

Cii Honeywell Bull Series 60, Level 61

NEW PRODUCT ANNOUNCEMENT

On February 1, 1979, Cii Honeywell Bull announced the model 61/DPS (Distributed Processing System), a transaction-processing system that combines the best features of the Extended 61/60-2 with new hardware and software. Able to support 16 terminals, the 61/DPS is the latest building block in CII-HB's UNISYS/DSE master framework for distributed processing networks.

Internally sophisticated, the 61/DPS presents a friendly face to the non-technical user. By providing lists of alternatives, the system determines what the user wants to do and asks for needed parameters. Then, to prevent misunderstandings, the system displays a description of the operation as it will be executed. In addition, AUTOFORM, a software package, enables users to develop their own interfaces with the system in their own native language.

Inside the system, CII-HB has further refined the dual-processor architecture of the Level 61 systems. Each processor now has two levels of microprogramming: a micro-ROM for the instruction set and a macro-ROM for the most-used parts of the system control software. A disk cache memory, which reduces the number of necessary disk accesses, now is standard equipment. And the amount of on-line disk storage supported by the integrated controller has been expanded to 230 million bytes.

Full technical details were not immediately available, but the new GCOS 61/DPS operating system appears to be an enhanced version of Extended GCOS. During its time slice, each program has all of user memory available to it. If a program is too long to fit, it is brought into user memory in variable length segments.

The workload on the 61/DPS is divided between the Common Resource Processor (central processor) and the Distributed Resource Processor (front-end processor). The two are linked by a 50 kilobyte per second channel.

The Common Resource Processor (CRP) has 64K or 96K bytes of processing memory; 24K bytes of micro-ROM which contains test routines and the instruction set; 24K bytes of macro-ROM which contains the resident supervisor, system initialization routines, and diagnostic routines; and an integrated disk controller. Main memory is composed of 16K-bit, error-correcting chips with a cycle time of 700 nanoseconds per byte. The micro-ROM has a cycle time of 350 nanoseconds per 24-bit word.

The Distributed Resource Processor (DRP) has 24K or 56K bytes of processing memory; 8K bytes of micro-ROM which contains test routines and the instruction set; 8K bytes of macro-ROM which contains diagnostic routines; an asynchronous multi-line adapter; and a synchronous line adapter. Main memory has a cycle time of 700 nanoseconds per byte and micro-ROM has a cycle time of 100 nanoseconds per 16-bit word.

The resident CRP supervisor:

- Initializes the entire system.
- Manages input and output (except diskette and workstations) by calling upon firmware routines or resident macros.
- Provides file and data management, including control of the pool of file buffers in the disk cache memory.
- Shares CRP time among jobs, which can include a mix of one batch job and 16 interactive jobs.
- Manages multi-line print buffers and spooling files.
- Communicates with the DRP supervisor.

The resident DRP supervisor:

- Handles the transfer of messages to and from workstations.
- Manages the transmission of data to and from another computer or a key-to-diskette system.
- Tells the CRP which application program will be required next.
- Controls the console/workstation, other workstations, and diskette drives.
- Integrates page formats generated by AUTOFORM into the related application programs.
- Performs all pre- and postprocessing required by applications.

AUTOFORM enables a user to create a link between himself and an existing (or proposed) COBOL application program. In a dialog with the AUTOFORM/FORMATTER, the user describes the page formats (headings, instructions to the user, and data fields), acceptability checks, editing controls, and arithmetic and logical operations. Design and later modification are easy: data fields, for example, can be designed by giving examples of the contents of the fields. Formats and procedures are then stored on disk by the formatter.

When called by a user, each format and its associated procedures provides parameters to the AUTOFORM/INTERPRETER, which runs in the DRP and performs the necessary pre- and post-processing of each transaction. Because the COBOL programmer only has to write the core of the program, the part that runs in the CRP, CII-HB says programming time is reduced by up to 50 percent. Moreover, AUTOFORM lightens the load on the CRP because only about half of the program, the COBOL part, runs in the CRP. (The output of the formatter is also in COBOL, but is never seen in that form by the user.)

Programs can also be written in BASIC and FORTRAN, and all languages can be used simultaneously in the system's multi-user environment.

Privacy and security of the system is controlled by a catalog that contains the identification of authorized users, optional passwords, and a list of the programs and files each authorized user is permitted to access.

To protect the integrity of the files, each transaction is checkpointed by the CRP and the system provides automatic restart and recovery features. In addition, the system maintains a journal of incidents to help the maintenance engineers eliminate potential problems and is equipped with power supplies that are immune to momentary cuts in power or fluctuations in voltage.

Two new disk drives are available for the 61/DPS: the MSU0323 with fixed and removable cartridges and the MSU0333 with disk packs. The MSU0323 offers a choice of 5.76-megabyte cartridges with an average access time of 22.3 milliseconds (fixed) and 33.3 milliseconds (removable) or 11.5-megabyte cartridges with an average access time of 25.3 milliseconds (fixed) and 38.3 milliseconds (removable). The MSU0333 uses removable disk packs with a capacity of either 28.8 or 57.6 megabytes. Drives may be mounted two to a cabinet, for a maximum of four drives with a total capacity of 230.4 megabytes. Average access time ranges from 26.3 to 38.3 milliseconds. The transfer rate for both the MSU0323 and the MSU0333 is 1.2 megabytes per second.

The 61/DPS is equipped with a 243-kilobyte diskette drive for maintenance support, and the drive can optionally be used as an input/output device for batch processing.

Nine new printers are available for the 61/DPS. Three are 7x7 dots matrix units: the PRU0040 at 40 characters per second, the PRU0041 at 120 characters per second, and the PRU0044 at 160 characters per second. These printers can be equipped with front-feed options. There are also three medium-speed, belt printers: the PRU0107 at 100 lines per minute, the PRU0207 at 180 lines per minute, and the PRU0307 at 300 lines per minute. And there are three high-speed, belt printers: the PRU0441 at 400 lines per minute, the PRU0641 at 600 lines per minute, and the PRU0841 at 800 lines per minute. Automatic spooling enables the system's central printer to operate at maximum speed.

One workstation is standard with the 61/DPS and also serves as the console. Up to 16 additional DTU 7172 workstations may be attached to the system. Workstations include a keyboard, a 2,000-character display, and, optionally, a hard-copy printer and a badge reader. Under system control, black characters can be displayed against a green or white background or green or white characters against a black background. Other features include upper and lower case letters, blinking, underlining, blanking, and two levels of brightness. The optional printers are the TTU8124 and TTU8126, rated at 30 and 120 characters per second, respectively. When equipped with keyboards, they can also be used as interactive workstations.

Workstations can be directly linked to the system from distances up to 400 meters at 300 bits per second or 30 meters at 9,600 bits per second. Via modems, they can use public telephone or telegraph lines at 300 bits per second or four-wire lines at 600 to 9,600 bits per second.

The synchronous link allows the 61/DPS to communicate, at 600 to 9,600 bits per second, with other Cii Honeywell Bull systems or, using BSC 2780 protocols, with systems from other manufacturers.

Monthly 61/DPS rental rates, including GCOS 61/DPS and COBOL, range from 5,000 FF for a minimum system to more than 25,000 FF. First customer deliveries are scheduled for the third quarter of 1979.□