programs**

The COBOL system offers two methods for debugging COBOL programs:

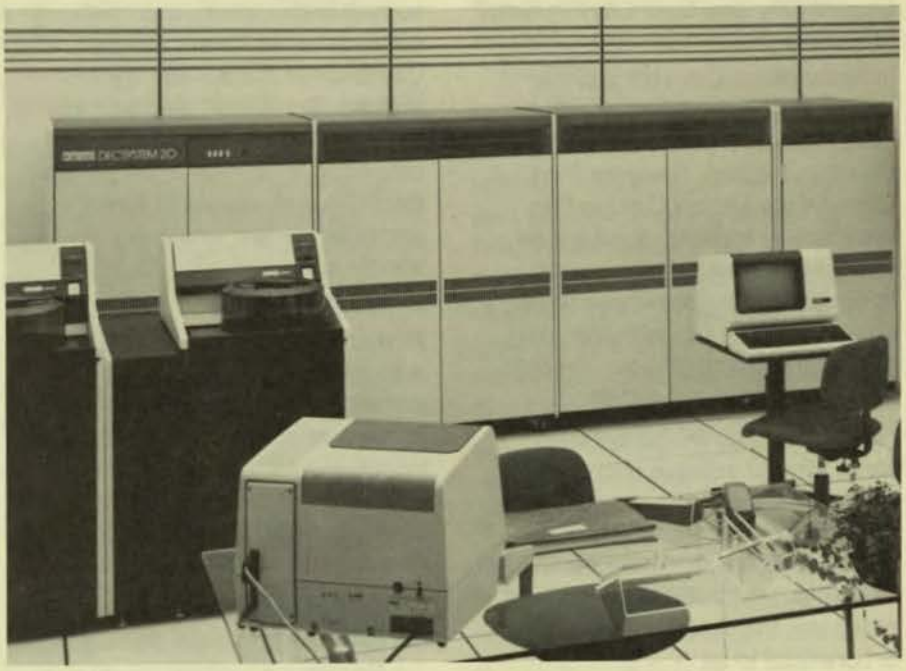
- Dynamic debugging with COBDDT
- Coded debugging with the DEBUG module

COBDDT is an interactive debugger which uses COBOL-like expressions. COBDDT features, which include tracing, stepping by paragraph, and displaying or altering data fields, are available at load time.

The DEBUG module enables the tracing of program actions and comparing results with expected results at various points. The DEBUG module offers a special DEBUG syntax and the use of compile and object-time switches. In addition, DEBUG coded lines can be inserted in a program and treated as comments until DEBUG processing is turned on.

**FIPS Flagger**

COBOL provides the capability to flag syntax at all four of the FIPS levels plus additional levels with the /FLAG-ALLBUT: and /FLAG-IF: switches at compile-time. These levels are: LOW-LEVEL, LOW-INTERMEDIATE-LEVEL, HIGH-LEVEL, REPORT-WRITER-SYNTAX, DBMS-SYNTAX, IBM COMPATIBILITY, VAX-COMPATIBILITY, 8x-COMPATIBILITY, NON-STANDARD-SYNTAX.



# NCP CALC - INCREASES IN SALES SUPPORT

*Larry Vifquain*

NCP Calc, the spreadsheet software product for DECsystem-10 (QA058) and DECSYSTEM-20 (QA059), will not be distributed through the External Application Software(EAS) Library after November 15, 1983. Instead, the product will be supported directly by a new sales support capability of National Computer Performance(NCP), Inc.

This change is due to a significant increase over the last year in NCP's sales and service staff. Now NCP can directly provide our DECsystem-10 and -20 salespeople with sales, technical, and distribution support for NCP products.

By working directly with the Digital field organization, NCP's increased staff can be more responsive to customer needs. One effect will be a reduction in the number of steps customers will need to buy NCP products.

Currently, NCP Calc is installed in a large number of accounts. The product is well received in the market. It meets a specific LCG software demand for spreadsheet analysis and provides leverage in hardware sales.

Contact NCP at the following address for sales, technical support or product information.

NCP
Mr. Bob Cronin, Sales Manager
535 Middlefield Rd. Suite 150
Menlo Park, Ca. 94025

# MUNICIPAL TIMESHARING
# THE CITY OF EAST CHICAGO AND THE DECSYSTEM-20

*Peggy Sullivan*

**School City and Civil City: Synergy in Action**

In many cities, City Hall and the School Board are frequent adversaries and rare partners. In East Chicago, Indiana, however, the Civil City and the School City (as they are officially known) joined forces to provide computing resources. In so doing, they developed what one participant, Dr. John Maniotes, consultant, referred to as "the best system in Northwest Indiana."

"Intergovernmental cooperation for funding to achieve economies of size or volume forces cooperation between groups," explained James Knight, City Controller. "As we saw with the computer purchase, this forced cooperation is beneficial to all."

Added the Superintendant of Schools, Dr. Robert Krajewski, there "is a definite synergistic effect when both sides feel the need to cooperate in obtaining computer resources. For it to work well, however, there must be absolute clarity on the ground rules. Who pays what? Who is accountable?

"With this clarity in mind, the two groups were able to join forces and implement a computer system flexible enough to serve the needs of both the Civil City and the School City and to allow for compatible, incremental growth. As their needs and resources grew, they expanded to two TOPS-20 systems. Since then, their ability to move programs back and forth across their two TOPS-20 systems has allowed them to handle periods of rapid applications growth and still maintain a planned, steady growth of computing resources.

**Data Processing Needs**

In late 1977 and 1978, all city departments were required to assess their current and future data processing needs. The needs of both the Civil City and the School City were considered. To improve data processing services and provide them in as cost-effective a manner as possible, East Chicago wanted to select a computer system which would handle current needs and future growth for all areas.

At that time, the City of East Chicago was using batch computers and some older bookkeeping machines for all data processing needs. After talking to other municipalities and school boards, the City and their consultants determined that they needed an interactive system that:

- would be easy for their present clerical staff to learn and use
- had a proven success record in municipalities and education
- was cost effective

**Matching the Needs**

"We knew from talking to others that a batch system with on line capabilities added on was *not* what we wanted," said Dr. John Maniotes. The DECSYSTEM-20, however, a highly interactive mainframe computer system designed for timesharing, was a good match with East Chicago's need.

In addition to the interactive nature of the DECSYSTEM-20, two other factors were important in East Chicago's choice of Digital. No other vendor's system matched the DECSYSTEM-20 in amount and variety of software available. No other vendor could provide references from as many successful users in both municipalities and educational institutions. "The availability of software and references from other municipal and educational users led us to decide upon Digital," said Dr. Maniotes.

Cost was still another factor in the decision. After competitive bidding, the DECSYSTEM-2040 was chosen as a cost-effective solution allowing for easy growth as the city proceeded with its program to improve DP facilities. Over the next few years, the Civil City upgraded to a DECSYSTEM-2060 and the School City purchased its own DECSYSTEM-2020. These additions were necessary to meet growing application needs both within East Chicago itself and to serve other municipalities in the immediate area.

**Why the DECSYSTEM-20?**

According to Dr. John Maniotes, "TOPS-20 is one of the friendliest and easiest to use operating systems I've come across."

Added Gerald Miksis, President of Cenifax Management Services and Data Processing Facilities Manager for East Chicago, "I came out of a batch background and, with all my experience there, I was skeptical. But now I agree with Dr. Maniotes. In the process of installing systems and training first time users, I found TOPS-20 to be all that we had hoped for."

"For example," continued Miksis, "in the Water Department, we trained people who ranged in age from their mid-20s to early 60s to use the DECSYSTEM-20. We trained them in less than a month without interfering with their daily routines or taking them out of the office." These were clerical staff who had previously used only the old bookkeeping machines owned by the Water Department.

Training is not the only area where the ease of use of TOPS-20 made a significant difference to the city. The initial requirement for ease of use of the computer system was partly occasioned, according to Dr. Maniotes, by concern that "other systems we looked at were people intensive. The systems programmers they required were hard to find and hard to hold in an area like ours."

Instead of adding systems programmers and increasing the professional and clerical staffs, the staff has remained constant or, as in the case of the Water Department, decreased since the installation of the DECSYSTEM-20s. Said Dr. Maniotes, "the Digital system just isn't people intensive."

**User Applications**

By changing to a flexible, easy-to-use, interactive system, the City increased the productivity of its people. These productivity increases became obvious in a wide variety of East Chicago's applications, ranging from the standard administrative tasks of personnel and payroll to some highly interactive programs for the School City. One of the most obvious increases in productivity occurred in the Water Department.

**Water Department**

One of the first needs identified by the Civil City was for a computerized water billing system.

The Water Department previously:

- had two NCR bookkeeping machines
- had seven clerks to handle 10,000 accounts
- took five to six working days to do the monthly balance
- required ten days for a billing cycle

In 1980, they switched to timesharing on the DECSYSTEM-20. They now:

- have five clerks (reduction accomplished through attrition)
- complete their monthly balance in a matter of hours
- handle accounts on a ten-day cycle, but take only three to four days to complete the accounts.

The water billing system has been so successful, in fact, that the town of Griffith, Indiana, will dial in to East Chicago's DECSYSTEM-2060 and run the water billing program on a timesharing basis. Griffith has contracted with Cenifax Management Services, Inc., to maintain the water billing program for them.

**School City**

In addition to the Civil City projects, such as the water billing system, there are a number of interesting applications for the School City of East Chicago. The School City consists of:

- two high schools
- two middle schools
- ten elementary schools
- one career or vocational school
- one administration building

With a school population of 7200 students, largely minorities (50% black, 40% Hispanic, 10% white), in an area of widespread unemployment, the School City achieves near grade level reading and math scores in grades 1-6.

The Superintendant of Schools, Dr. Robert Krajewski, believes that this excellent result may partly be due to more teaching time. "We have reduced the amount of time teachers previously needed to process attendance and grade reporting. We computerized much of this routine," said Superintendant Krajewski.

Other student information, usually gathered by the clerical staff, includes each student's immunization history and grade history. This information is stored on the Civil City's DECSYSTEM-2060 as another timesharing application. This interactive pupil accounting system has been presented at an Indiana State Department of Public Instruction Conference and has received favorable comment from state sources.

The School City's DECSYSTEM-2020 is used for:

- computer math classes
- programming classes, for both day students and adult evening classes
- a guidance information system (TEDS, Training and Educational Data Service)
- payroll and financial programs for the School City

However, this list does not represent the full use of the School City's DECSYSTEM-2020. The City of East Chicago is not the only user of the DECSYSTEM-20. The system is used via remote lines by several other municipalities and school districts.

For example, the TEDS guidance system is accessed by:

- Hammond Public Library
- Lake County Public Library
- Munster High School
- Highland High School
- Griffith High School
- Porter County School Cooperative (10 high schools)

In addition, Munster High School uses the 2020 for computer math and programming classes and Highland High School dials into the 2020 for advanced programming classes.

With such heavy use of the DECSYSTEM-2020, the School City is beginning to consider various ways of increasing their TOPS-20 computing power. In the meantime, to lighten the load, the TEDS program (for East Chicago only) will be moved to the DECSYSTEM-2060. Other school corporations in Northwest Indiana will still use the DECSYSTEM-2020 via remote lines for access to the TEDS package.

This ability to move programs from one system to another results from use of the TOPS-20 operating system. It has made it easier for the City to develop new applications and add them as neededwhile maintaining a steady growth of computing resources.

# ENERGY ENTERPRISES CONTROLLING ENERGY WITH DECSYSTEM-2060s

*Don Waite*

For many individuals and industries throughout the world, energy is a major concern. The rising cost of energy production affects us all and these costs have become a focus of attention. As a result, both the procurement and control of energy products have become leading industries world-wide.

Energy related industries are the focal point of the efforts of Energy Enterprises, a GEISCO (General Electric Information Services Company) component since 1982. At Energy Enterprises, complete computer packages are designed that meet all needs, including an economic evaluation system, a production allocation and history system, and a land accounting and management system for petroleum companies.

Energy Enterprises provides timesharing services through a uniquely qualified group of employees. Most employees are specialists in two areas: the petroleum industry and data processing — a coupling that enables Energy to provide the most comprehensive oil and gas computer programs available today.

New software programs are developed and existing ones expanded by Energy's data services, but the timesharing services would not be as sophisticated as they are if it were not for the data processing tools they have assembled. Energy feels they have gathered the best of data processing tools possible — five DECSYSTEM-2060 mainframes.

### History

Energy Enterprises was founded in 1969 by James M. Gernert who created, and marketed a system called RAMS (Reserve Analysis and Management System). The RAMS system is considered the cornerstone of the corporation and it provides financial cash flow analysis and present values for independent oil and gas companies.

At that time, Energy Enterprises was timesharing on a GEISCO system and realized that in order to properly 'grow' the RAMS system and the company, they had to invest in their own computer system. Neal Stratton, Facilities and Planning Manager, explains, "we considered in-house systems versus outside timesharing and made a conscious business decision to buy an interactive system. We bought what we determined to be the best timesharing machine in the business and in the summer of 1976, the DECSYSTEM-2040 was installed."

The staff at Energy Enterprises had researched their own needs and those of their client base. Digital's financial status and distinguished management, combined with the introduction of the then new TOPS-20 operating system put Digital in an unequalled position. "The TOPS-20 system was the best timesharing system commercially available. When you couple that with Digital personnel, who are at the cutting edge of technology, there was no other decision. We bought a total solution, the total company — Digital", states Greg Scott, Manager of Hardware, Systems, and Communications.

### Growth to Five Systems

A second larger system, a DECSYSTEM-2060, was installed in August, 1980, when Energy found the first system being utilized to its capacity. "Our clients' enthusiasm in using our applications and the TOPS-20 operating system soon exhausted the resources of both systems and we realized that we might need a third system," Greg explained.

Energy Enterprises upgraded again and again and now have a total of five DECSYSTEM-2060 mainframes. Energy Enterprises feels that for efficiency and productivity in the data services area, Digital's DECSYSTEM-2060s are still the best timesharing machines offered today. Greg Scott stated it simply. "The DECSYSTEM-2060 is the optimum vehicle for timesharing services. Because of this," Greg continued, "We are able to offer a broad spectrum of services to our oil and gas clients."

Neal Stratton further explained that the DECSYSTEM-2060 has many attributes that make it the best system for Energy Enterprises. The DECSYSTEM-2060's ability to handle a large client load compared to other systems, and accomplishing that in a cost effective way are major benefits. "The DECSYSTEM-2060 can handle large evaluation programs and has actually led the way for today's virtual memory systems," said Neal.

Two hundred eighty oil and gas clients receive timesharing services from four of Energy's DECSYSTEM-2060 mainframes, while the fifth is dedicated to software development. Input is networked into Energy Enterprises' Lakewood, Colorado, facility where all five systems are housed. From this data center Energy is able to service all of their clients, most of whom are based in the United States.

### An Example of an Energy Enterprises Account

One client account utilizes the RAMS system on a DECSYSTEM-2060 to determine oil lease information. A cash flow analysis over the life of each well is completed for each individual well.

RAMS maintains and calculates 1000 months of historical and projected data that is used to financially evaluate thousands of properties. It provides totally integrated economic analysis and data management resulting in fast, precise property evaluations.

RAMS takes any well, and works in taxes, revenue projections, flow rates, and projects this information over the life of the well. This information is updated monthly and reported directly to each stockholder. "This is a great benefit to companies trying to justify the probability of a return on an investment, and also for justification for loans," states Dave Noel, Product Marketing Manager.

**Sophistication of Offerings**

Very few system applications are as accurate or have as high an esteem as Energy Enterprises' systems, providing clients with advanced services and products. Neal Stratton explains, "For years we have been the leader in this field. Now, (since 1981) the competition is becoming fierce and other companies have invested vast production dollars in these areas," Neil continued. Energy Enterprises, however, leads the field in sophistication of products. "After all, we've been in this area of study for almost 15 years now and our products and services have been enhanced," adds Neil.

Energy has five DECSYSTEM-2060s with 1.5 MW memory. These systems utilize 36 RPO6 disks and fourteen RP20 disks for storage space. The DECSYSTEMS are linked via DECnet.

Energy Enterprises currently has Los Angeles, Tulsa, Oklahoma City, Seattle, Houston, Dallas, Denver, and several other cities as network distribution points connected via remote multiplexers to the DECSYSTEM-2060s. Each network distribution center houses modems and multiplexers. There, clients can dial local numbers and get timesharing services over high speed lines. "Naturally each of our clients has a geographic area of concentration. Whether it be Texas, Oklahoma, California, or any other state, we have communications lines to provide our services," explains Neal Stratton. Clients can also access the system from anywhere in the United States via WATTS or Telenet.

Energy Enterprises also has a large data base on-line that contains production history on all wells drilled in the United States. The company provides Hotline Enery Reports from this data base.

**Systems and Services Offered by Energy Enterprises**

The most impressive point of all the systems offerings from Energy Enterprises is the care that each system has received in its development stages. "We've listened to what our petroleum customers need," explains Neal Stratton. "Our staff works in a team effort with customers, as well as within Energy Enterprises, translating our computer expertise into understandable terms and uses."

Designed for petroleum users, not computer specialists, every program from Energy Enterprises uses English-like commands, answering questions and notifying users of input errors. In fact, almost every service offered on the DECSYSTEM-2060 mainframes is designed according to client specifications.

Petroleum clients can easily maintain security because the programs are designed for in-house use and records are kept right in the clients' office. Energy Enterprises' on-line interactive systems are designed to permit convenient computer access since the DECSYSTEM-2060 mainframes are available 24-hours-a-day, seven-days-a-week from anywhere in the United States.

Here are a few of the areas that Energy Enterprises' programs cover:

- **ECONOMIC EVALUATION**– RAMS (Reserve Analysis and Management System) offers petroleum clients clear, accurate information to assist in property evaluations. A powerful forcasting tool that, among other capabilities, can deliver Windfall Profit Tax calculations with full implementation of Net Income Limitation.
- **PRODUCTION MANAGEMENT**– PMS (Production and Price Monitoring System) generates the monthly government (state and federal) reports and stores up to five years of production data. PMS, like RAMS, can calculate Windfall Profit Taxes.
- **LEASE RECORDS MANAGEMENT**–LAMS™ (Land Accounting and Management System) transforms thousands of lease records into a compact, manageable system. LAMS is designed to help streamline lease records management by delivering information the moment it is needed.

**Leaders in the Field**

Still considered the premier industry for world survival, petroleum production has advanced great lengths with programs for land management, production control, and governmental reporting. As energy maintains its position as a major concern of industries throughout the world, one company has become well established in North America as a leader in this field — Energy Enterprises.

# ARTIFICIAL INTELLIGENCE SYMBOLIC MANIPULATION LANGUAGES: LISP and PROLOG

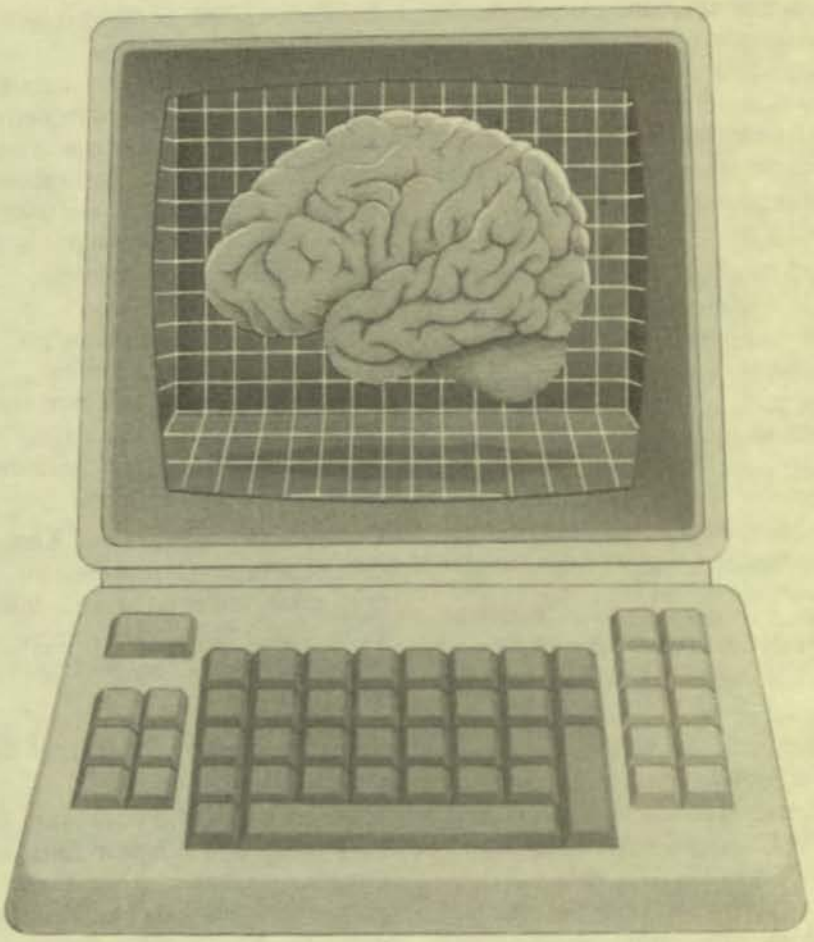
*Mitchel D. Perlitch*

The following articles continues the series begun in the July BUY-LINE (refer to titles under the section "Emerging Markets/Technologies").

Intelligent beings deal in concepts both real and abstract. These concepts are generally described in words. Words are symbols that represent these concepts. Programming languages such as FORTRAN and COBOL perform real operations on (string and numeric) data.

In order to make intelligent machines, the machine must be able to manipulate symbols as humans do. To this end, many "symbolic manipulation" languages have appeared over the years.

LISP and PROLOG are examples of symbolic manipulation languages. LISP is by far the most widely used. It is simple and extensible. PROLOG is new and is of some interest to certain sectors of the AI (artificial intelligence) research community, most notably in Europe and Japan.



**LISP**

Essentially all AI research programming has been done in a language called LISP (LISt Processing). LISP is a symbolic manipulation language. LISP has been referred to as the "assembly language" of AI research.

The basic unit in LISP is the ATOM. An ATOM is analogous to a word. ATOMs can be linked together to form lists. An ATOM can represent anything. It can be a number, a real word, a quality, or any concept.

If one knows nothing else about LISP, one should recognize the names of two basic LISP instructions: CDR (pronounced "cudder") and CAR. The names for these instructions have their roots as the names of registers on the IBM 704. This was a 36 bit computer; the CAR was the left 18-bit pointer, and the CDR the right 18-bit pointer. In LISP, the CAR instruction returns the first element of a list and the CDR returns the rest of the list:

(CAR 'Apples Oranges Plums)) = >
Apples
(CDR 'Apples Oranges Plums)) = >
(Oranges Plums)

Most LISP instructions manipulate lists (in some sense, all do). The various dialects of LISP offer various other functions, e.g. graphics and complete arithmetic operations.

**LISP Dialects**

Many dialects and descendants of LISP exist. The two principal dialects are MACLISP (MIT) and INTERLISP (XEROX PARC).

LISP users tend to be extremely loyal to the dialect that they are using. It is somewhat unrealistic to expect that an X-LISP user could be converted to Y-LISP. For this reason, it is important that as many dialects as possible are supported by a given system to insure a broad acceptance.

A good deal of work is going into the development of LISP systems that are transportable between different computer systems. The standardization of a particular LISP would allow work to be shared more easily, etc. The two major efforts in this area are Common-LISP (CMU) and PSL (Portable Standard LISP, University of Utah).

**PROLOG**

PROLOG is short for "PROgramming in LOGic". It is a nonprocedural language. Most traditional programming languages are "procedural". That is, programs are constructed by creating an ordered list of functions to be performed.

The order is important. In PROLOG, each statement is a fact. Each statement can be evaluated without having to investigate the other statements in the program.

Facts in PROLOG are stated as relationships or clauses. To say that Bill is the father of John:

father(Bill,John)

Similarly,

father(John,Tom)

states that John is the father of Tom. To tell PROLOG that a grandfather is the father of a father:

grandfather (X,Y) < – father(X,Z),father(Z,Y)

If these were the only facts known to PROLOG, asking:

grandfather(X,Y)

would result in PROLOG responding that Bill and Tom were related in the fashion requested.

Clearly, this is a simple way of creating a knowledge-based system. Data and relationships are easily specified, and inferred relationships between elements via established facts are easily obtained.

PROLOG was developed at the University of Marseille (Roussel 1975) as a practical tool for programming in logic.

PROLOG was written for the DEC-system-10 at Edinburgh by David H. Warren (1977). It has an interpreter and compiler, both written (for the most part) in PROLOG.

Since that time, it has been implemented on quite a few machines including several microcomputers. In Japan, ICOT (Institute for Computer Technology, i.e. the Fifth Generation Computer project) is designing a PROLOG machine a la the LISP Machine.

PROLOG is just beginning to gain some support, here in the USA. Warren is currently at SRI, due to their interest in this language.

***NOTE:*** *Non-procedural languages such as PROLOG are of interest to customers concerned with programmer productivity and/or the use of computers by non-technical personnel, not simply AI researchers. In some cases, it is easier to write in a non-procedural language, since debugging does not require the user to trace logic through large pieces of code.*

This article is excerpted from the "AI Overview," recently mailed to BUY-LINE readers. Watch forthcoming issues for additional articles on this exciting field in which DECSYSTEM-20s perform a significant role.

# LCG LITERATURE LIST

*Peggy Sullivan*

### HARDWARE OPTION BULLETINS

| | |
|---|---|
| CD20 Card Reader | ED 23999 61 |
| DN20 Communications Front-End Subsystem | ED 20504 26 |
| DN200 Remote Station | ED 22987 61 |
| IDX-3000 Integegrated Digital Exchange (Linkabit Switch) | ED 24075 61 |
| LP20-A/B Line Printer Systems | ED 19137 26 |
| LP20-C/D Line Printer Systems | ED 19135 26 |
| LP100-B Line Printer Systems | ED 19139 26 |
| LP100-F/H Line Printer Systems | ED 19677 26 |
| LP200-B Line Printer System | ED 24013 61 |
| TU72 Magnetic Tape Subsystem | ED 19763 26 |
| TU77 Magnetic Tape Subsystem | ED 17400 26 |
| TU78 Magnetic Tape Subsystem | ED 23003 82 |

**EDITOR'S NOTE:** You may order these publications by contacting Jane Fitzgerald at P&CS in Northboro. The DTN is 234-4325. Mail stop is: NRO2-2/W3. RCS Code is NR12 (for telexes).

You may order ***new LCG Literature*** via your SCC (Sales Communications Center) Specialist. The Literature List in BUY-LINE will asterisk the very latest items.

If you find an item to be out of stock or incorrectly numbered, please phone me or Gail Breslin at DTN: 231-4996 or 231-4013, and we'll try to help you out.

**ATTENTION ! ! ! This list (and order numbers) supersedes all prior lists.**

### SOFTWARE DATA SHEETS

| | |
|---|---|
| APL-SF-10 | ED 24841 61 |
| BASIC-PLUS-2 | ED 18885 26 |
| BLISS-36 | ED 19208 26 |
| COBOL | ED 22109 61 |
| CFS-20 | EC 23858 61 |
| CPL | ED 15659 63 |
| DECmail/MS | ED 24000 61 |
| DECnet-10 Phase III | ED 24056 61 |
| DECnet-20 Phase III | ED 22835 61 |
| DBMS-10 | ED 21782 81 |
| DBMS-20 | ED 21827 61 |
| FORTRAN-10/20 V.7 | ED 24054 61 |
| IBM RJE E/T | EC 24057 61 |
| IQL | ED 15660 63 |
| NCP Calc | EC 24656 61** |
| PASCAL-20 | EJ 24759 61 |
| TOPS-20 PSI Gateway | ED 24053 61 |
| TOPS-20 Supported Utilities | ED 22933 61 |
| TOPS-10 V7.02 | EZ C5532 44 |
| TOPS-20 V6.0 | EZ C5532 45 |

### TECHNICAL SUMMARIES

| | |
|---|---|
| DECsystem-10 Technical Summary | EE 21041 26 |
| DECSYSTEM-20 Technical Summary | EA 20415 18 |
| LCG Product Summary - April '83 | EJ 24660 61 |
| LCG Price List - April '83 | EE 24661 61 |

### PHOTO BULLETINS

| | |
|---|---|
| DECsystem-10/20 Fact Sheet | EJ 19596 26 |
| DECsystem-10 Family At A Glance | EJ 19595 26* |

* New order numbers for recently produced editions
** Cooperatively marketed with NCP Corporation

### LCG BROCHURES

| | |
|---|---|
| Don't Let the Software Blues Get You Down | EA 24773 61 |
| TOPS-20 Multiprocessing | EA 24237 61 |
| Introducing TOPS-20 Multiprocessing | EC 24046 61 |
| DECSYSTEMS: The Users Choice | EA 18366 26 |
| DECsystem-10 Family | EA 20572 26 |
| Develop Microprocessor Applications Faster | EA 22895 61 |
| TOPS-10/20 Data Networking | EC 22813 61 |
| LCG Software Referral Catalog (2nd Ed.) | EJ 22780 61 |
| Symmetric Multi-Processing | ED 24089 61 |
| The Personal Mainframe/Electronic Mail | EA 22872 61 |
| The Personal Mainframe | EA 24546 61 |

### CORPORATE BROCHURES

| | |
|---|---|
| Digital's Ethernet | EA 22710 18 |
| Digital Introduces DECnet/SNA Gateway | EA 22703 18 |
| Digital Storage Architecture Product Summary | ED 23981 18 |

### MARKET SPECIFIC BROCHURES

**Education:**

| | |
|---|---|
| Wesleyan Univ. | EA 20271 87 |
| Univ. of Vermont | EA 20270 87 |
| Univ. of Pittsburgh | EA 19633 87 |
| Columbia Univ. Teachers Coll. | EA 19630 87 |

**Engineering:**

| | |
|---|---|
| Monenco: Engineering for Excellence | EA 23075 16 |

**Banking:**

| | |
|---|---|
| New York City Bankers Choose Timesharing | EJ 24794 61 |
| Bankers Trust: Partners in Success | EA 23155 16 |
| "Will the Street Bypass Time Sharers?" (reprint from "Institutional Investor") | EJ 24696 61 |

* New order numbers for recently produced editions

**GENERAL MATERIALS**

| | |
|---|---|
| DECNET-10 Phase III Press Kit Folder | EJ 23998 61 |
| BUY-LINE Compendium (Vol.2: 1981-82) | EZ 09016 82 |
| Digital's Systems Interconnect Folder | EJ 24741 61 |
| DECision Systems Folder | EJ 24658 61 |

**POSTERS**

| | |
|---|---|
| 1983 Smooth Sailing Calendar | EJ 21823 61 |
| Chart Your Course Sailing Poster | EJ 21623 61 |
| LCG Personal Mainframe Poster | EJ 21652 61 |

**SITE PREPARATION GUIDES**

Corporate Field Service's Generic Site Planning Kit, available worldwide, enables site planners to do floor layouts and site planning for all DIGITAL products including the DECsystem-10 and-20 product set. This Kit is designed to be Field Service's standard Site Planning tool. The new Kit's order number is EK-SPKIT-SP, available from P&CS, Northboro.

* New order numbers for recently produced editions

**AUDIO VIDEO**

| | |
|---|---|
| LCG Users Tape (10 min.) | loan request |
| Benchmarking/CPU Analysis with Brochure | loan request |
| DEC-10/20 Overview Slide Show | K. Stanton |
| LCG DECSYSTEM-20 Timesharing Testimonial Slide Show<br>Kathie Stanton, Bedford MA, DTN 249-4068 | Memo Don Waite MR2-2/8D2 |
| Supplementary Slide Package | |
| Large Systems Slide Presentation (Modules 1 thru 7) | K. Stanton |

(Alternates)

IDX-3000 Integrated Digital Exchange (Linkabit Switch)

## BUY-LINE

BUY-LINE is the Large Computer Group's monthly internal magazine primarily aimed at the salesforce, field service, and software service specialists, with particular interest in large systems products.

## BUY-LINE APPLICATION

NAME: MAIL STOP:

BADGE: COST CENTER:

DEPT: OFFICE LOCATION:

( ) Please add my name to the BUY-LINE mailing list.

( ) Please delete my name from the list.

My responsibility is in:

( ) LCG SALES

( ) LCG MARKETING

( ) LCG SERVICE

( ) Another product line or corporate function.
Please list "other" _____

Please mail to Editor, MRO2-2/8D2. Thank you.

**BUY-LINE Editor**

**MRO2-2/8D2**


digital

DIGITAL EQUIPMENT CORPORATION
MARLBOROUGH, MASSACHUSETTS 01752

Large Computer Group

# BUY-LINE

November 1983

Special In This Issue

DECSYSTEM 10/20 Pricing Update

Connection to
Future Third Party Software

The Las Vegas Connection

For Internal Use Only

digital

# BUY-LINE NOVEMBER 1983
# TABLE OF CONTENTS

## LARGE SYSTEMS MARKETING



## LARGE SYSTEMS PRODUCT INFORMATION



## SALES/APPLICATION NOTES



## SYMPOSIA



## GENERAL INTEREST



## LITERATURE

**BUY-LINE** is published monthly by the Large Systems Marketing group, Marlboro.

**PUBLISHING COUNCIL:** Don Mallinson

**BUY-LINE** IS COMPILED ON THE DIGITAL WS200 WORD PROCESSING SYSTEM BY GAIL BRESLIN.

**LAYOUT AND ARTWORK** ARE BY LORI FEAREBAY, BERLIN, MASS.

**PRINTER** IS COMMONWEALTH PUBLISHING CO. OF BOSTON, MASS.

**CIRCULATION SERVICES** ARE PERFORMED IN NORTHBORO, COORDINATED BY JACK DECESARE, OF P&CS.

Upon request (see mailer card in this issue), the following will be added to the **BUY-LINE** mailing list:

- Field Service Managers
- Sales Managers
- Marketing Managers
- Sales Representatives
- Operations Committee Members
- Service Group Managers
- Software Support Managers
- Product Managers
- Software Specialists

# DIGITAL MOVES BOLDLY TO SOLVE CUSTOMER GROWTH NEEDS

*Rose Ann Giordano*

Our major goal in Large Systems Marketing continues to be providing Digital solutions to meet our customer's high-end growth needs. Our goal is to supply increased system power and new application tools while at the same time protecting our customer's current software investments. The vehicle for meeting this goal is the implementation of the Digital Information Architecture where the full spectrum of Digital products are utilized to provide a comprehensive solution.

Integration is a planned, step-wise growth into the Digital Information computing environment. It is one which places heavy emphasis on data transportability, common data access and high interconnectability among all Digital systems. While the effectiveness of existing equipment is maximized, from Mainframes to Workstations to PCs, the newest, state-of-the-art hardware and software products can be easily added to the network. Requirements for compute, storage, and communications capacity is added incrementally, when and where it is needed in the organization.

The Digital Information Architecture has been the corporate product strategy for some time. Integration of our DECsystem-10s and -20s has recently taken on greater significance and urgency. Substantial resources are being committed to support this direction. Increased numbers of engineering personnel, intensified negotiations with third party software vendors, continuing dialog with customers, and new product development will make this a reality.

For our DECsystem-10 and -20 customers, we are advocating a multi-pronged approach to integrate their computer environments. In many cases, users should be advised to run and grow current applications on DECsystem -10s and -20s.

For new applications, they should consider the full spectrum of Digital products—DECsystems, VAXs, Workstations, PCs.

We have developed several programs to facilitate a smooth integration of DECsystem-10 and DECSYSTEM-20 users into Digital's Information Architecture.

To understand customer needs, field support teams were put into place to do comprehensive business and technical audits of more than 100 DECsystem-10 and DECSYSTEM-20 users. Each team consists of software and sales personnel familiar with DECsystem-10s and -20s and VAX family systems. Their reports and recommendations are being reviewed at corporate by a team of Area Management Marketing, Engineering, and Software Service personnel. The purpose is to provide customers with tailored business and technical solutions. Information gathering, prioritization of programs, and execution of complex solutions requires time. We got off to a slower start than we would have liked but resources are now in place in most locations to provide this essential service.

The reality of the marketplace dictates that we remain cost competitive with our offerings. To achieve this goal, we constantly evaluate our competitive position to ensure that our customers have attractive offerings from Digital. We have also announced aggressive pricing and packaging investments for most DEC 10/20 systems, communications gear and memory. (See "DECsystem-10/20 Pricing Update," page 4.)

Customer dialog continues to be dynamic and fruitful, sometimes controversial, it is an invaluable process. We will continue to participate in as many LUG, SIG and DECUS meetings as possible. Via phone calls, sales reports, and visits, customers remind us where we are not satisfying their needs. They also say what they like about our integration plans. Through this interchange and implementation of these ideas, we will satisfy our customers needs.

Our work with third party software vendors is going especially well. (See "Your Connection to the Future Third Party Software," page 7.) Eight of the 10 most popular third party DECsystem-10/20 application packages already run on other Digital systems. We are negotiating with vendors to make this a reality for the remaining two.

Each day we continue to make progress on our integration strategy and implementation.

# DECsystem-10 and DECSYSTEM-20 PRICING UPDATE

*Per Hjerppe*

The following is a comprehensive summary of price changes that have been made over the past months.

In order to further our integration strategy, the DN20-based front-end with DECnet Phase III has been reduced by 50% (fifty percent).

These new prices and packages continue to further enhance the cost-effectiveness of the DECsystem-10/20, and will allow our customers to continue to solve their future computing needs.

| Option: | Description: | Old Price | New Price | Savings |
|---|---|---|---|---|
| **Repriced System Packages** | | | | |
| 1091-FE | 1MW SYS PKG T-10, 120V/60HZ 3PH | 532,000 | 425,000 | 21% |
| 1091-FF | 1MW SYS PKG T-10, 240V/50HZ 3PH | 532,000 | 425,000 | 21% |
| 1091-FH | 512KW SYS PKG T-10, 120V/60HZ 3PH | 496,000 | 396,000 | 21% |
| 1091-FJ | 512KW SYS PKG T-10, 240V/50HZ 3PH | 496,000 | 396,000 | 21% |
| 1091L-FE | 1MW L/O SYS PKG T-10, 120V/60HZ | 522,000 | 415,000 | 21% |
| 1091L-FF | 1MW L/O SYS PKG T-10, 240V/50HZ | 522,000 | 415,000 | 21% |
| 1091L-FH | 512KW L/O SYS PKG T-10, 120V/60HZ | 486,000 | 386,000 | 21% |
| 1091L-FJ | 512KW L/O SYS PKG T-10, 240V/50HZ | 486,000 | 386,000 | 21% |
| 1091S-FE | 1090A TO 1091 SMP U/G 120V/60HZ | 340,000 | 275,000 | 19% |
| 1091S-FF | 1090A TO 1091 SMP U/G 240V/50HZ | 340,000 | 275,000 | 19% |
| 1091S-FH | 1090B/1091B TO 1091 SMP U/G 120V/60HZ | 340,000 | 275,000 | 19% |
| 1091S-FJ | 1090B/1091B TO 1091 SMP U/G 240V/50HZ | 340,000 | 275,000 | 19% |
| 1091S-FK | 1091B TO 1091 SMP U/G 120V/60HZ | 340,000 | 275,000 | 19% |
| 1091S-FL | 1091B TO 1091 SMP U/G 240V/50HZ | 340,000 | 275,000 | 19% |
| 2060-FE | 1MW SYS PKG T-20, 120V/60HZ 3PH | 502,000 | 405,000 | 19% |
| 2060-FF | 1MW SYS PKG T-20, 240V/50HZ 3PH | 502,000 | 405,000 | 19% |
| 2060-FH | 512KW SYS PKG T-20, 120V/60HZ 3PH | 466,000 | 375,000 | 19% |
| 2060-FJ | 512KW SYS PKG T-20, 240V/50HZ 3PH | 466,000 | 375,000 | 19% |
| 2060L-FE | 1MW L/O SYS PKG T-20, 120V/60HZ | 472,000 | 375,000 | 20% |
| 2060L-FF | 1MW L/O SYS PKG T-20, 240V/50HZ | 472,000 | 375,000 | 20% |
| 2060L-FH | 512KW L/O SYS PKG T-20, 120V/60HZ | 436,000 | 345,000 | 21% |
| 2060L-FJ | 512KW L/O SYS PKG T-20, 240V/50HZ | 436,000 | 345,000 | 21% |
| KL10-RE | Addon U/G 1091 CPU 120V/60HZ 3PH | 326,000 | 260,850 | 20% |
| 2060-UA | 2040-2060 U/G W MCA20, T-20 EXT. FEAT. | 225,000 | 125,000 | 45% |
| **Repriced DN20 Front End** | | | | |
| DN20-MA | DEC20 128KW Front End 60HZ | 37,620 | 18,800 | 50% |
| DN20-MB | DEC20 128KW Front End 50HZ | 37,620 | 18,800 | 50% |
| DN20-MC | DEC20 128KW Front End 60HZ | 37,620 | 18,800 | 50% |
| DN20-MD | DEC20 128KW Front End 50HZ | 37,620 | 18,800 | 50% |
| **New DN20/DECnet Package** | | | | |
| DN20-ME | DN20-MA + DECnet-20 (QTD04-AM) | N/A | 23,100 | N/A |
| DN20-MF | DN20-MB + DECnet-20 (QTD04-AM) | N/A | 23,100 | N/A |
| DN20-MH | DN20-MC + DECnet-10 (QH683-AM) | N/A | 23,100 | N/A |
| DN20-MJ | DN20-MD + DECnet-10 (QH683-AM) | N/A | 23,100 | N/A |
| **Repriced Common File System** | | | | |
| QT225-AM | Common File System-20 | 85,000 | 15,000 | 82% |
| QT225-DZ | Common File System-20 L/O | 5,000 | 2,000 | 60% |
| **New CFS-20/CI20 Package** | | | | |
| CI20-AC | 2xCI20-AA + QT225-AM + QT225-DZ 60HZ | N/A | 45,000 | N/A |
| CI20-AD | 2xCI20-AB + QT225-AM + QT225-DZ 50HZ | N/A | 45,000 | N/A |
| **Repriced MF20 Memory** | | | | |
| MF20-E | 256KW Add-on Memory | 30,000 | 20,000 | 33% |
| MF20-L | 256KW Add-on Memory with Backplane | 50,300 | 35,000 | 30% |

## NEW DECsystem-10/20 PRICING AND PACKAGES

To support the integration strategy for our DEC-10/20 customers, we are announcing the following new prices and configurations. This announcement is divided into the following three parts:

I. TRADE-INS

II. COMBINED DECsystem-10/20 AND VAX SYSTEM PACKAGES

III. MODIFIED DECsystem-10/20 SYSTEM PACKAGES

All of these new packages and prices can be booked immediately, although the DSPL entries have not yet been made.

### I. TRADE-INS

The trade-ins are aimed at older systems, KI10s and 2020 systems, to give them an alternative to KL10-based systems.

| Description of Trade-in | Trade-in Allowance |
|---|---|
| KI10 System trade-in to 780 or KL10-based system. KI10 system defined as: | 10% of the new system MLP up to a maximum of $20,000 |
| KI10 System Trade-in<br>- KI10 CPU<br>- 384 KW of Memory<br>- 1 X DF10<br>- 1 X RH10 or RP10<br>- 64 asynchronous lines (either DC76 or DC10) | |
| 2020 System trade-in to 780 or KL10-based system. 2020 system defined as: | 10% of the new system MLP up to a maximum of $40,000 |
| 2020 System Trade-in<br>- KS10 CPU<br>- 512 KW of Memory<br>- 16 asynchronous lines<br>- 2 X RH-11-C | |
| The 780 systems will include FORTRAN (QE100-AY) and COBOL (QE099-AY) at no extra charge. | |
| RA81 - HDA exchange from 18 to 16-bit format | No charge |

### II. COMBINED DEC-10/20 SYSTEM PACKAGES

**TOPS-10 SMP/TRI-SMP and VAX UPGRADE PACKAGE**

This package is aimed at providing more capacity for TOPS-10/1090/1091 customers. It will also make it possible for them to get into the VMS-based systems and tie the TOPS-10 and VMS-based system together over DECnet.

The rule for these proposed packages is that one of each package can be bought per customer per separate location.

| | MLP |
|---|---|
| 1078-AA/AB system defined as:<br>1091S-FH/FJ<br>- BLISS-36 (QH115-AM)<br>780CA-AE/AJ<br>- RA81-AA/AD<br>- DEUNA-AA<br>- RA60-CA/CD<br>- DMF32-LP<br>- LA120-DA<br>- VMS (QE001-HJ)<br>- FORTRAN (QE100-AY)<br>- COBOL (QE099-AY)<br>- DATATRIEVE (QE898-AJ)<br>- BLISS-32 (QE106-AY)<br>- DECnet/VMS (QED03-AY) | $499,500 |

Please note the 780 system will be scheduled for Q4FY84 delivery.

**2060 AND VAX UPGRADE PACKAGE**

| | MLP |
|---|---|
| 2078-AA/AB system defined as: | $599,500 |
| 2060L-FA/FB without RP06<br>DN20F-ME/MF<br>BLISS-36 (QH115-AM) | |
| 780CA-AE/AJ<br>- RA81-AA/AD<br>- DEUNA-AA<br>- RA60-CA/CD<br>- DMF32-LP<br>- LA120-DA<br>- VMS (QE001-HJ)<br>- FORTRAN (QE100-AY)<br>- COBOL (QE099-AY)<br>- DATATRIEVE (QE898-AJ)<br>- BLISS-32 (QE106-AY)<br>- DECnet/VMS (QED03-AY) | |

Please note the 780 system will be scheduled for Q4FY84 delivery.

**2040 CACHE UPGRADE, VAX PACKAGE**

| | MLP |
|---|---|
| 2078-AC/AD system defined as: | $309,500 |
| 2060-UA<br>BLISS-36 (QH115-AM) | |
| 780CA-AE/AJ<br>- RA81-AA/AD<br>- DEUNA-AA<br>- RA60-CA/CD<br>- DMF32-LP<br>- LA120-DA<br>- VMS (QE001-HJ)<br>- FORTRAN (QE100-AY)<br>- COBOL (QE099-AY)<br>- DATATRIEVE (QE898-AJ)<br>- BLISS-32 (QE106-AY)<br>- DECnet/VMS (QED03-AY) | |

**DN20 WITH DECnet AND VAX UPGRADE**

| | MLP |
|---|---|
| DN750-AA/AB TOPS-20, DN750-AC/AD TOPS-10<br>consisting of: | $123,000 |
| DN20F-ME/MF (TOPS-20)<br>DN20F-MH/MJ (TOPS-10) | |
| 750XA-AE/AJ<br>- RUA81-CA/CD<br>- TU80-AA/AB<br>- DMF32-LP<br>- DEUNA-AA<br>- LA100-BA/BB<br>- VMS (QD001-HJ)<br>- FORTRAN (QD100-AG)<br>- COBOL (QD099-AG)<br>- DATATRIEVE (QD898-AM)<br>- BLISS-32 (QD106-AG)<br>- DECnet/VMS (QDD03-AG) | |

## III. MODIFIED DECsystem-10/20 SYSTEM PACKAGES

**NEW 2040, 2060, 1091 PACKAGES WITHOUT RP06**

The following packages are to be sold only to existing customers who have RP06s installed, and one of the RP06s has to be moved to the new system to act as the diagnostic KLADPACK. This way, customers can spend their money on buying RP07s instead. This is in response to the most frequent request from the installed base, to be able to purchase KL10-based systems.

The customers are required to make an RP06 that is up to current revision level available as a dedicated system disk.

| | MLP |
|---|---|
| 2040L-FA/FB License only without RP06 | $200,000 |
| 2060L-FA/FB License only without RP06 | 355,000 |
| 1091L-FA/FB License only without RP06 | 395,000 |
| The above configurations are identical to the 2040L-FE/FF, 2060L-FE/FF, and 1091L-FE/FF, except the RP06 is not included. | |

# YOUR CONNECTION TO THE FUTURE
# THIRD PARTY SOFTWARE

*Parmelee Eastman*

Integrating DECsystem-10s and -20s with VAX systems does not mean your customers have to abandon their favorite third party software. The reason: VMS.

Most third party software for DECsystem-10s and -20s is now available as a VMS version or a VMS version is presently under development. Of the eleven most widely used packages (according to user surveys), seven now have a VMS version, two have a VMS version under development, and two have equivalent functionality available under VMS.

A data base management system, System 1022 from Software House, is one of the most popular third party software packages for DECsystem-10s and -20s. For VMS users, Software House has another package available, System 1032, which provides a user interface similar to that of 1022 and has such TOPS-like features as Command Recognition and Help built into the system. To make integration of a VMS/1032 system into a TOPS/1022 environment easier, Software House provides a document containing transition information, including data transfer.

Other popular data base management packages include DPL and ACCENT R from National Information Systems. DPL users, whether planning to integrate VAX systems or not, will find it advantageous to move to ACCENT R. See "NIS offers Integration Options for DPL and ACCENT R customers," page 14.

Another popular third party software package is SCOPE, from Interactive Systems, Inc. The TOPS-10 and -20 versions of this screen formatting package have the same user and programmer interfaces as the VMS version. Existing code is transportable and multi-license discounts are available across TOPS and VMS systems, making integration of this third party package very easy.

Five of the remaining seven packages, EMPIRE, IMSL, BMDP, MINITAB, and TELL-A-GRAF, have the same code running on VMS as on TOPS. For example, if your customer's finance department is using EMPIRE on a TOPS system for financial modeling, your customer can easily integrate a VAX system into the computing environment and move the financial applications onto it. In addition, CONTROL-10/20, a query language and report writer often used with DBMS software, is expected to be available as a VMS version in the spring of 1984. Spread sheet calculators are also available and there are a number of choices. The sixth package is a spread sheet calculator. Many other products are available which offer the same functionality on either TOPS or VMS. Less comprehensive spread sheet calculators are also available on Digital's personal computers.

Support for file transfer between personal computers and large systems is of growing interest. KERMIT, a public domain software package from Columbia University, supports file transfer between any microcomputer system and TOPS-10, TOPS-20, and VMS. Polygon Associates has recently released a CPM and TOPS-20 communications package called Poly-COM.

Information on these and over 50 other third party packages is available on the Marketing System in Marlboro under File name "HELP THIRD-PARTY". Topics covered include other Digital products on which the package runs, pricing policies relevant to the TOPS customer, availability of a trial program, transition tools such as a filter or documentation, and the vendor contact for additional information. The information is being updated as LSM gets more information.

If you do not have an account on LSM's Marketing System, contact Ammie Herring at 231-5963. If you are a member of an integration team and do not have an account, call Reed Powell at 231-4261.

A brochure describing the Third Party Software Program is under development and will be available by February 1984.

# THE LAS VEGAS CONNECTION

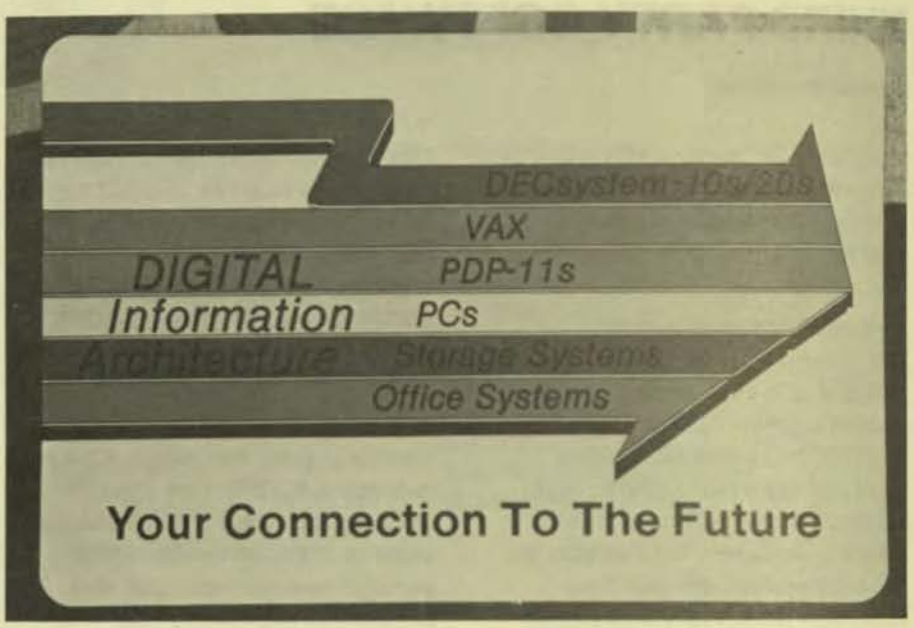
*Don Mallinson*

Armed with the latest refinements in the integration strategy, Large Systems Marketing management along with their engineering counterparts went to the U.S. Fall DECUS Meeting in Las Vegas.

In conjunction with the LSM SIG, we had arranged for over 40 sessions where Digital personnel would make presentations or share panels. Most of the presentations were about the concept and implementation of integration in one way or another. Booth theme was "Your Connection To The Future" and visibly showed DECsystem -10 and -20 connection to the Digital Information Architecture. Some of the session titles included "LSM Product Line Panel," "10/20 Integration Options," "10/20 to VAX Technical Comparison" and "Mixed 36/32 Bit Environment."

Every session was SRO—standing room only—and the Digital/user exchanges were spirited. The Integration Strategy, while accepted and appropriate for many, is not everyone's panacea. For example, at one session a user likened the strategy to a safety net with gaps and users were being asked to jump now, with the understanding the gaps would be filled in before the user landed in the net. On the other hand, another user noted that the obvious dialog between VMS and TOPS developers was a very encouraging, positive sign.

The major session was, as usual, the opening LSM Product Line Panel. At this three and a half hour panel, Rose Ann Giordano summarized the progress since the spring DECUS meeting. Per Hjerppe reviewed the results of the SIG questionnaire and talked about price reductions and new products. Walter Manter reviewed the integration commitments and strategy.




*The LSM exhibit was centered around a large 4' x 5' visualization of the Integration strategy concept entitled "Your Connection To The Future."*

Peter Hurley focused attention on major product development programs. Bill Johnson responded to specific questions about competitive developments.

Specifically, Walter Manter emphasized the commitment to integration that has been made throughout the corporation. Senior executives, VAX and 10/20 development engineers, marketing managers and the customer services organization have all committed time and resources to making this strategy happen.

Per Hjerppe detailed the expanded trade-in program, all the price reductions in the area of memory, systems, communications, packages and software. He also reiterated the new products such as COBOL-30 V 13, RMS-20 V 2, CMS-20, FTS-20, DIL-10/20 and the new Microcode V321.

Peter Hurley discussed all the many major programs that engineering was currently working on in the areas of KL enhancements, operating systems, communications, languages, data management and documentation.

Supplementing the symposium was the Digital exhibit area where LSM displayed its latest hardware and software products. The KL10R (FCC'd version of KL processor) was up and running. This processor has improved reliability, maintainability and installation as a result of the enhancements made to meet the newest FCC emissions requirements. Other parts of the system included HSC50, Star Coupler, RA81, 2 RP07s and an RP06, all operating under TOPS-20 V5.2 and TOPS-10. Thirty assorted DECmate II, Rainbow, Professional 350, VT125 and VT100 terminals were available for many demos. The most popular demo was DIL (Data Interchange Library) featuring a baseball game in which files were being updated and exchanged between a VAX-11/780 and the 2060 via DECnet.

Third party participants included Linkabit with their IDX300 switch, Ampex with their ARM-10LS Multiported MOS Extended Memory, Interactive Systems Inc. with SCOPE, National Information Systems with ACCENT R and DPL, and American Management Systems with DAZZLE and Fel Industries with MICRO-10/20.

Judging from the intensity of the dialog at DECUS, users are still vitally interested in Digital's large systems.

# LSM GOES WEST TO DECUS

*When Easterners get out West to places like Las Vegas they sometimes get carried away. The LSM exhibit and system set-up crew really got into it. Left to right: (back row) Bob "Zepata" Zepf, John "Curley" Rzucidlo, Tim "Tough guy" Hines, Reed "Johnny Reb" Powell, John "Aces High" Purretta; (Middle Row): Jim "Smile when you say that" Rehill, Dino "Studs" Genova, and Jack "Slick' Lucier; and (front) a demur "Western" lass.*

*What appears to be the American sport of baseball being played on an arcade video game is actually a demo of DIL (Data Interchange Library) exchanging real time data on line between a 2060 and a VAX 11/780.*

*Reed Powell, LSM Technical Services supervisor, gave a formal presentation of DECsystem-10/20 integration options.*


*One of Digital's product strengths, communications within and between organizations, drew the rapt attention of users.*

*Dorie Compton (left), a software services specialist from Digital's Chicago office, listens to a customer comment on DIL demo.*


*Dave Doxey, representing Digital's DIS Department, made a presentation about how Digital, the world's largest user of DECsystem-10/20 and VAXs, was handling integration.*

## LSM GOES WEST TO DECUS Continued

*Another Third Party demo was of a product called DAZZLE, here being intently put through its paces by Patrick Farrell (right) of AMS.*

*Allan Titcomb (right), LSM Applications Marketing manager, listens to comments by customers.*

*Gary Kuba (left) from Interactive Systems, Inc., demo's SCOPE, a forms handling package.*

---

## SIGnificant Meeting

*Don Mallinson*

Last July a select group of LSM SIG (Special Interest Group) members met in Cambridge with many Digital representatives to begin discussions about integration. Specifically, they reviewed results of the SIG questionnaire responses to insure our analysis was correct.

Last month a follow-up meeting was held with this same SIG group. The purpose this time was to explore further the issues relating to integration, and to review efforts to date and courses of actions chartered for the immediate future.

Walter Manter, Vern Poulter, Peter Hurley and Peter Damon from Central Engineering updated attendees on the latest hardware and software product developments in 10, 20 and VAX areas.

Per Hjerrpe reviewed recent and planned product price reductions and a new multiyear service agreement.

While the actions taken by the company are plentiful, some of the SIG attendees expressed reservations about any action short of developing a KL follow-on product being able to meet their needs. Many did say that the more TOPS-like VMS V4 as presented, plus the clustering of DECSYSTEM-20s and the significance of the NI would greatly benefit most of the 10/20 customer base.

All the attendees appreciated Dave Doxey's presentation on the problems and solutions Digital's DIS Department was experiencing. Dave, who works in DIS, graphically illustrated from his viewpoint as the world's largest 10/20 and VAX user what he has been faced with in terms of integrating 10s and 20s into Digital's Integrated Computing Environment. Dave did such a good job he was invited to make a similar presentation to the U.S. Fall DECUS Meeting scheduled the last week in October.

# 1090 CUSTOMERS FACE UNPARALLELED GROWTH

*Parmelee Eastman/ Art Zina*

Your 1090 customers have an unparalleled number of choices for growth open to them right now. Digital's continued commitment to the large system product space assures them of on-going support and development for their 1090 as well as new access to Digital's outstanding technological developments in distributed processing.

These customers have flexibility in their future plans for growth. The options are numerous. They can utilize corporate standard technology in peripherals and communication while development and support of their existing 1090 is guaranteed. They can increase their system's power through symmetric multi-processing; or they can integrate into other Digital products with easy-to-use tools and Digital programs. They not only can combine these options, but also can implement their choices at their own pace.

Adding to a 1090 gives users more performance. Digital is currently working on several enhancements to the KL processor to improve its performance. Cache doubles in size to 1024K. The micro code is being enhanced. The KL pager doubles in size. All these improvements are field upgrades so that 1090 customers will not disturb their operations. They will be able to expand by adding MF20 MOS memory in an external cabinet to lower maintenance costs and footprint while increasing reliability. Again, minimizing disruption to their operation and reducing their cost of ownership.

The corporate-wide Digital Storage Architecture will be available for the 1090. DSA offloads the CPU via an intelligent peripheral controller, the Hierarchical Storage Controller: HSC50. It gives customers the best price/performance disk drive—the 463 MB RA81 and the RA60. RA disk drives can be stacked three to a cabinet. This configuration means lower costs for your customers: less floor space, air-conditioning power and lower maintainance charges. New technology will be available for customers faster as future RA peripherals will be added to the HSC50 with no rewriting of the TOPS-10 operating system.

The new world of local area networks will be an option for future growth. Digital will support the Network Interconnect for Ethernet on TOPS-10. In addition to LANs, customers will have PC clusters and gateways. Digital gives customers this opportunity because of its commitment to DECnet Phase IV for TOPS-10.

If your customers need more growth than the expanded 1090 can provide, then they can expand their power with a symmetric multi-processor arrangement. Now that Digital supports 1091s and 1090s in an SMP environment, the cost of adding a 1091 has dropped by 20% making this option more attractive financially for your customer. Not only are costs lowered, but flexibility has increased. Digital signed a joint marketing agreement with Ampex to provide cost-effective multi-port MOS memory with single vendor service.

Thus Digital utilizes an SMP configuration in addition to implementing DSA and NI. Digital guarantees continued development for a minimum of five years and support for a maximum of 10 years.

Another of the many options available to your 1090 customers is the ability to integrate with distributed processing using Digital's VAX family of systems. They will be able to integrate a 1090 and a VAX via DECnet, Digital's corporate networking communications protocol. Digital has made it more cost-effective to use DECnet by cutting the price of a DN20 in half. Exchanging information will be easy with the Data Interchange Library (DIL) of subroutines callable from FORTRAN and COBOL to translate data types between TOPS-10 and VMS using DECnet when available. Data exchange will be even easier in the future when DIL extends into the Data Interchange Utility. More information on this is in a new brochure titled "Coupling Processors with DECnet, FTS-20, and DIL".

Documentation on the differences between TOPS and VMS in the areas of command languages, utilities and layered languages will reduce retraining of your customers' programmers and users. Digital is working with third party software vendors to ensure that their products are integrated into Digital's other product families.

Implementing a VAX cluster now allows an upward growth path that will be augmented by new follow-on VAX compatible family members, giving your customers large jumps in computing power at Digital's traditional, attractive price/performance range.

Thus, whatever option your customers choose, they will be assured of the opportunity for growth for their system and continued support.

# EUROPEAN INTEGRATION ACTIVITIES ROUNDUP

*Geoff Beacroft*
*U.K. LSM Sales Manager*

Customer Visit Program, VMS for TOPS Users Session, LSM Skill Centre to be formed, special coordinating committee established, SIG meetings, customer developed software tools - these are just some of the integration programs being planned or underway in Europe.

In the U.K. over half of the 50 10/20 customers have been visited by a special audit team. Team members include Geoff Beacroft, UK Sales Manager, Phil Hadfield and Chris Penning as Sales Coordinators and Steve Neale, Dave Melton, Chris Bond and Graham Beech VAX/TOPS Specialists. The reports resulting from these meetings will start to be presented to the customers this month.

A comprehensive session of VMS for the TOPS user is scheduled for December.

An LSM Skills Centre to be based in Leeds will become operational at the turn of the year. Customers who, following agreed plans at the audit, wish to try converting some of their applications to VMS will be able to use the two VAX-11 780s installed at the Centre.

Elsewhere in Europe, an Area Coordination Group has been formed with the following objectives:

A. To keep our existing 10/20 customers and to develop the best strategies to ensure their future growth with Digital Products.
B. To prepare the right environment for a strong Digital presence in future high-end systems sales and marketing across Europe.

In a letter to be sent to customers, the group members are listed as:

| | |
|---|---|
| SALES: | Geoff Beacroft (Project Leader) U.K. LSM Sales Manager |
| PRODUCT MANAGER: | Norman Valentine Area High-end Marketing Manager |
| SUPPORT SERVICE: | Maxime Boulad Support Services Manager, Valbonne |
| ADVISORY SUPPORT: | Klaus-Dieter BUSCH Country Group Manager |

Bobby Choonavala, Manager to International Sales Operations, will be playing a European Management supportive role for the group.

The main objectives of this group will be as follows:

1. To support the local country Account teams.
2. To share benefits and experience on DECsystem-10 and -20 development, co-existence, integration, etc., including VAX and VAX follow-on products.
3. Effective two-way communication with the U.S. Marketing and Engineering Groups.
4. Review DECsystem-10 and -20 Customer Visit programme.
5. Develop consistent business strategies and investments.
6. Create an identified set of large systems resources for the European area.

---

# EDUCATIONAL SERVICES SEMINARS

**TOPS-20 System Performance Management**

This lecture, discussion, and workshop is designed to help users maximize the return on their DECSYSTEM-20 investment. It will introduce the basic concepts of performance evaluation, examine common performance bottlenecks, and present specific ways to improve their system. In addition, this seminar will present performance implications and tradeoffs involved in using various programming techniques and practices.

Speaker: Dave Wagner from Digital's Customer Support Center, Colorado.

January 24-26, Dallas, TX; Registration: DTN 249-4949

**Disaster Recovery Planning**

As businesses increase their dependence upon readily available computer power, the need to plan for disasters affecting the data center becomes a major issue.

This seminar will focus on a practical approach to disaster recovery planning and preparedness. It is largely based on the seminar leader's own experiences in overcoming serious emergencies while a data center manager and during his later work as a computer security consultant. Participants will be given numerous tools and forms to aid in identifying data center problems and developing their own recovery plans. As a special highlight, the seminar will provide information on newly available recovery and vital records protection services designed especially for users of Digital's systems.

Speaker: Eugene F. Troy, director of systems technology for Digital Analysis Corp., Reston, VG.

January 25-27, Boston, MA; Registration: DTN 249-4949

# MULTI-YEAR AGREEMENT SUPPORTS 36-BIT CUSTOMERS

*Bob Myers*

Field Service is introducing a Multi-year Agreement program designed to reinforce Digital's long-term commitment to support our 36-bit customer base with service at competitive prices.

The program, which will be available for registration starting December 1, 1983, is targeted both at current Digital customers with KI, KS, and KL systems currently under service contracts and customers purchasing KL systems in the future. The agreement will be sold at contract renewal time for existing 36-bit customers and during the hardware sale for future customers for the next 12 months.

Although Field Service has offered agreements such as Multi-year in past competitive situations, offering a five year contract at a predictable cost is a major step forward for Field Service.

With the Multi-year Agreement, current and future 36-bit system customers are assured that Digital will service all KI, KS, and KL based processors for the next 10 years.

Field Service is offering customers not only a commitment to service 36-bit systems for 10 years, but also a significant savings in service prices over the life of the contract.

The Multi-year Agreement features:

1. DECservice or Basic Service agreements available in five-year increments.
2. Fixed maintenance costs for the first two years of the agreement.
3. Escalation clause capping price increases to a maximum of 5% of the Total Monthly Charge for the remainder of the five year contract.
4. No penalty for early withdrawal.

The need for the Multi-year Agreement is particularly important in light of the recent Corporate announcement that there will be no follow-on 36-bit CPU beyond the KL10 processor. The cancellation of future 36-bit CPU development has created customer concerns about Digital's ability to offer the same high level of service at a reasonable cost in the future.

The Multi-year Agreement helps to reassure customers that Digital is committed to protecting their investment in 36-bit hardware—and that we will offer service at competitive prices. That commitment is a key element in Digital's Integration Strategy for 36-bit customers.

The goal of the Integration Strategy is to retain current 36-bit customers by meeting their short-term growth needs with current products and allowing our customers to slowly integrate their 36-bit CPUs with Digital's information architecture. The Multi-year Agreement supports the Integration Strategy's goal by providing the expanded support both existing and future 36-bit customers need.

For the salesforce, the Multi-year Agreement will help them to leverage future sales for both 36-bit systems and add-ons by reassuring customers of Digital's commitment to support KI, KS, and KL processors at a reasonable cost for the next 10 years.

For Field Service, the Multi-year Agreement offers these benefits:

- Maintains good relations with customers and account control while hardware and software is developed to enable customers to integrate their 36-bit CPUs with Digital's VAX architecture.
- Protects Field Service from losing service contracts to independent maintenance suppliers - due to customer fears of increased costs or lack of service.
- Protects service revenue from the current service contract base.
- Eliminates the need for annual contract renewals.

# EDUCATIONAL SERVICES COURSES STRATEGICALLY INTEGRATED

*Rocco Bombardieri*

As part of Educational Services' commitment to supporting Digital's Integration Strategy, we will have integration information in our courses. Furthermore, we will be offering a new seminar focusing on some aspects of integration.

We will continue to update courses for new releases of TOPS-10 and TOPS-20 operating systems to support our installed base.

In order to help provide our customers with flexible solutions to their computing needs, we will begin accepting LSM training credits for VAX training.

Educational Services will review new documentation to ensure that the documentation itself helps meet the educational needs of our customers.

We will continue to offer our most technical courses at our facilities and attempt to reduce or eliminate cancelled courses. Other courses will be offered on an on-demand basis.

# NIS OFFERS INTEGRATION OPTIONS FOR DPL AND ACCENT R CUSTOMERS

*Parmelee Eastman*

National Information Systems (NIS) has mapped out an attractive integration path for its DPL and ACCENT R customers. DPL and ACCENT R are two of the most popular packages among the DECsystem-10/20 customer base that combine relational data management with productivity tool features.

In 1982, NIS announced ACCENT R, a follow-on product for its long popular Data Programming Language. ACCENT R combines the following attributes:

- Relational data base management technology
- Powerful non-procedural data manipulation language
- 4th generation structured programming language
- Active data dictionary capabilities
- User-friendly protective environment

ACCENT R offers a procedural language that requires one-fifth as many lines of code as FORTRAN or COBOL.

For DECsystem-10/20 customers who are currently using DPL, NIS offers a discount on ACCENT R until June 30, 1984. This is not a trade-in, but allows co-existance of both products. The discount varies depending on how long the customer has had DPL. The minimum price for which an existing DPL customer can purchase ACCENT R is $5,000 plus $950 installation.

The maximum price an existing DPL customer will have to pay for an ACCENT R License with equivalent options is:

| | |
|---|---|
| Basic Online System | $31,500 |
| Host Language Interface | 5,000 |
| User Accounting | 1,000 |

The discount is calculated according to the following formula:

DISCOUNT = Price paid for DPL x (48 months - months since DPL contract date) / 48.

Thus, if DPL was purchased one month ago for $38,000, the discount would be $38,000 x (48 - 1) / 48 = $37,208. The ACCENT R License would cost $40,000 - $37,000 = $2,792. However, since this is less than the minimum, the actual cost would be $5,950.

Or, if DPL was purchased two years (24 months) ago, the discount would be $38,000 x (48 - 24) / 48 = $19,000. The ACCENT R License would cost $40,000 - $19,000 = $21,000.

Moving existing DPL applications to ACCENT R saves significant system resources. According to users, moving the application from DPL to ACCENT R with no re-writing returns about 15 to 20% in system resources. Re-writing the application to take advantage of powerful ACCENT R features can save up to 40% in machine resources.

A conversion guide, "DPL-ACCENT R Conversion Guide," dated June 1982, is available from NIS to aid users wishing to convert.

In January 1984, a filter will be available to take about 90% of existing DPL code to equivalent ACCENT R code. There will be a charge of no more than $5,000.

ACCENT R will be available on VMS in mid-1984. The product will be equivalent to the existing TOPS product less certain TOPS capabilities which do not exist on VMS. ACCENT R applications on TOPS will run on VMS after recompiling. If the ACCENT R license is purchased for TOPS before December 31, 1984, the license will be transferred to a VMS system for $150.

For further information, contact John Enyedy at 408-257-7700.

# LSM LITERATURE LIST

EDITOR'S NOTE: You may order these publications by contacting Jane Fitzgerald at P&CS in Northboro. The DTN is 234-4325. Mail stop is: NRO2-2/W3. RCS code is NR12 (for telexes).

You may order new LSM Literature via your SCC (Sales Communications Center) Specialist. The Literature List in BUY-LINE will asterisk the very latest items.

If you find an item to be out of stock or incorrectly numbered, please phone Gail Breslin at DTN: 231-4013, and she'll try to help you out.

ATTENTION ! ! ! This list (and order numbers) supersedes all prior lists.

**HARDWARE OPTION BULLETINS**

| | |
|---|---|
| CD20 Card Reader | ED 23999 61 |
| DN20 Communications Front-End Subsystem | ED 20504 26 |
| DN200 Remote Station | ED 22987 61 |
| IDX-3000 Integrated Digital Exchange (Linkabit Switch) | EC 24075 61 |
| LP20-A/B Line Printer Systems | ED 19137 26 |
| LP20-C/D Line Printer Systems | ED 19135 26 |
| LP100-F/H Line Printer Systems | ED 19677 26 |
| LP200-B Line Printer System | ED 24013 61 |
| TU72 Magnetic Tape Subsystem | ED 19763 26 |
| TU77 Magnetic Tape Subsystem | ED 17400 26 |
| TU78 Magnetic Tape Subsystem | ED 23003 82 |

**SOFTWARE DATA SHEETS**

| | |
|---|---|
| APL-SF-10 | ED 24841 61 |
| BASIC-PLUS-2 | ED 18885 26 |
| BLISS-36 | EA 25859 57 |
| COBOL-20 | EA 25860 57 |
| CFS-20 | EA 25526 61 |
| DEC/CMS-20 | EA 25444 61 |
| CPL | ED 15659 63 |
| DECmail/MS | ED 24000 61 |
| DECnet-10 Phase III | ED 24056 61 |
| DECnet-20 Phase III | ED 22835 61 |
| DBMS-10 | ED 21782 81 |
| DBMS-20 | ED 21827 61 |
| FORTRAN-10/20 V.7 | ED 24054 61 |
| FTS-20 | EA 25862 57 |
| IBM RJE E/T | EC 24057 61 |
| IQL | ED 15660 63 |
| PASCAL-20 | EJ 24759 61 |
| TOPS-20 PSI Gateway | ED 24053 61 |
| TOPS-20 System Software | EA 25861 75 |
| TOPS-10 V7.02 | EZ C5532 44 |
| TOPS-20 V6.0 | EA 25445 61 |

**TECHNICAL SUMMARIES**

| | |
|---|---|
| DECSYSTEM-10 Technical Summary | EE 21041 26 |
| DECSYSTEM-20 Technical Summary | EA 20415 18 |

**PHOTO BULLETINS**

| | |
|---|---|
| DECsystem-10/20 Fact Sheet | EJ 19596 26 |
| DECsystem-10 Family At A Glance | EJ 19595 26 |

## LSM BROCHURES

| | |
|---|---|
| Coupling Processors with DECnet, FTS-20, and DIL | EA 29959 57* |
| Track Software Changes Without Tracking Them Down | EA 25362 61 |
| Don't Let the Software Blues Get You Down | EA 24773 61 |
| TOPS-20 Multiprocessing | EA 24237 61 |
| Introducing TOPS-20 Multiprocessing | EC 24046 61 |
| DECsystem-10 Family | EA 20572 26 |
| TOPS-10/20 Data Networking | EC 22813 61 |
| LSM Software Referral Catalog (3nd Ed.) | EJ 25148 61 |
| Symmetric Multi-Processing | ED 24089 61 |
| The Personal Mainframe/Electronic Mail | EA 22872 61 |
| The Personal Mainframe | EA 24546 61* |

## CORPORATE BROCHURES

| | |
|---|---|
| Digital's Ethernet | EA 22710 18 |
| Digital Introduces DECnet/SNA Gateway | EA 22703 18 |
| Digital Storage Architecture Product Summary | ED 23981 18 |

## MARKET SPECIFIC BROCHURES

Engineering:

| | |
|---|---|
| Monenco: Engineering for Excellence | EA 23075 16 |

Banking:

| | |
|---|---|
| New York City Bankers Choose Timesharing | EJ 24794 61 |
| Bankers Trust: Partners in Success | EA 23155 16 |
| "Will the Street Bypass Time Sharers?" (reprint from "Institutional Investor") | EJ 24696 61 |

## GENERAL MATERIALS

| | |
|---|---|
| DECNET-10 Phase III Press Kit Folder | EJ 23998 61 |
| BUY-LINE Compendium (Vol.2: 1981-82) | EZ 09016 82 |
| Digital's Systems Interconnect Folder | EJ 24741 61 |
| DECision Systems Folder | EJ 24658 61 |

## POSTERS

| | |
|---|---|
| Chart Your Course Sailing Poster | EJ 21623 61 |
| LSM Personal Mainframe Poster | EJ 21652 61 |

## SITE PREPARATION GUIDES

Corporate Field Service's Generic Site Planning Kit, available worldwide, enables site planners to do floor layouts and site planning for all DIGITAL products including the DECsystem-10 and -20 product set. This Kit is designed to be Field Service's standard Site Planning tool. The new Kit's order number is EK-SPKIT-01, available from P&CS, Northboro.

* New order numbers for recently produced editions

# U.S. LSM COORDINATORS

| DISTRICT | NAME | LOCATION | TELEPHONE NO. |
|---|---|---|---|
| NORTHEAST | | | |
| Metro Boston | Joe Castellani | | |
| NAAD | Mike Malone | | |
| New England | Pat Miller | | |
| Conn. | Gardner Mason | | |
| Upstate NY | Pete Lilley | Rochester (RCO) | 252-2322 |
| CENTRAL | | | |
| Chicago | Helen Godfrey | Rolling Meadows (RLO) | 421-5660 |
| Mid America | Nari Bawa | St. Louis (STO) | 314-991-6400 |
| Great Lakes | Scott Benson | Detroit (FHO) | 313-348-8900 |
| No. Central | Frank Delmont | Minneapolis (MPO) | 612-853-9605 |
| SOUTHERN | | | |
| Southeast | Ed Janusz | Orlando (ORO) | 305-660-2100 |
| Mid South | TBA | | |
| Charlotte | Cliff Spatz | Chapel Hill (NCO) | 919-493-2531 |
| Houston | Lary Brown | Dallas (DLO) | 214-620-2051 |
| WESTERN | | | |
| Santa Clara | Toby Arnold | Santa Clara (WRO) | 521-2484 |
| San Francisco | TBA | | |
| Rocky Mtn. | Bill Krause | Denver (DVO) | 553-2214 |
| Northwest | Ron Quarles | Seattle (SEO) | 206-453-5500 |
| NY/NJ | | | |
| NY Comm. | Alan Vitolo | One Penn Plaza (NYO) | 333-3913 |
| NY Tech. | Ned Barber | Westchester (WHO) | 333-3940 |
| New Jersey | Chet Sherer | Piscataway, NJ (KYO) | 323-2383 |
| NJ Comm. | Pete Buttacavoli | Piscataway, NJ (KYO) | 323-2465 |
| SOUTHWEST | | | |
| So. Cal. | TBA | | |
| Los Angeles | Frank Calderon | Culver City (LAO) | 213-417-4351 |
| Albuquerque | Bob Hughes | Albuquerque(AQO) | 552-3021 |
| MID ATLANTIC | | | |
| *Washington | Clyde Blassengale | Washington D.C.(DCO) | 341-2615 |
| *Maryland | CLYDE COVERS BOTH WASHINGTON & MARYLAND DISTRICTS. | | |
| Philadelphia | Deane Curran (acting) | Pittsburgh (PTO) | 422-2250 |
| Ohio Valley | Jim Fate | Columbus (CSO) | 614-868-1900 |

## European LSM Coordinators

| | | | |
|---|---|---|---|
| BELGIUM | Roland Matthys | Evere(BRO) | (32)-(2)-2425095 |
| ENGLAND | Geoff Beacroft | Reading (REO) | (44)-(734)-868711 |
| DENMARK | David Barlow | Gentofte (DMO) | (45)-(2)-889666 |
| FINLAND | Lars Lindstrom | Espoo (FNO) | (358)-(0)-423511 |
| FRANCE | J-L Delafraye | Rungis (PAO) | (33)-(1)-6872333 |
| GERMANY | Erwin Weiss | Munich (RTO) | (49)-(89)-95910 |
| NETHERLANDS | G. van Ruiten | Utrecht (HOO) | (31)-(30)-631222 |
| NORWAY | Alan NcDowell | Oslo (NWO) | (47)-(2)-160290 |
| SWEDEN | Cyril Malm | Solna (SOO) | (46)-(8)-7300200 |
| SWITZERLAND: | | | |
| | Urs Hainfeld | Petit Lancy (OUO) | (41)-(22)-713434 |
| | J-P Mueller | Kloten (ZUO) | (41)-(1)-816911 |
| | Bob Taylor | Geneva (GEO) | (41)-(22)-933311 |
| | Norm. Valentine | Geneva (GEO) | (41)-(22)-933311 |

## BUY-LINE APPLICATION

NAME: _____ MAIL STOP: _____

BADGE: _____ COST CENTER: _____

DEPT: _____ OFFICE LOC: _____

( ) Please add my name to the BUY-LINE mailing list.

( ) Please delete my name from the mailing list.

My responsibility is in:

( ) LSM Sales

( ) LSM Marketing

( ) LSM Service

( ) Another product line or corporate function

Please detach and mail to Christine Medeiros, MR02-2/8D2. Thank you.

CHRISTINE MEDEIROS

MR02-2/8D2


digital

DIGITAL EQUIPMENT CORPORATION
MARLBOROUGH, MASSACHUSETTS 01752

Large Computer Group

# BUY-LINE

December/January 1984

Special in this Issue

Unbundling TOPS-10/20

Customer Integration Mail System

The New KL10-R CPU, Improved and Repackaged

For Internal Use Only

digital

# BUY-LINE DECEMBER/JANUARY 1984

## TABLE OF CONTENTS



***ATTENTION!** Prices and availability quoted in BUY-LINE – unless otherwise stated – apply to Continental USA only; for other locations, please contact your Large Systems Marketing Representative.*

**BUY-LINE** is published monthly by the Large Systems Marketing group, Marlboro, Massachusetts.

**EDITOR:** Christine Medeiros, Marketing Communications Specialist, MRO2-2/8D2, DTN 231-4996

**EDITORIAL ADVISOR:** Don Mallinson, manager, LSM Marketing Communication

**PRODUCTION ASSISTANT:** Gail Breslin

Upon request (see mailer card in this issue), the following Digital personnel will be added to the BUY-LINE mailing list:

Field Service Managers
Management Committee Members
Marketing Managers
Product Managers
Sales Managers
Sales Representatives
Service Group Managers
Software Specialists
Software Support Managers

# INTRODUCING A NEW YEAR OF RENEWED COMMITMENT

*Rose Ann Giordano, Group Manager, Large Systems Marketing*

I hope everyone had a wonderful holiday season, and I wish you all a happy, healthy and prosperous new year.

For Large Systems Marketing, the new year brings excitement and challenges as we watch our integration campaign come alive in our new and old accounts. The lessons and experience we gained last year will help us bring better products to our customers and better marketing programs to the Field. For Digital, this will be the year for launching many new high-end products. Large System Marketing will support and drive these in the corporation.

One of the newest changes in LSM is the creation of the Integration Program Office. Just as integration binds together many powerful computers, the program office brings together all our resources to strengthen our support to the Field and to the DECsystem-10/20 customer base. The program office coordinates the efforts of Central Engineering, Large Systems Marketing, Area Management Centers, Software Services, Sales and the Field to be more responsive to our DEC-10/20 customer requirements and to help them grow into the Digital information computing environment.

The program office is responsible for the corporate-wide drive of the integration process—offering a central and consistant message, training and reports on customer requirements and progress. Don Turner has been chosen to manage the Integration Program Office; this function reports directly to me.

The Integration Program Office (IPO) will create new programs and make the programs already in place run more effectively. The audit teams and the account review process, under IPO's direction, will continue to provide customers with tailored business and technical solutions. In turn, we are gaining a better understanding of our customers' immediate and future needs and concerns.

IPO will be tracking and communicating success stories while monitoring the integration progress in our top accounts. The Program Office will also continue to focus on building good working relationships with third-party software houses.

Even though this program opens the dialogue among many groups affected by integration, LSM looks forward to meeting directly with our Field representatives. We are presently planning a Sales meeting in early February for Field members involved in the integration process. This will be a great opportunity to present an update on our integration tools and programs and for the Field to share their experiences with each other.

We want to insure that all Field people are armed with the tools and skills to present Digital's integration strategy to the senior management of their accounts.

## Financing and packaging

Much is happening! As you know, we have already taken action in the areas of pricing and packaging. The customer and Field reaction to our combined packaging of VAXs and DECsystem-10/20s has been encouraging. (See November 1983 BUY-LINE.) You can assure your customers that our systems will remain cost-competitive. A major factor in decision-making will be our responsiveness to our customers.

Per recent customer request, we have decided to unbundle TOPS-10/20 operating system and license it to our users. (See story page 5.) This decision was a direct result of the exstensive querrying and open dialogue with our 10/20 customer base. We will continue to look for attractive alternatives that reinforce the increasing value of their investment in Digital. Our current energies are in financing alternatives for our customers including a rental program.

To fully integrate high-end products into Digital's Information Architecture, we understand that the Field needs some essential benchmarking and competitive information in regards to VAX clusters. To arm you with the best data available, LSM is going to expand its current data center to include a VAX cluster with benchmark and demonstration capabilities. We want to offer real high-end performance testing for positioning in the marketplace as well as for sales leverage. This center will be located in Marlboro, Mass. We will keep you informed as developments in this project occur.

Let's keep the momentum going and use the resources available to make integration the solution.

# KL10 CPU, IMPROVED AND REPACKAGED

With a new cabinet, improved air flow around internal logic and power supplies and certain of its components relocated, the KL10-R, replacing the KL10-E, is more reliable, more stable, cooler, quicker to install and has improved maintainability.

Improving its stability, the KL10-R has an overall center of gravity one foot lower than the KL10-E. The CPU, itself, is positioned three inches lower. Also, the MOS memory power supply and battery are hard-mounted to the CPU cabinet. They are no longer positioned on the CPU cabinet door. Bringing the center of gravity in for the I/O cabinet, the H760 power supply has been rotated 180 degrees.

The KL10-R is quicker to install and easier to maintain for several reasons. Much of the cabling running between cabinets has been made easier to work with because of connectors. Now, when cabinets must be separated, the cables between them can simply be unplugged. Cables which have connectors include the fault indicator harness, the MF20 power harness, all AC wiring and the RTO cable. Also, there is no longer external wiring entering from underneath the cabinets. The MASSBUS, UNIBUS, I/O memory bus and various power cords and communications lines now plug into bulkheads on the I/O and front-end cabinets.

In the front-end cabinet, the 863 power controller has been rotated 180 degrees, a move which positions all breakers and switches to the front. The same was done for the 861 power controller in the I/O cabinet. Moving the power controllers saves steps for Field Service personnel.

Cooling is improved by the addition of an exhaust duct to the CPU backplane. Heated air exits through the unobstructed vent. Two other exhaust ducts are positioned beside the H761 power supply for the same reason. Each fan on the H761 power supply moves 120 cubic feet of air per minute.

*The KL10-R, replacing KL10-E, has been enhanced and repackaged.*

---

# PCS-10, PCS-20, COGO-10, COGO-20 RETIRED

*Laura Gawronski, Product Management*

The Large Systems Integration Group announces the retirement PCS-10, PCS-20, COGO-10 and COGO-20. These products were officially retired December 31, 1983.

PCS-10 and PCS-20 are project control systems that analyze critical path or procedure networks and generate a number of resource, cost and critical path reports. COGO-10 and COGO-20 are tools for solving problems in plane coordinate geometry through the use of a computer program with a geometrically oriented language.

PCS-10, PCS-20, COGO-10 and COGO-20 have not been converted to the newest version of FORTRAN. They have been sold on an "as-is" basis without warranty or software maintenance service.

Effective immediately, these products will no longer be sold to new or existing customers.

# MEETING 36-BIT CUSTOMER'S DEMANDS

## TOPS-10/20 IS UNBUNDLED

*Rich Whitman LSM Strategic Marketing*

A recent decision to unbundle the TOPS-10/20 Operating Systems, made by Digital's Management Committee, may effect some of our Large System customers. As strategic marketing manager, I would like to explain the program in detail.

The decision to discontinue the "KL follow-on" processor has caused some reevaluation in our customer base. We held several meetings, including DECUS, and an extensive customer questionnaire to determine how this base could continue to grow with Digital products.

In response to the customer requests, we have put together several major programs, outlined in the Integration Strategy report, to assist this base. Announced earlier this fall, we have lowered the price of all newly purchased systems by over 20 percent and bundled together VAX processors with KL packages to assist integration efforts. (See Nov. 1983 BUY-LINE.) We also have in operation procedures to evaluate and enhance the performance of the current installed base.

Several very large accounts have asked Digital to unbundle TOPS-10/20 operating systems so they may run them on foreign hardware. Their contention is that because of their large investment of over 15 years with these operating systems, they cannot move their systems to less powerful hardware. They say that by allowing them to continue to run these operating systems on foreign hardware, they will stay with Digital until our VAX line has the power to give them the growth they need.

After an exhaustive study to determine the viability of this alternative and its effect on our account base and sales force, while we do not believe many accounts will actually purchase our operating systems, we felt the move was responsive to our customers and, in a few cases, would buy us time. Our recommendation to unbundle the operating systems was passed on to several of our Corporate Committees and accepted.

Digital will entertain written requests to the Sales force for the purchase of the operating system. The operating system will be licensed on a single CPU basis and only granted to customers who currently have a valid TOPS-10/20 Catagory A license. This also applies to end-users of our large Data Services Accounts, who have been granted a pass through license. WE WILL NOT LICENSE ACCOUNTS WHO ARE NOT CURRENT LARGE SYSTEM CUSTOMERS.

Purchase of the TOPS-10/20 Operating System will require approval of a Country or Area Management Center manager. Before this permission will be given, the Sales person must have exhausted all efforts to sell our current hardware, either VAXs or DECsystem-10/20s.

A new license agreement is nearing completion. It will spell out in detail our responsibilities and customer's accountability. The license states that Digital makes no claims or warrantees as to runability, maintainability or performance of our operating systems on foreign hardware. But Digital will attempt to fix any bugs which can be recreated on a KL CPU. Updates of TOPS-10 or 20 can be purchased with the proper subscription service.

We are under no obligation to maintain either the software or hardware under the circumstances where our software is being run on foreign hardware, however it is our intent to keep Digital representatives associated with these critical accounts. We must maintain the opportunity to bid on either the hardware or software maintenance for these accounts.

Digital has committed to continue the support of the KL processor and the TOPS operating systems through 1993. This new licensing agreement will have no effect on that date. Development of existing DECsystem-10/20 products will continue, including extensive communication capabilities, operating systems and mass storage for years to come.

To summarize, our intent is to keep several of our largest and oldest accounts growing with Digital products. We see very few alternatives on the market today which could satisfy many of our users. However, in an attempt to be responsive and minimize any competitive threats, we have taken this action. To obtain a copy of the license agreement, call Rich Whitman at DTN 231-7498.

# INTEGRATION TOOLS CLEARINGHOUSE

## An Update on the Integration Mail System

Large System Marketing's Technical Support group includes in its support activities a Clearinghouse for any tools or documentation relating to the high-end integration effort.

An electronic mail system has been established by the group to open communication between customers and Digital around the issues of integrating DECsystem-10 and DECSYSTEM-20 mainframes into Digital's overall product spectrum.

One component of the Integration Customer Mail System is to provide a single channel for the distribution of software tools and documentation related to 36-bit and 32-bit integration. All software in the Clearinghouse, whether developed by Digital or by customers, is available at no charge and distributed by Digital on an 'as is' basis. People who submit tools and wish to provide support for their software will be identified in the distribution kits.

Ideally, the Clearinghouse will prevent duplication of efforts among customers or between customers and Digital's engineering organizations. The Clearinghouse is concerned not only with software products, but also with documentation relevant to the integration of 36- and 32-bit systems, as well as with micros, etc. Documentation is being solicited with the same fervor as software products.

Submission kits should include the following:

1. Name, address, organization/company and phone number of person making submission.
2. May the orignator's identity and location be released with the software package?
3. Name of the package.
4. Short (one page maximum) description of what the package does.
5. Installation notes.
6. Documentation (if any).
7. Machine-readable media from the following list:

   9-track tape (800, 1600, 6250), in either BACKUP (TOPS-10), DUMPER (TOPS-20), or ANSI (VMS) format. Floppies in either CP/M or PC350 format for micro software.

This information should be on the distribution media rather than on paper. People making submissions should also indicate if they wish to receive feedback from end-users or Digital. All software and documentation submissions should be sent to:

Technical Support
Large Systems Marketing
Digital Equipment Corporation
One Iron Way MRO2-2/D8
Marlboro, MA 01752

### Obtaining an account

Accounts on the Integrated Mail System are available to any customer, software services, Large System marketing, support or engineering personnel. As well as providing a vehicle for submitting information and requests for tools, interested parties can keep informed of other developments in integration.

The system is accessed via dial-up through 617-467-7020 (autobaud, 300, 1200 baud). There is no ARPA or X.25 access into this system. The information needed for account creation is:

1. Name of requester
2. Name of company
3. Address of company/requester
4. Telephone number
5. Account name desired (this should reflect the name of the company, not the name of the requester
6. Password desired

Note that the account name and password must be made up of letters and numbers with no spaces, symbols, etc., allowed. Dashes ("-") are permissable. Accounts will be created within seven to ten days of the request. The Technical Support group will follow up if there are any problems with a request as an invalid account name.

The requests for an account should be sent to the following address:

Technical Support
Large Systems Marketing
Digital Equipment Corporation
One Iron Way MRO2-2/D8
Marlboro, MA 01752

Information on accessing the tool lists, which is handled primarily through MS and BBOARD, is displayed when you log into the system. To obtain help on the Integration Mail System just type "HELP INTEGRATION."

The Tools Clearinghouse currently contains a modest collection of software tools and documentation. The listing is continually updated when new tools are discovered by LSM's Technical Support and Integration Progam Office groups. At the present time, the Clearinghouse contains the following tools and documentation:

Software tools:

CONVRT - A program for VMS systems that will read TOPS-10 BACKUP format tapes.

*(Continued on next page)*

# NEW SCREEN FORMATTER FOR DECsystem-10/20

## License for internal use available

Digital has signed a corporate multi-site software licensing agreement with Olamic Systems Corporation to acquire their software product, DEMAND-92.

DEMAND-92 is Olamic's full screen formatter and video transaction management system designed for use on DECsystem-10 and DECSYSTEM-20 and compatible with a wide variety of video terminals and computer networks.

DEMAND-92 is used to create video forms with fields of information specific to the data needs of an individual office activity. These forms are used to manage purchase orders, personal records, insurance forms, etc. The fields specify variable information like name, address, part description, price or salary. DEMAND-92 supports special video attributes such as underlining, blinking, reverse video and bolding.

Written in MACRO assembly language, DEMAND-92 is an extremely efficient requiring less than 40K words of main memory to run. Very user friendly, the screen forms can be created and edited by the user interactively. Entering, changing or deleting data with DEMAND-92 is done interactively as well.

The system also provides for mathematical computations within a form and can subtotal and total for rows and columns.

DEMAND-92 operates in three basic modes:

**Design,** in which the user defines and creates the screens;
**Manage,** for inserting, altering and deleting data; and
**View,** allows user to examine forms and data without modification.

### Interfaces to 1022

Of particular interest to internal computer sites is the DEMAND-92 interface to SYSTEM 1022 allowing very large data management while using both sets of commands. This interface permits the SYSTEM 1022-user to use existing 1022 files or new 1022 files with DEMAND-92 forms. It has the ability to handle over 200,000 records. DEMAND-92 also offers file compatibility with ASCII, COBOL and BINARY files.

One Digital software specialist choose DEMAND-92 because it allowed him to put up screens without programming them in COBOL, BASIC or MACRO. "I was able to create screens in 30 minutes as opposed to the two days necessary for traditional programming."

Other features of DEMAND-92 include:

- Over 25 English-language commands available to the user in each of its three modes.
- Handles up to 31 video pages per form.
- Offers the user mutiple levels of password protection for forms and data files.
- Supports both fixed and variable length records.

Included with the license agreement is one year of free maintainence. Olamic also offers both a hotline and on-site support for installation and use.

For additional information about acquiring DEMAND-92, call DIS Purchasing at DTN 223-3147. Additional technical information can be obtained by contacting Thomas Gray at:

Olamic Systems Corporation
141 W. Jackson Blvd.
Suite A1
Chicago, Illinois 60604
312-786-1410

---

*(Continued from page 6)*

VAXTAP - A program for TOPS-10 systems that will read VMS ANSI labeled tapes.

COMLIB - A VMS command file library which implements a number of the more popular TOPS-20 commands.

Integration documentation:

- Documentation of the similarities and differences of TOPS COBOL and VMS COBOL.
- Documentation of the similarities and differences of more commonly used TOPS-20 and VMS user commands.
- Documentation on the similarities and differences of more commonly used TOPS-10 and VMS user commands.
- Documentation on the similarities and differences of general characteristics between TOPS and VMS.

In addition, plans are being made to provide machine readable copies of various integration related documents and manuals which Digital's documentation groups are producing. This is a joint customer-Digital effort: the size of the inventory is dependent on submissions from users and customers. So,

**PLEASE SEND TOOLS!**

# DIGITAL EXPANDS FIELD SUPPORT FOR VENDOR PRODUCTS

"The industry press has sized the Digital compatible market to include over 530 companies that produce hardware, software, maintenance services and consulting with over 1,500 products in a market experts expect to exceed $6 billion by 1985," says Will O'Brien, manager, Vendor Equipment Services group. "We estimate that about 25 percent of our customers have non-Digital equipment linked to their Digital systems. That equipment needs to be maintained, and when it serves Digital's and the customer's interest, we will now provide that service."

Digital's Field Service engineers are often asked by customers to service the non-Digital products—terminals, printers, plotters, disks and controllers—that are linked to the customers' Digital central processing units (CPUs). Customers do not want to be dealing with two, three or four service vendors; they want one vendor—Digital.

So in the past, local branch managers and Field Service engineers responded with individualized service plans for selected customers with mixed vendor systems. Demand for this kind of support has increased steadily during the last several years.

In September, Digital's Field Service organization introduced a world-wide program to service selected vendor equipment installed on Digital systems.

"The decision to offer mixed-vendor service to an account is made at the local level by a Field Service representative and the Sales Account manager on a case by case basis," says Will O'Brien. "If the choice is to provide support, the Field Service branch will use the service plan that has been developed for that specific vendor equipment."

A centralized library (Vendor Equipment Information System) of the various service plans provides branches with the detailed information needed to properly service another vendor's hardware. Each Field Implementation Plan includes a training element, information on spare parts and documentation for the maintenance and support of a product or set of products.

"If no service plan exists," says Will, "the branch will develop one to support the customer and submit it to the clearinghouse system we have set up in Stow (Mass.) on a VAX.

"The new program allows us to be more responsive to our customers' needs by providing one-vendor service at the level of quality that they have come to expect from Digital," continues Will. "Offering support for vendor equipment will ensure that Digital maintains its visibility and influence within key accounts that might have otherwise gone to third-party service vendors. It will also give the Sales force leverage on future add-on and upgrade business."

Today, local Field Service branches have access to the training, documentation, spare parts and support that enable them to service more than 35 products manufactured by other companies. These include Empex memory for KL10s; Printronix and Data Products printers; CDC and DSD disks; Fujitsu, STC Cipher, Kennedy tape drives; Emulex, System Industries, Briton-Less, Westpercorp controllers and Able communication equipment.

For more details on this program, please call Wayne Kataisto at DTN 223-1983. Future issues of BUY-LINE will publish success stories resulting from this expanded service.

---

# VENDOR EQUIPMENT SERVICES NOW AVAILABLE

It's official. Digital Field Service will support selected vendor equipment, both competitive and non-competitive, which is presently installed on Digital CPU's.

This expansion of services enables Digital to be more responsive than ever before to the needs of our customers and to meet head on the rising competition posed by Plug Compatible Manufacturers (PCMs) and third party maintenance organizations.

## How the Vendor Equipment Program Works

Early in FY83, Field Service began developing comprehensive service plans—called Branch Implementation Plans—on a selected menu of non-Digital products. Product selection was based on worldwide field demands and market research.

Copies of the plans were distributed to the field and also input to the central Vendor Equipment Information System. This reference library, located on the VAX in Stow, serves as a clearinghouse for all service plans. It enables Field Service Branch Managers or Sales Support personnel to look up and obtain a copy of any available plan they need.

When a mixed vendor situation arises, the Sales Account Manager and Field Service Representative decide jointly at the local level whether or not to offer service. They make their decision on a case-by-case basis; it does not represent an endorsement of the foreign product or Digital's blanket intent to service it in all cases.

If granting service is in the best interests of Digital and the customer, we then provide it, using the service plan

*(Continued on next page)*

# UPDATE ON ACCOUNT REVIEW PROCESS

## Forum for Integration Solutions

How can you help your DECsystem-10/20 customers implement the Integration Strategy while leveraging additional sales? By bringing your top accounts through an account review. Armed with information gained in a review, you can better advise your customer on how to protect their current investment while planning their growth with Digital products.

During a review meeting, held weekly in Marlboro, Mass., a team leader, account manager or technical support representative from the Field meets with Large System strategic and tactical Marketing representatives, an AMC revenue manager and an engineer. The commitee studies customer applications, their system uses and functionalities.

To coordinate an Account Review, call your AMC (Area Management Center) contact listed below:

| AMC Manager | AMC Contact | Large System Marketing |
|---|---|---|
| Chic Shue<br>Northeastern U.S. | Terry Riddle<br>264-3945 | Bob Todisco<br>231-4201 |
| Harvey Weiss<br>Mid-Atlantic/Southern U.S. | Oscar Boreth<br>231-8146 | Peter Gray<br>231-5829 |
| Dave Granger<br>Western/Central U.S. | Jim George<br>231-6858 | Ron Unsworth<br>231-2249 |

---

*(Continued from page 8)*

described. If no plan currently exists, the branch will develop one and submit it to the clearinghouse system.

In addition to the plans already available, Field Service will be adding a total of 50 more non-Digital product service plans across FY84.

The strategy behind Vendor Equipment Services is first to retain and/or regain account control by servicing a foreign option and subsequently, to displace that hardware with a Digital product.

### OEM System Service

One important variation of Vendor Equipment Services is intended to help increase Field Service's support for Digital OEM's. Through a special pilot program, one OEM has already contracted for this new service, called OEM System Service.

The agreement with 3PM, Digital's second largest COEM customer, encompasses total hardware system service for the OEM's DECSYSTEM-20/20 system. This is a mixed vendor configuration, consisting of an PDP-11/23 CPU and a foreign winchester disk drive subsystem. 3PM will sell approximately 500 systems prior to the avialability of a suitable replacement disk from Digital. Meanwhile, the Account Manager will develop a conversion plan to ensure that 3PM will move back to an all Digital solution.

### Joint Service Agreements

Another significant component of the Vendor Equipment strategy is our intent to enter into Joint Service Agreements (JSAs) with selected foreign equipment vendors. Already one such agreement has been consummated with Ampex.

A Joint Marketing Agreement (JMA) between Ampex and the LSM Marketing Group allows Ampex to market ARM-10LS MOS memory units on DECsystem-10 configurations as an alternative to Digital's MH-10 core memory. The corresponding Joint Service Agreement between Ampex and Field Service provides for service on the ARM-10LS when it is installed on DECsystem-10s.

Both OEM System Service and the Joint Service Agreement provide single-vendor service to our customers, and a cost-effective service solution for the vendors involved. At the same time they promote the long-range goals of Field Service by maximizing service opportunities and retaining or increasing system contract penetration.

### Internal and External Announcements

The Vendor Equipment Services strategy was presented during the Field Service Road Show in June and announced internally in Sales Update on August 15. Please refer to relevant articles in that issue for further details on program objectives, policy, procedures, products covered and competition.

# DIGITAL ASSUMES LEADERSHIP ROLE IN RECORDS MANAGEMENT

In the words of Dick Poulsen, Field Service vice president, the organization took "a giant step toward becoming a 'Complete Service Vendor'" with the opening of the first Records Management Centers in Burlington, Mass., and Chicago, Ill.

Intended to serve the Greater Boston and Chicago areas, the facilities provide safe storage for all types of customer media—magnetic tape, disk, microfiche, and paper—whether manufactured by Digital or not. The centers are approximately 40,000-square-foot facilities, equipped with state-of-the-art security, environmental-control and fire-prevention technology.

One of several new Field Service business start-ups planned across FY84, the sites are the mainstay of Digital's new Records Management Services (RMS) Program. And all are intended to position Digital as the first and only "Complete Service Vendor" in the computer industry.

"Digital is the first and only computer vendor to offer Records Management Services," said Dave Earley, RMS group manager. "Consequently, unlike anyone else in the business, we have years of experience in the safe handling and storing of media. We've simply been doing it for ourselves for so long."

*All media is transported in environmentally-controlled vans available 24 hours a day—7 days a week.*

When asked why Digital Field Service has chosen to offer Records Management Services, Dave explained: "Our strategy here is to bring more and more services to our existing markets as opposed to trying to pry open new ones. At the same time, of course, we realize RMS is also very likely to provide inroads into traditionally non-DEC hardware environments.

"Other companies may be doing some form of off-site media storage, but no one can compete with our thoroughness and technological sophistication."

Records Management Services provides secure, off-site storage and 24-hour, 7-days-a-week pick-up and delivery of any customer media. All media is transported safely in environmentally controlled vans. And in emergencies, Digital will respond to customer needs within three hours.

Digital technicians will also perform Media Maintenance at RMS Centers, thereby helping to avoid "crashes" and to ensure customer disks are clean and credible.

In a spacious, automated receiving area, center personnel classify customer media, using an electronic bar code system. They check and recheck bar codes both electronically and manually. Then, they place the media in a vault appropriate to media type. Tape vaults hold in excess of

(Continued on next page)

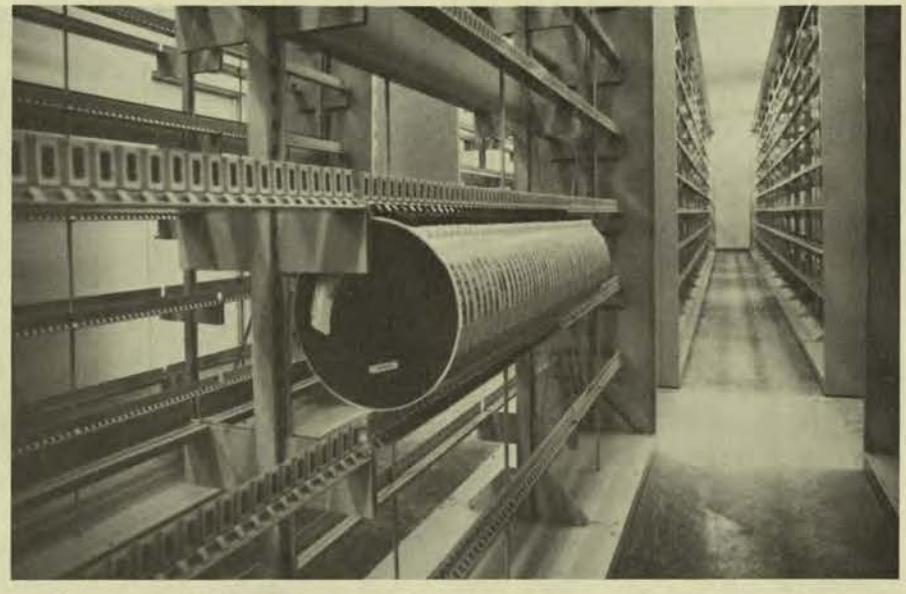
*Dick Poulson, vice president, Field Service, officiates at the opening of the first Records Management Center in Burlington, Mass.*

150 thousand tapes, while corresponding storage areas for disks accomodate 10 to 15 thousand units each.

All vaults boast electronic card readers, heat sensors and redundant alarm systems which tie into a central security location as well as to local fire and police departments. In addition, motion-activated TV cameras inside the facility provide a visual record of activity.

In the magnetic storage vaults, halon gas systems backed up by sprinklers provide for the extinguishing of fire—literally in minutes. And facility walls and ceilings are all steel-reinforced and two-hour fire rated.

"Taken together," continued Dave, "these services also show our intent as a service organization to go beyond conventional remedial hardware maintenance in order to adopt the more comprehensive goal of total customer support. To an increasing degree, we intend to support customers by sharing the risks they face in maintaining their computer environments. In fact, as I see it, when we speak of becoming a 'Complete Service Vendor' we are essentially talking about taking the 'Risk' out of Risk Management for our customers. To me, the two goals are one and the same."



*Vaults boast electronic heat sensors and alarm systems that tie into a central security location and local fire and police departments.*

Digital also offers customers a comprehensive selection of training courses and consulting services on data security, media handling, disaster planning and other topics related to Risk Management.

The Burlington and Chicago facilities are the first of four RMS Centers scheduled to open, one per quarter, across FY84. Soon to be online are facilities in Los Angeles (Q3) and Toronto (Q4), all of them securing to an even greater degree Digital's leadership role in Records Management.

# INTEGRATION PROGRESS REPORT

*Marilyn Davison, Marketing Analysis*

As we learn of accounts that have made progress in integration, Large System Marketing will document and disseminate reports on their advancements. Progress reports focus on successful integration plans that allow for growth and expansion using Digital products.

## UNIVERSITY OF TEXAS HEALTH SCIENCES CENTER

An account that is in the vanguard of customers in terms of planning and implementing integration is the University of Texas Health Sciences Center.

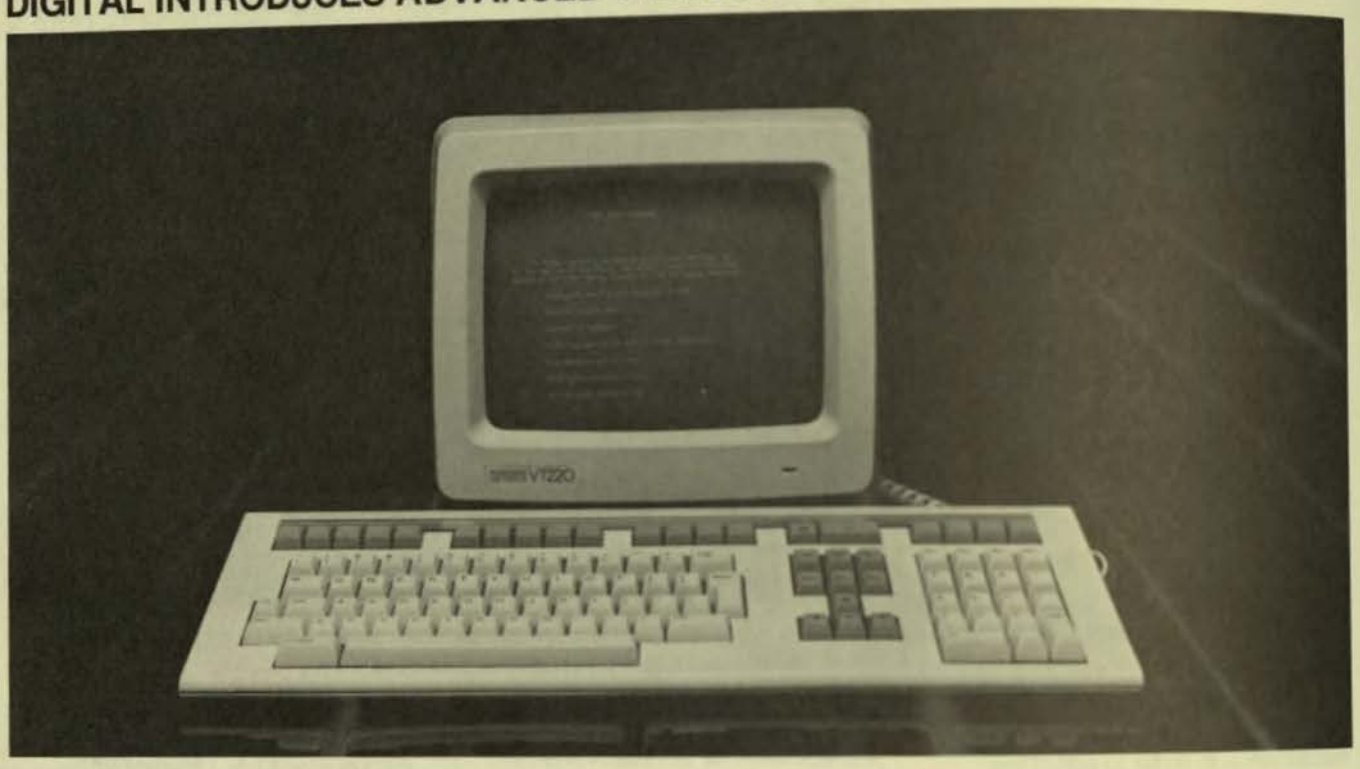
The Health Sciences Center currently has two DECSYSTEM-2060s installed and a third on order. The Center also has two VAX-11/750s and a PDP-11/44. All systems are connected via DECnet. There are approximately five hundred terminals including a number of personal computers accessing the systems using a MICOM switch port selector.

The account manager is Lary Brown. The customer is Dr. Claire Goldsmith, director of Computer Sciences, who also serves as the chair of the Large Systems DECUS Special Interest Group (SIG).

The account audit at Texas Health Sciences was considered very valuable by Dr. Goldsmith. Some system solutions suggested by the audit team helped the Center handle some of their applications more effectively resulting in real cost savings. The time and attention given the account by the Digital Audit Team made Digital's interest and commitment to the center and to satisfy its growth requirements visible throughout the University community.

Currently, Dr. Goldsmith says that the Center is planning to slowly move academic computing applications to VAX systems where appropriate and to continue to use the DECSYSTEM-2060s for administrative computing.

# DIGITAL INTRODUCES ADVANCED VT200 FAMILY OF TERMINALS



Digital has introduced a sleek new line of video display terminals with lower price tags and more functions than its best-selling VT100 terminals. The new VT200 video terminal family boasts three ergonomically designed models with features ranging from advanced text handling to both text and color graphic capabilities.

The VT200 family consists of the VT220, VT240 and VT241 models priced at $1,295, $2,195 and $3,195, respectively. Initial deliveries are immediate. The advanced features and aggressive pricing of the new terminal series will enable the company to increase its dominance in the terminals market.

The Terminal Products Group reports that customers and distributors have already indicated that they believe demand for the VT200 terminals will even surpass that of the VT100. Therefore, Digital is planning production capacity so that they can ship at least as many VT200s as VT100s during the balance of this fiscal year.

The production of VT100 terminals will continue for at least two years, longer if demand continues. The VT100, introduced in 1978, has become the industry's best-selling ASCII display terminal and spawned a huge emulation market. Digital has shipped more than a half million VT100 units.

VT200 terminals have full VT100 emulation capabilities. This enables customers to add VT200s economically to systems currently supporting VT100 terminals without changing software.

The new terminals are targeted for a variety of applications including data entry, office automation, electronic mail, interactive computing, communications, networking and business graphics. Markets include Original Equipment Manufacturers (OEMs), system integrators and end-users in business, engineering, medicine, laboratories and education.

**The family members**

- The VT220 terminal is a two-piece monochromatic text unit consisting of an ergonomically styled keyboard and 12-inch, nonglare monitor. The compact, wedge-shaped video monitor is available with white, green or amber screens and contains all logic circuitry.
- The VT240 terminal has all the text features of the VT220 plus bit-map graphics capabilities for business graphics applications. The monochromatic terminal supports two high-level graphics instruction sets: Digital's ReGIS (Remote Graphics Instruction Set) and Tektronix 4010/4014 graphics protocols.
- The terminal is a three-piece assembly with monitor, keyboard and system box containing the terminal's logic. Digital has available application software, such as DECgraph and DECslide packages, to support the graphics features of the VT240 terminal. A large number of commercial application pack-

*(Continued on next page)*

ages is also being developed by major third-party vendors.

- The VT241 terminal has the text and graphics features of the VT240 terminal with the addition of color display. It is a three-piece unit with a 13-inch, nonglare color monitor, system box and keyboard. The terminal features color RGB (red/green/blue) output to devices such as a color camera or auxiliary color monitor. It also has an optional, integrated modem that features auto-dial and auto-answer capabilities.

## New family features

VT200 terminals incorporate several new features plus many of the ergonomic attributes of Digital's personal computers, including compact size and advanced packaging. Monitor display features include reverse video and character highlighting—character brightness and screen contrast can be adjusted independently.

*The VT220 has a compact, wedge-shaped video monitor which contains all logic circuitry.*

*The VT240 supports Digital ReGIS and Tektronix 4010/4014 graphics instruction sets and protocols.*

Special function keys on the 103-keyboard are host-programmable to define an operation or command with a single keystroke. Keys can be custom labeled for each application. Downline-loadable special character sets for Greek letter, mathematical symbols and other characters customize the terminal for operations such as APL programming.

If the same image is displayed for 30 minutes, a CRT "saver" blanks the screen to extend tube life. Any single keystroke recalls the blanked image.

Each model is available with a choice of 16 different language keyboards. Additionally, any of 256 multinational characters can be composed from any keyboard. All VT200 terminals have a printer port, EIA and 20mA communications interfaces and a universal power supply.

## READY.

## AIM.

## FIRE.

We have a known message.
A clearly defined audience.
And a direct-mail program to get the message to the audience.

Beginning in early January and on an average of every three to four weeks, a highly-creative, attention-getting message about some high-end product development will be mailed to select customers and Digital Sales representatives throughout the world.

The message subject and sequence of mailing are:

| Sequence | Subject | Audience | Complete Info In |
|---|---|---|---|
| 1 | Price changes and special VAX/2060 packages | U.S. | Jan. 2 Sales Update Oct./BUY-LINE |
| 2 | KL10 electro/mechanical improvements | U.S. & Canada | Dec./Jan. BUY-LINE |
| 3 | TOPS-10 PSI Gateway Certification | U.S. & Europe | Aug 83 BUY-LINE |
| 4 | VMS V4.0 | Worldwide | TBA |
| 5 | Cache and Pager Enhancements | Worldwide | TBA |
| 6 | U.S. DECUS Review | U.S. | TBA |
| 7 | New VAX Product | Worldwide | TBA |

These mailers will be short teasers designed to arouse interest. The call to action in each announcement will be to "call your local Sales representative."

The Sales force will be receiving copies of each mailing piece at the same time distribution to customers is being made. For more details on a product announcement or enhancement, look for the publications listed in the reference column of the schedule table in this article.

We are making progress in integration. This is one program for telling everyone about it.

# LITERATURE REVIEWS

Available fact sheets and brochures featured at DECUS

**COBOL-20 Version 13** software data sheet lists all the added enhancements in programming techniques and practices of this latest version of TOPS-20 COBOL. Tables in the brochure include proposed standards supported by COBOL-20 v.13; extensions to ANSI-74 COBOL; and conformance with ANSI-74 standards.

Other sections detail compiler and system features, the simultaneous update facility, enhanced RMS file handling, sort/merge, report writer, debugging COBOL programs and FIPS flaggers.

The data sheet also lists available documentation and optional software. *To order, the part number is EA 25860 57.

**Track Software Changes Without Tracking Them Down** is a Large System Marketing brochure on the Code Management System, DEC/CMS, written for TOPS-20 and VAX customers. The piece focusses on the problems behind tracking a software development project. The copy stresses the important role of the "librarian" that keeps an account of everything that happens to a program while it is being written—every modification.

The specific benefits of DEC/CMS and the productivity issues around software development are addressed in a positive and solution-oriented manner. *To order, the part number is EA 25362 61.

**DEC/CMS-20** software data sheet highlights and describes Digital's Code Management System that helps manage and control files of an ongoing software development project.

*(Continued on next page)*

# DOCUMENTATION DIRECTIONS FOR INTEGRATION

*Susan Porada, Software Publications*

Marlboro Software Publications is extending its documentation to address the needs of customers in an integrated, multi-system environment. The documentation on the following issues are planned:

- Language Compatibility and Transportability
- Network and Data Management Usages
- System Commands and Utilities Comparisons
- System Management and Operational Differences

The documentaion listed below is currently available. Customers may place orders through their local Digital Sales office. Employees must place orders through the Software Distribution Center (SDC) using an Internal Software Order form, that may be obtained at stationary supply.

**FTS-20 Reference Manual AA-M252A-TM**
FTS is a network file transfer spooler that allows users to transfer files between TOPS-20 and other DECnet nodes that have network file access capabilities. FTS can also be used to transfer files within the local node. The spooler allows both queued and immediate mode file transfer requests.

**DIL User Reference Manual AA-M581A-TK**
The Data Interchange Library is a set of callable subroutines that COBOL and FORTRAN programmers can use to transfer data between TOPS-20 and VAX/VMS systems. TOPS-10 users can also use DIL to perform data conversion on certain types of data.

**Digital Networking Pocket Guide AV-N956A-TK**
This pocket guide provides information on basic commands and programs the unprivileged terminal user can use through the network. It describes networking products on the following systems: IAS, RSTS, RSX-11M and RSX-11S, RT, TOPS-10, TOPS-20 and VAX/VMS.

**FORTRAN-10/20 and VAX-11 FORTRAN Compatibility Manual AA-Y868A-TK**
This manual describes the similarities and differences between FORTRAN-10/20 version 7 and VAX-11 FORTRAN version 3. This manual is intended for users who may want to transport FORTRAN-10/20 programs to a VAX-11 computer or transport VAX-11 FORTRAN programs to a DECSYSTEM-10/20 computer.

**TOPS-20 PASCAL Language Manual AA-L315A-TM**
This manual includes an appendix that summarizes the differences between PASCAL-20 version 1 and VAX-11 PASCAL version 2.

Other publications are currently in planning and development stages. These publications are:

- COBOL Compatibility
- Network File Transfer
- TOPS-10/TOPS-20/VAX/VMS Commands

*(Continued from page 14)*

# LITERATURE

Each DEC/CMS-20 subcommand, invoked from the TOPS-20 command level, is described in a brief and consise paragraph. *The part number is EA 25444 61.

**Coupling Processors with DECnet, FTS-20 and DIL** is a marketing brochure introducing Digital's network software and software tools. Computer networks allow users to transfer messages, share information and intergate power of individual systems through the use of shared CPU resources.

This piece of literature gives an overview of DECnet, Digital's network software, which serve as a communications interface to FTS-20 (File Transfer Spooler) and DIL (Data Interchange Library) to share resouces between DECSYSTEM-20 mainframes, VAX/VMS systems and PDP-11 processors. Both software tools are described with highlights of their key features.

** To order, the part number is EA 29959 57.*

**FTS-20** software data sheet details this network File Transfer Spooler for the DECSYSTEM-20. FTS-20 facilitiates communication of information by allowing a user to transfer files between systems in a DECnet environment, including DECSYSTEM-20, VAX and PDP-11 nodes.

The fact sheet highlights FTS-20's features as a file transfer progam and functions practical only in a spooled environment. The procedure for queued and immediate requests is described as well as the construction of FTS commands. There is also a brief explanation of the system security measure in FTS-20. *The sheet's part number is EA 25862 57.

** Publications are available from your local literature contact or through Jane Fitzgerald at P&CS in Northboro, DTN 234-4325, Mailstop NRO2-2/W3. RCS Code is NR12.*

# PREVIEW OF DECISION SYSTEMS BROCHURE

To help Sales reference sell DECision Support Systems, a new brochure has been designed, targeted for management of large system accounts. The brochure will be available mid-Q3.

In the literature, five Digital customers, all managers in Fortune 100-level accounts, discuss how they have used Digital computer systems to turn data into information for professional end-users within their corporations and institutions.

The accounts profiled in this brochure are Chase Manhattan Trust Co., Morgan Guaranty Trust Co., Abbott Laboratories, R.J. Reynolds Co., and Johnson & Johnson.

As a preview, the following excerpts from the brochure are on Chase Manhattan, Johnson & Johnson and R. J. Reynolds. If there are any question about DECision Systems, please call Jim Higgins at DTN 231-5385.

## Chase Manhattan Bank

Chase Manhattan Bank, the third largest bank in the United States, provides a broad range of financial services to individual and business customers and has a presence in over 100 countries.

Within the bank, the Corporate Industries Sector (CIS) serves the financial needs of U.S. and multi-national corporations.

The CIS group comprises more than a dozen line divisions which support major industries and do the major corporate lending for the bank. A Digital VAX-11/780 is used throughout CIS to distribute information collected from various transactional systems within the bank. This information is used to help manage the day-to-day operations of each division.

According to Dennis Routledge, Vice President in the Corporate Industries Sector, "It used to be that the common complaint of the management of Corporate Industries Sector was that they didn't have information available to give them a handle on what the marketplace looked like. Or what their earnings looked like.

"In an organization this size, the biggest problem is getting access to your data in a format you can deal with. Management wanted information that could help them formulate their business plans. That's what started us on the VAX," continues Routledge.

"We use the system to provide the various levels of management with on-line information on their individual markets. It also gives our relationship managers up-to-date market data which helps them know more about their customers."

Routledge says the majority of users within the various industry groups access information relative to their specific industries. "As an example, in our Public Utilites Division we have a MAPS modelling package that runs on Digital's Professional 350 personal computers and on the VAX. We've written a system in MAPS that allows users to input all the gas and electric companies around the country with their income statements, cash flows, and other pertinent financial data. Users can generate a series of individual reports based on that data which helps them assess the risk for any individual company in carrying new debt."

Users in Administration, Marketing, Finance, Personnel and other groups have access to information for all divisions. "Users can respond to requests for specific information from senior management in the industry divisions and the sector. For instance, Marketing has an executive support system that lets all the divisions see how well they are meeting their goals set the previous year. It's a tool for management to be sure that we're emphasizing the customers we said we would in our business plan," says Routledge.

The third class of users includes systems personnel who help manage the system and perform special studies for the line divisions.

"We chose the VAX for a number of reasons," says Routledge. "One was the size, because we needed a bigger system. Another was the telecommunications capabilities that let us hook just about any kind of terminal or personal computer we want to the VAX. Another factor was the ease-of-use to manage the system and the fact that we would not have to upgrade our systems people."

"The final reason is that there's a tremendous amount of software available for the VAX in the third party sector. We know that whatever we want to do, there are products available that will run on the VAX."

"The biggest benefit of the VAX is the ability to service more of our user base. We have over 350 users on the system and we've only had it running for about a year. We believe that total will double over the next 12 months. As part of a national expansion, we hope to provide access to product information to all our regional marketing offices around the country."

*(Continued on next page)*

*(Continued from page 16)*

He concludes, "The next thing we'll bring in on the VAX is Digital's ALL-IN-ONE package." ALL-IN-ONE will let users choose from a complete range of office applications, including word processing and electronic mail, from a menu displayed on the user's terminal or personal computer."

## Johnson & Johnson

Johnson & Johnson is a family of over 150 companies that range from leaders in consumer products to pharmaceutical innovators to companies that market products for professional health care.

At the Management Information Center, a division of Johnson & Johnson Corporate in New Jersey, a configuration of three DECsystem-10 computers helps service the timesharing needs of a number of J&J affiliates around the world.

Ongoing development of new and improved products is key to J&J's success. Clinical analysts, statisticians, chemists, doctors and other researchers produce and manipulate large volumes of research data, used in the analysis of new products. The DECsystem-10 computers are used primarily to store and analyze data in support of the scientific community in J&J companies.

According to Ralph Bradshaw, Director of Advanced Technology at J&J, the system is also used to handle production scheduling and quality assurance work. "We've written decision support systems that are used by many companies to optimize use of their manufacturing machinery. The system helps reduce waste and utilize equipment in cost-effective ways. It helps managers make decisions on product mix, scheduling and machinery maintenance. Manufacturing professionals from the companies dial-in to the DECsystem-10 and run the programs that help them make the best decisions to improve the manufacturing process."

There are also marketing applications on the system. A Canadian subsidiary uses a decision support system on the DECsystem-10 to analyze television rating figures and examine the effects of the company's promotional activities. Says Bradshaw, "It is very cost-effective for our users. We have a rich assortment of software, so our users can get the computer support they need and pay for it only when they use it. We offer timesharing internally for probably less than 50 percent of what it would cost outside."

J&J purchased their first DECsystem-10 over a dozen years ago when useage of outside timesharing was growing rapidly and had become a significant expense to the corporation. Bradshaw recalls, "In 1971, I put together a proposal to purchase our own timesharing system and, after a thorough evaluation, we bought our first DECsystem. We grew so fast that by 1976 it was time to upgrade the DECsystem, so we decided to take a second look at the other vendors.

"We found that some of the companies we had looked at earlier had gone out of the timesharing business and the others had made no significant changes to their timesharing offerings, while Digital had made significant improvements. We felt reaffirmed that we had made the right decision back in 1971."

J&J added a second DECsystem-10 in 1978 and a third in 1982. Now, the system has over 1,500 accounts coming in over direct dial, leased lines and the Tymnet* communication system.

In addition, to satisfy the financial information requirements of upper management, the Management Information Center recently purchased a VAX-11/780 to be used for an executive support system. Says Bradshaw, "The executive support system we're putting together will be used by the chief financial officers of the corporation. It will present them with key financial data they can use to fill requests for information on J&J operating companies. In the past, executives had to shuffle through detailed financial reports. The new on-line data base system will make it easier and faster for management to access that information."

The executive support system on the VAX will provide "passive or status ad hoc query" techniques. Those executives who will be using the system will not do financial modelling themselves, so the system is being designed to concentrate on features that enhance data base reference rather than data base manipulation.

Data on the VAX will be obtained from several other corporate sources, including IBM data processing systems which also communicate with the DECsystem-10 computers. When the system is fully operational, the DECsystem-10 computers will communicate with the VAX via DECnet.

*(Continued on next page)*

**Tymnet is a trademark of Tymshare, Inc., Freemont, California.*

*(Continued from page 17)*

## R.J. Reynolds Tobacco Company

The R.J. Reynolds Tobacco Company, a subsidiary of R.J. Reynolds Industries, is one of the world's leading tobacco products manufacturers. Headquartered in Winston-Salem, North Carolina, RJR markets over 27 brands of tobacco products, including cigarettes and smoking and chewing tobaccos.

To increase decision making efficiency in a rapidly changing product environment, the Marketing Development Department at RJR needed to provide quicker access to information and analyses. To accomplish this, they chose an in-house timesharing system and the DECSYSTEM-2060.

Lee Yancey, Marketing Decisions Systems Manager, explains what made the DECSYSTEM-2060 so attractive. "We were looking for a timesharing computer with a data base management system that could handle our large data bases and could provide fast response and easy retrieval. We were also looking for a system that would help reduce our outside timesharing costs since we were spending close to three-quarters of a million dollars on outside timesharing. After thoroughly evaluating what was on the market, we chose the DECSYSTEM-2060."

The Marketing Development Department uses the system in three major areas: quantitative research, forecasting and data reporting and analysis. Statistical packages are used to develop and evaluate product tests, sales and merchandising programs, consumer research, and, for model development. Operational groups within the marketing area also use the system's modeling and retrieval capabilities for producing pre-defined and ad-hoc reports for decision making.

Yancey says, "We call the DECSYSTEM-2060 a Marketing Decision System. It lets us generate reports that are used within marketing for media and brand planning and for selecting test markets." The DECSYSTEM-2060 is also used to analyze sales volumes and market performance, compare current with past trends and prepare reports on customer shipments, as well as to provide market analysis data for new cigarette brands planning.

The DECSYSTEM-2060 at RJR helps turn research data into decision making information. Data is updated and manipulated on-line, so the users know that their marketing information is always current. "The timeliness with which users can get their applications in and out of the system is one of the biggest benefits of the DECSYSTEM. The timeliness of our data is what makes our marketing information so important," says Yancey.

Market performance is used by management and staff to support strategic decision making. "These are the kinds of reports that top management is interested in so they can see instantly what the current state of the business is," says Yancey.

"In addition, we use graphics so users can see trends and patterns at a glance, he continues". Graphics are used by management and marketing research analysts as an easier way to understand information than by reading through long reports.

Graphics are practical even for RJR's novice users because of the ease-of-use of the DECSYSTEM-2060 and the graphics applications packages. "It doesn't take a programmer to draw graphs. The system has a lot of flexibility so a novice user can get from the data base to the graphics packages in a very simple process.

"The majority of our users are non-technical professionals. We conduct two to four-hour training sessions where we show new users how to log on, use the editor and create files. From there they can generally continue on their own with very little support from us," says Yancey.

In addition, RJR is currently implementing an Executive Decision System for the senior level executive. It will provide ready reference reports, query reports (for more details) and spread sheets to enable data manipulation.

# IDECUS FALL SYMPOSIUM REPORT

## Ed Kramer stresses value of the end-user

Personal computing, factory automation, satellite communications and the latest and future VAX/VMS products were presented to over 2,000 Digital employees, representing Digital computer users from all over the company at the Internal DECUS' Fall Symposium last November. Featured at the symposium were over 50 sessions designed to inform internal users about the latest products, technologies and training opportunities.

As one of the key speakers, Ed Kramer, vice president, Corporate Marketing, said, "One of Digital's best secret weapons is its own internal users." He explained that Digital's own people are in the best position to understand how the full range of Digital's products can be implemented to meet business needs. Ed urged more widespread use of products internally to further support Corporate Marketing.

He continued by pointing out how many employees, especially through groups like DECUS and IDECUS, play a vital role in influencing Digital's product development, and he encouraged them to continue to provide feedback to engineering. Addressing the internal users, he said, "You are and should be the most vocal critics of our product developers. You should continue to demand the type of excellence you really believe we should have in our products. You must get developers to equip you with what you need to get your job done."

Ed Kramer illustrated how internal users' ideas have been turned into corporate products. He urged employees to be agressive in promoting their creative ideas and internal applications to marketing groups. He said, "You should push our marketing people to promote these ideas outside of Digital. Some of our most exciting products such as EMS and ALL-IN-1 have come from inside the company."

Much of Ed's talk focused around Corporate Marketing functions. He presented an overview of the six Marketing groups and explained how products are developed and finally delivered to market.


*Before the symposium, IDECUS and the Northeast Sales Region opened the exhibit hall and sessions to some 500 customers.*

The exhibit hall featured the latest products including Rainbow, DECmate, PRO350, IVIS, a complete VAXcluster, the new VAX-11/725, Micro VAX I and MICRO/PDP-11. Internal service groups were well represented from Software Services, Field Services, Internal Equipment Group, Publishing and Circulation Services, Advanced Information Systems and Advanced Application Services.

The sessions included presentations on such topics as VAX product futures and development, the new VT200 family of terminals, external research projects, Computer Integrated Manufacturing, the Corporate Network Program and the Corporate Electronic Mail System.

A videotex program, produced by Printing and Circulation Services and the Communication Marketing Group, ran on the PRO350 in three areas of the symposium. Its videotex program provided attendees with information about sessions, hotel layout, program updates, Digital Interest Group activities and demonstrations.

*Over 2,000 Digital employees attended the Fall IDECUS symposium.*

If you are interested in a copy of the symposium session abstracts with speakers' names, please write: Internal DECUS at VRO3-3/B9 or send a memo via DECmail to Sophia Tsonis at Virginia Rd., Concord, VRO.

Prior to the two-day symposium, Internal DECUS and the Northeast Sales Region organizations presented a sales symposium and customer show. Some 500 customers attended breakout sessions toured the exhibit hall. According to the N.E. region, several leads were generated which are expected to result in over $2 million worth of business.

# NEW TO LARGE SYSTEM MARKETING

*Tom Blinn, principal technical support specialist*

*Kathy Rosenbluh, senior technical support specialist*

**Thomas Blinn** is a Principal Technical Support Specialist in Large Systems Marketing's Technical Support group. Before joining Digital, he worked at Bankers Trust Company in New York, where he provided technical support for internal timesharing on the bank's three DECSYSTEM-20/60 computer systems. Tom has a doctorate in statistics and undergraduate training in chemistry.

*Scott Cramer, marketing communications specialist*

**Scott Cramer,** the new editor of Large Systems News, has been with Digital two months. He comes from Yankee Magazine and the Middlesex News, a local Massachusetts daily newspaper. In addition, he has written for numerous other publications. Prior to that, Scott worked as a high school chemistry and math teacher. Scott has a BS in Chemistry from Tufts University. He is now a marketing communications specialist with Large Systems Marketing.

**Christine Medeiros,** the new editor of BUY-LINE, has been with Digital for three and half years. She comes from Corporate Employee Communication where she was associate editor of DECWORLD, Digital's worldwide employee magazine, and MGMT MEMO, a monthly newsletter for supervisors. Before that, she was editor of Digital This Week, employee newsletter for New England. Christine has a degree in magazine and photo-journalism from Boston University. She is now a marketing communication specialist for Large System Marketing.

*Christine Medeiros, marketing communications specialist*

**Kathy Rosenbluh,** Senior Technical Support Specialist for Large Systems Marketing, has been with Digital for two and half years. Prior to joining LSM, Kathy was a senior software specialist providing worldwide back-up support via the hotline and doing code maintenance for TOPS-20. Kathy has previous experience in applications programming and operations management. Her academic background is in medieval history, in which she has a B.A. from the University of Chicago.

# OFFERINGS FROM EDUCATIONAL SERVICES SEMINARS

The following seminars are of special interest to sales and field personnel and LSM customers. For more information or to register, call the Seminar registrars indicated below with the specific seminar dates.

**Software Engineering: A Professional Development Seminar**

This three-day seminar presents significant advances in software development methodologies that result in the timely and cost-effective production of high-quality software systems. The seminar is primarily technical and intended for persons with two to five years of software development experience and some management experience. The seminar covers requirements analysis, specifications, design, implementation and other issues relating to the software development environment.

January 24-26, San Jose, CA;
Registration: DTN 249-4949

**TOPS-20 System Performance Management**

This lecture, discussion and workshop is designed to help maximize the return on your DECSYSTEM-20 investment. It introduces the basic concepts of performance evaluation; examines common performance bottlenecks; and presents specific ways to improve your system. In addition, this seminar presents performance implications and tradeoffs involved in using various programming techniques and practices.

January 24-26, Dallas, TX;
Registration: DTN 249-4949

**Disaster Recovery Planning**

This seminar will focus on a practical approach to disaster recovery planning and preparedness. The course is largely based on the seminar leader's experiences in overcoming serious emergencies while he was a data center manager and a computer security consultant. Participants will be given numerous tools and forms to aid in identifying data center problems and developing their own recovery plans.

As a special highlight, the seminar will provide information on newly-available recovery and vital records protection services designed especially for users of Digital's systems.

January 25-27, Boston, MA;
Registration: DTN 249-4949
February 8-10, Schaumburg, IL;
Registration: DTN 249-4949

**DECnet Protocol Analysis**

This seminar offers an in-depth view of the Digital Network Architecture (DNA). Participants will be able to follow various protocol specifications, completely interpret any of the protocol messages and identify any unusual situations. This seminar provides a comprehensive overview of the DNA network architecture, clearly identifying the functions performed at each level.

Attendees will learn how to:

- identify the protocol message exchanges under both normal and error conditions;
- decode each protocol message, highlighting the important fields and their significance;
- discuss the use of the CRT data analysers and software traces to capture the protocol messages; and
- examine actual protocol exchange sequences.

Prerequisites: Training and experience in basic data communications concepts, DECnet network usage and programming.

February 6-7, Newport Beach, CA;
Registration: DTN 249-4949

**Database Technology: The Key to Software Productivity**

This three-day seminar will provide a thorough overview of the basic concepts of data models and the physical organization of databases. An important part of the seminar will be a comparison and contrast of the three significant database models: relational, CODASYL and hierarchical. The participants will thoroughly understand distributed database systems and application design. The seminar will also discuss the evaluation and selection of DBMSs.

February 7-9, Lanham, MD;
Registration: DTN 341-2580

**DECnet/RSX Internals**

This seminar presents the implementation details of the Digital Network Architecture (DNA) under the RSX/11S/M/M-PLUS systems. Attendees will learn about the interface between the RSX executive and the DECnet software. They will also learn to use the listings effectively in order to confirm and extract information within minutes rather than hours.

Prerequisites: Training and/or experience in MACRO-11 programming, RSX/11S/M/M-PLUS Internals, DECnet/RSX network usage and programming and DECnet protocols.

February 8-10, Newport Beach, CA;
Registration: DTN 249-4949

**Networking: Architectural Concepts with Examples of Computer Communications Networks**

This three-day technical seminar is for anyone involved in the design, use or selling of networks. The state-of-the-art presentation covers fundamental concepts, technology and practical implementation of computer networks. It includes a thorough discussion of network architectures, components and structures with a focus on complete network design.

February 13-15, San Jose, CA;
Registration: DTN 249-4949

**DECnet/VAX Internals**
This seminar presents the implementation details of the Digital Network Architecture (DNA) under the VAX/VMS system. Attendees will learn about the interface between the VAX/VMS executive and the DECnet software. They will also learn to use the listings effectively in order to confirm and extract information within minutes rather than hours.

Prerequisites: Training and/or experience in VAX/VMS MACRO programming, VAX/VMS Internals, DECnet-VAX network usage and programming and DECnet protocols.

February 14-16, Boston, MA;
Registration: DTN 249-4949

**Network Analysis and Design Workshop**
This three-day seminar presents modern techniques for supporting network design decisions. It covers issues related to:

- proper hardware and software selection,
- network analysis techniques,
- network performance planning and design,
- several-node network design including cost and performance requirements,
- network application considerations and
- correct interpretation of performance measurements.

Numerous case studies are used to illustrate network design problems for both simple and complex networks as well as corresponding problem-solving techniques.

Prerequisites: Technical training and/or experience in network usage, network management or network applications analysis and programming.

February 20-21, Cherry Hill, NJ;
Registration: DTN 249-4949

**Engineering for Software Excellence**
This seminar introduces the essentials of an effective new approach to software quality. It shows the participants how to apply both commonsense and modern quality-control methods to the process of engineering software.

The seminar will teach attendees how to:

- define the quality of their organization's software products and services;
- plan quality into software from the very beginning;
- begin measuring and controlling the quality of their products and services;
- achieve greater productivity of software developers by putting more emphasis on the quality of their work; and
- institute a technical review process which provides the benefits of both early problem discovery and prevention.

February 20-21, Burlingame, CA;
Registration: DTN 249-4949

**Structured Testing: Improving Software Reliability, Maintainability and Quality**
This seminar presents techniques and methods that consistently improve the reliability and maintainability of software projects. Attendees will learn how to:

- develop a complete test plan;
- thoroughly test specifications, design and code;
- test the effects of modifications; and
- define and enforce testing and maintenance standards.

Participants are encouraged to bring with them examples of operational software to be analyzed with the testing and modularization techniques presented in this seminar.

February 21-23, Houston, TX;
Registration: DTN 249-4949

**Network Trouble-shooting Seminar**
This seminar presents the latest techniques used for trouble-shooting network problems in complex DECnet networks. The seminar introduces major hardware and software tools available for network trouble-shooting and demonstrates their use in several selected case studies. The seminar covers the complete trouble-shooting cycle from problem identification to problem resolution. Following a three-step logical procedure, the attendee will determine when a system problem is a network problem, isolate the network component(s) responsible for a problem and systematically approach resolution.

Prerequisites: Technical training and/or experience in network software and/or hardware technical support, network management for DECnet networks or programming for complex network applications.

February 22-24, Cherry Hill, NJ;
Registration: DTN 249-4949

# LSM COORDINATORS

## NORTHEAST DISTRICT

| | | | |
|---|---|---|---|
| Metro Boston | Joe Castellani | Waltham (WAO) | 221-5490 |
| New England | Pat Miller | Burlington (OFO) | 274-6841 |
| Conneticut | Gardner Mason | Meriden (MDO) | 255-5307 |
| Upstate NY | Pete Lilley | Rochester (RCO) | 252-2322 |
| NAAD | Mike Maione | Burlington (OFO) | 274-6736 |
| (Norteastern Account Applications District) | | | |

## CENTRAL DISTRICT

| | | | |
|---|---|---|---|
| Chicago | Helen Godfrey | Rolling Meadows (RLO) | 421-5660 |
| Mid America | Nari Bawa | St. Louis (STO) | 314-991-6400 |
| Great Lakes | Scott Benson | Detroit (FHO) | 313-348-8900 |
| No. Central | Frank Delmont | Minneapolis (MPO) | 612-853-9605 |

## SOUTHERN DISTRICT

| | | | |
|---|---|---|---|
| Southeast | Ed Janusz | Orlando (ORO) | 305-660-2100 |
| Mid South | TBA | | |
| Charlotte | Cliff Spatz | Chapel Hill (NCO) | 919-493-2531 |
| Houston | Lary Brown | Dallas (DLO) | 214-620-2051 |

## WESTERN DISTRICT

| | | | |
|---|---|---|---|
| Santa Clara | Sandy Mingia | Santa Clara (WRO) | 521-2484 |
| San Francisco | TBA | | |
| Rocky Mtn. | Bill Krause | Denver (DVO) | 553-2214 |
| Northwest | Ron Quarles | Seattle (SEO) | 206-453-5500 |

## NY/NJ DISTRICT

| | | | |
|---|---|---|---|
| NY Comm. | Alan Vitolo | One Penn Plaza (NYO) | 333-3913 |
| NY Tech. | Ned Barber | Westchester (WHO) | 333-3940 |
| New Jersey | Mike DePasquale | Piscataway, NJ (KYO) | 323-2383 |
| NJ Comm. | Pete Buttacavoli | Piscataway, NJ (KYO) | 323-2465 |

## SOUTHWEST DISTICT

| | | | |
|---|---|---|---|
| So. California | TBA | Costa Mesa (CWO) | 714-979-2460 |
| Los Angeles | Frank Calderon | Culver City (LAO) | 213-417-4351 |
| Albuquerque | Bob Hughes | Albuquerque (AQO) | 552-3021 |

## MID ATLANTIC DISTRICT

| | | | |
|---|---|---|---|
| Washington | Clyde Blassengale | Washington D.C. (DCO) | 341-2615 |
| Maryland | Clyde Blassengale | Washington D.C. (DCO) | 341-2615 |
| Philadelphia | Deane Curran (acting) | Pittsburgh (PTO) | 422-2250 |
| Ohio Valley | Jim Fate | Columbus (CSO) | 614-868-1900 |

| EUROPE | | | |
|---|---|---|---|
| BELGIUM | Roland Matthys | Evere (BRO) | (32)-(2)-2425095 |
| ENGLAND | Geoff Beacroft | Reading (REO) | (44)-(734)-868711 |
| DENMARK | David Barlow | Gentofte (DMO) | (45)-(2)-889666 |
| FINLAND | Lars Lindstrom | Espoo (FNO) | (358)-(0)-423511 |
| FRANCE | J-L Delafraye | Rungis (PAO) | (33)-(1)-6872333 |
| GERMANY | Erwin Weiss | Munich (RTO) | (49)-(89)-95910 |
| NETHERLANDS | G. van Ruiten | Utrecht (HOO) | (31)-(30)-631222 |
| NORWAY | Alan McDowell | Oslo (NWO) | (47)-(2)-160290 |
| SWEDEN | Cyril Malm | Solna (SOO) | (46)-(8)-7300200 |
| SWITZERLAND | Urs Hainfeld | Petit Lancy (OUO) | (41)-(22)-713434 |
| | J-P Mueller | Kloten (ZUO) | (41)-(1)-816911 |
| | Bob Taylor | Geneva (GEO) | (41)-(22)-933311 |
| | Norman Valentine | Geneva (GEO) | (41)-(22)-933311 |

To make corrections, deletions to either list of coordinators, please contact Carol LeBlanc at DTN 231-2613 or 617-467-2613 or via EMS.

# LSM LITERATURE LIST

EDITOR'S NOTE: You may order these publications by contacting Jane Fitzgerald at P&CS in Northboro. The DTN is 234-4325. Mail stop is: NRO2-2/W3. RCS code is NR12 (for telexes).

You may order new LSM Literature via your SCC (Sales Communications Center) Specialist. The Literature List in BUY-LINE will asterisk the very latest items.

If you find an item to be out of stock or incorrectly numbered, please phone Gail Breslin at DTN: 231-4013, and she'll try to help you out.

ATTENTION ! ! ! This list (and order numbers) supersedes all prior lists.

**HARDWARE OPTION BULLETINS**

| | |
|---|---|
| CD20 Card Reader | ED 23999 61 |
| DN20 Communications Front-End Subsystem | ED 20504 26 |
| DN200 Remote Station | ED 22987 61 |
| IDX-3000 Integrated Digital Exchange (Linkabit Switch) | EC 24075 61 |
| LP20-A/B Line Printer Systems | ED 19137 26 |
| LP20-C/D Line Printer Systems | ED 19135 26 |
| LP100-F/H Line Printer Systems | ED 19677 26 |
| LP200-B Line Printer System | ED 24013 61 |
| TU72 Magnetic Tape Subsystem | ED 19763 26 |
| TU77 Magnetic Tape Subsystem | ED 17400 26 |
| TU78 Magnetic Tape Subsystem | ED 23003 82 |

**SOFTWARE DATA SHEETS**

| | |
|---|---|
| APL-SF-10 | ED 24841 61 |
| BASIC-PLUS-2 | ED 18885 26 |
| BLISS-36 | EA 25859 57 |
| COBOL-20 | EA 25860 57 |
| CFS-20 | EA 25526 61 |
| DEC/CMS-20 | EA 25444 61 |
| CPL | ED 15659 63 |
| DECmail/MS | ED 24000 61 |
| DECnet-10 Phase III | ED 24056 61 |
| DECnet-20 Phase III | ED 22835 61 |
| DBMS-10 | ED 21782 81 |
| DBMS-20 | ED 21827 61 |
| FORTRAN-10/20 V.7 | ED 24054 61 |
| FTS-20 | EA 25862 57 |
| IBM RJE E/T | EC 24057 61 |
| IQL | ED 15660 63 |
| PASCAL-20 | EJ 24759 61 |
| TOPS-20 PSI Gateway | ED 24053 61 |
| TOPS-20 System Software | EA 25861 75 |
| TOPS-10 V7.02 | EZ C5532 44 |
| TOPS-20 V6.0 | EA 25445 61 |

**TECHNICAL SUMMARIES**

| | |
|---|---|
| DECSYSTEM-10 Technical Summary | EE 21041 26 |
| DECSYSTEM-20 Technical Summary | EA 20415 18 |

**PHOTO BULLETINS**

| | |
|---|---|
| DECsystem-10/20 Fact Sheet | EJ 19596 26 |
| DECsystem-10 Family At A Glance | EJ 19595 26 |

## LSM BROCHURES

| | |
|---|---|
| Coupling Processors with DECnet, FTS-20, and DIL | EA 29959 57* |
| Track Software Changes Without Tracking Them Down | EA 25362 61 |
| Don't Let the Software Blues Get You Down | EA 24773 61 |
| TOPS-20 Multiprocessing | EA 24237 61 |
| Introducing TOPS-20 Multiprocessing | EC 24046 61 |
| DECsystem-10 Family | EA 20572 26 |
| TOPS-10/20 Data Networking | EC 22813 61 |
| LSM Software Referral Catalog (3nd Ed.) | EJ 25148 61 |
| Symmetric Multi-Processing | ED 24089 61 |
| The Personal Mainframe/Electronic Mail | EA 22872 61 |
| The Personal Mainframe | EA 24546 61* |

## CORPORATE BROCHURES

| | |
|---|---|
| Digital's Ethernet | EA 22710 18 |
| Digital Introduces DECnet/SNA Gateway | EA 22703 18 |
| Digital Storage Architecture Product Summary | ED 23981 18 |

## MARKET SPECIFIC BROCHURES

| | |
|---|---|
| Engineering: | |
| Monenco: Engineering for Excellence | EA 23075 16 |
| Banking: | |
| New York City Bankers Choose Timesharing | EJ 24794 61 |
| Bankers Trust: Partners in Success | EA 23155 16 |
| "Will the Street Bypass Time Sharers?" (reprint from "Institutional Investor") | EJ 24696 61 |

## GENERAL MATERIALS

| | |
|---|---|
| DECNET-10 Phase III Press Kit Folder | EJ 23998 61 |
| BUY-LINE Compendium (Vol.2: 1981-82) | EZ 09016 82 |
| Digital's Systems Interconnect Folder | EJ 24741 61 |
| DECision Systems Folder | EJ 24658 61 |

## POSTERS

| | |
|---|---|
| Chart Your Course Sailing Poster | EJ 21623 61 |
| LSM Personal Mainframe Poster | EJ 21652 61 |

## SITE PREPARATION GUIDES

Corporate Field Service's Generic Site Planning Kit, available worldwide, enables site planners to do floor layouts and site planning for all DIGITAL products including the DECsystem-10 and -20 product set. This Kit is designed to be Field Service's standard Site Planning tool. The new Kit's order number is EK-SPKIT-01, available from P&CS, Northboro.

* New order numbers for recently produced editions

## BUY-LINE APPLICATION

NAME: _____ MAIL STOP: _____

BADGE: _____ COST CENTER: _____

DEPT: _____ OFFICE LOC: _____

( ) Please add my name to the BUY-LINE mailing list.

( ) Please delete my name from the mailing list.

My responsibility is in:

( ) LSM Sales

( ) LSM Marketing

( ) LSM Service

( ) Another product line or corporate function

Please detach and mail to Christine Medeiros, MR02-2/8D2. Thank you.

CHRISTINE MEDEIROS

MR02-2/8D2


digital

DIGITAL EQUIPMENT CORPORATION
MARLBOROUGH, MASSACHUSETTS 01752