

PMS workstation requirements

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Common Digital Systems

Product Team Workstations

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Product range

- Easyvision R/F(digital II based X-ray: RF, vascular, cardio)
- Easyvision CT/MR
- Easyvision Rad (digital, or digitized film)

The range of applications will grow in the future, possible extensions include:

- Extreme low cost viewstations (“lightbox” on physician desk).
- Dedicated servers (for instance archive, hardcopy)
- Advanced workstations (for instance 3D, surgical navigation)

Requirements are formulated for mid 1995

CPU and memory

- 100 specInt92

Higher specInt92 -> Higher functionality, without additional dedicated hardware

- 32 MByte, extendable to 512 MByte, in 32 MByte steps
- 500 MByte disk, >1 GByte disc(s) optional

Interfaces

- Ethernet
- optional ATM (FDDI?)
- SCSI-2, fast, byte wide
- optional Fiber Channel Interface, will become standard
- 2 RS232, 1 keyboard mouse interface (ACCESS?)
- minimum 2 extension slots (PCI), these slots are free if all mentioned non-optional interfaces and the framebuffer are present

Price (OEM quantities)

- CPU+interfaces+box+32 MB+0.5 GB+16"monitor:

4 k\$ (low end) (strategy unknown -> # unknown)

6 k\$ (EV CT/MR, EV R/F, EV rad) (# = hundreds)

10-15 k\$ (advanced WS) (# = tens)

Framebuffer

- 1280*1024*(minimum 8 bit; more bits 12, 16? for pseudocolor support will become required);

2500*2000 for high end products

multiple framebuffers (2, max 4) for review, teaching and demonstration systems

- minimal update rate 25 frames/second; 30 MByte/s
- greylevel and color support
- 76 Hz refresh rate

Packaging

- Self-sustained unit (power, cooling, EMC shielding)
- Board level products in a later phase; mainly for cost reduction.

Software

- UNIX
- X-windows, access through X-server should support 30 MByte/s frame update rate, without monopolizing the CPU or system bus. (a lower spec forces the bypass of the X-server)
- asynchronous I/O, for all I/O including process communication, network I/O etc.
- XDR library (CPU independent streaming)
- notifier library, to synchronize timers, asynchronous I/O and socket I/O
- Real time process control
- TCP/IP, sustained transfer rate on ethernet >500 kByte/s
- DECnet support (separately licensed)
- customizable SCSI control
- customizable RS 232 event generation

- customizable boot and start-up procedure (embedded system)
- diagnostic software for workstation and standard computer peripherals
- development environment for Objective-C
- JPEG library