Itel Advanced Systems

Univac, Burroughs, and even CDC, competing with itself in terms of performance and throughput. Among the directly competitive systems are Honeywell's Level 66 Models 66/10, 66/20, and 66/40; the Burroughs B 6811 and B 6821; the Univac 1100/10, 90/60, and 90/80; and Control Data's Cyber 172 and Cyber 173. All offer roughly the same general throughput capabilities in the range of the IBM 370/148 and 370/158 systems and are competitively priced.

USER REACTION

Although the Itel Advanced Systems were announced in October 1976, customer deliveries did not begin until April 1977. In view of this short installed life, Datapro elected not to conduct its usual formal survey of user experience. Instead, we conducted an informal survey consisting of short interviews that asked early users for their initial impressions of the sytems. The five users we queried had a total of two AS/4's and three AS/5's installed. Four were running under OS/MVT and the fifth under VM/CMS.

All five users had substantially the same story to tell. They were highly impressed with the Itel systems. In all cases, installation was exceedingly simple, requiring only a few hours. The users stated that Itel's field support personnel are at least as good as IBM's if not superior in most instances, and that system availability ranged from 96 to better than 98 percent. The most important question about the Itel systems—the degree to which they are compatible with IBM's operating software—received a unanimous and unqualified response: "Totally."

Two users noted that the lower power consumption of the Advanced Systems had made a very noticeable difference in their computer room temperatures. These systems had replaced an IBM 370/155 and a 370/158, and they generated significantly less heat than the IBM systems.

Thus, early field experience with the Itel Advanced Systems indicates that these products are rapidly establishing themselves as viable, cost-effective alternatives to the IBM System/370 processors.

EQUIPMENT PRICES

		Purchase Price	Monthly Maint.
PROCESSORS AND MAIN MEMORY			
AS/4	Central Processing System; includes CPU, 2,097,152 bytes of main memory, 4K bytes of cache memory, 7 I/O channels, 8192 bytes of read-only storage, and one system console with a 180-cps serial printer	$ 922,000	$3,096
AS/5-1	Central Processing System; includes CPU, 2,097,152 bytes of main memory, 7 I/O channels, 8192 bytes of read-only storage, and one system console with a 180-cps serial printer	1,155,000	3,531
AS/5-3	Central Processing System; includes CPU, 1,048,576 bytes of main memory, 7 I/O channels, 8192 bytes of read-only storage, and one system console with a 180-cps serial printer	1,219,000	3,631
PROCESSOR OPTIONS AND MEMORY			
	1,048,576 bytes of memory for all systems above	110,000	—
	Multisystem Unit: for joining two uniprocessor systems into a dual-processor system	35,250	NC

Itel Advanced Systems

New Product Announcement

The battle among IBM plug-compatible processor manufacturers continues unabated. During the last 15 months Itel has announced five new processors equivalent in power to various members of the IBM System/360 and 303X processor families. At the same time, Itel has strengthened its line of IBM plug-compatible peripheral equipment by adding a high-performance magnetic tape subsystem manufactured by Hitachi.

PROCESSORS: Just how the new Itel processors reportedly compare to their IBM counterparts is shown in the following table. The new processors are the AS/3-3, AS/3-4, AS/5-7031AP, AS/6-1, and AS/6-2; the previously announced Itel processors are also shown for comparative purposes.

Itel Processor	Equivalent IBM Processor	Rated Performance Improvement Over IBM Equivalent
AS/3-3	370/138	1.3 to 1.4
AS/3-4	370/148	equal
AS/4	370/148	1.4
AS/5-1	370/158-1	equal
AS/5-3	370/158-3 or 3031	equal
AS/5-7031AP	3031	1.5 to 1.8
AS/6-1	3032	1.1 to 1.25
AS/6-2	370/168-3 or 3032	1.2 to 1.5

Itel lost no time in reacting to IBM's announcement of its Model 3031 and 3032 processors, responding almost immediately with the *AS/6-1*. This model is claimed to provide 3 to 4 times the performance obtained from the previous top-of-the-line system, the AS/5-3. It is also claimed to be capable of 10 to 25 percent greater performance than IBM's new Model 3032 processor.

Unlike the earlier members of the Advanced Systems Series which are manufactured by Exsysco, a subsidiary of National Semiconductor, the AS/6-1 is manufactured in Japan by Hitachi Ltd. and is the first of two such plug-compatible systems that will be marketed by Itel. Itel had been marketing the AS/6-1 internationally prior to its U.S. introduction. Under the terms of an agreement concluded in June 1977, Intel will market and maintain the Hitachi-manufactured systems in the U.S., Canada, Western Europe, South America, and Australia.

The AS/6-1 Model 7032 processor features a 72-nanosecond cycle time. Memory is constructed of 4K chips with an access time of 100 nanoseconds and starts at 2 megabytes, expandable to 16 megabytes in 1-megabyte increments. The unit also features 64K bytes of high-speed buffer memory.

The AS/6-1 I/O subsystem includes two input/output processors, each of which permits attachment of up to eight channels. The basic system package includes six channels: one byte multiplexer, two selectors, and three block multiplexers. An optional two-byte interface is offered for both selector and multiplexer channels.

The new *AS/3-3* and *AS/3-4* employ the same 115-nanosecond CPU. Main memory uses 16K-bit chips and has a read cycle time of 1035 nanoseconds and a write cycle time of 690 nanoseconds. Memory capacity can range from one to four megabytes in one-megabyte increments.

The use of denser memory circuitry and other technological enhancements have reduced the power consumption and heat output of the AS/3 systems as compared to the IBM 370/138 and 148. The AS/3-3 requires about 8.0 KVA and produces about 28,000 BTU/hour of heat. These figures are 15 and 18 percent, respectively, below the corresponding figures for the 370/138. Similarly, the AS/3-4 consumes 8.3 KVA and produces 29,200 BTU/hour, and these figures are 32 and 21 percent, respectively, below the figures for the 370/148. Space requirements are also reduced; the AS/3-3 requires 40 percent less floor space than a 138, and the AS/3-4 occupies 60 percent less space than a 148.

The AS/3-3 is priced about 47 percent above the System/370 Model 138, and Itel contends that this price difference is justified by the performance improvement obtainable from the AS/3-3. The AS/3-4, however, is priced about 13 percent below a comparably configured System/370 Model 148.

Itel Advanced Systems

New Product Announcement

The *AS/5 Model 7031 Attached Processor (AS/5-7031AP)* features a processor cycle time of 100 nanoseconds, expanded reloadable control storage, up to eight megabytes of additional main memory in one-megabyte increments for the AS/5-3 (for a total of 16 megabytes) when in a complex with the AS/5-7031, a 32K-byte high-speed buffer memory, and a 128-entry translation lookaside buffer. First deliveries of the AS/AP are scheduled for the second quarter of 1979.

In comparison to the IBM 3031/3041 AP complex, the Itel AP complex is more expensive to purchase, but it can have up to 10 megabytes of additional memory. Itel claims the maximum AP complex offers 50 to 80 percent greater throughput than the AS/5-3 alone. IBM rates its 3031/3041 AP complex as 60 to 80 percent more powerful than the stand-alone 3031. First deliveries of the Itel AS/AP are scheduled to occur a full quarter ahead of the IBM 3041 AP.

The new *AS/6-2* is the result of work performed by Itel's newly formed Systems Development Division rather than by the AS/6 supplier, Hitachi. The AS/6-2 offers enhancements in microcoding and hardware so that when running under IBM VM/370 and/or MVS, the new processor exhibits a throughput gain of up to 10 percent over the AS/6-1. Performance gains of 10 to 25 percent are possible, according to Itel, when the AS/6-2 is operating under IBM MVS or VM System Extension program products.

Hardware and firmware modifications in the AS/6-2 include the Virtual Machine Assist feature, which results in reducing CPU cycle utilization by approximately 10 to 20 percent under normal conditions when operating under VM/370; MVS/SE improvements in microcode; and improvements in handling IBM virtual operating systems through the segment table original stack. Customer deliveries of the AS/6-2 will begin in the first quarter of 1979.

PERIPHERALS: Itel has entered into an agreement with Hitachi America, Ltd., the U.S. subsidiary of Hitachi Ltd., to market Hitachi-manufactured IBM-compatible magnetic tape subsystems to Itel Advanced System users and to users of other IBM plug-compatible CPU's. The controller and tape drive in this subsystem are functionally compatible to IBM's 3803-2 Controller and 3420-8 Magnetic Tape Drive. The Hitachi subsystem, consisting of the 7803-22 Controller and 7420-22 Magnetic Tape Drive, is claimed to offer advanced technology and better price/performance than its IBM counterpart. First deliveries of the subsystem were scheduled to be made prior to the end of 1978.□

EQUIPMENT PRICES

		Purchase Price	Monthly Maint.
PROCESSORS			
AS/3-3	Central Processing System; includes CPU, 1,048,576 bytes of main memory, 3 I/O channels, and a system console	$ 490,000	$1,973
AS/3-4	Central Processing System; includes CPU, 1,048,576 bytes of main memory, 5 I/O channels, and a system console	600,000	2,618
AS/5-7031AP	Central Processing System with attached processor; includes attached processor, 2,097,152 bytes of main memory, 7 I/O channels, 8192 bytes of read-only storage, and one system console with a 180-cps serial printer	1,570,000	4,581
AS/5-7031	Attached Processor System; includes 2,097,152 bytes of main memory and system console with 180-cps printer	1,100,000	3,631
AS/6-1	Central Processing System; includes CPU, 2,097,152 bytes of main memory, power distribution unit, 6 I/O channels, 2 I/O processors, and a system console with 180-cps serial printer	1,960,000	7,419
AS/6-2	Central Processing System; includes CPU, 2,097,152 bytes of main memory, power distribution unit, 6 I/O channels, 2 I/O processors, and a system console with 180-cps serial printer	2,160,000	—
PROCESSOR OPTIONS AND MEMORY			
	1,048,576 bytes of memory	110,000	—
	Console printer for AS/3-3 or AS/304	15,000	118
UPGRADES			
	AS/4 to AS/5-1	200,000	—
	AS/4 to AS/5-3	300,000	—
	AS/4 to AS/5-7031	400,000	—
	AS/5-1 to AS/5-3	100,000	—
	AS/5-1 to AS/5-7031	200,000	—
	AS/5-3 to AS/5-7031	100,000	—
	AS/5-7031 to AS/5-7031AP	470,000	—
	AS/6-1 to AS/6-2	200,000	—