

### ROUTING AND RECORD SHEET

**SUBJECT:** (Optional)

ISB Meeting Minutes - 15 September 1987

**FROM:**

SA/EXDIR  
7E12 HQS

**EXTENSION**

**NO.**

ER 4320-87

**DATE**

16 September 1987

**TO:** (Officer designation, room number, and building)

**DATE**

**OFFICER'S INITIALS**

**COMMENTS** (Number each comment to show from whom to whom. Draw a line across column after each comment.)

RECEIVED      FORWARDED

1. Executive Registry  
7E12 HQS

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.



*B-209-ik*

ER 4320-87  
16 September 1987

MEMORANDUM FOR: Information Systems Board

STAT

FROM:

[redacted]

Special Assistant to the Executive Director

SUBJECT: ISB Meeting Minutes - 15 September 1987

STAT

1. [redacted] Computer Scientist for Engineering Group within OIT, discussed efforts to reduce the security risks posed by removable magnetic media through the use of "diskless" workstations. [redacted] also conducted a demonstration of diskless workstation prototypes. A copy of the presentation slides is attached.

STAT

STAT

2. [redacted] within IMS, described plans for a test-bed of diskless workstations in IMS. Notes from the presentation are attached.

STAT

/signed/

[redacted]

Attachments

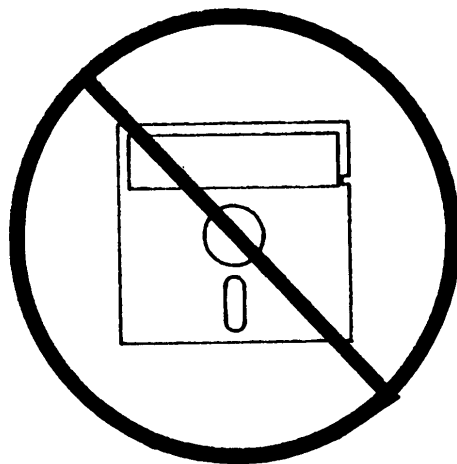
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DCI/EXDIR [redacted] (16 Sep 87)

Distribution:

- Orig - Each ISB member
- 1 - ER
- 1 - ISB File

## Diskless PC Technology



From OIT to the ISB, Sept. 15, 1987

**Unclassified**

## Diskless PC Concepts

### Problem:

#### Floppy Disks Insecure

Too Portable/Concealable  
Work-at-Home Temptations  
Unaccountable/Untraceable  
Obvious Target for Hostile Acquisition

#### Floppy Disks Unmanaged

Poor for Record Use  
Disorganized  
Shoebox, not Corporate Data

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ISB-01

## Diskless PC Concepts

### Solutions:

#### Render Floppies Unthreatening

- Use for Unclassified Program Loading Only
- Ensure Floppy Drives cannot Write
- Develop Operational Concepts to Match
- Support Organizations Provide Customization

#### Replace Disk Functionality

- Use Host Disks in Limited Ways
- Advance to Networked Disks if Needed
- Allow Internal Disks where Secure

Unclassified

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ISB-02

## Diskless PC Concepts

### Technologies for Eliminating Floppy Disk Problems

#### RAM Disk

Created in Volatile Memory  
High Speed Access

#### Virtual Disk

Maintained on Host Disks  
Requires Host Logon, Availability  
Speed Constrained to Network Speed

#### Read-Only Disk Drives

Modified Locally  
Special Purpose, Program Loading

#### Network Disks (LAN)

File Server on LAN  
Separately Secured, Administered

Unclassified

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ISB-03

## Diskless PC Concepts

### Constraints:

#### Configuration 1 (See Figure)

Limited use in Structured Environments  
Not fully useful PC -- Very Programmable Terminal  
Suitable Mainly for IMS Requirements  
Technically Done, Available Anytime  
Requires Central Support, Development

#### Configuration 2 (See Figure)

Generally Applicable Architecture  
Full, more-than-PC Function  
Requires New Investments in Engineering  
Creates New Problems, but Better Ones  
Not Ready for Deployment to Everyone

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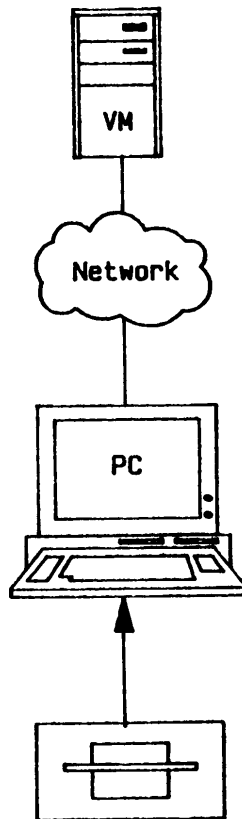
ISB-04

**Configuration 1.**

Generic PA/AT Clone  
3270 Emulation Card/SW  
RAM Disk  
Read-only Floppy Drive  
LGA Graphics  
Mouse

**Usage:**

Programmable Interface  
Local WP  
Central Storage  
Short term Off-line Work



Host Services  
MDS/SAFE  
AIM  
DBMS

3270 Connectivity  
PBX or SNA

User Interface  
Word Processing

Read-only  
Boot Programs  
Customized Disks

**Unclassified**



### Configuration 2.

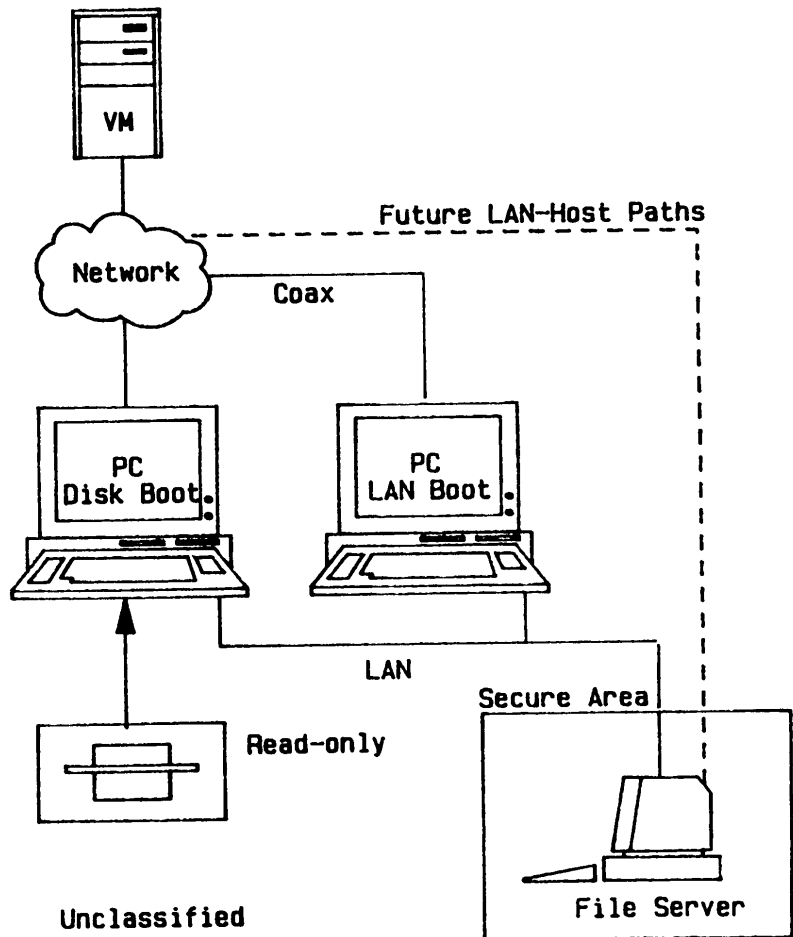
Generic PA/AT Clone  
3270 Emulation Card/SW  
RAM Disk  
Optional R/O Floppy Drive  
Optional Hi-Res Monitor  
Mouse  
TRN LAN Adapter

### Usage:

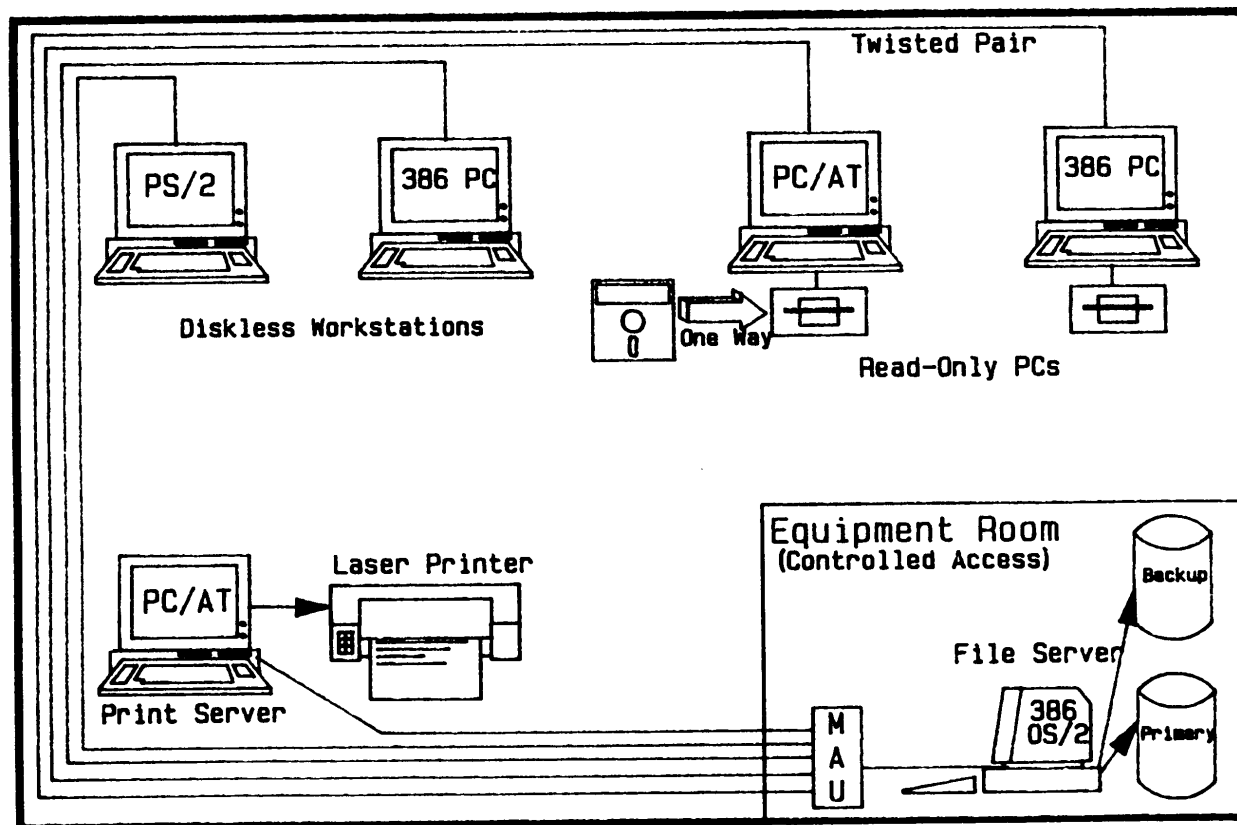
Programmable Interface  
Local WP  
Local and Central Storage  
Longer Term Offline Work  
Host Optional

### File Server Adds:

Compartmented Storage  
Local Shared Data  
Host Independence  
Full PC Functionality



# Work Group Computing Vault-sized LAN



Unclassified

## Diskless PC Concepts

### Activities:

#### Working with IMS to Deploy Configuration 1

Tools for PC-based WP/Cable Creation from OIT  
Development of Customer System by IMS  
Starting Now

#### Working on Configuration 2 Issues

Acquiring and Testing LANs  
Supporting Testbeds  
Developing Distributed AIM/Cable Services  
Initiating Future LAN-based Architecture Design

#### Interim Accommodation Policies

Use of Least Portable Media Possible  
Policy to Minimize Floppy Abuse  
Personnel Security and Education

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ISB-05

DIRECTORATE OF OPERATIONS  
DISKLESS PC TESTBED

Agenda

- Background
- Purpose
- Scope
- Schedule
- Potential future applications

Background

- DO concerned about use of PC's because of diskettes
- OIT to acquire "neutered" (read only) version of workstation
- DO agrees to use when:
  - suitable DO user interface developed
    - PC-based word processor
    - cable "model"
    - Aim interface
    - seamless integration
  - SAFE modified to provide 3270 support (version 3.5)
  - 3270 communications are available in outbuildings to support DO training
- Alternatives for loading software
  - from neutered disk
  - from LAN file server
  - from mainframe, optical disk, etc.
- OIT to provide first option
- DO to testbed second option
  - implications for future (DOLPHIN)

Purpose

- To build testbed using diskless PC's and LAN
  - test/evaluate in DO environment
  - adjust as required
  - consider for long range use
    - use OIT option for short-range
  - departmental (cooperative) computing concept
    - local files at "desk" level
      - same as DO stations
      - file server in vault, therefore compartmentation
      - user ownership/control
    - mainframe connectivity when needed
      - "corporate" data
      - message processing
      - networking

### Scope

- File server (1)
  - DEC MicroVAX II
- Local area network (1)
  - Ethernet (IEEE 802.3)
- Workstations (15)
  - IBM PC/AT equivalents
    - with no non-volatile storage
    - with 3270 DFT-A interface card
  - IMS front office 2
  - SG front office 3
  - SG branch chiefs 6
  - DO Info Center 2
  - IMS programmers 2
  - Total 15

### Schedule

- Early 1988 (standalone LAN)
  - MicroVAX III here now
  - Ethernet LAN on order
  - diskless PC's to be ordered when available

### Potential Future Applications

#### Standalone LAN (PC network)

- Local (compartmented) processing
  - local files/applications (mirror of DO station)
  - local word processing

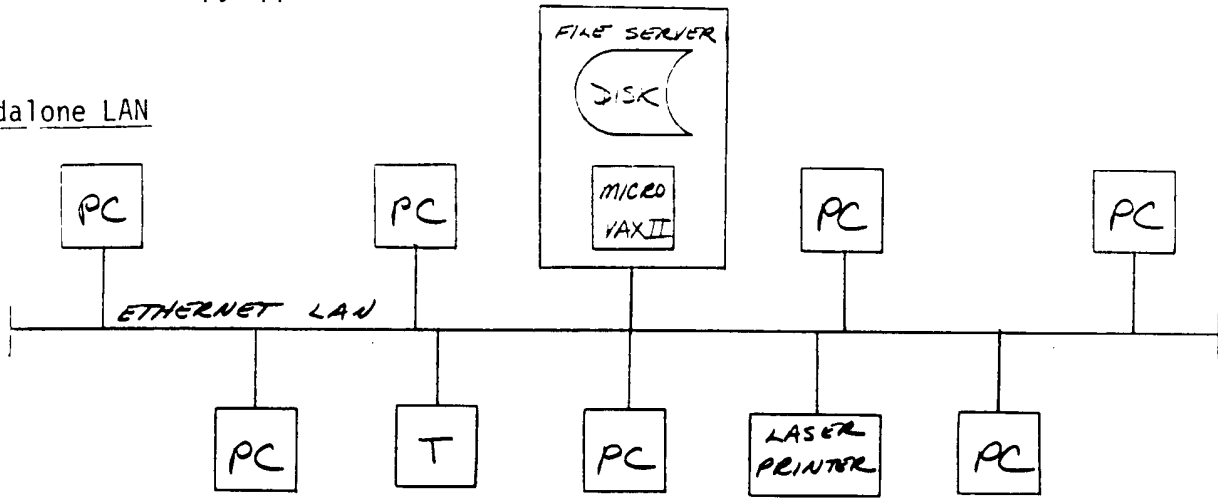
#### Mainframe terminals

- Mainframe processing
  - message processing (MDS)
  - networking (Aim)
  - alternatives will be evaluated

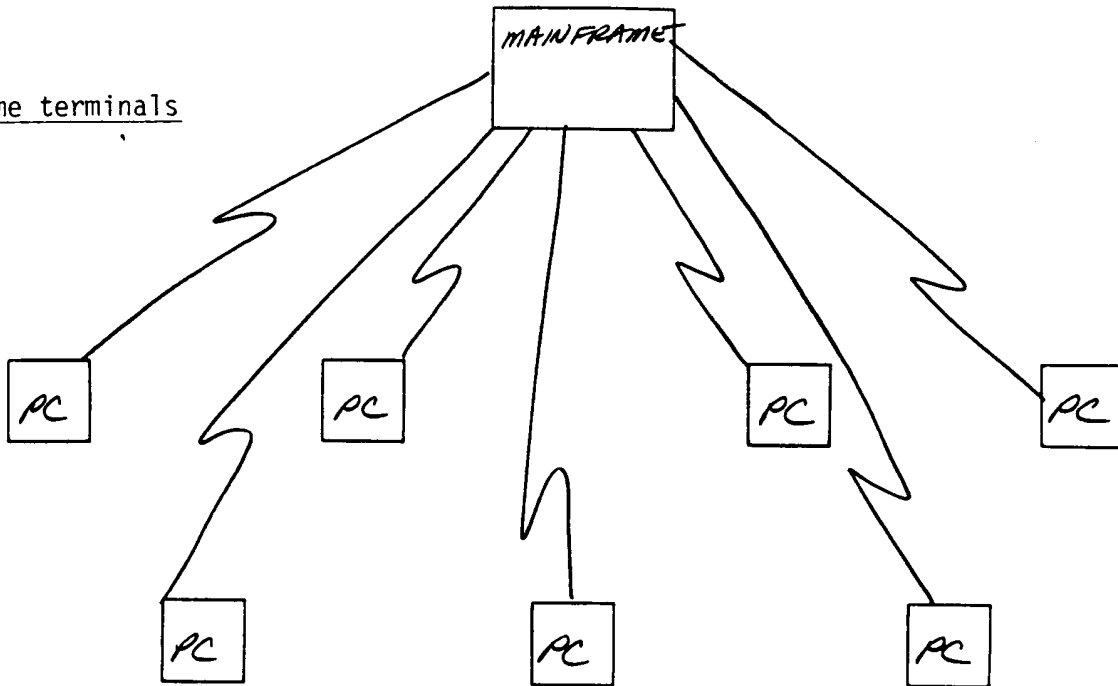
#### Connected LAN (with gateway)

- Cooperative processing
  - corporate data in mainframe
  - local data in LAN

Standalone LAN



Mainframe terminals



Connected LAN

