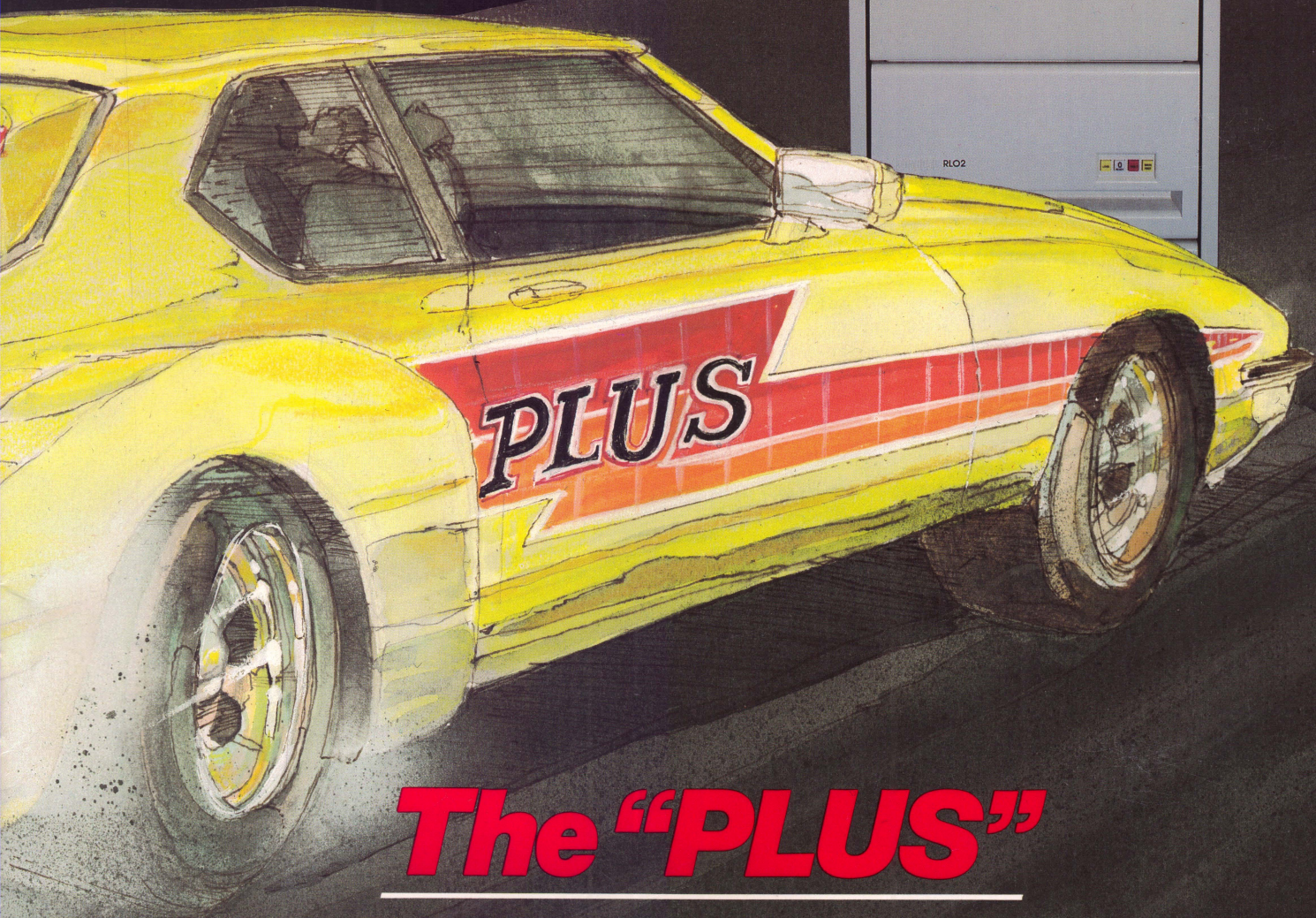


Announcing a New PDP-11/23



The "PLUS"

digital

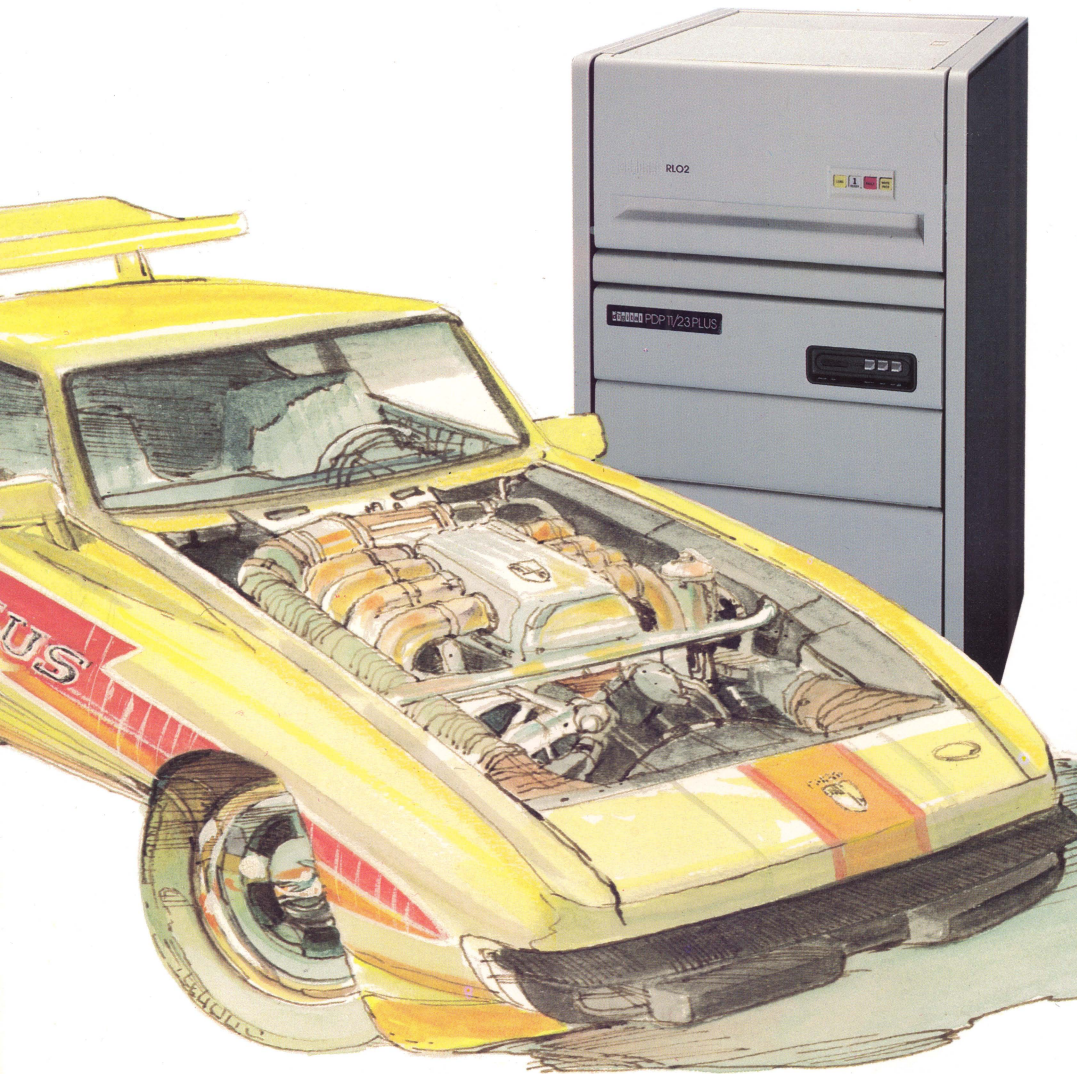
When horsepower matters, count on the PDP-11/23 PLUS

If you've followed the evolution of Digital's microcomputers, you know that we introduced the first 16-bit microprocessor in 1975. It was soon complemented with other pace-setting 16-bit systems, allowing us to offer end users and original equipment manufacturers a wide range of choices.

Now, with the PDP-11/23 PLUS, the performance edge is even greater. More addressing power. More memory. More proven software. Superior service. Unrestricted upward hardware migration and software compatibility. Plus choices of packaged or rack-mountable systems that let you precisely match computer to application.

For instance, you can choose a 256Kb or 512Kb packaged system. Or a 256Kb or 512Kb rack-mountable configuration. What's more, you can choose from a variety of video or printer terminals and other peripherals. Also, for the best fit to your applications, you have a choice of operating systems, including RSTS/E, RSX-11M, RSX-11S, RSX-11M-PLUS, and CTS-500.

The PDP-11/23 PLUS. Out in front of the pack with these new performance enhancements:



- Extended addressing (up to 1Mb) for faster response times and greater programming capability.
- Parity memory for improved data integrity and greater overall maintainability.
- Commercial Instruction Set standard on commercial packaged systems for higher performance in business applications.
- A new easy-access system distribution panel for simpler setup and maintenance.
- Microcode floating point and hardware floating point processor options for increased computation speed.
- Powerful PDP-11 operating systems and languages—including RSX-11M-PLUS for enhanced real-time performance.
- Hardware migration paths to other PDP-11s—with complete software compatibility—for future growth.
- Wide range of optional peripherals and software for flexibility of configuration.
- Digital's Customer Services for worldwide support.

The PDP-11/23 PLUS Processor... carrying on the performance tradition

The new PDP-11/23 PLUS Processor includes these application-oriented features standard with the 11/23 family:

Instruction Set

The PDP-11/23 PLUS offers a standard instruction set of 91 instructions. It includes both single and double operand instructions that operate with bit, byte, 16-bit word, and multiple-word data types. A variety of addressing modes extends the standard instructions to over 400 powerful instructions common to all PDP-11s.

Extended Instruction Set (EIS)

This standard EIS contains four additional instructions which allow hardware integer multiply and divide, and direct implementation of multiple shifting.

Memory Management Unit (MMU)

Memory management is a standard feature that provides relocation, segmentation and protection. It enables the 16-bit processor to address up to 1 Mb. Because the virtual address space is segmented, sections of programs and data can be shared, conserving memory space and facilitating large memory applications. Also, since several programs can reside in physical memory simultaneously, the MMU allows system users to limit access to the programs and to both define and control the space occupied.

... Plus these new enhancements:

Extended LSI-11 Bus

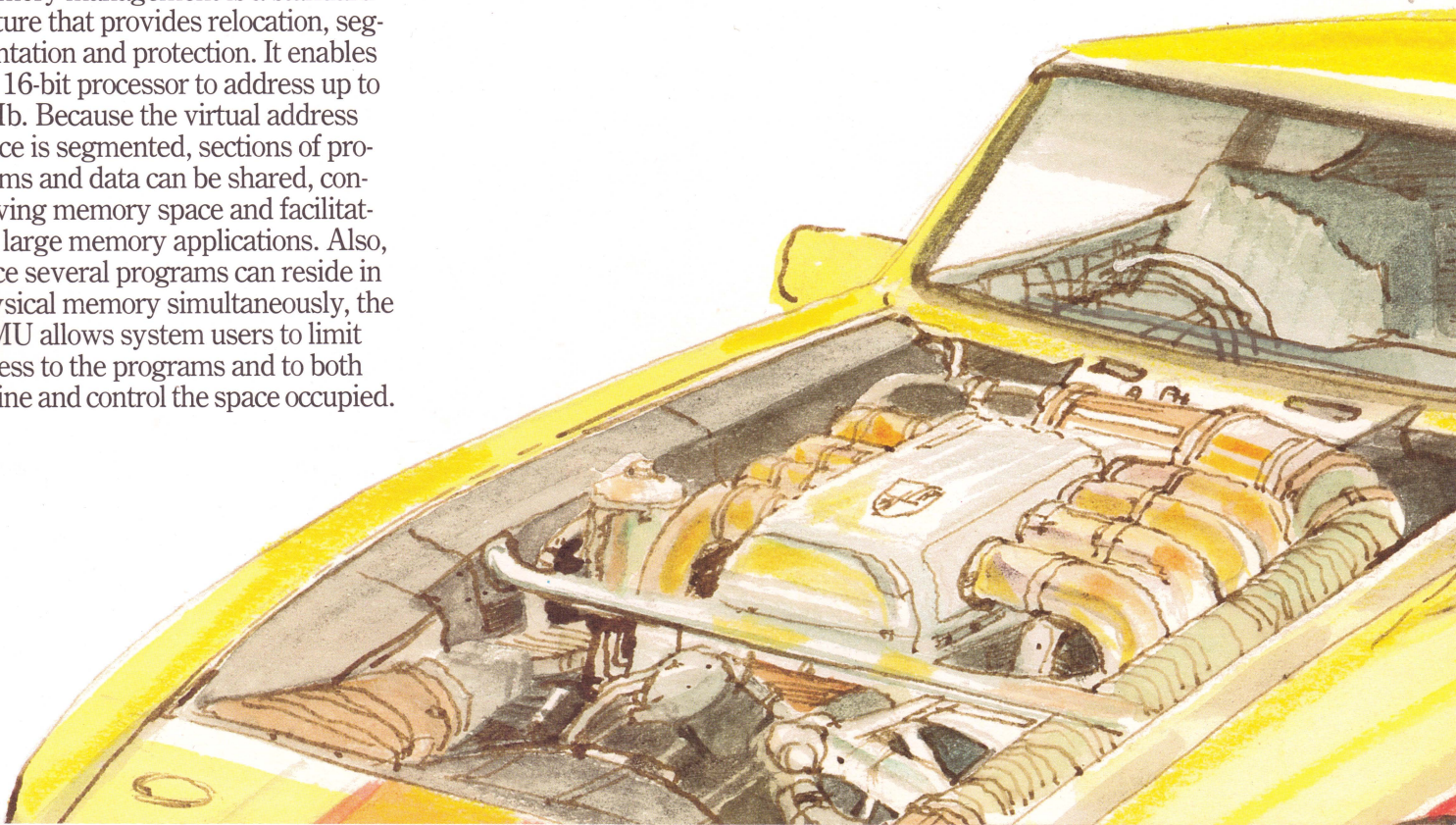
All communication between the 11/23 PLUS processor and devices in the system is handled by the Extended LSI-11 bus. Since this communication is asynchronous, each device operates at its own speed, maximizing overall system performance. A fully vectored priority interrupt scheme allows every device to have its own vector and interrupt service routine, eliminating the need for polling. Device priority is a function of electrical proximity to the processor. Through Direct Memory Access, faster data transfer and lower processor overhead are achieved because each I/O device regulates the bus address and control signals rather than the processor.

System Distribution Panel

A system distribution panel has been incorporated to provide quick and efficient means of connecting terminals and external devices to the PDP-11/23 PLUS system. Connection of a terminal or I/O device is merely a matter of plugging its cable into a panel connector. The panel will accommodate additional interfaces, simplifying installation, reconfiguration and maintenance.

Commercial Instruction Set (CIS)

CIS is a microcoded processor for business applications that implements a set of commercial instructions on a variety of data types, including character strings, packed decimals, and numeric formats. COBOL and DIBOL make extensive use of CIS to increase both compile and execution speed.



PDP-11/23 PLUS Packaged Systems... Totally integrated, economically priced

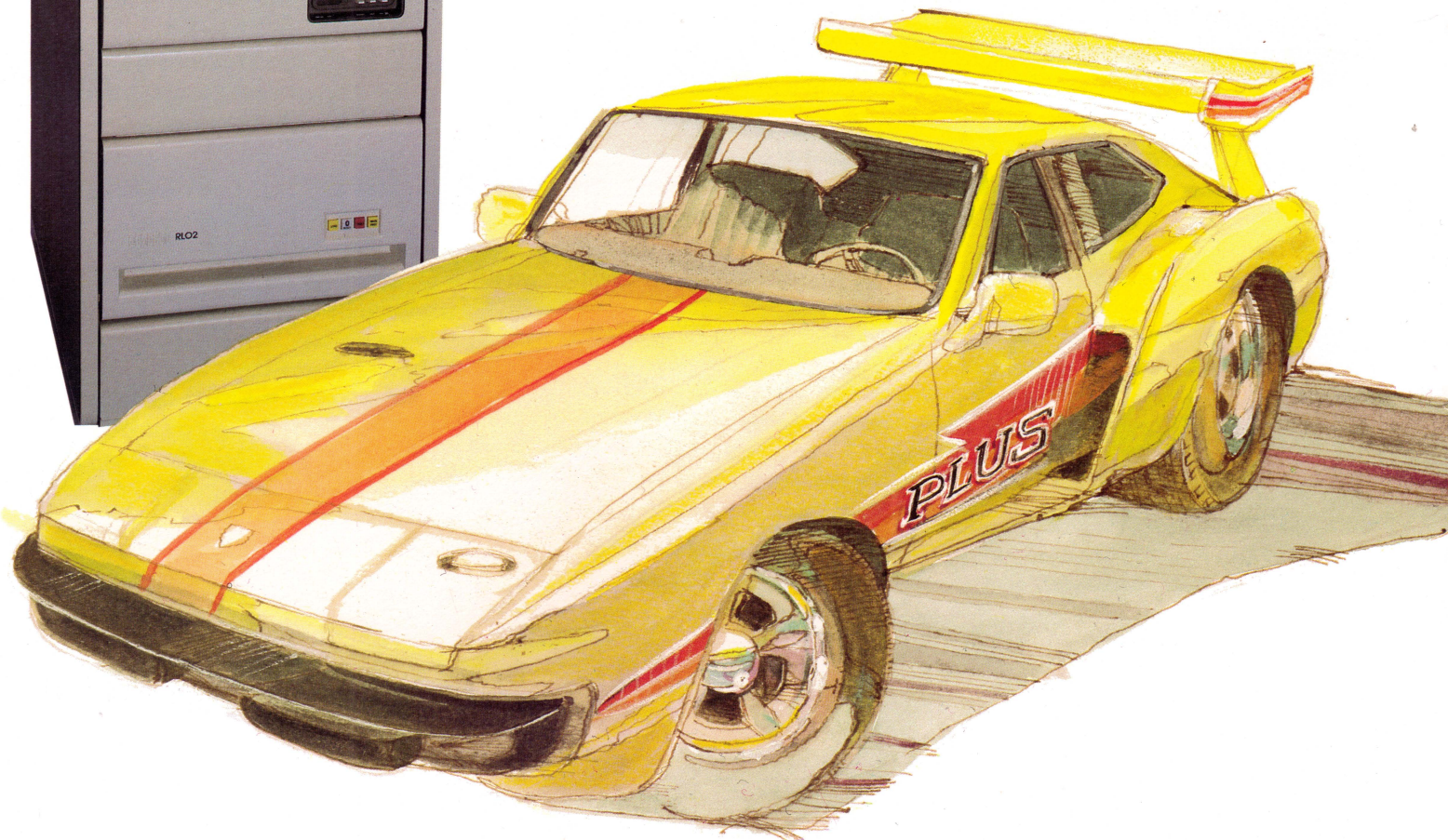
Systems based on the new PDP-11/23 PLUS are available to OEMS and end users alike in a variety of packaged configurations with a choice of operating system, main memory size and terminal. In addition to the price advantage of combining complete hardware and operating system software, the package components are totally integrated and fully tested. Each packaged system includes:

RSX-11M and RSX-11M-PLUS based Packages

- PDP-11/23 PLUS CPU
- 256Kb or 512Kb of parity memory using 64K RAM
- Dual RL02 cartridge disk drives in 40-inch cabinet
- Two or six asynchronous serial line units
- Bootstrap loader/diagnostic ROMs
- Five expansion slots (Commercial package)
- Choice of LA120 console printer or VT100 video terminal
- Program-controlled line frequency clock

RSTS/E and CTS-500 based Packages

- PDP-11/23 PLUS CPU
- 256Kb of parity memory using 64K RAM
- Dual RL02 cartridge disk drives in 40-inch cabinet
- Two or six asynchronous serial line units
- Bootstrap loader/diagnostic ROMs
- Five expansion slots available
- LA120 console printer or VT100 video terminal, depending on level of support



The rack-mountable PDP-11/23 PLUS... tailor your own specials

Also available is a rack-mountable PDP-11/23 PLUS with a choice of memory size, plus a variety of options including terminals, I/O interfaces, peripherals and—depending on the disk drives—a selection of operating systems.



- PDP-11/23 PLUS CPU
- 256Kb or 512Kb of parity memory using 64K RAM
- Two asynchronous serial line units
- Bootstrap loader/diagnostic ROMs
- Program-controlled line frequency clock
- 115V or 230V operation

Major Packaged System Components

RL02 Cartridge Disk Drive

Recipient of an "IR 100" award, the RL02 is a double-density single cartridge disk drive with a capacity of 10.4 million bytes. It employs Digital's track-following embedded-servo design for increased reliability and comes with extensive diagnostic software to simplify maintenance. Direct Memory Access assures rapid throughput and excellent response.

VT100 Video Terminal

The VT100 is an industry-leading video display terminal with detached keyboard for data entry, retrieval and processing. An enhanced version, the VT125, offers the same capabilities, plus graphics support for picture drawing and data plotting.

LA120 DECwriter™ III Terminal

The LA120 is a 180 cps hardcopy terminal that features bidirectional printing, a 1K character buffer, and fast skipping of horizontal and vertical white space. It offers more than 45 keyboard-selectable attributes.

Power-packed Options

To allow the greatest flexibility for developing products or systems, Digital offers a broad spectrum of options for use with the PDP-11/23 PLUS. Included are asynchronous and synchronous communications interfaces, I/O interfaces, disk drives, terminals, printers and the following floating point options:

Floating Point Option (KEF11-AA)

The KEF11-AA is a microcoded chip that implements 45 microcoded instructions which perform arithmetic, logical and conversion operations five to ten times faster than equivalent software.

Floating Point Processor (FPF11)

For computation, instrumentation and control applications, the FPF11 is a hardware option designed to increase the execution speed of floating point instructions six-fold. Its dedicated, 64-bit wide, high-speed data path avoids the use of complex arithmetic coding routines when a 16-bit CPU operates on 32- and 64-bit operands.

Proven Software

Digital software for the PDP-11/23 PLUS is proven, complete and warranted for 90 days. No other micro-computer systems are so richly supported, or offer you such a wealth of choices.

RSX-11 Real-time Operating Systems

Digital's family of RSX-11 real-time operating systems includes RSX-11M, RSX-11M-PLUS and

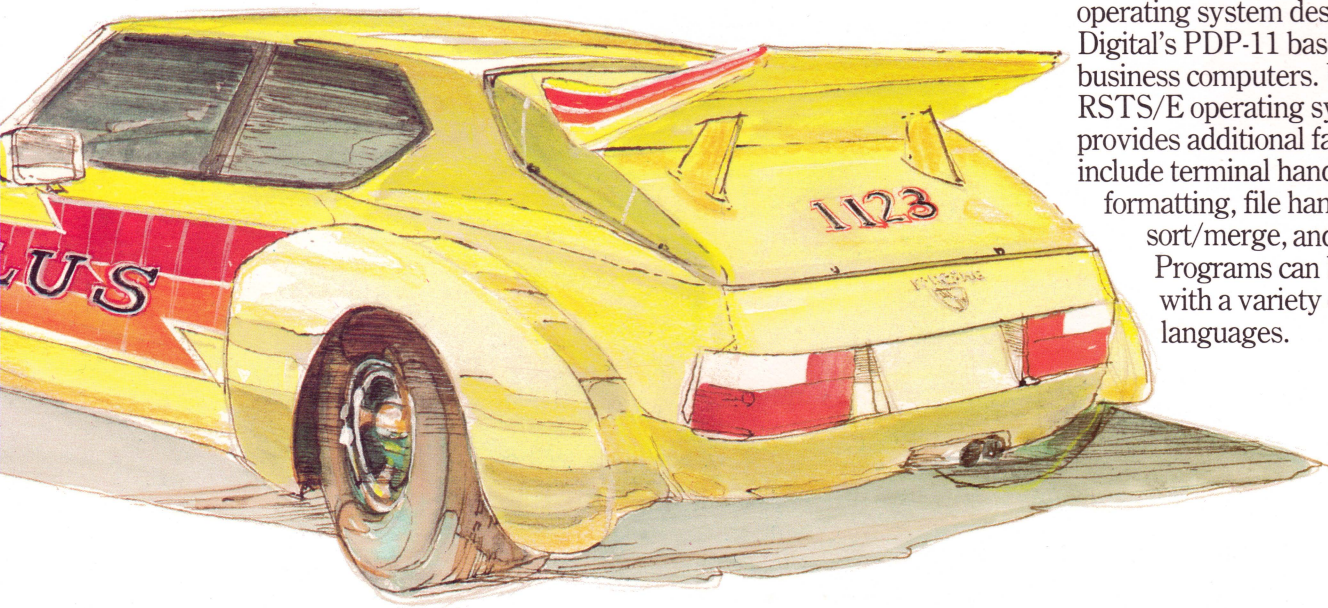
RSX-11S. RSX-11M is a multiuser, multitasking system. Mass-storage based, it supports a number of high-level languages, and it enables several programmers to share the 11/23 PLUS simultaneously with complete protection. RSX-11M-PLUS is an enhanced version, and RSX-11S is a memory-based subset which provides a dedicated, execute-only environment for concurrent monitoring and control applications.

RSTS/E Operating System

RSTS/E is a resource-sharing system that supports many language processors and offers batch processing as well as timesharing. Because processor time, memory space, file space and peripherals are allocated by a dynamic scheduling algorithm, each user can employ virtually the entire system's resources during program development or execution.

CTS-500 Operating System

CTS-500 is a commercial transaction operating system designed for Digital's PDP-11 based family of business computers. Using the RSTS/E operating system kernel, it provides additional facilities which include terminal handling and screen formatting, file handling, sort/merge, and print spooling. Programs can be developed with a variety of high-level languages.



Worldwide Services and Support

Complete hardware/ software services

System availability is essential to most computer applications. Quality product engineering and design are major contributors to availability. So also is proper maintenance. Digital's Customer Services organization is among the industry's largest, with more than 16,000 technical and administrative personnel dedicated to providing service and support. Because customer needs differ, Field Service—for example—offers a variety of hardware service agreements ranging from comprehensive on-site services to various levels of

off-site service. Software Services provides advice on system selection, installation, warranty and a variety of on-going support programs. A full range of applications consulting and project services is also available.

For organizations preferring to assume responsibility for maintaining their own computer systems, our Accessories and Supplies Group is a source of maintenance consulting, spare parts, system documentation in either hardcopy or microfiche form, tools and test equipment, and expendable supplies such as printer paper and ribbons.



Training

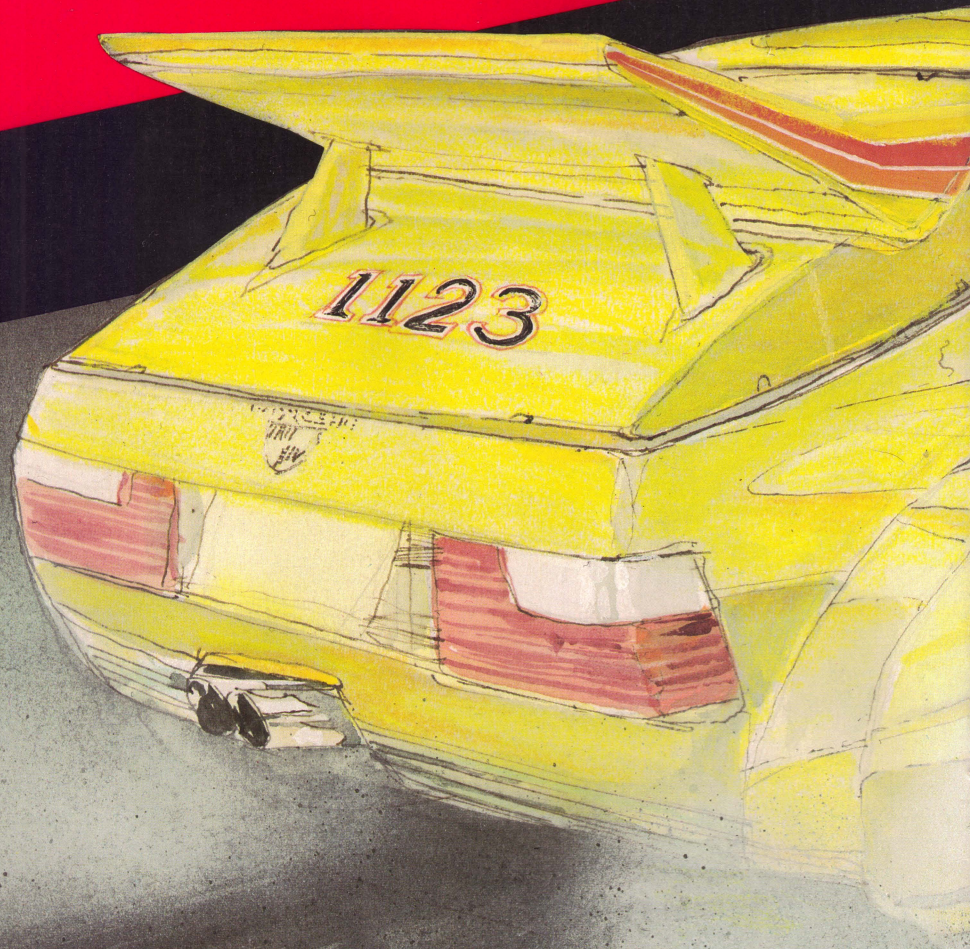
To meet the educational requirements of customers, Digital has established training centers worldwide, staffed by professional instructors. More than 300 classroom/laboratory courses are offered for hardware, software, systems management and operations. In addition, many self-paced instruction programs are available for training large numbers of

employees. On-site and—through special arrangement—customized courses are also available, as well as a variety of management and technical seminars.

For More Information

For more information about Digital's PDP-11/23 PLUS systems and options, contact your local Digital sales office.





digital

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