

NEW PRODUCT ANNOUNCEMENTSWILL WORKMAN/HPDISTRICT SALES MANAGER - ROCKVILLE

Before I announce the HP1000 System, let me apologize for the delay you probably experienced during registration. About a week ago with Gary Green's encouragement, we decided to go "on-line" and provide a data base using our 3000 System in Rockville, Maryland, to handle registration and later for sorting the data for the USERS GROUP. As you probably observed, we were running behind schedule on the implementation.

Well, what about the HP System 1000? You are obviously aware that we have a 3000 System and possibly the System 2000. At our Data Systems Division in Cupertino, California, they decided it was time for the System 1000! What is it? The System 1000 will be announced in a press release on October 4th and followed by feature articles in the trade press during October and November. The System 1000 utilizes the newest member of the 2100 minicomputer family and will be used for a broad spectrum of computational, data acquisition and control, measurement system and operations management applications. The major features of the System 1000 are the faster 21MXE processor, a 2645A CRT Terminal with dual mag tape cartridges for program and data storage (no paper tape!), IMAGE 1000 for data base management, desk-style

configurations, on-line microprogramming support under RTE and lower prices!

So we see it replacing, in some respects, various configurations that you might be familiar with . . . the 9600 family of data acquisition systems, including the 9640. The System 1000 will be the primary nomenclature for minicomputer systems coming out of the Data Systems Division in Cupertino, California.

Let me try to compare the three families of computer systems that we now have on the market. The 3000 Systems that you are familiar with we see as a general purpose business data processing system for on-line plus batch operations. The ACCESS 2000 System which has been seen as a 32 terminal T/S system supporting BASIC . . . has been enhanced to support RJE using HASP capability (IBM 370) and a data entry library to support formatted data entry operations. The System 1000 that we are announcing is seen as a computation/instrumentation/data acquisition and control/operations management system for dedicated applications that can be written in ASSEMBLY/FORTRAN/BASIC with limited data base management requirements. The System 1000 should be important to owners of the HP3000 as a "front-end" processor for real time data acquisition/control applications and data entry/operations management applications in a distributed system environment.

At time of introduction, we will have four different models of the System 1000. Looking at the slide, you will notice that the physical configuration is based on a desk. The 21MXE processor is in the left-hand bay with the disc and disc controller

in the right-hand bay. The system console is the 2645A CRT Terminal with dual mag tape cartridges. This configuration, using the 7905 (15M-byte) disc and 64K-byte of memory in the 21MXE processor with RTE-II software, is priced at \$37,500. The Model 31 uses the 7900 (5M-byte) disc in an up-right cabinet rather than the Model 30 desk and is priced at \$33,500.

The Model 80 System 1000 includes a 128K-byte 21MXE processor, same disc and console as the Model 30, desk with single-bay cabinet housing a 1600 CPI 9-track mag tape drive, 200 LPM line printer with RTE-III operating system and IMAGE 1000 data base management software (with QUERY) and is priced at \$62,600. The same equipment configured in dual cabinets (no desk) is identified as the Model 81 and is priced at \$63,600. Delivery for all models is running from 8 to 12 weeks. If you compare the System 1000 pricing to our 9600 family and the price/performance compared to our competitors . . . I think you will find that HP is becoming more aggressive!

Let's take a closer look at the 21MXE processor! As the 2100 minicomputer has matured, we have had the opportunity to explore microcode implementation for speed and efficiency. Our analysis of the 21MX processor showed that most instructions could be implemented in 4 microcycles rather than the six currently used. Therefore, on the 21MXE, we have used variable microcycle length instructions to optimize the speed of the machine. As a result, the "XE" processor runs about 60% faster than the MX and many FORTRAN programs with floating point operations is running

about twice as fast. We have achieved this speed improvement for approximately 10% increase in price over the MXI. Another important feature of the System 1000 is that microprogramming of the 1KW WCS option is now supported under the RTE operating system. Users of the System 1000 can write and debug 21MXE microcode from the system console or another terminal.

As far as future enhancements for the System 1000, we are working on software to link the System 1000 RTE to the 3000 MPE for program-to-program communications, remote terminal access to the 3000 via RTE and file transfer. On the processor side, we expect to announce faster memory and floating point hardware during 1977 to provide a significant increase in speed.

For those of you not familiar with the HP2645A CRT Terminal announced September 1st . . . I would like to describe some of its features which led to our decision to use it as the System 1000 console. The 2645A CRT Terminal uses a new microprocessor (INTEL 8080) which provides significant speed and memory addressing capability over the earlier 2640 and 2644 CRT Terminals. The 2645A CRT Terminal supports up to 9600 baud asynchronous communications in half and full duplex modes. We have also designed a new data communications card for supporting IBM bi-sync in non-HP computer environments. The eight special function keys can now be programmed to initiate the transmission of up to 80 characters for complex commands to the computer system, for controlling and formatting data on the mag tape cartridges or for issuing

"log-on" commands when connected to a time-share network with single keystroke operation. These "soft programming" capabilities of the 2645 CRT Terminal can be dynamically loaded from the computer or mag tape cartridges and will be used on the System 1000 to initiate system commands like a FORTRAN compilation using one keystroke . . . making the RTE operating system "friendlier". The mag tape cartridges will be used for loading system diagnostics or for program/data storage that the user can take away from the system for security reasons.

Let me summarize . . . the System 1000 will be the main system offered by Data Systems Division. As the year evolves, you will see a number of enhancements, certainly in the 21MXE processor. We will be announcing additional distributed systems software that will provide a powerful link between the System 1000 and the 3000 System you are familiar with. The System 1000 is aggressively priced using a desk-style configuration that will fit better in the commercial DP environment. We look forward to providing 3000 owners a broader solution to solving your instrumentation and data processing requirements with the System 1000.

That is all I have for new product announcements. I will be happy to answer any questions . . .

QUESTION . . . Will the 21MX minicomputer be discontinued?

ANSWER . . . No, not in the near future. The 21MX will remain in production as we add enhancements to the higher priced 21MXE processor. This will give our customers a broader range of alternatives.

NOTE: As of March 1977, HP is announcing the following enhancements to the System 1000:

- 1) Models 20 and 21 using the new RTE-M memory-based operating system with an entry price of \$21,100 for the Model 20 which can support up to 608K-bytes of 4K RAM semiconductor memory and the HP-IB.
- 2) New 512K-byte flexible disc drive ("floppy") for an additional \$4,500.
- 3) Faster 4K RAM 16K word memory (20-30%) with price reductions on the current 16KW memory modules.
- 4) RTE-M/BASIC for programming in the BASIC language from several terminals.

Delivery of these new System 1000 models and the hardware/software enhancements is in the 8 to 10 week range. The Model 31 has been reduced to \$21,500 and the configurations and prices for the System 1000 are shown in the following table:

TABLE 1. HP 1000 Basic Configurations

	Model 20	Model 21	Model 30	Model 31	Model 60	Model 81
Processor	21MX E-Series					
Cabinet	Desktop	Upright	Desktop	Upright	Desktop	Upright
Main Memory Std Size (KB)	64	64	64	64	64	64
Opt. Expansion To	304	608	304	608	304	608
Operating System	RTE-M	RTE-M	RTE-WRITE-III	RTE-WRITE-III	RTE-III + IMAGE/1000	
Standard/Optional						
Disc Subsystem Type	Flexible Disc (optional)			Cartridge Disc		
Capacity (MB)	512K	512K	15M	5 or 15M	15M	15M
Opt. Expansion	2048K	2048K	365M	365M	365M	365M
System Console	2645 Display with Dual Mini cartridges (110KB)					
Standard Peripherals						
Line Printer	None	None	None	None	200-1250 lpm	
Mag Tape	None	None	None	None	800-1600 bpi	
Base Prices	21,000 or 25,500	22,000 or 26,500	36,500	31,500 or 36,000	62,000	63,000