

## OPTICAL DISKS

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A comprehensive overview of the different types of optical storage technology was presented. Research efforts to integrate this technology into the VAX/VMS environment were then discussed. In addition, plans for future applications of optical disk technology were described. The applications should prove to be beneficial to the NSSDC user community as a whole. Of particular interest is the concentration on the collaboration with the Dynamics Explorer project.

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# Topics

- o Overview of optical storage technology
- o NSSDC's work in optical storage
- o Future applications

# Optical Storage Devices

- o Compact Disk - Read Only Memory (CD-ROM)
- o Write Once Disks
- o Write Once Tapes
- o Erasable Optical Disks

# CD-ROM

- o Read only. Data must be sent to manufacturer to be written to disk.
- o Media is extremely durable and not susceptible to forms of corrosion.
- o Capacity - 600 Mbytes.
- o Cost:
  - drive - \$1500
  - master disk - \$5000
  - extra disk - \$30

# Write Once Disks

- o User can write to disk online.
- o Media has an advertised life expectancy of about ten years.
- o Capacities:
  - 5 1/4" 200Mbytes
  - 12" 1Gbyte
- o Cost:

5 1/4"	drive - \$5000
	media - \$150
12"	drive - \$11000
	media - \$400

## Write Once Tapes

- o Advertised life expectancy of >50 years.
- o Capacity - 4 Gbytes.
- o 5 1/4" tape cartridges.
- o Not yet commercially available.

## Erasable Optical Disks

- o Media is erasable not updatable.
- o Same data densities as write once drives.
- o Not yet commercially available.

## What makes optical storage so attractive?

- o Ultra-high data densities on a small light weight disk or tape.
- o The media is removable so one drive has access to many large datasets.
- o Disks are random access.

## Role in DP environment?

- o Optical media will not replace magnetic disks because of their non-updatable nature.
- o It will replace tapes as a fast access archival media.

# Development at NSSDC

- o The goal is to integrate the write once drives into the DEC environment as native peripherals.
  - 1> University of Texas at Dallas (UTD) delivered a write once optical subsystem for RSX-11M to NSSDC in summer 85.
  - 2> Building on the UTD approach, NSSDC is developing a VMS device driver for the optical subsystem.
- o Extensive testing is being conducted at NSSDC to measure the reliability of the optical disk drive.
- o NSSDC is collaborating in a study by NBS to determine media reliability.

# Plans for the Future

- o NSSDC and the Dynamics Explorer (DE) project will initiate an RFP for approximately 20 of the write once disk drives in March 1986.
- o The DE investigators will supply data to the NSSDC on optical disk in the CDF format.
- o Valuable NSSDC holdings (eg. frequently used PCDS datasets) will also be written to optical disks for fast access either locally or over the network.