HONEYWELL PRODUCT LINE

The following communication support is currently available for the models listed below.

a. 2780/3780 Asynchronous - Honeywell to Honeywell only

b. 2780/3780 BiSynchronous

c. UltiLink - File / Acct. Creation - Remote Asynch.

d. UltiNet - Distributed Processing - Remote Logical Disk / File Sharing.

e. Auto Dial - 8 way board only

note: Racal Vadic 2400 Synchronous modem will allow Auto Dial with 16 way board, although it is currently not a Ultimate supported option.

f. Pass-Thru - I/O Redirection

1. Model 6000
2. Model 6010
3. Model 6210
4. Model 6410
5. Model 6600
6. Model 6800
7. Model 7000
8. Model 7200
9. Model 7400

The Honeywell 1400 series currently supports the following:

a. UltiLink - File / Acct. Creation - Remote Asynch.

b. 2780/3780 BiSynchronous - Expected 5/88

VAX PRODUCT LINE

No Ultimate supplied communications software is currently available on the following models.

1. Model 8100 (MicroVAX-II)
2. Model 8200 (VAX 8200)
3. Model 8500 (VAX 8200 , 8550)
4. Model 8750 (VAX 750)
5. Model 8780 (VAX 780)
6. Model 8785 (VAX 785)
7. Model 8800 (VAX 8800)
8. Model 8860 (VAX 8600 , 8650)

DEC PRODUCT LINE

The following communication support is currently available for the models listed below.

a. 2780/3780 BiSynchronous

b. UltiNet - Distributed Processing - Remote Logical Disk / File Sharing

c. UltiLink - File / Acct. Creation - Remote Asynch

d. Pass-Thru - I/O Redirection

1. Model 1500
2. Model 1510
3. Model 1520
4. Model 1525
5. Model 2000
6. Model 2000S
7. Model 2020
8. Model 3010
9. Model 3020
10. Model 3025
11. Model 3030
12. Model 3040

IBM HARDWARE CONCEPTS

* Channels for Host Connection

* Control Units and Peripherals

* Communication Control Unit

CHANNELS FOR HOST COMMUNICATION

* Channels connect Host to Peripherals

* Channel processor frees Host to continue processing

CONTROL UNITS AND PERIPHERALS

* Regulate data flow between Host and Peripheral device

* Buffer data

* Code - Check - Decode data streams

* Manage single type of Peripheral

* Can handle multiple devices concurrently

  i.e. 3274 Cluster controller

COMMUNICATION CONTROL UNIT

* Local control device which provide Host access to remotely attached terminals and remote 3274 Control Units

* Communicate with Host over "channel"

* Establish and control all communications with the remote devices and remote Control Units.

* Sample IBM CCU's include:
  * 3704
  * 3705
  * 3725

IBM SOFTWARE CONCEPTS

* Operating Systems

* Access Methods

* Communication Protocols

OPERATING SYSTEMS

* Programs that schedule / supervise work, manage computing resources, and operate / control Peripheral devices

    * MVS (Multiple Virtual Storage)

        - Each job or user may have up to 16 MB of VM address space

    * VM (Virtual Machine) / 370

        - Each user has the equivalent of a dedicated computer

    * Ultimate 370

ACCESS METHODS

* Assists the programmer in record transfer between I/O devices.

* Each OS provides several methods of data organization. Each Access Method provides one or more techniques of file creation/retrieval.

* Access Methods that involve data communications control direct the transmission of data between the Host application program and remote terminals.

- VTAM

  * Supports a wide variety of devices.

  * Flexible as to terminal mix on multipoint lines.

  * Provides for more direct program control of terminals.

  * Designed to use new hardware and software such as VS and SNA. When used with 3704, 3705, or 3725 CCU's, VTAM allocates some of the network mgmt. to the CCU, freeing up the host resources.

COMMUNICATION PROTOCOLS

* IBM systems operate in a SYNCHRONOUS environment.

* IBM uses the EBCDIC character set for terminal operations.

- Data Link Control (DLC)

  * Set of rules that ensure transmission synchronization and error-free data communications.

  * Provides for the orderly transfer of data from one location to another.

    - Binary Synchronous Communication

      * First DLC to have multiple device addressing.

      * BSC is half-duplex, character oriented DLC protocol. Each block must be acknowledged before the next block is sent.

- Synchronous Data Link Control

* Independence of code structure- SDLC uses only one ctrl char., FLAG; BSC use several, complicating code detection and checking.

* Bit serial synchronous transmission. Either modem or CCU provides bit synchronization.

* Half/full duplex, point to point, multipoint, or loop configurations.

* SDLC counts two seperate sequences of frames. The frame being transmitted, amd the frame it expects to receive next. This allows SDLC links to handle send and receive data independently.

SYSTEMS NETWORK ARCHITECTURE

* Supporting structure for SDLC. Provides a framework within which users can view complex communications-based computer systems without concern for the physical details as to how a specific network is organized.

* Shifts functions formerly performed by the Host to the network- functions such as device control, data formatting, and communications line management.

* SNA Layers

  - Based on a set of well defined logical layers. Changes can be made in one layer without affecting other layers. Interaction can occur between functionally paired layers in different distributed units.

- Major SNA Layers

  * Application Layer

    - Performs application processing. Does not become involved with routing of data or protocols.

  * Functional Management Layer

    - Controlled by the application layer. Allows communications between applications or switching between applications.

  * Transmission Subsystems Layer

    - Concerned with routing and movement of data between devices. Allows SNA to be independent of network topology; configuration changes in network can occur without changes in devices. It also allows network paths to be shared by many applications.

DIGITAL NETWORK ARCHITECTURE (DNA)

* Framework for all Digital communication products.
  - DECnet
  - DECnet/SNA Gateway
  - Communication servers

* Based closely on the OSI model

* Networking environments
  - Digital to Digital
  - Digital to non Digital

NETWORKING PRODUCT LINE

* DECnet
  - Digital to Digital
  - Digital to non Digital(DECnet-DOS)

* Internet
  - Digital to IBM and other vendors systems (Wang, CDC, UNIX, Univac)

* Packetnet
  - Digital to Digital via X.25 PSDN
  - Digital to non Digital via X.25 PSDN

DECNET MAJOR PRODUCT CAPABILITIES

* Program to Program communication

* Network Virtual Terminal capability

* File Transfer

* Remote command/batch file submission and execution

* Remote file and record access

INTERNET MAJOR PRODUCT CAPABILITIES

* Digital to IBM Communications Software offers services that range from interconnection of the DNA and SNA to single function, system to system protocol emulation.

* DECnet/SNA Gateway

  - Provides interconnection of Digital and IBM environments on a network to network level.

  - VMS or MicroVMS systems on a DECnet network can access resources, programs, and information within a SNA network.

  - 3270 users within a SNA network can access DECnet based VMS or MicroVMS system resources within a DNA environment.

* VMS/SNA

  - Similar to DECnet/SNA but for installations that require a single direct link to the SNA environment through a MicroVAX I or II system.

* BSC Protocol Emulator

- Provide point to point communication emulation between Digital and IBM systems.

- Designed to satisfy single function Digital to IBM communication requirements.

- Two types of BSC:

    * 3271

    * 2780/3780

ETHERNET OVERVIEW

* Local Area Network (LAN)

  - A privately owned data communication system, offers high-speed communication channels optimized for connecting information processing equipment. The geographic area is usually limited to a section of a building, an entire building, or a cluster of buildings.

  - Ethernet is a high-speed LAN.

  - LAN's provide a fast, efficient means of exchanging information.

  - Resource sharing allows users to share expensive peripheral devices and databases.

  - LAN's expand the possibilities for global resource sharing by offering standards for communication between different vendors and between local and remote networks.

* Broadband

  - Cost effective transport media for data, voice, and video on shared cable.

  - Uses CATV type cable.

* Baseband

  - Single channel applications

  - Hi Speed Standard Coaxial

    * Used for communications between floors and buildings.

  - ThinWire Coaxial

    * Used to connect workstations, PC's, and low-end systems in local work areas on a floor.

* Channel speeds of 10 MBits/sec

IBM

Communications

Overview

February 2, 1988

Topics

General Overview

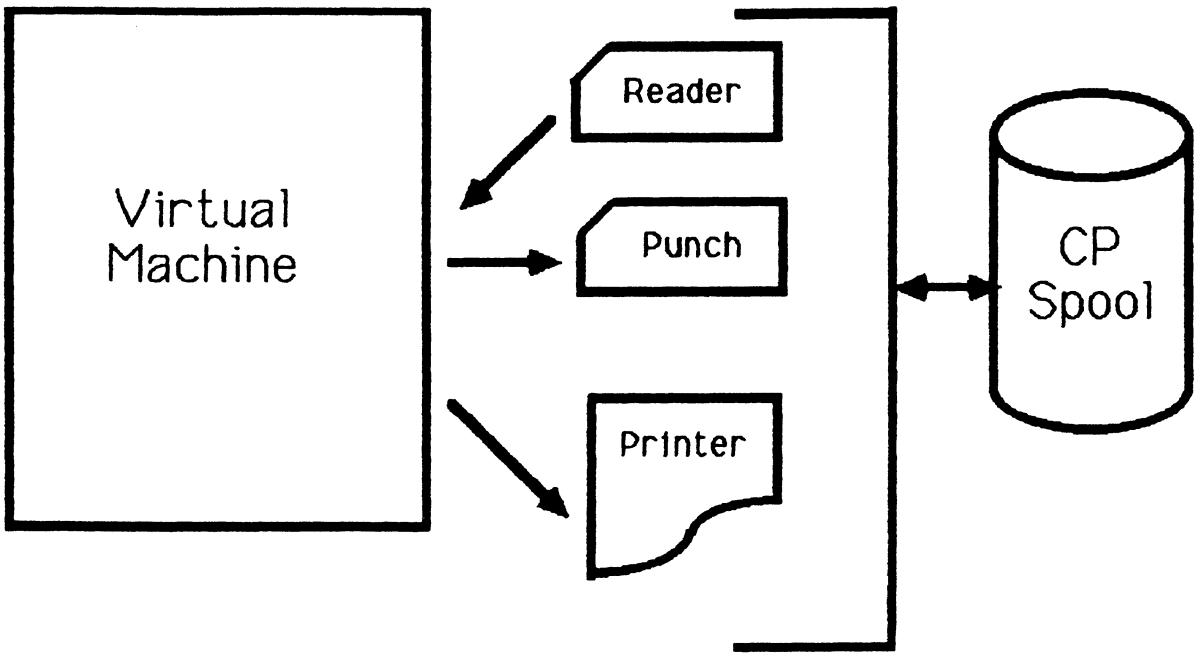
- Origins
- Protocols
- VM Internal Faciliities
- Hardware
- Software

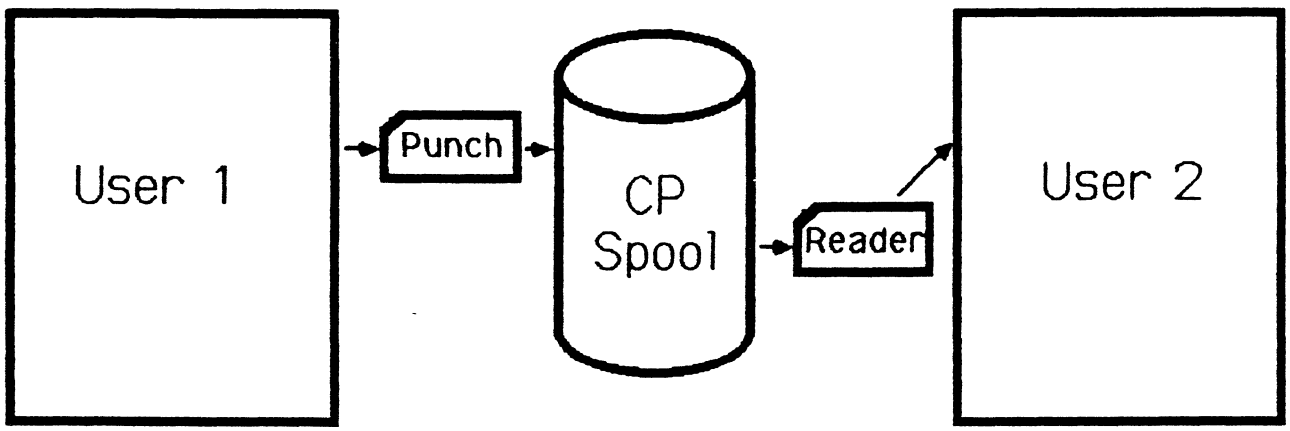
Advanced Program to Program Communication

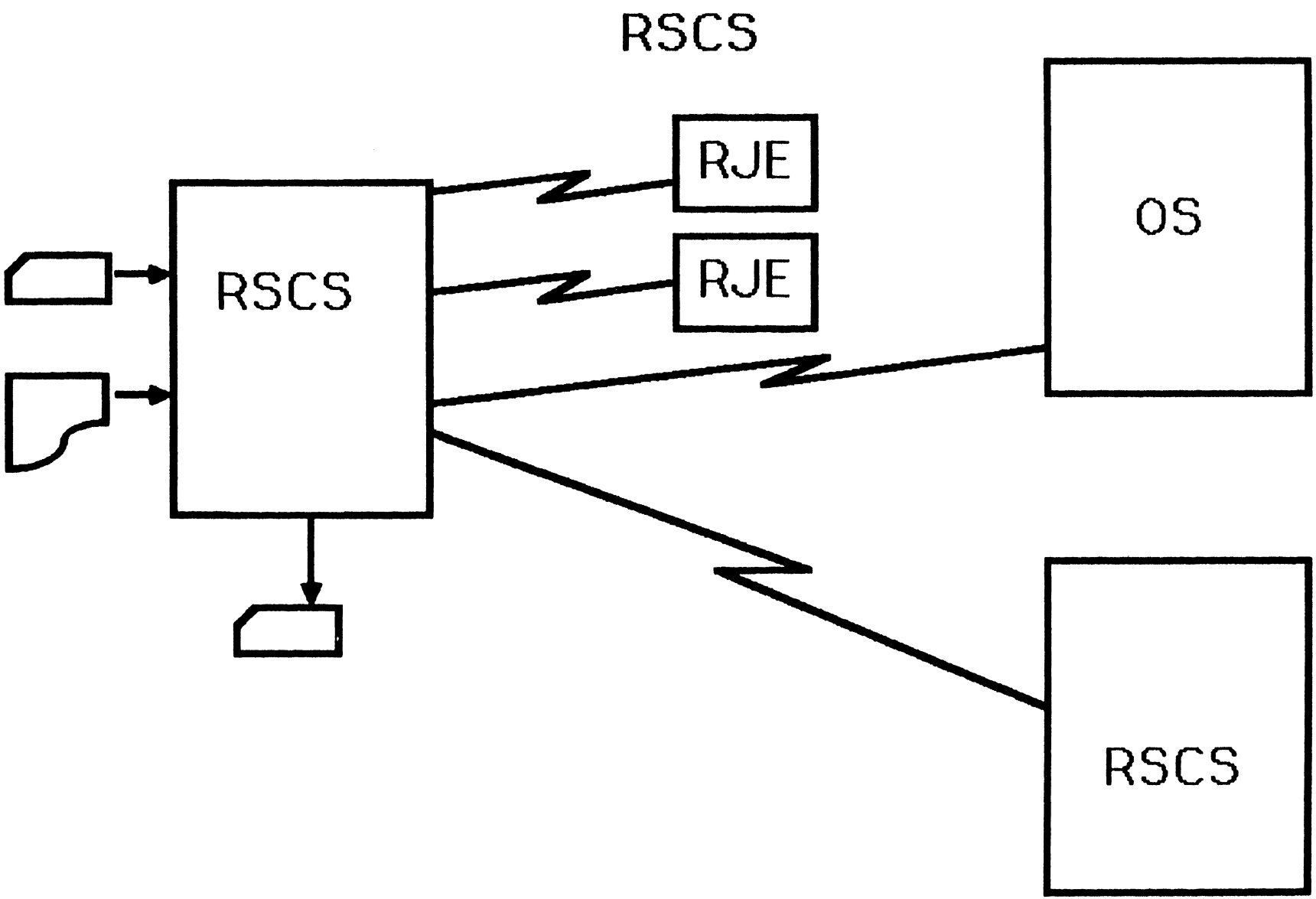
SNA Technical Overview

TSAF/LU 6.2 Technical Overview

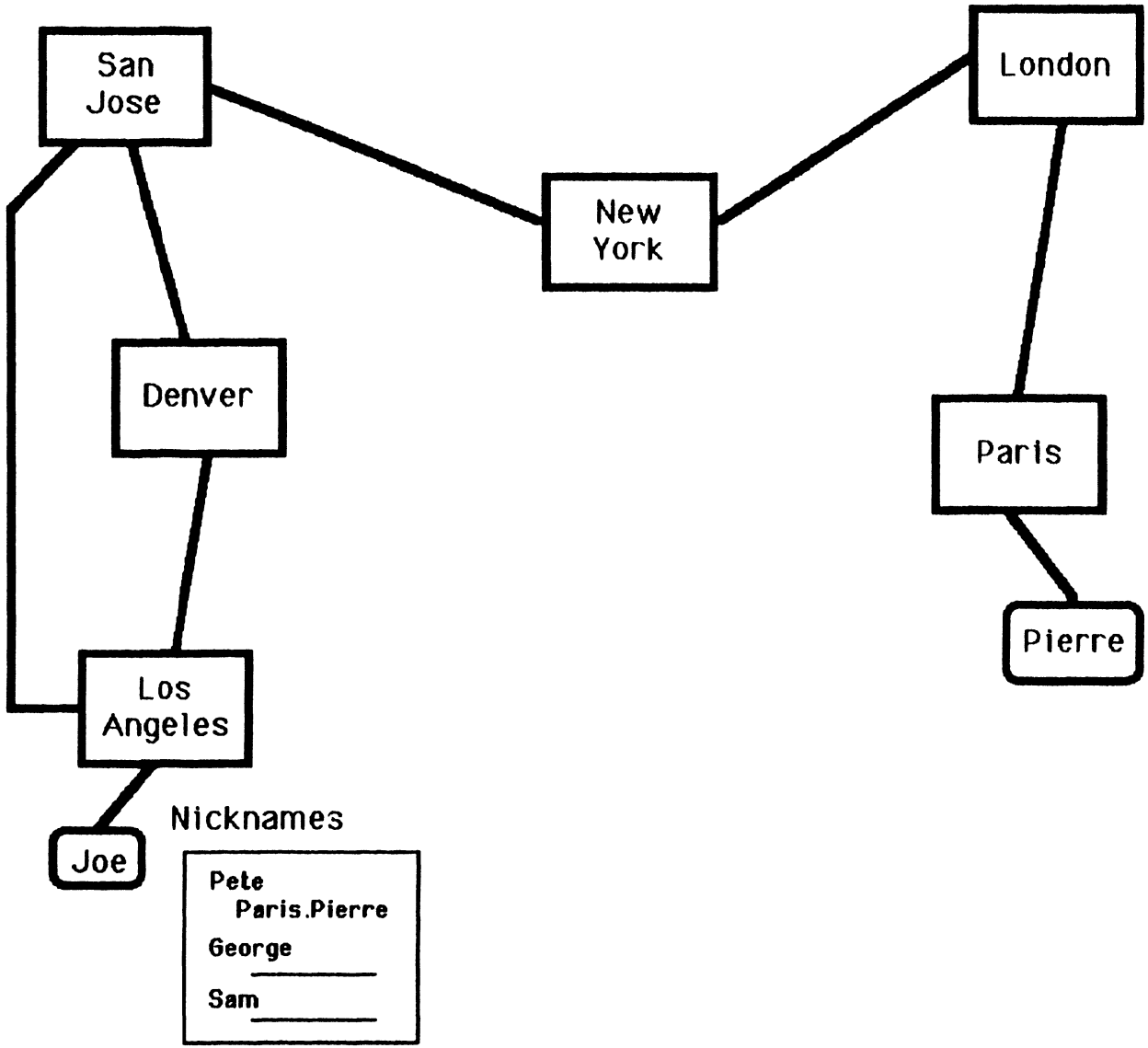
VM Spooled Devices



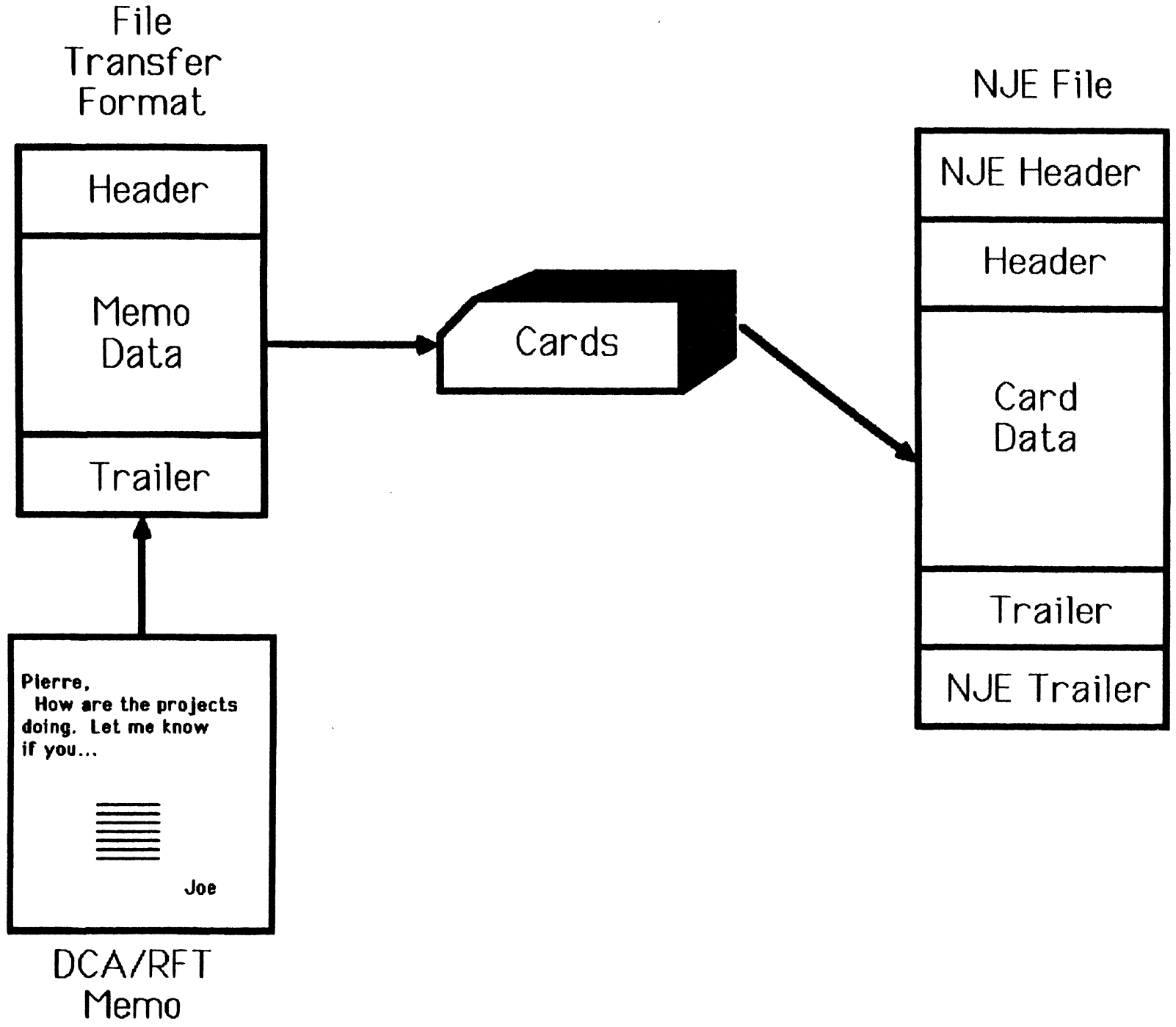



RSCS
RJE
RJE
OS
RSCS
RSCS

NJE Network


San Jose
London
New York
Denver
Paris
Pierre
Los Angeles
Joe
Nicknames
Pete
Paris.Pierre
George
Sam

From Card Images To ...



Communications "Protocols"

Asynchronous

- IBM Half Duplex
- Ultimate Series/1

Binary Synchronous

Channel to Channel Adapter

Systems Network Architecture

- Synchronous Data Link Control
- Channel to Channel Adapter
- X.25
- Token Ring
- Ethernet

TCP/IP

VM Constructs

Enhancements of Real Hardware

- Spooled Devices
- Virtual Channel to Channel Adapter
- Logical Devices

Software Only

- Virtual Machine Comunication Facility
- Inter User Communications Vehicle

Hardware

Channel to Channel Adapters

270X Communication Adapters

370x Front Ends

- Emulator Program
- Network Control Program
- Partitioned Emulator Program

Integrated Communications Adapter

VM Software - I

Native VM Support

- Binary Synchronous - BSC
- Asynchronous - ASYNC

Remote Spooling and Communications Subsystem - RSCS

- Binary Synchronous - BSC
- Channel to Channel Adapter - CTCA
- Systems Network Architecture - VTAM/SNA

Passthru

- Binary Synchronous - BSC
- Channel to Channel Adapter - CTCA
- Logical Device Support

VM Software - II

VTAM/SNA

- Synchronous Data Link Control - SDLC
- Binary Synchronous - BSC
- Channel to Channel Adapter - CTCA

Transparent Services Access Facility - TSAF

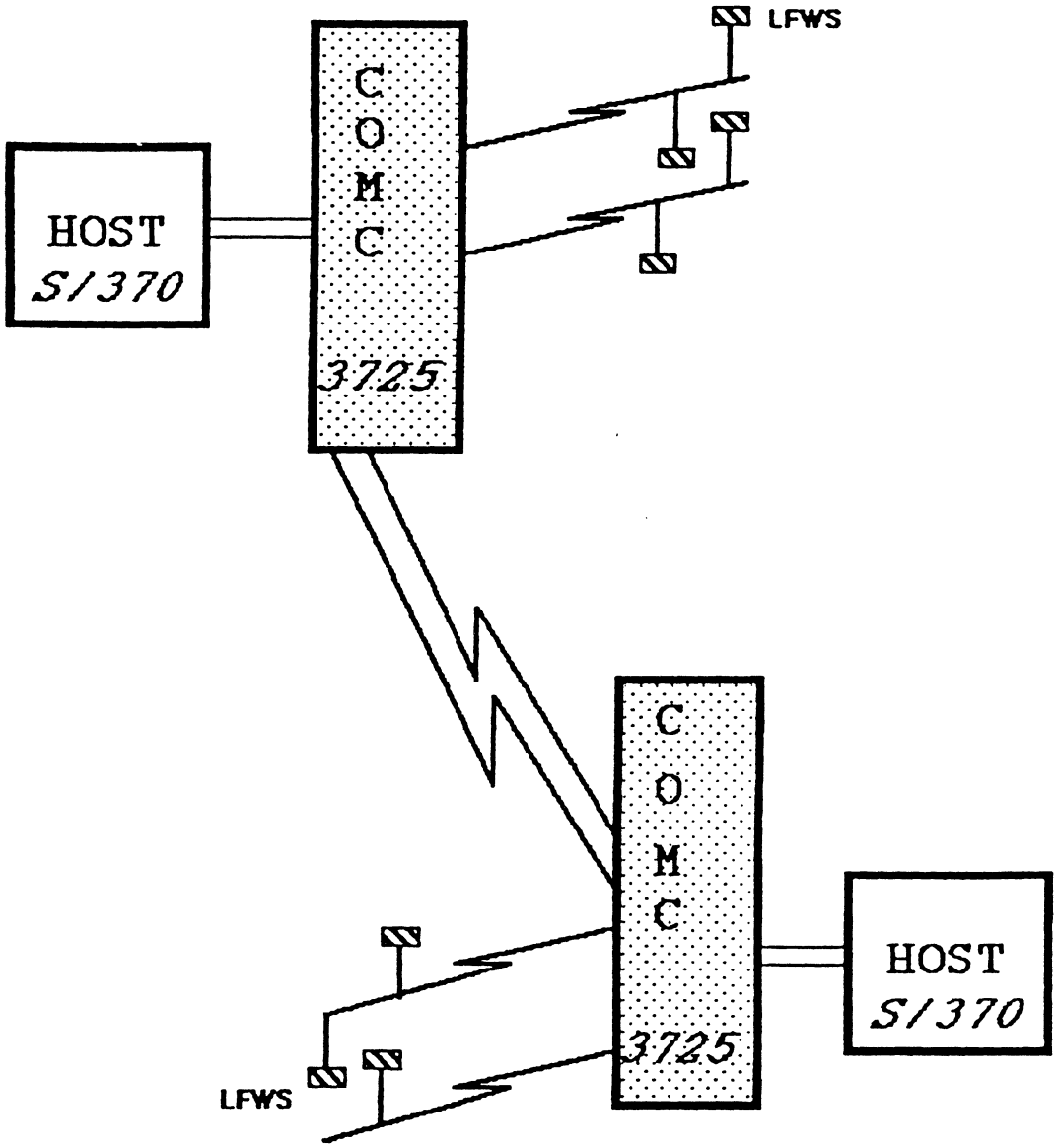
- Binary Synchronous - BSC
- Channel to Channel Adapter - CTCA
- Inter User Communications Vehicle - IUCV

Office Systems Architecture

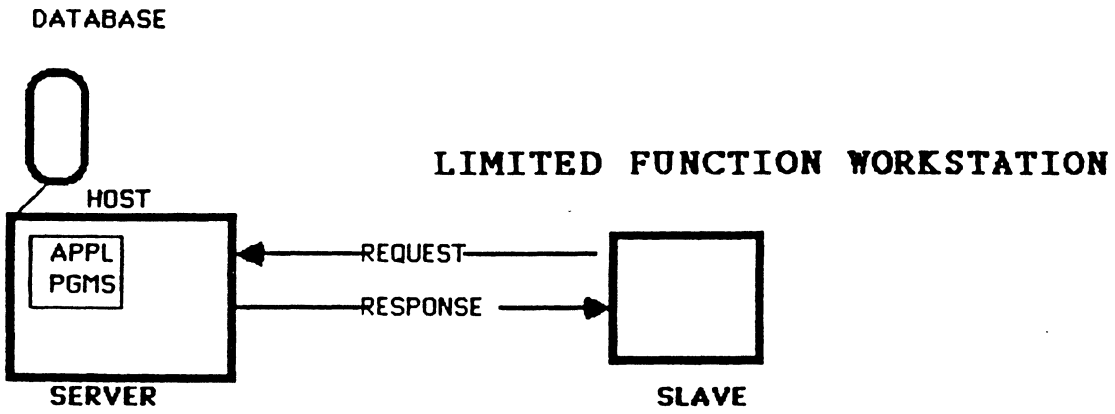
- Document Interchange Architecture - DIA
- Document Content Architecture - DCA
- Distributed Office Systems Support - DISOSS
- SNA Distributed Services - SNADS

An Introduction to Program-To-Program Communication and Peer-to-Peer Networking in an IBM SNA Environment

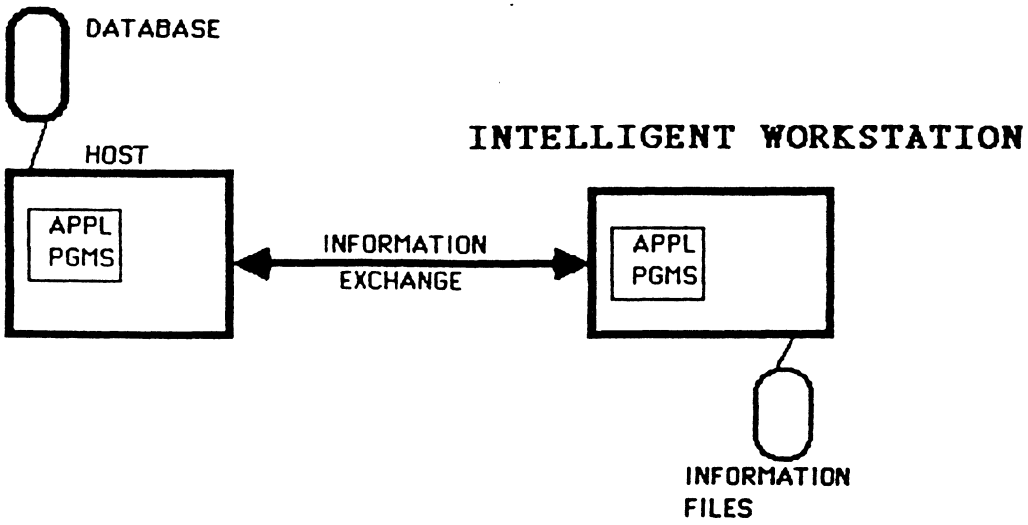
A HIERARCHICAL SNA NETWORK



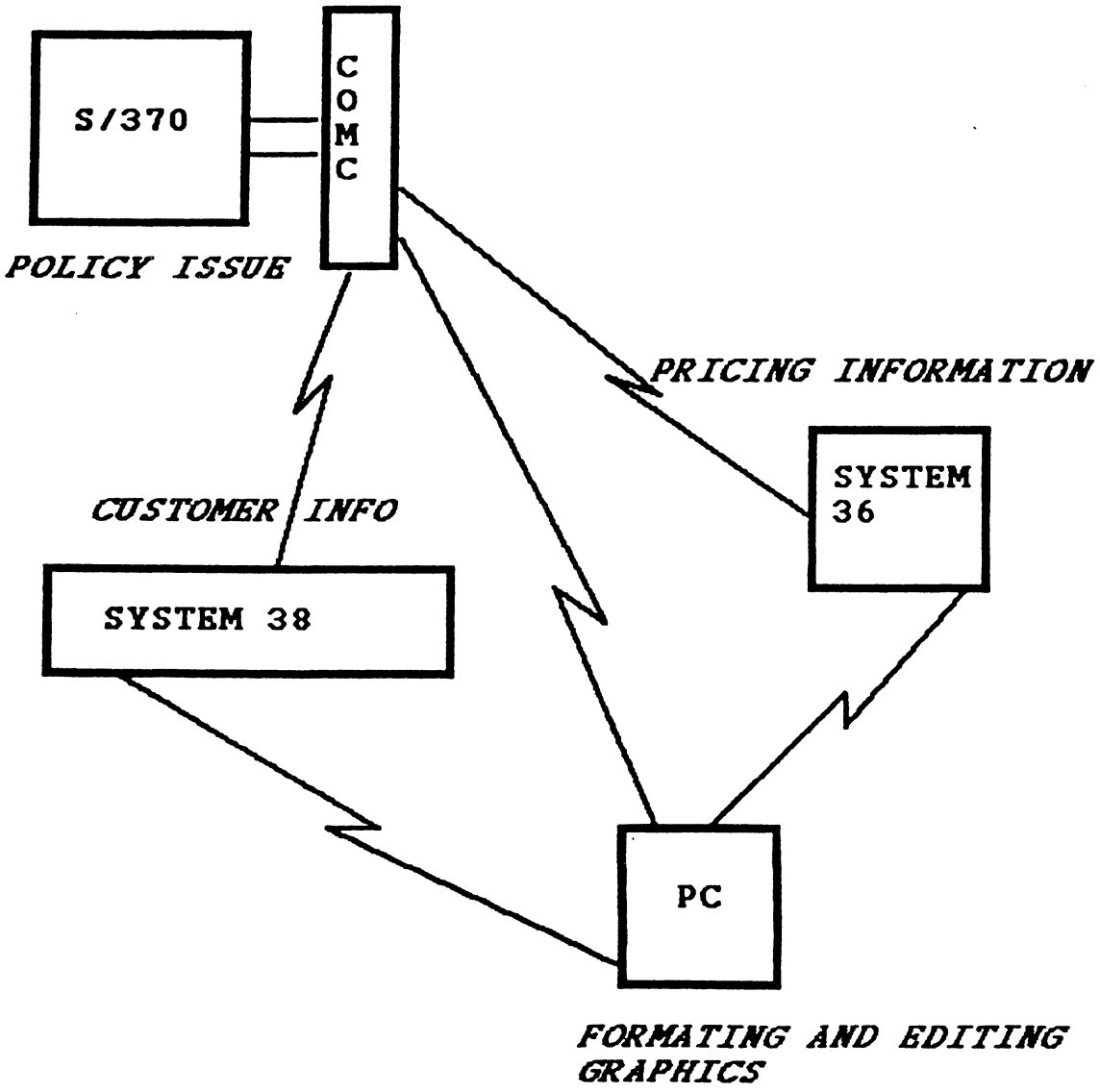
MASTER / SLAVE



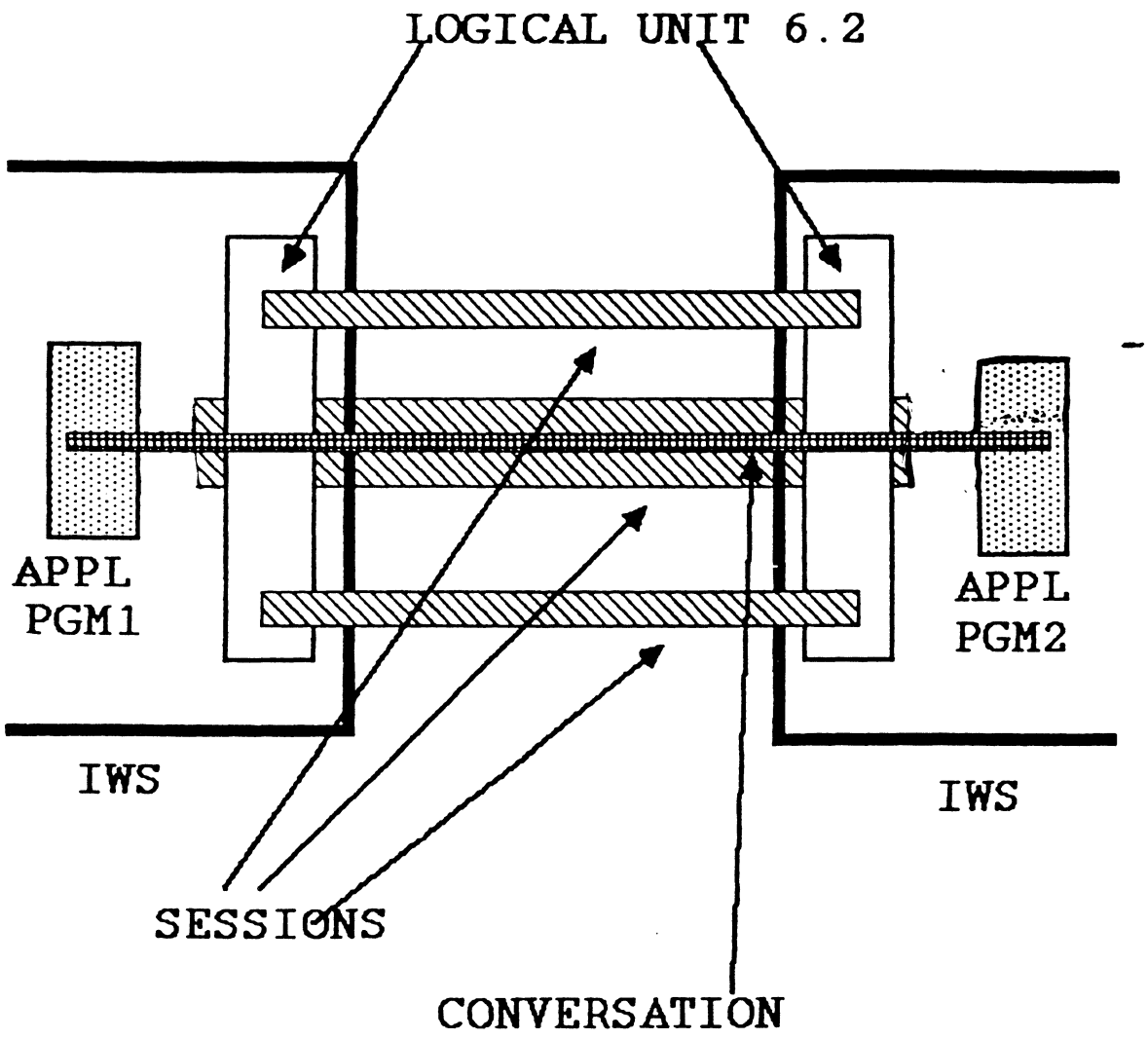
PEER-TO-PEER



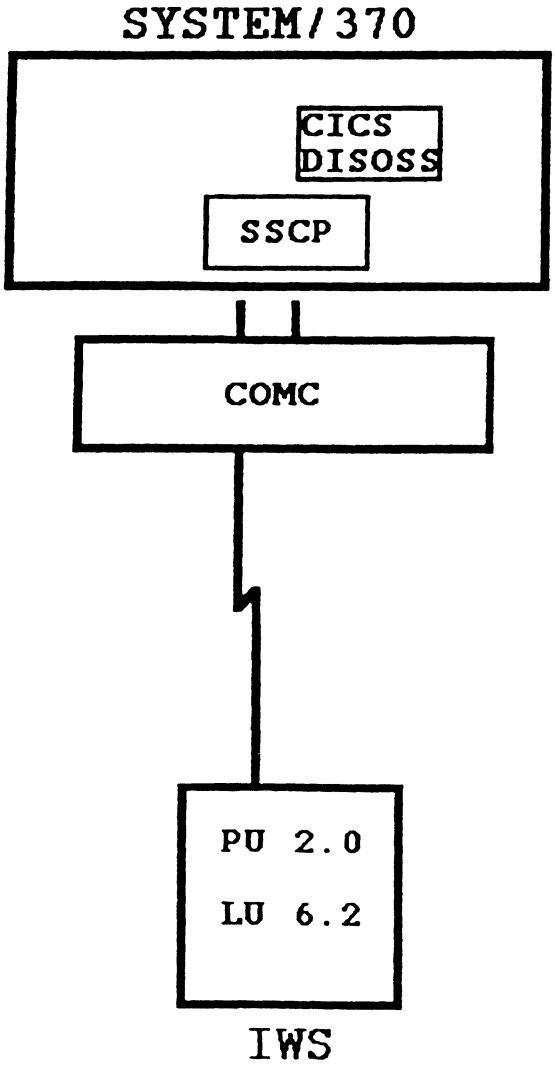
DISTRIBUTED TRANSACTION PROCESSING



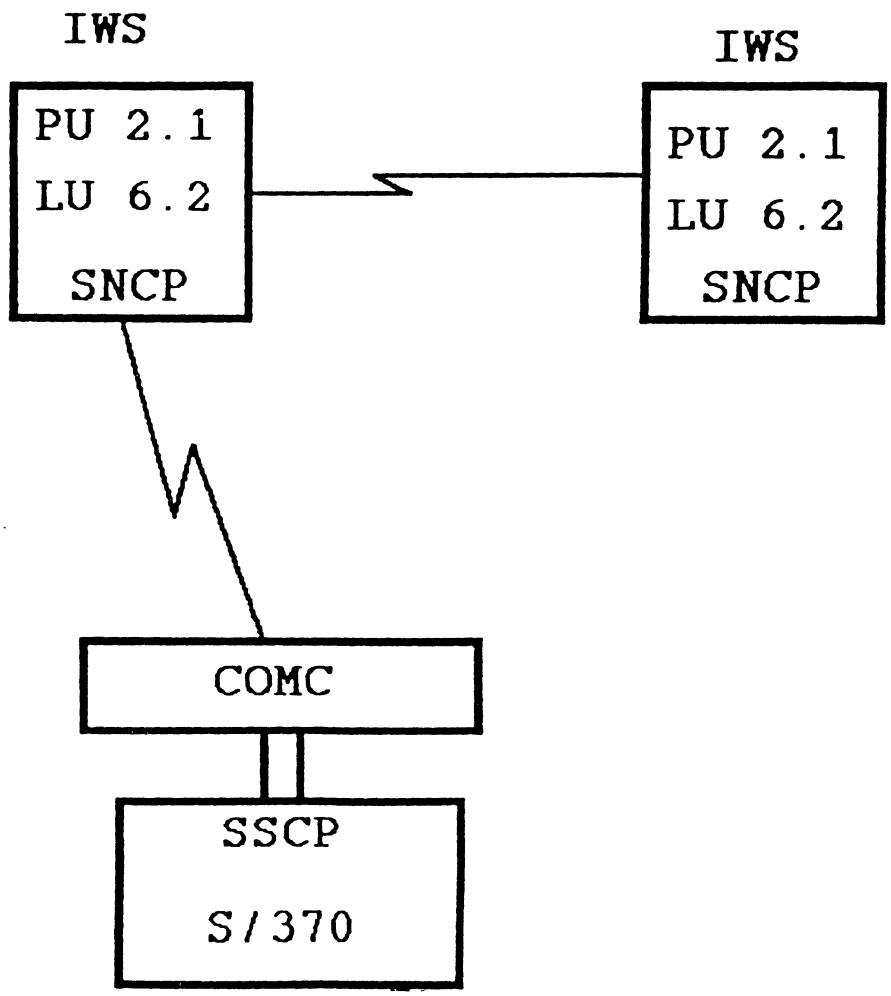
CONVERSATIONS AND SESSIONS



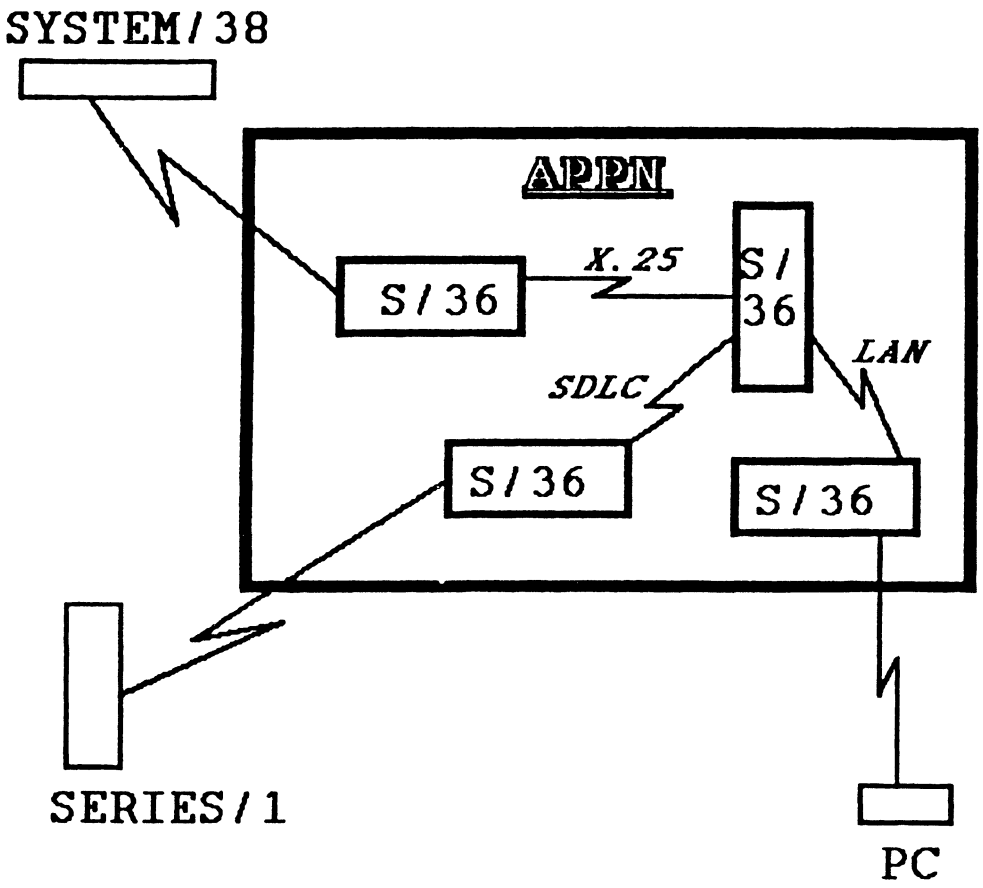
APPC WITH PHYSICAL UNIT 2.0



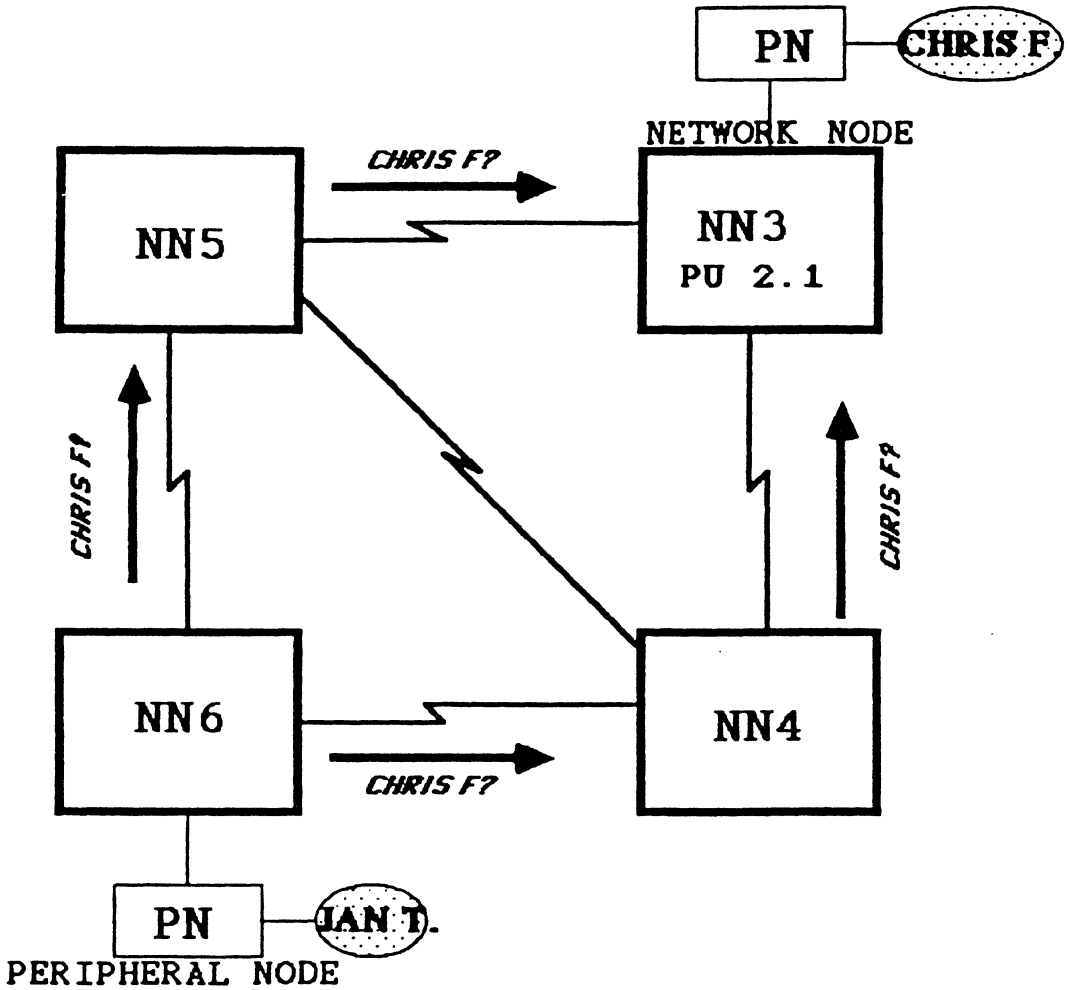
APPC WITH PHYSICAL UNIT 2.1 PEER-TO-PEER NETWORKING



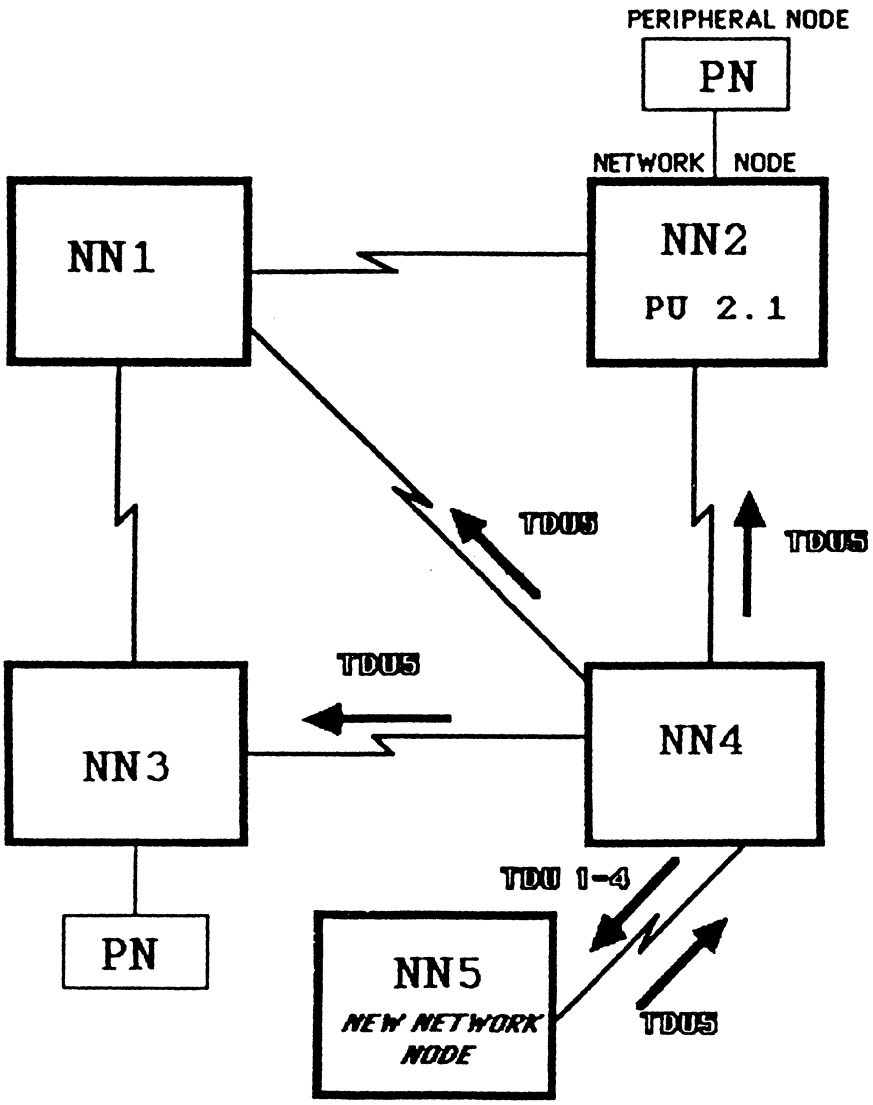
ADVANCED PEER-TO-PEER NETWORKING



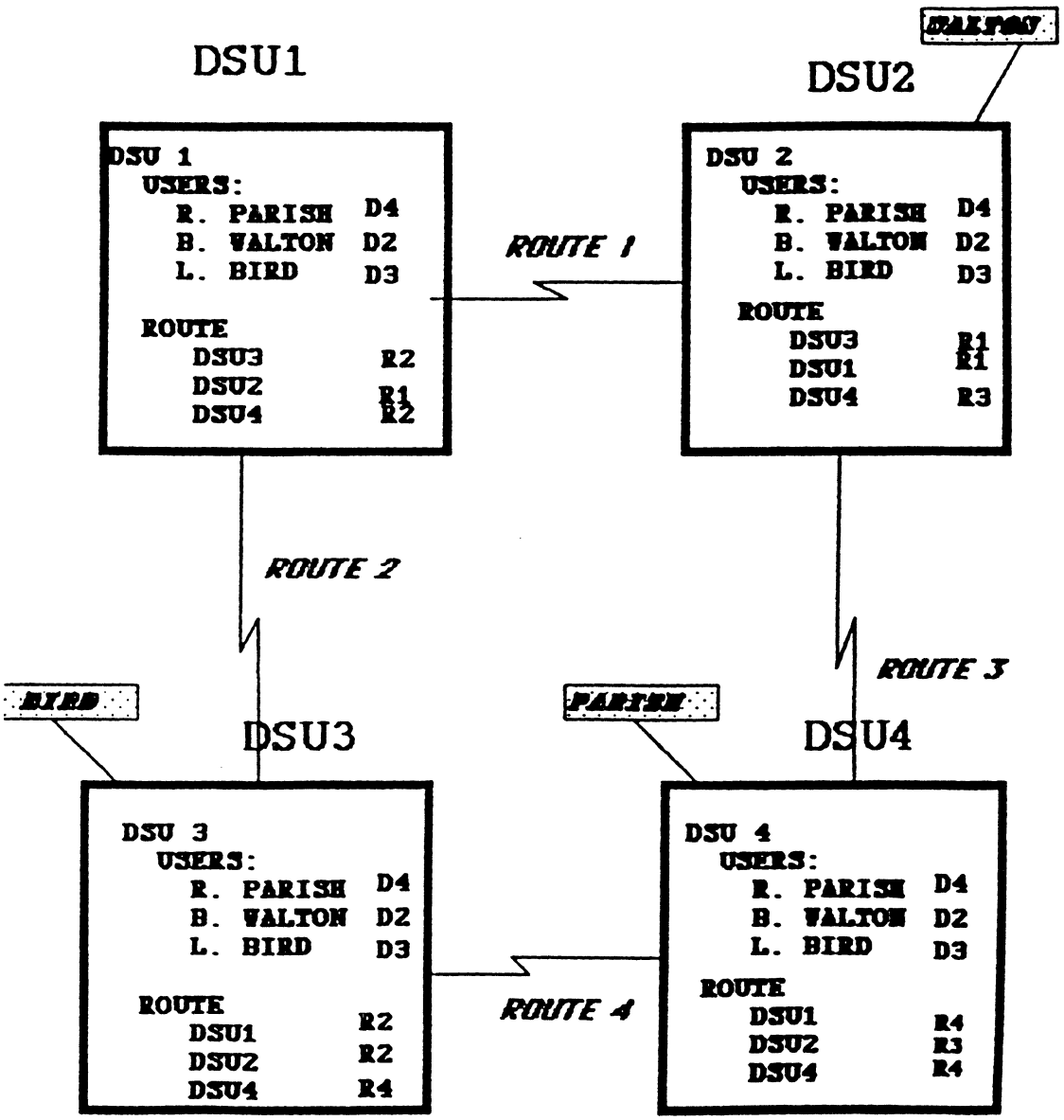
APPN NETWORK
UNDIRECTED SEARCH



APPN
DYNAMIC TOPOLOGY UPDATE



SNADS NETWORKING

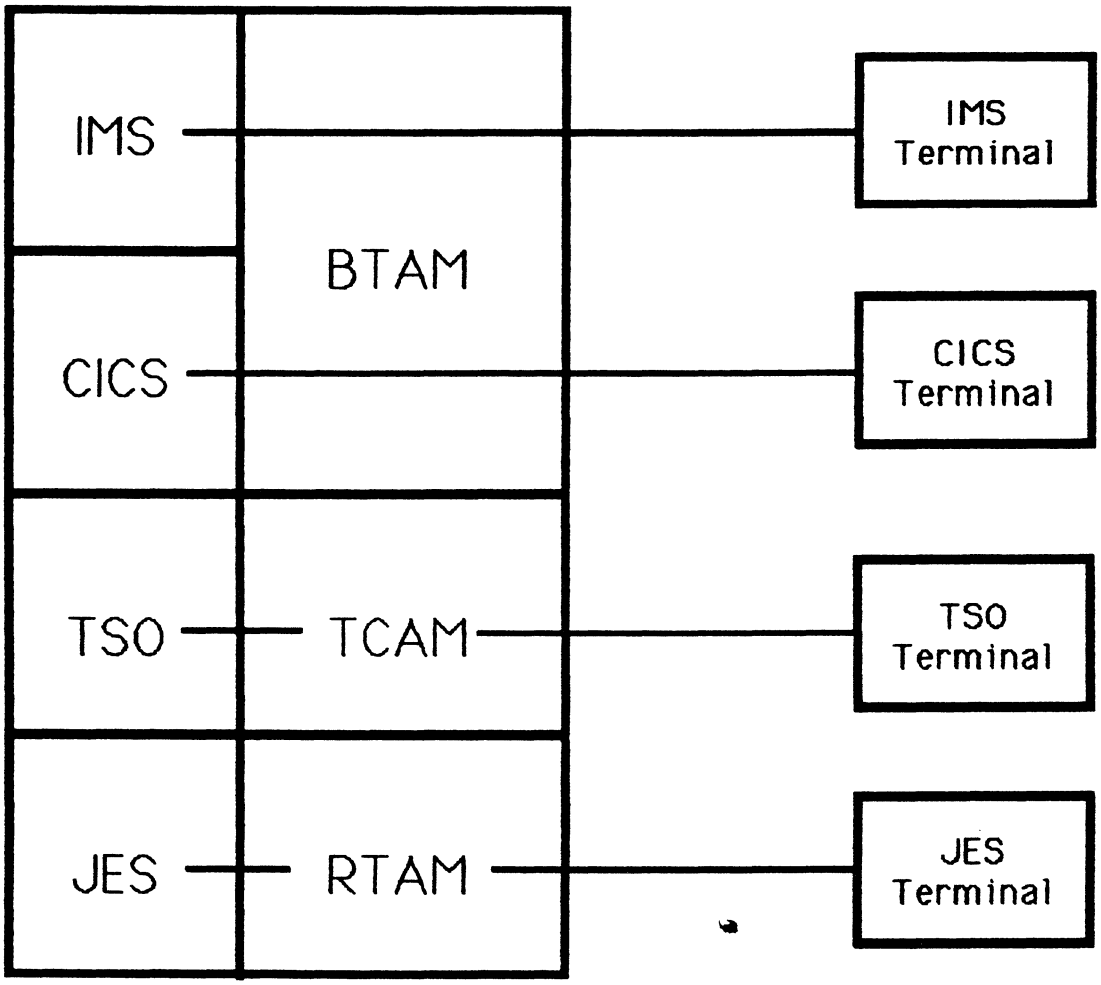


SNA

Technical

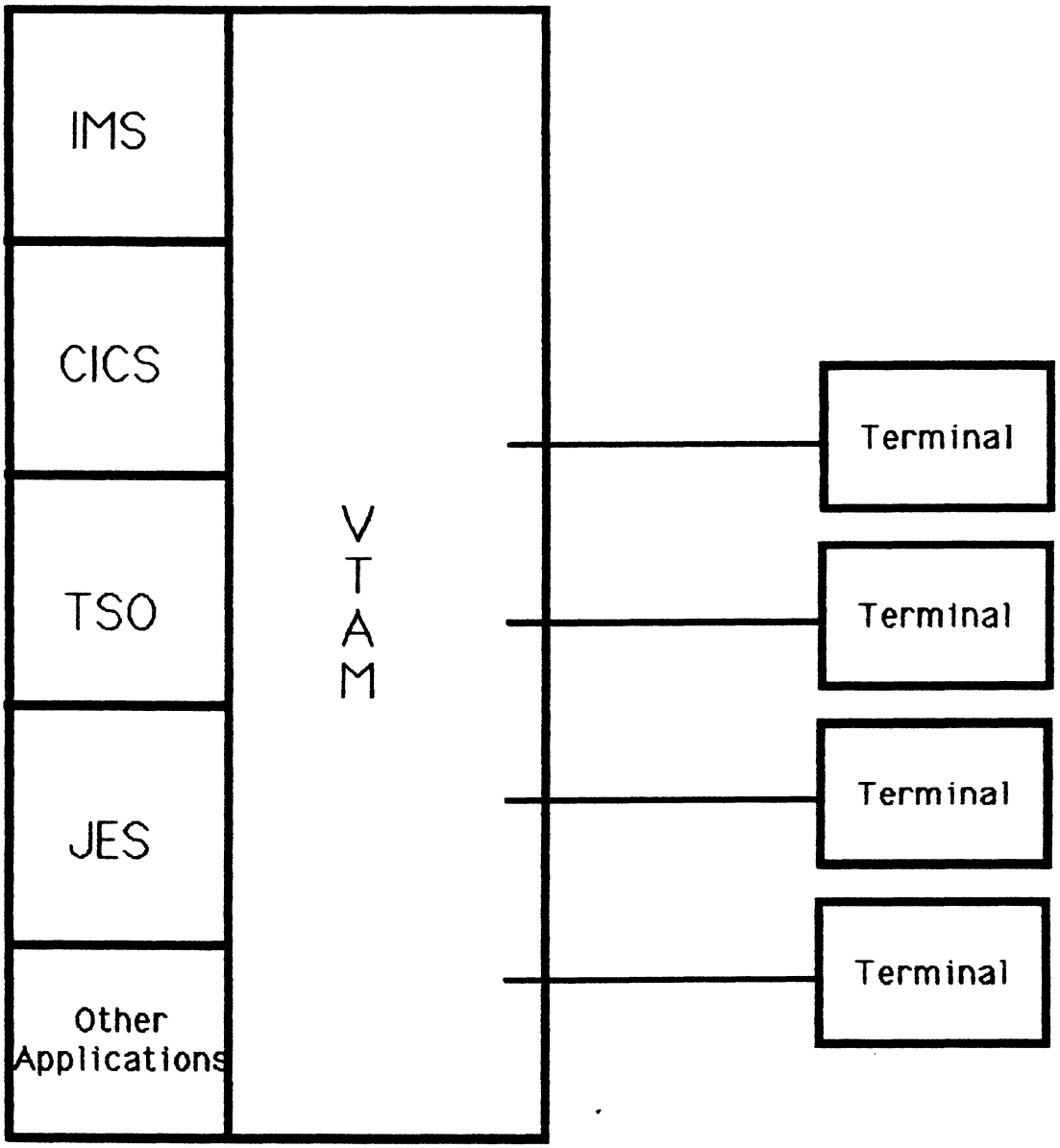
Overview

Pre-SNA IBM Network

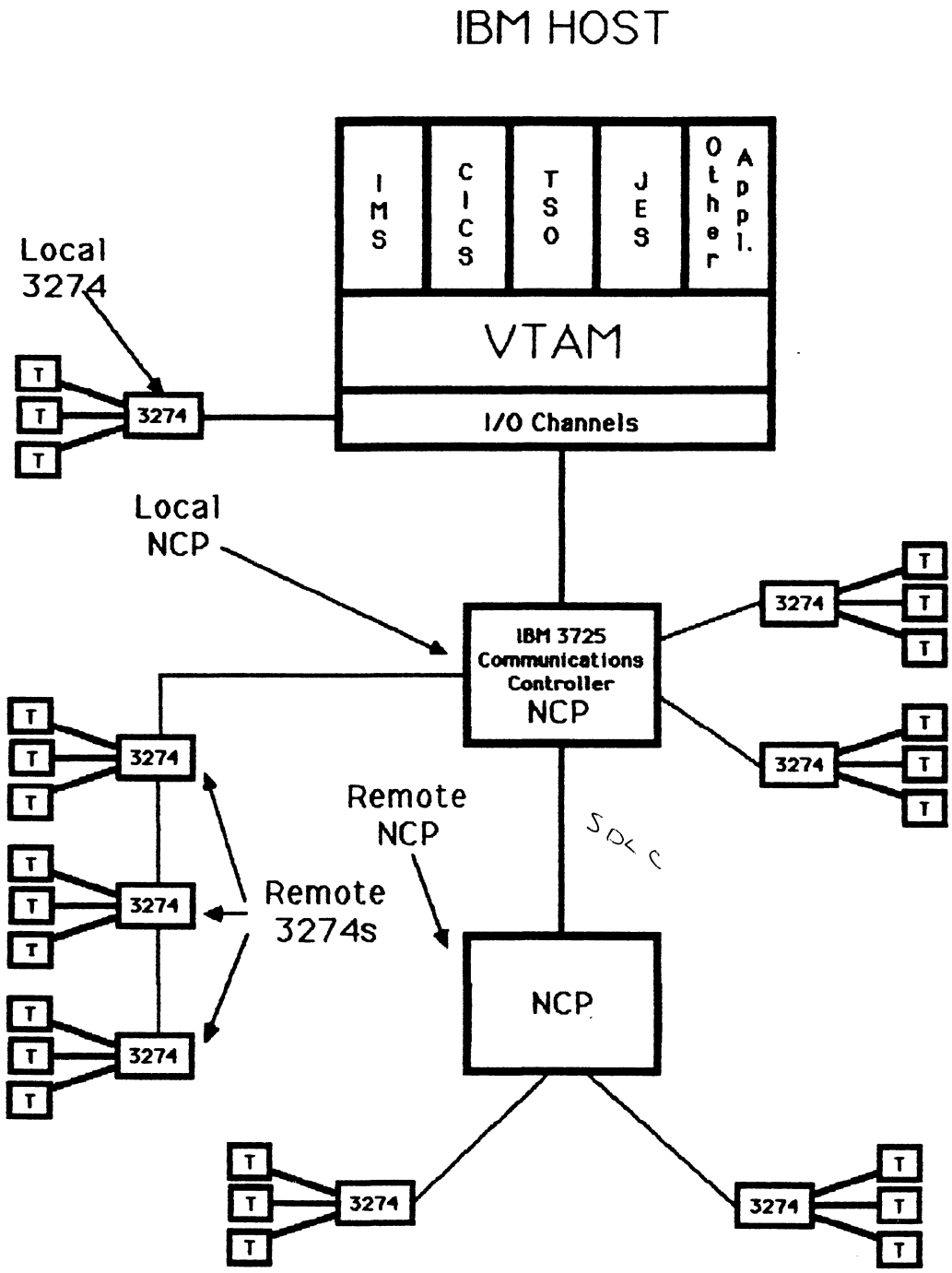


Each terminal can access only one application

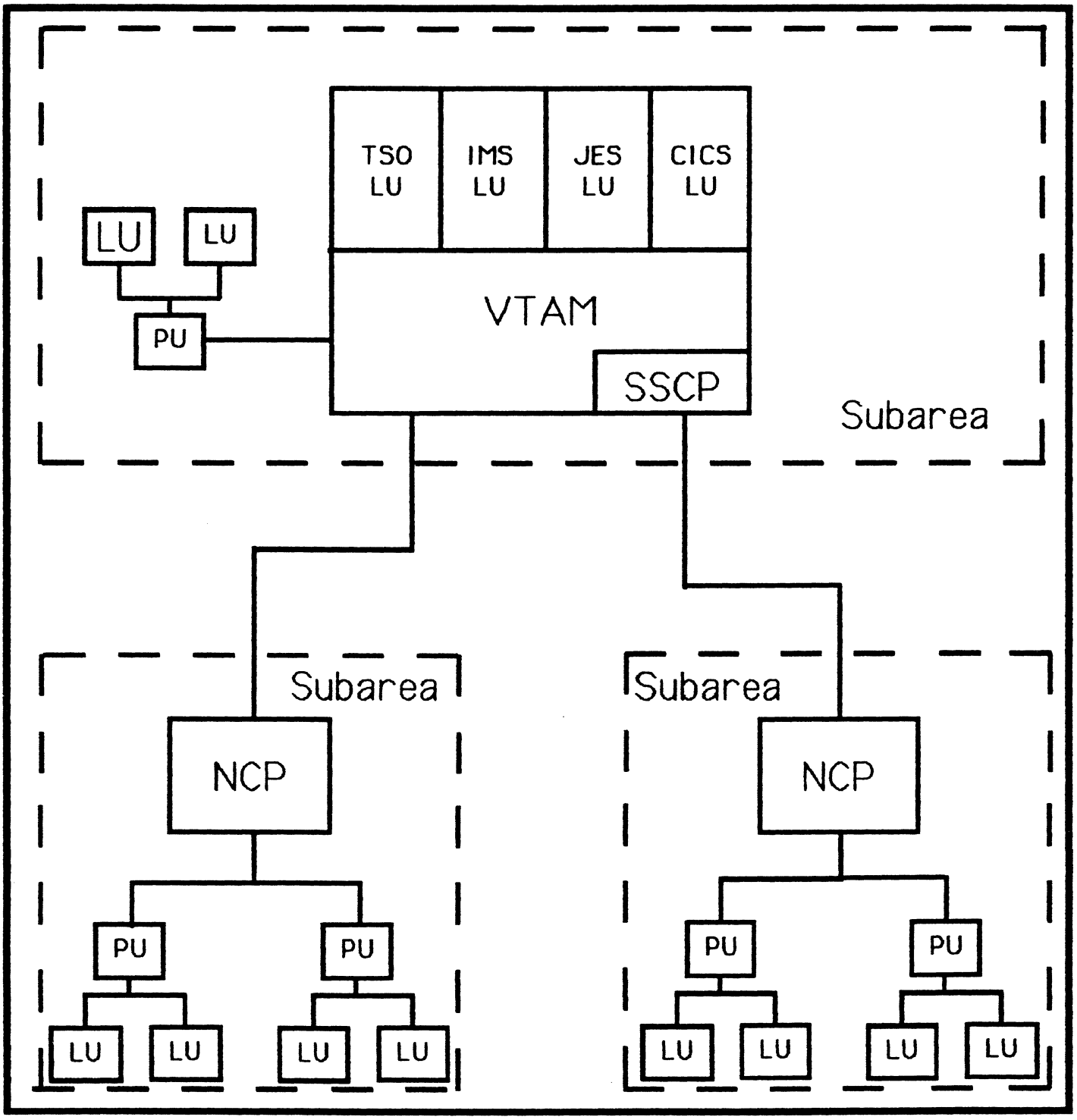
SNA Network


IMS
CICS
TSO
JES
Other Applications
VTAM
Terminal
Terminal
Terminal
Terminal

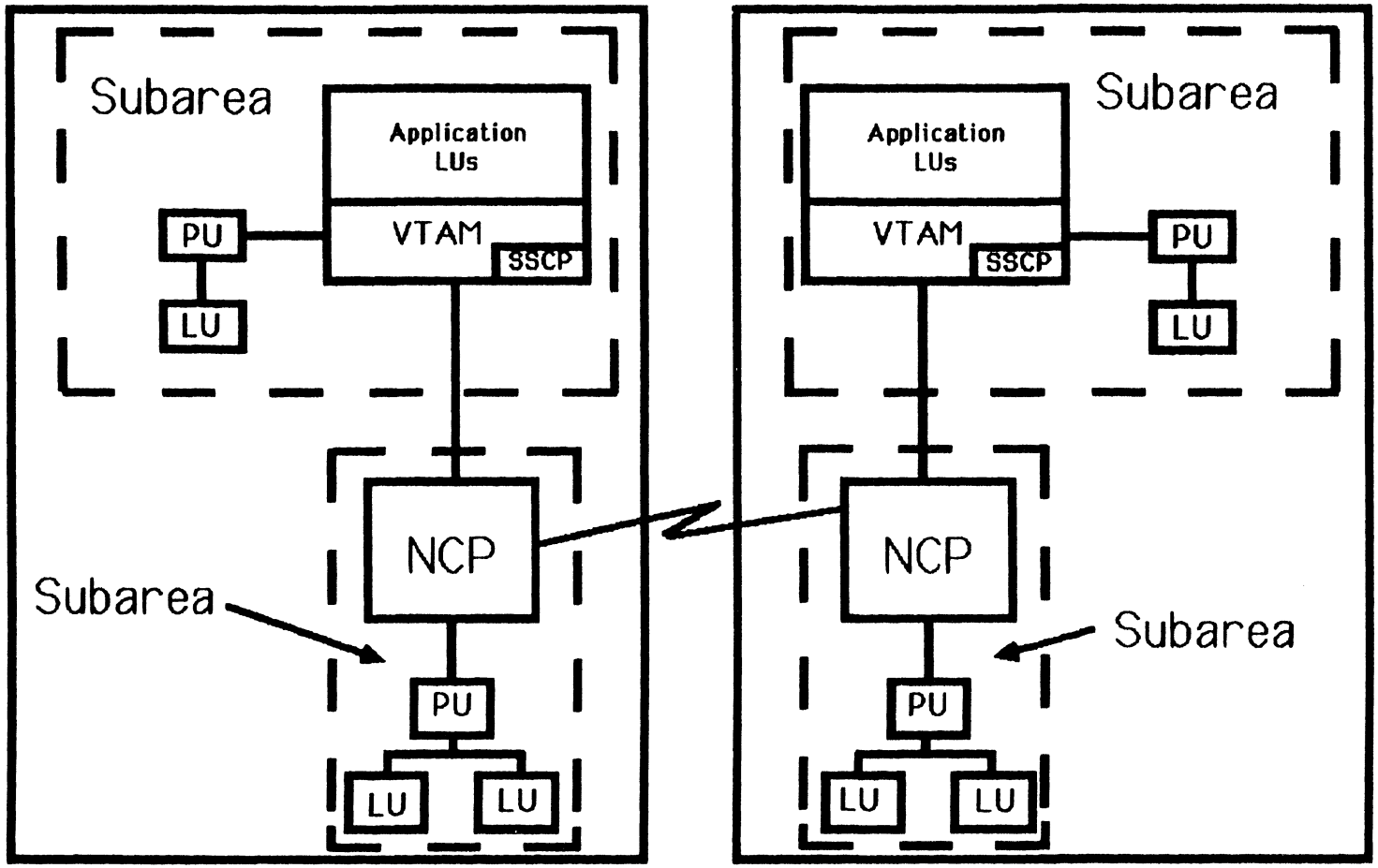
SNA Network Structure



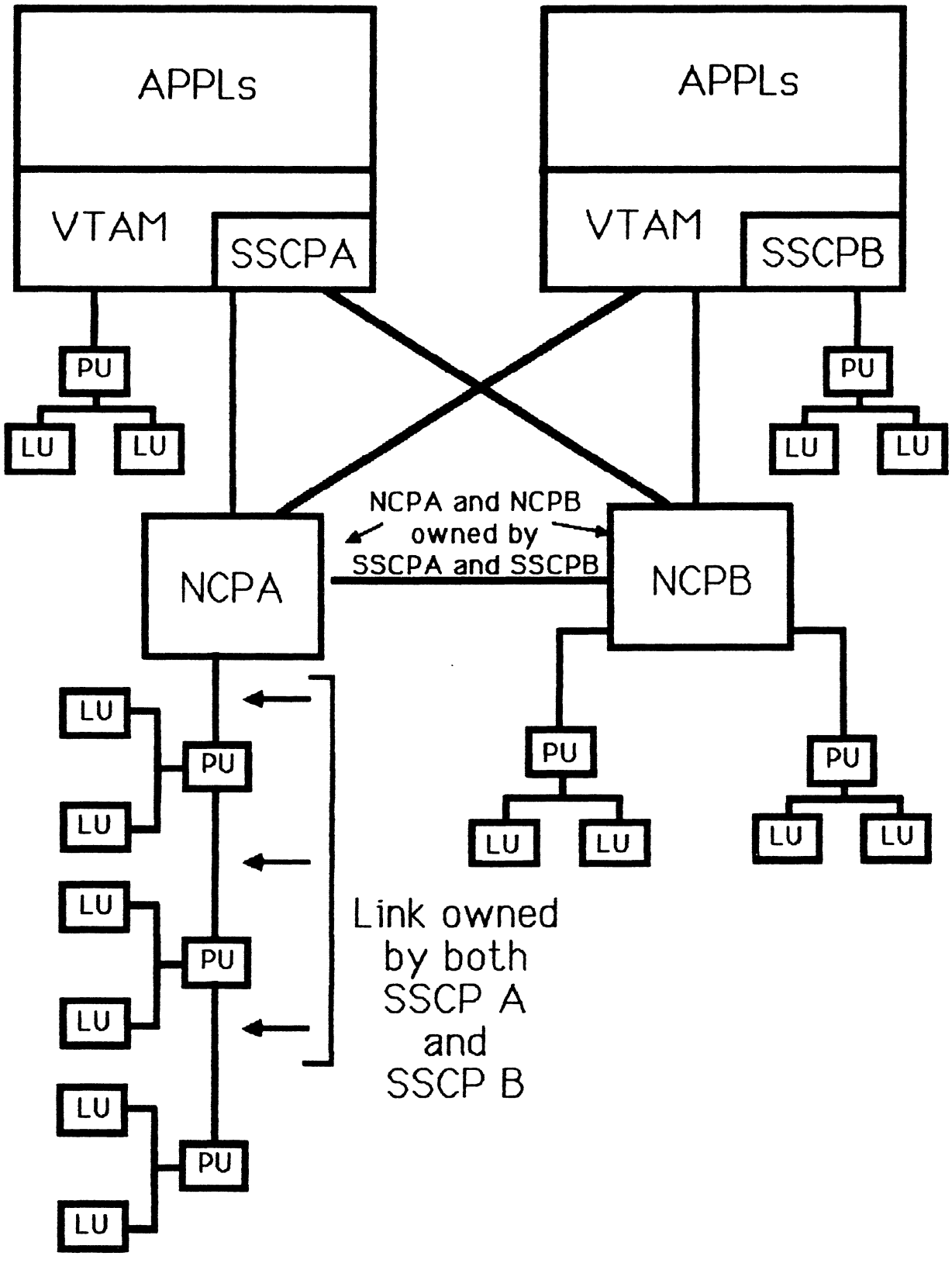
Single Domain Network



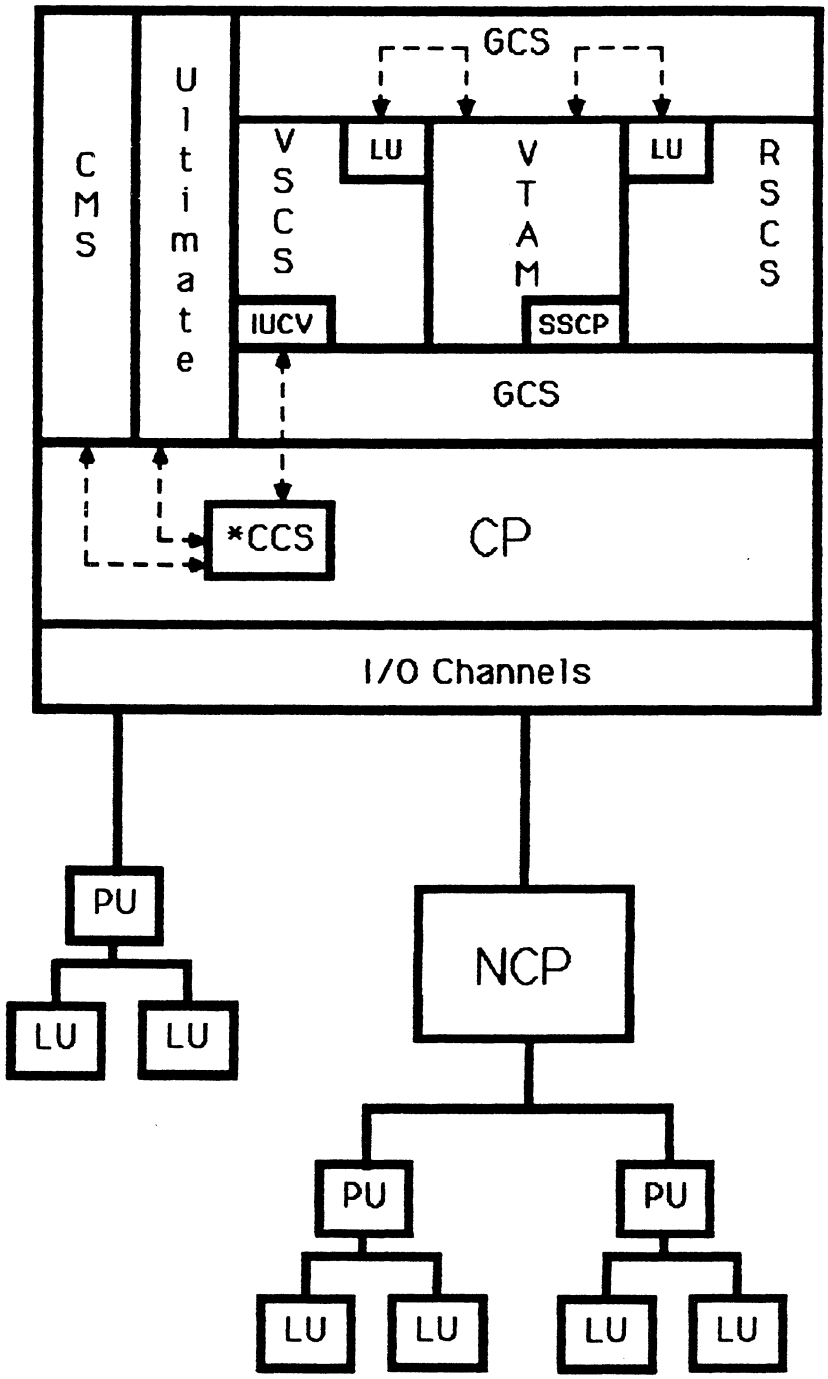
Multiple Domain Network



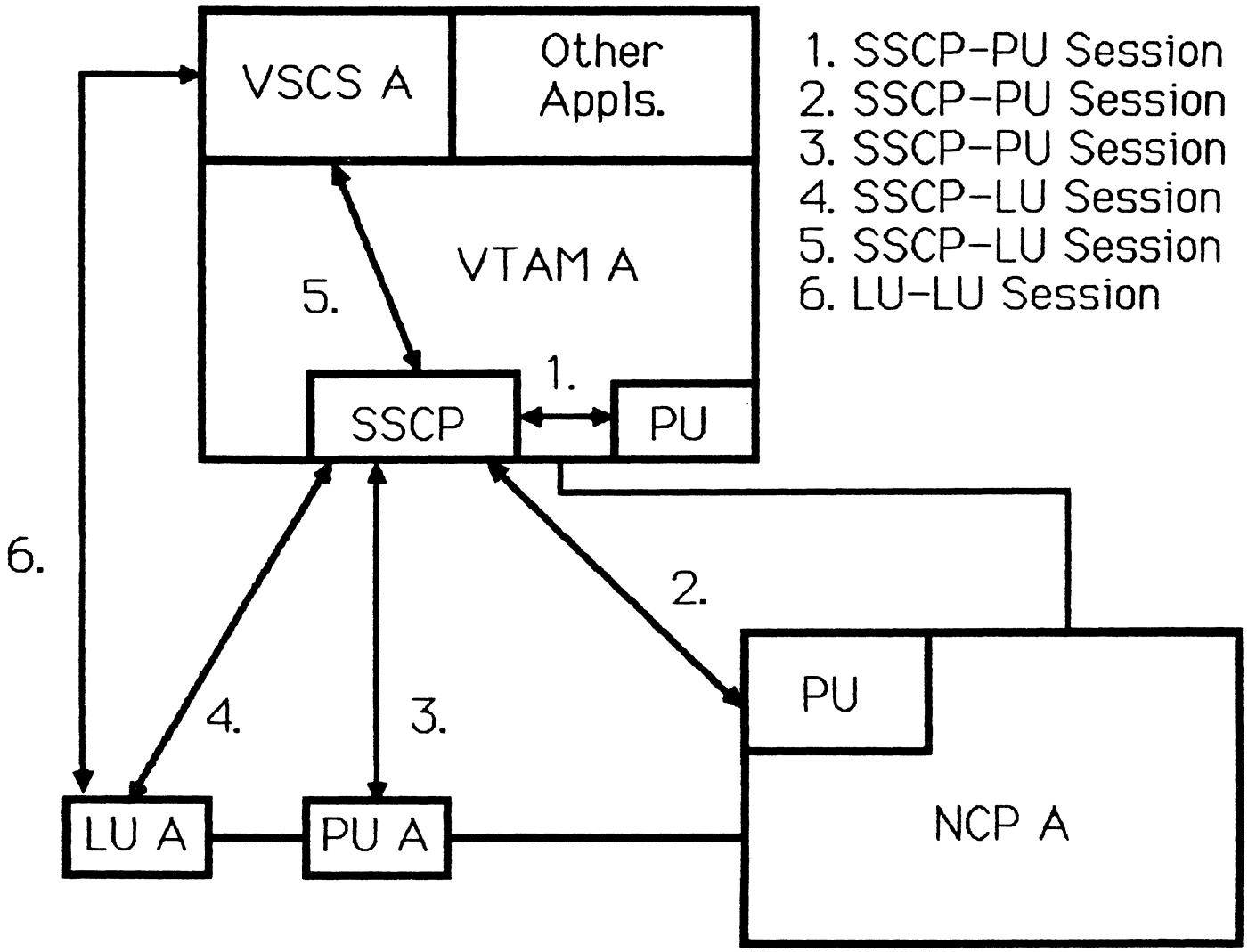
Concurrent-Serial Control



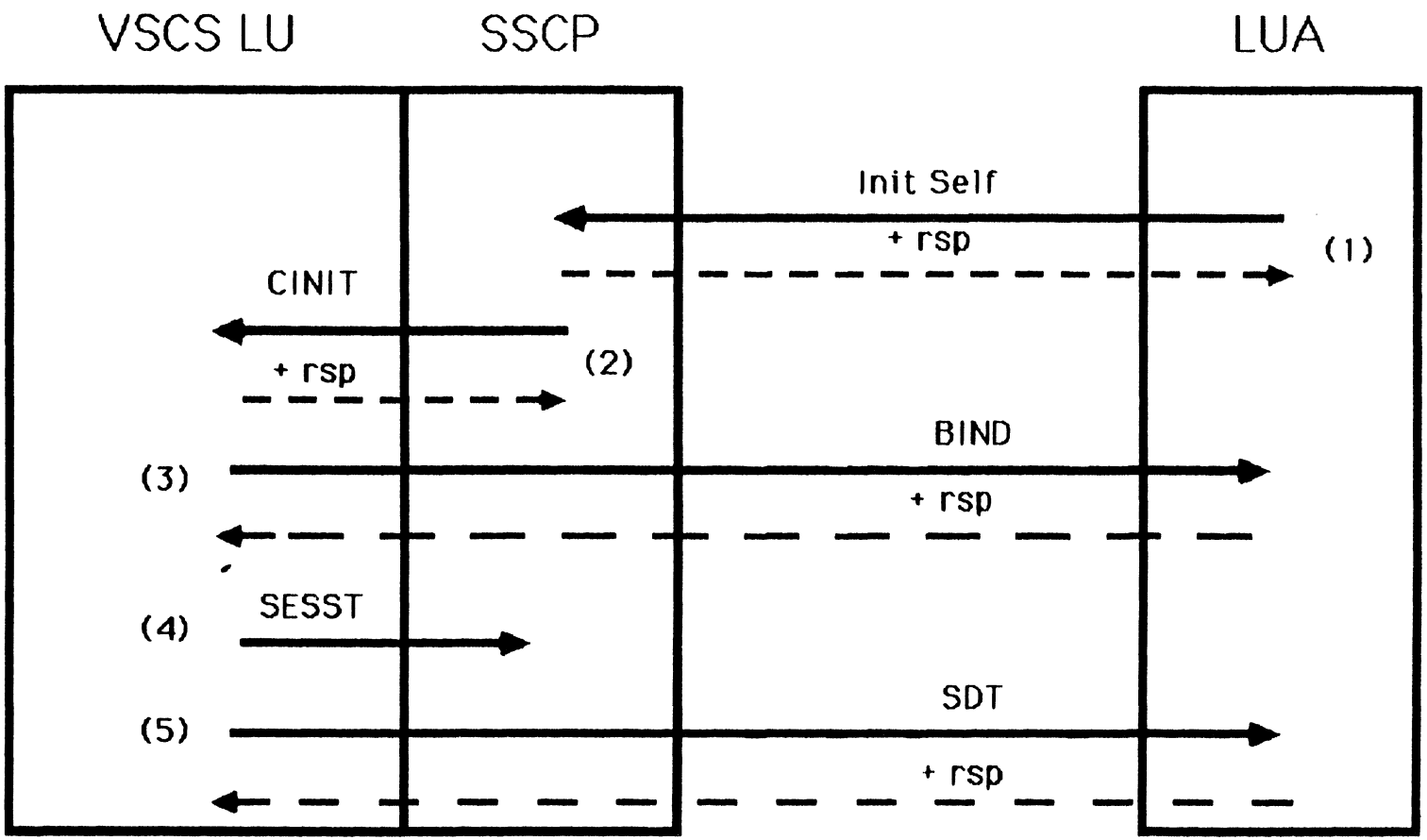
VTAM Under VM



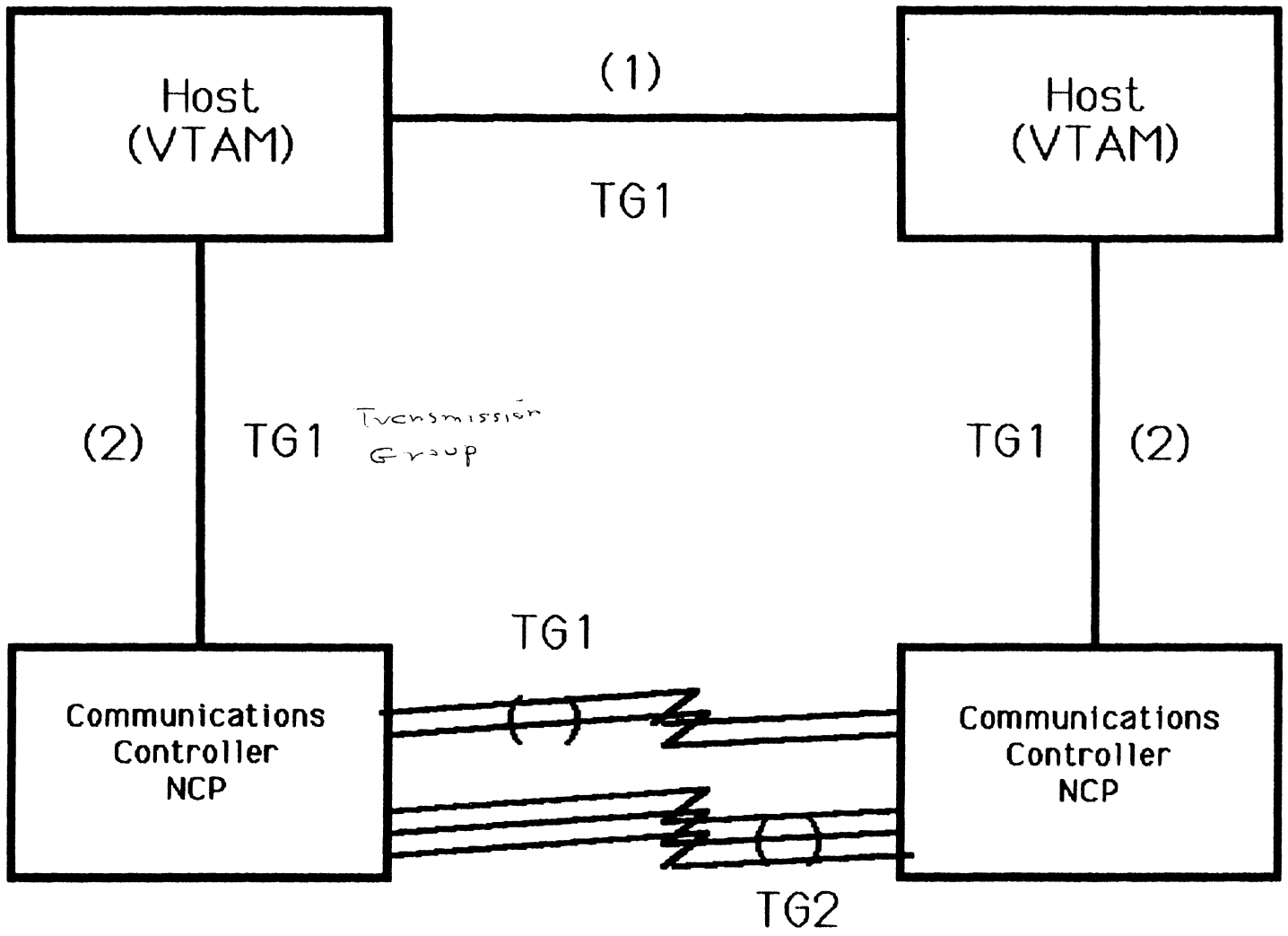
Session Establishment



LU-LU Session Initiation



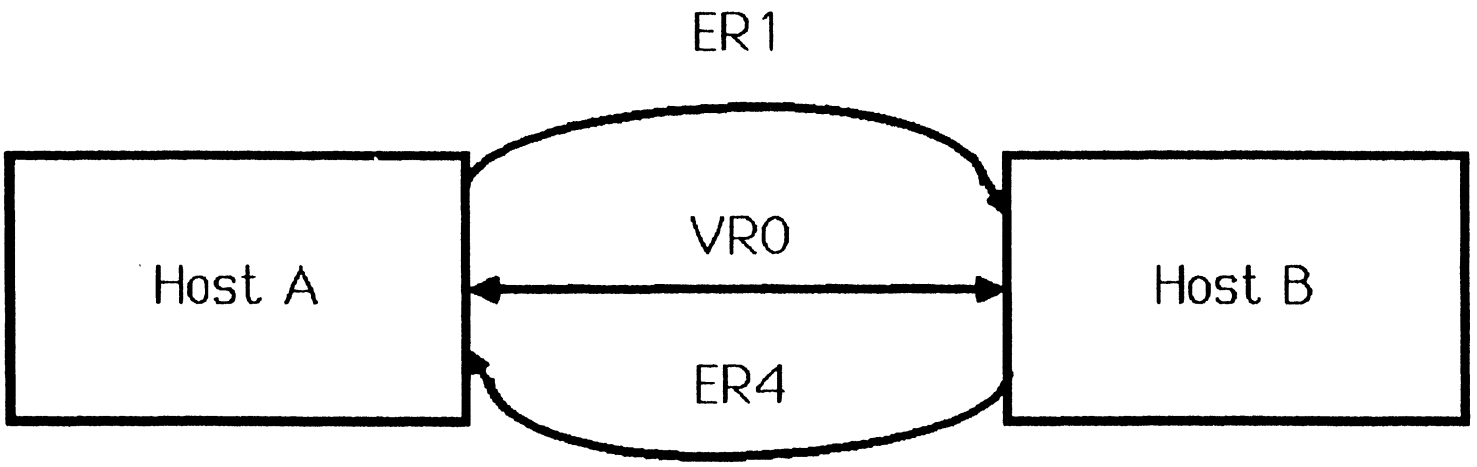
Transmission Groups



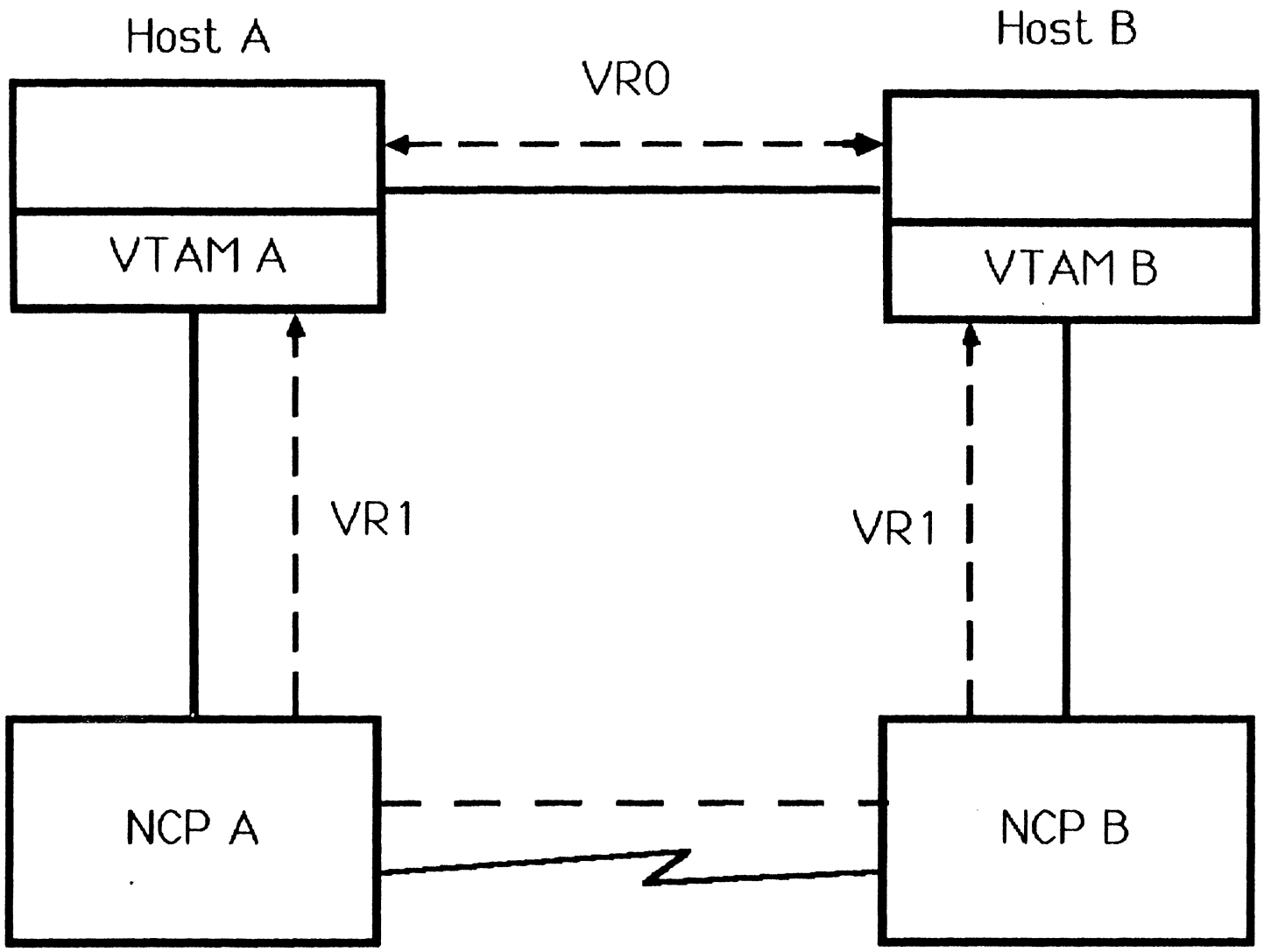
ERs and VRs

Explicit Routes

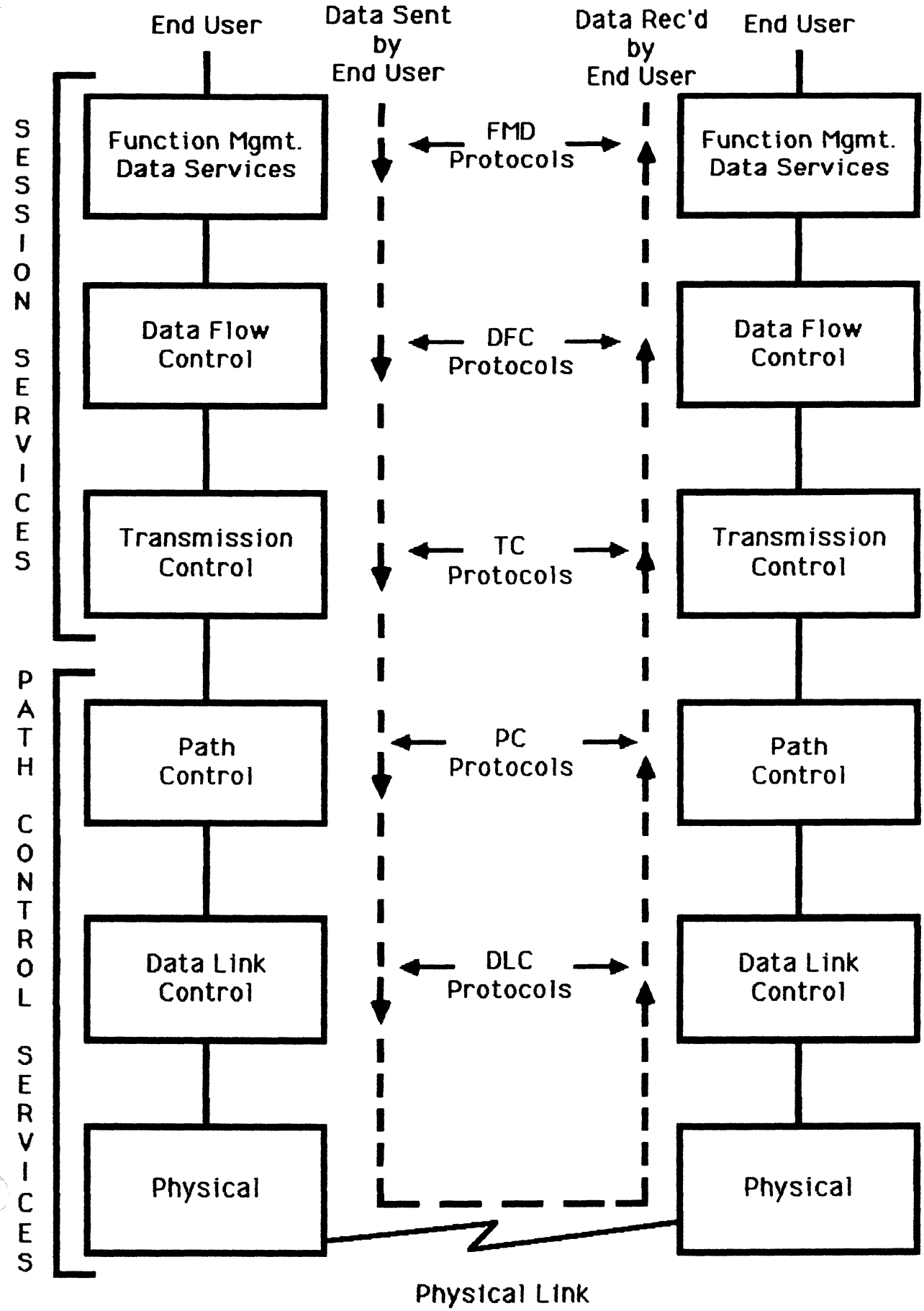
Virtual Routes



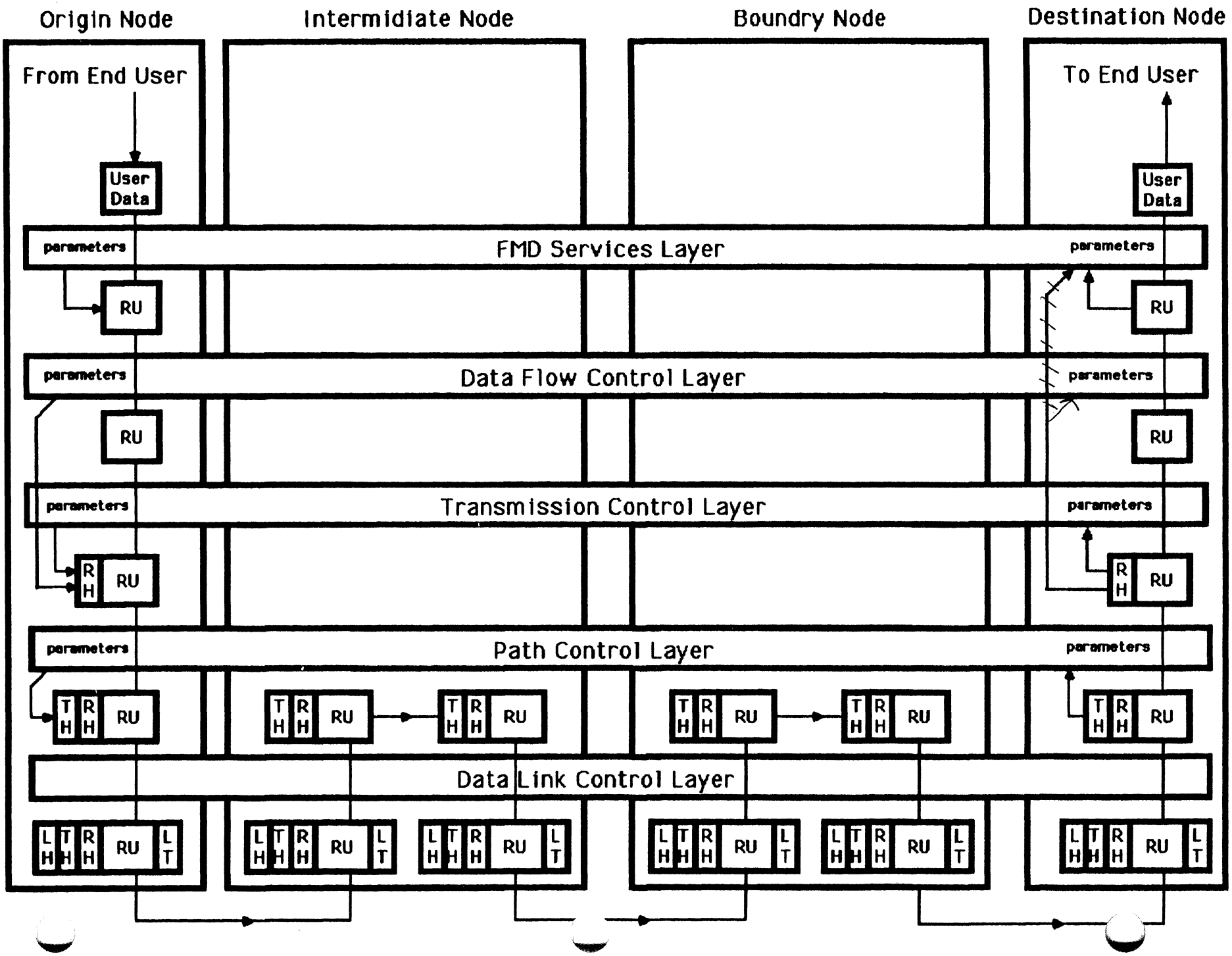
Alternate Routing



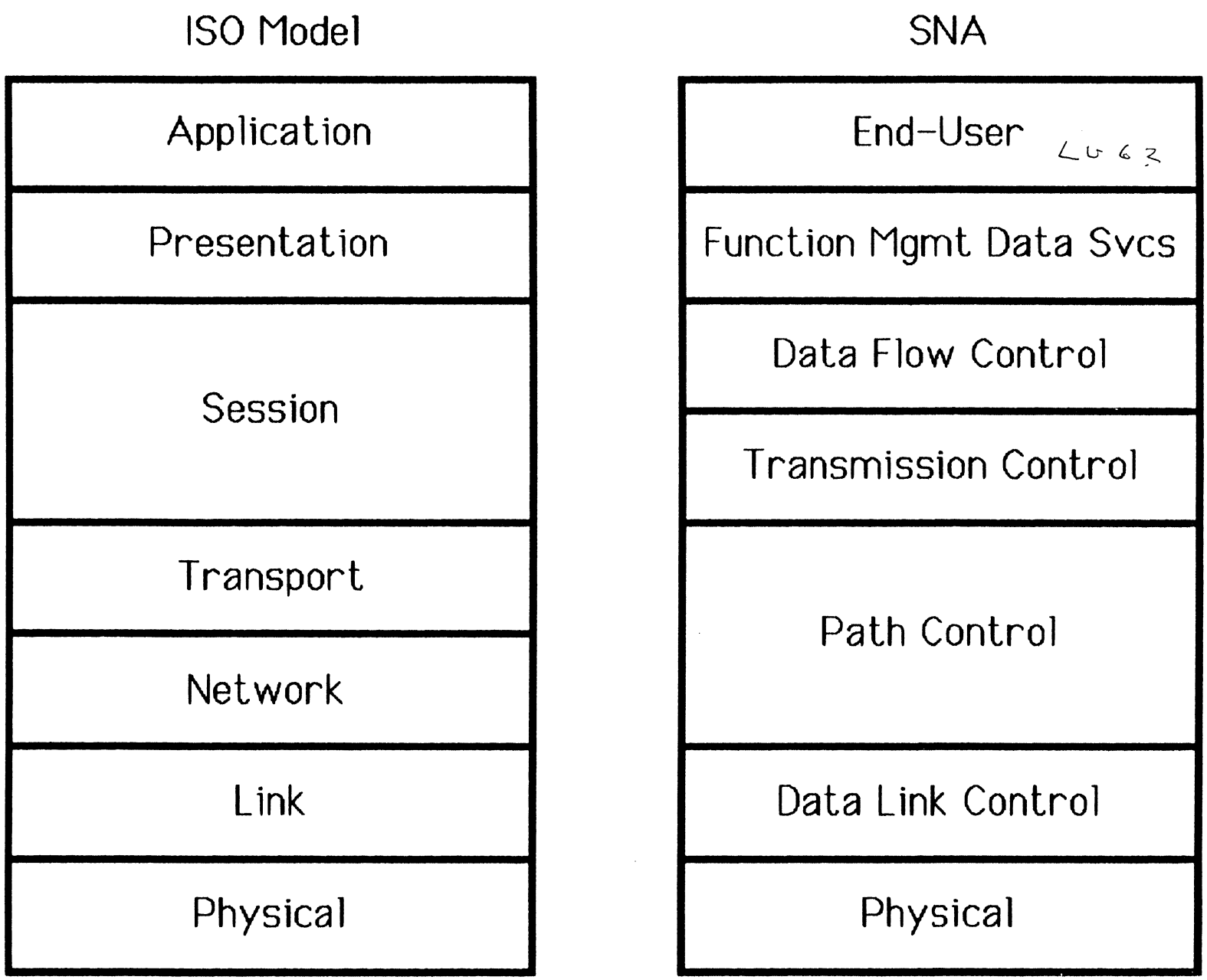
SNA Layers


End User
Data Sent by End User
Data Rec'd by End User
End User
SESSION SERVICES
PATH CONTROL SERVICES
Function Mgmt. Data Services
FMD Protocols
Function Mgmt. Data Services
Data Flow Control
DFC Protocols
Data Flow Control
Transmission Control
TC Protocols
Transmission Control
Path Control
PC Protocols
Path Control
Data Link Control
DLC Protocols
Data Link Control
Physical
Physical
Physical Link

Network Data Flow

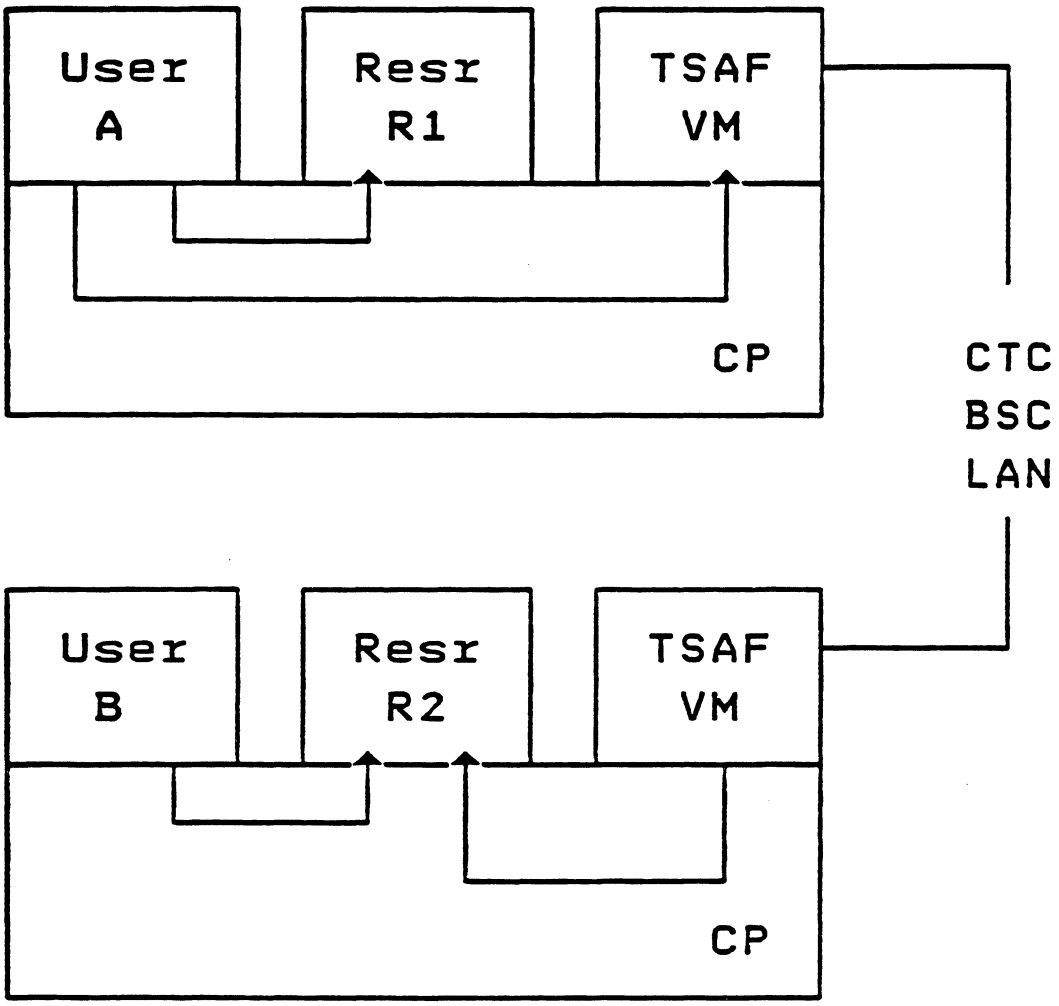


ISO Model vs. SNA

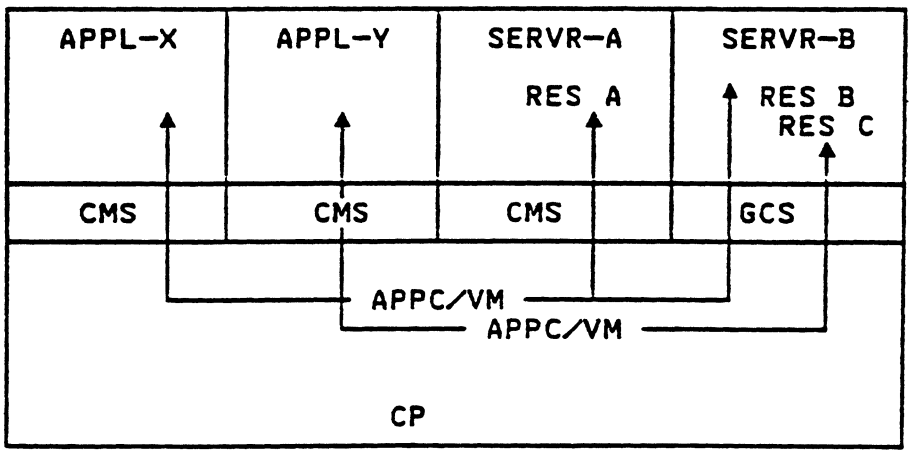


The Transparent Services Access Facility

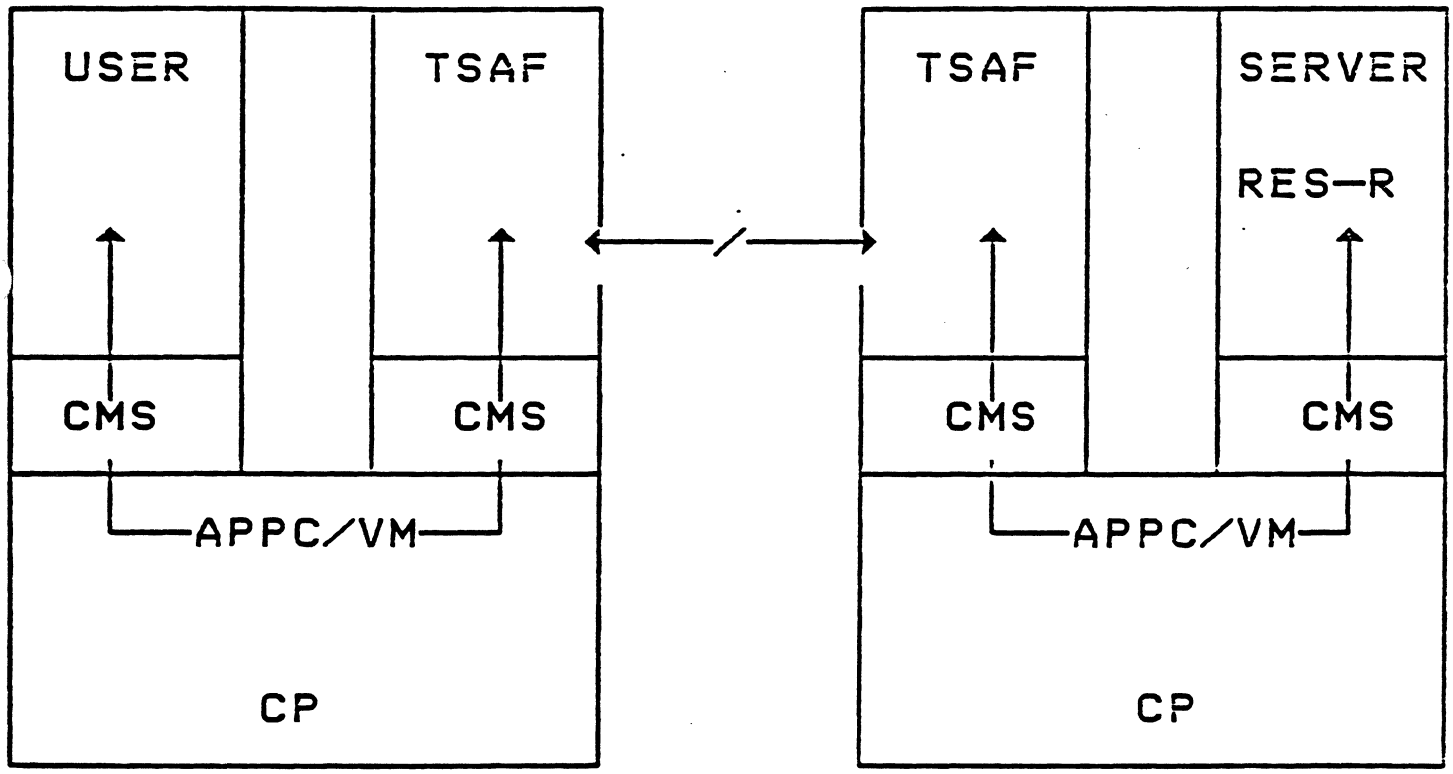
Users Connect to Resources Transparently



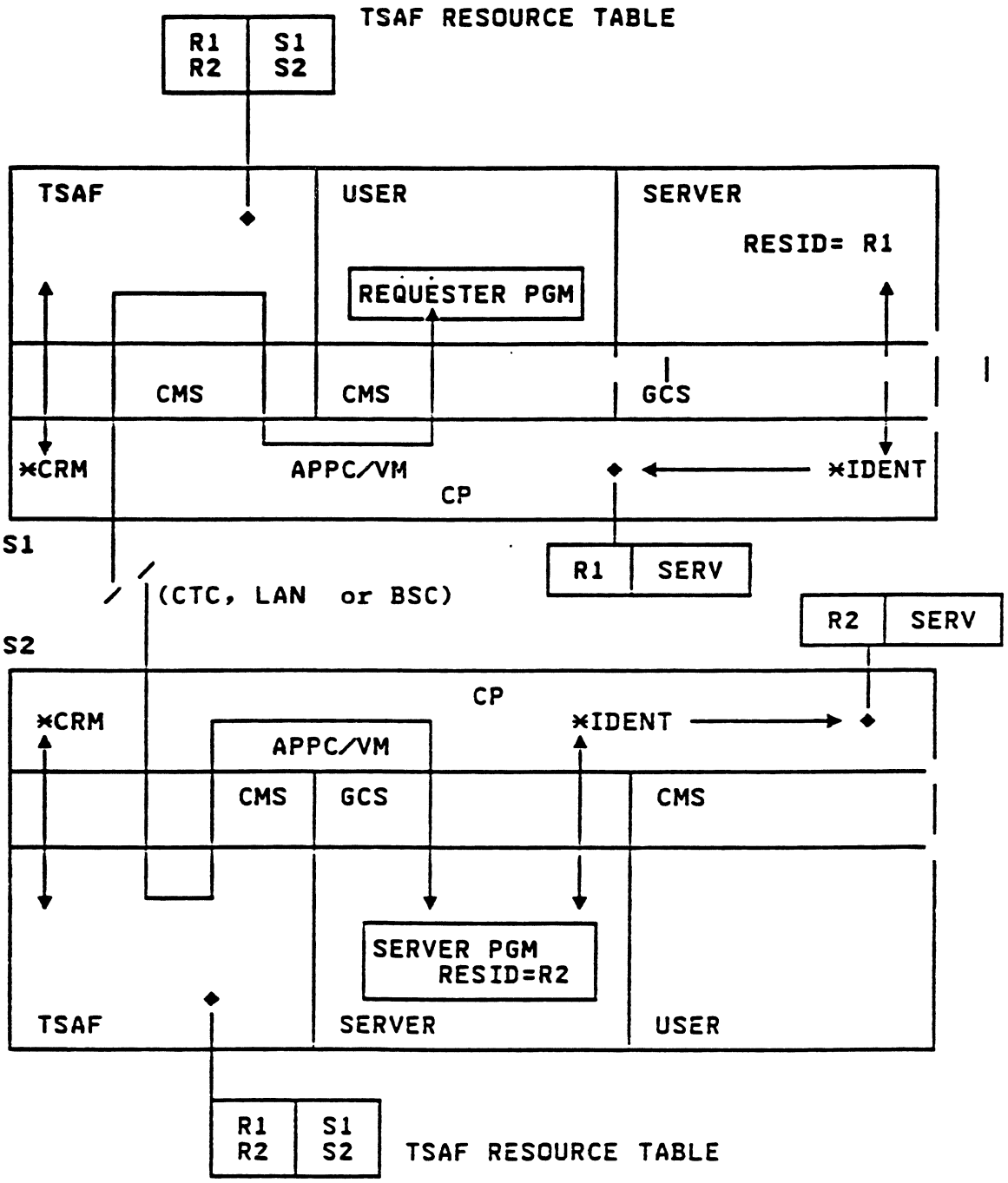
Single VM System Example



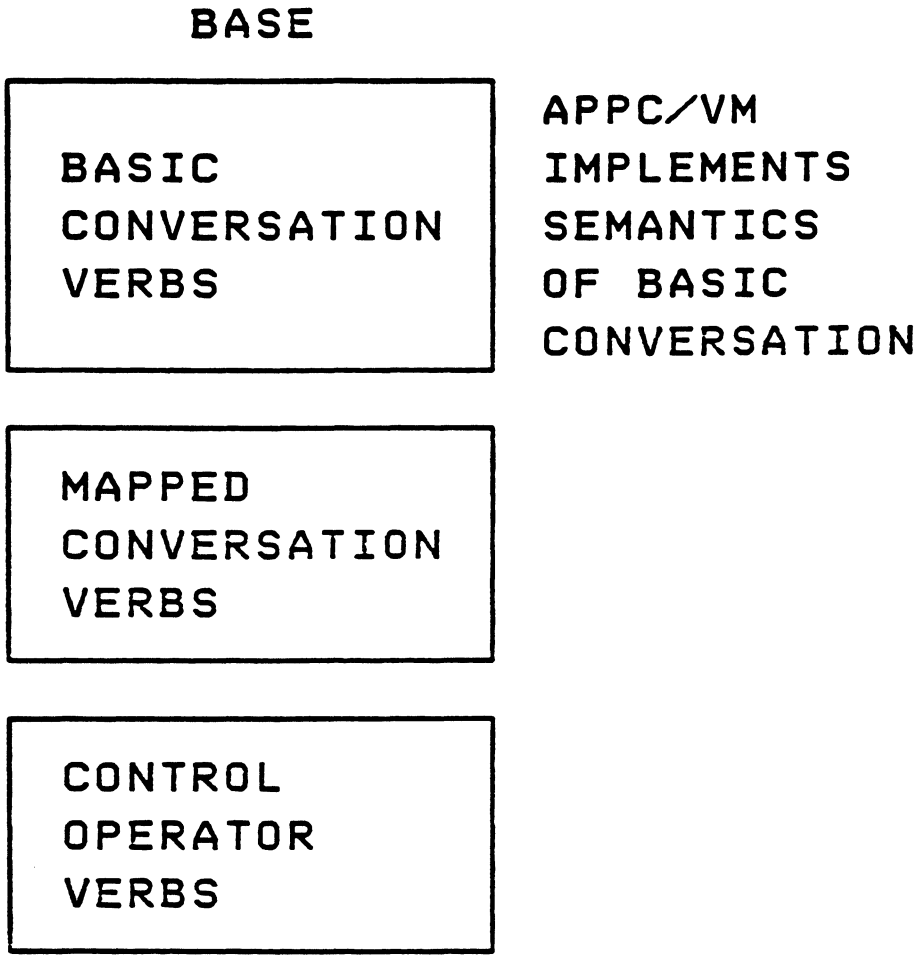
TSAF Collection Example



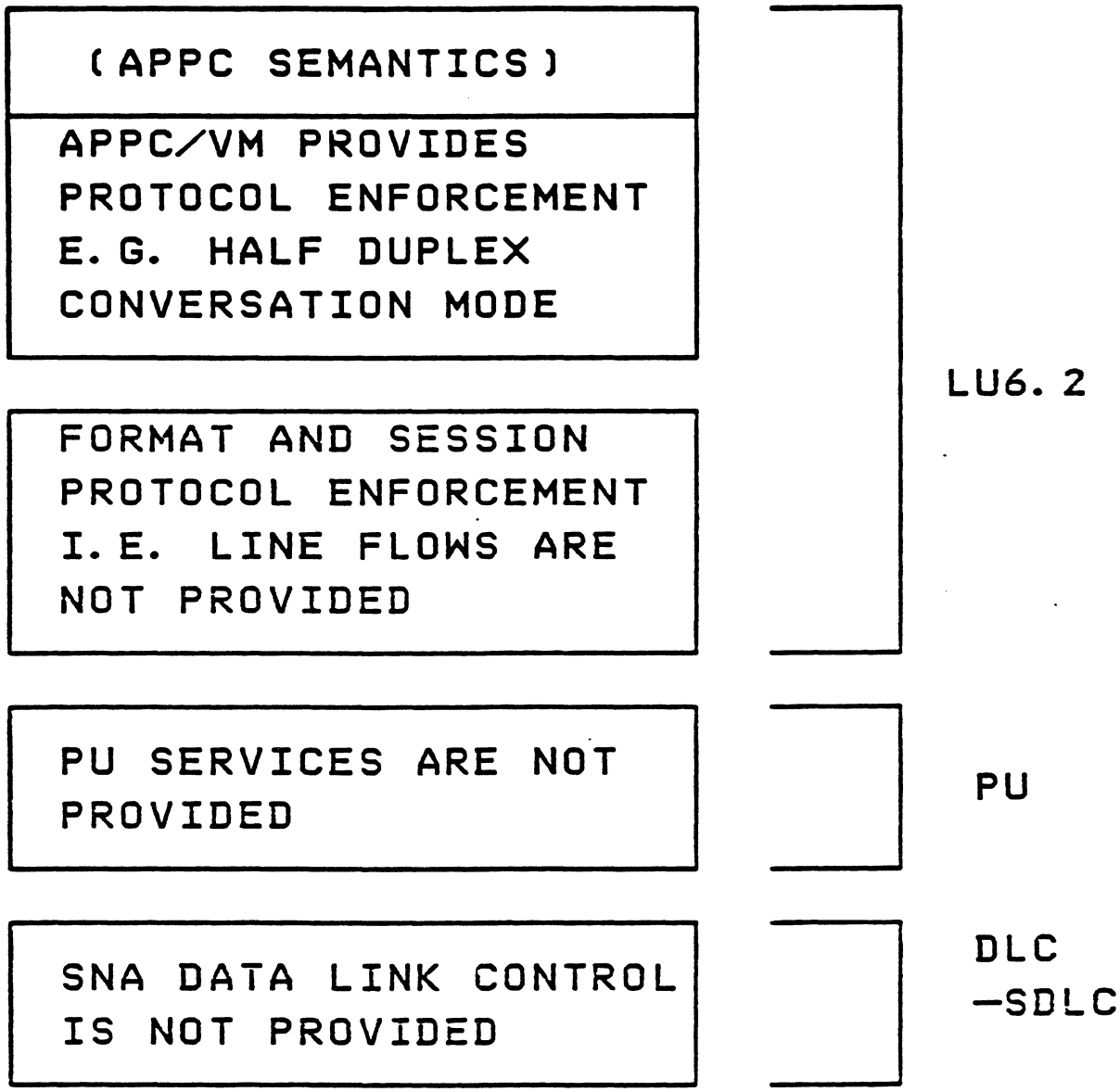
TSAF Collection Detailed



LU6.2 APPC BASE vs. APPC/VM



APPC/VM in Context



APPC/VM Mapping to SNA APPC

APPC/VM	APPC Verbs
CONNECT to server (Server RECEIVEs ALLOCATE Data)	ALLOCATE
SENDDATA [RCVE=NO]	SEND_DATA
RECEIVE	RECEIVE_AND_WAIT
SENDCNF TYPE=NORMAL	CONFIRM
SENDCNFD	CONFIRMED
SENDREQ	REQUEST_TO_SEND
SENDERR	SEND_ERROR
[SENDCNF TYPE=SEVER] SEVER (NORMAL|ABEND)	DEALLOCATE

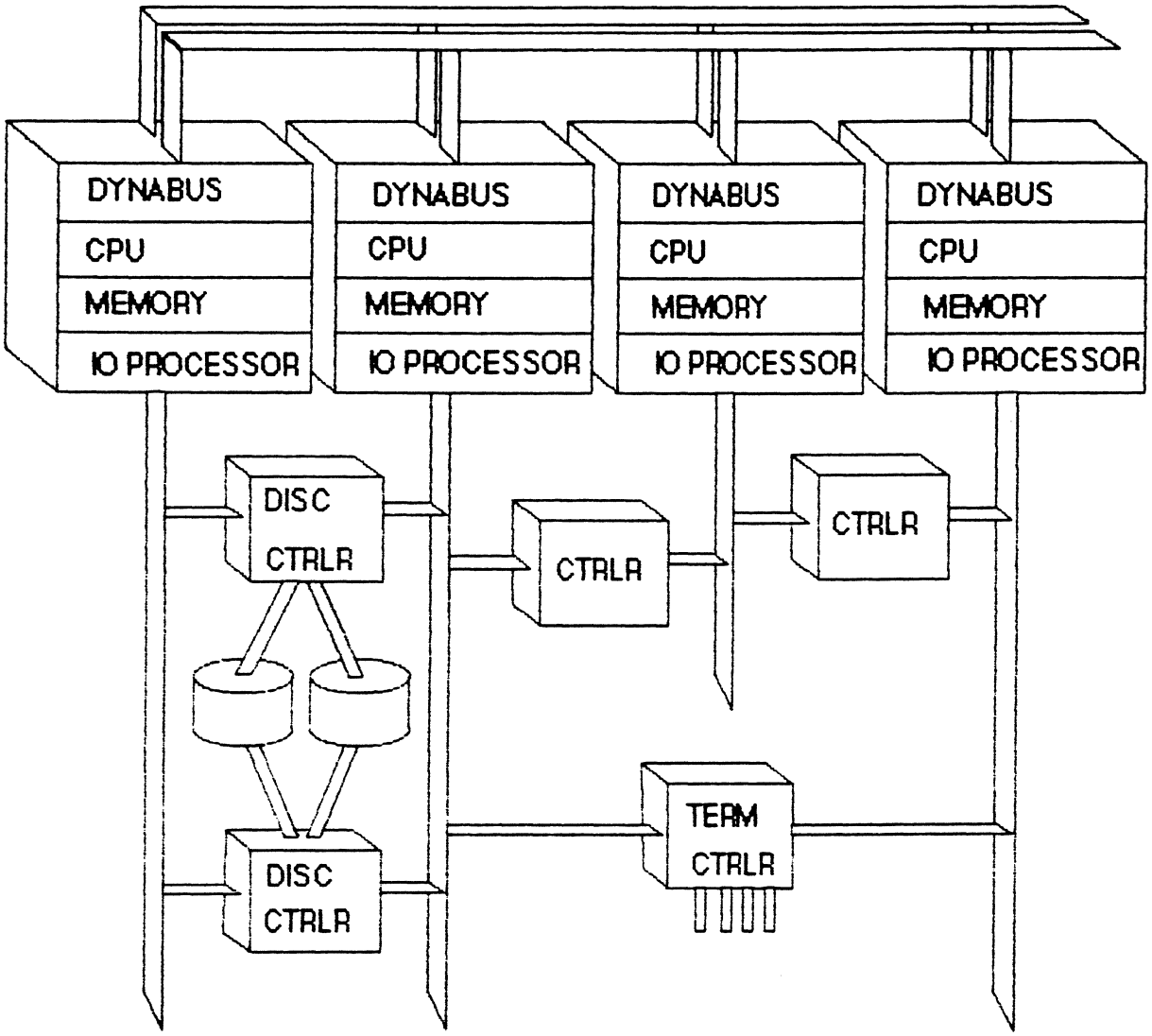
Tandem Communications Presentation

- Philosophy
- Fault-Tolerance
- Expand
- Gateways to other environments
- Integrated File-system support
- Integrated Expand networking
- Integrated Message-system support
- Multilan support for PC-networks

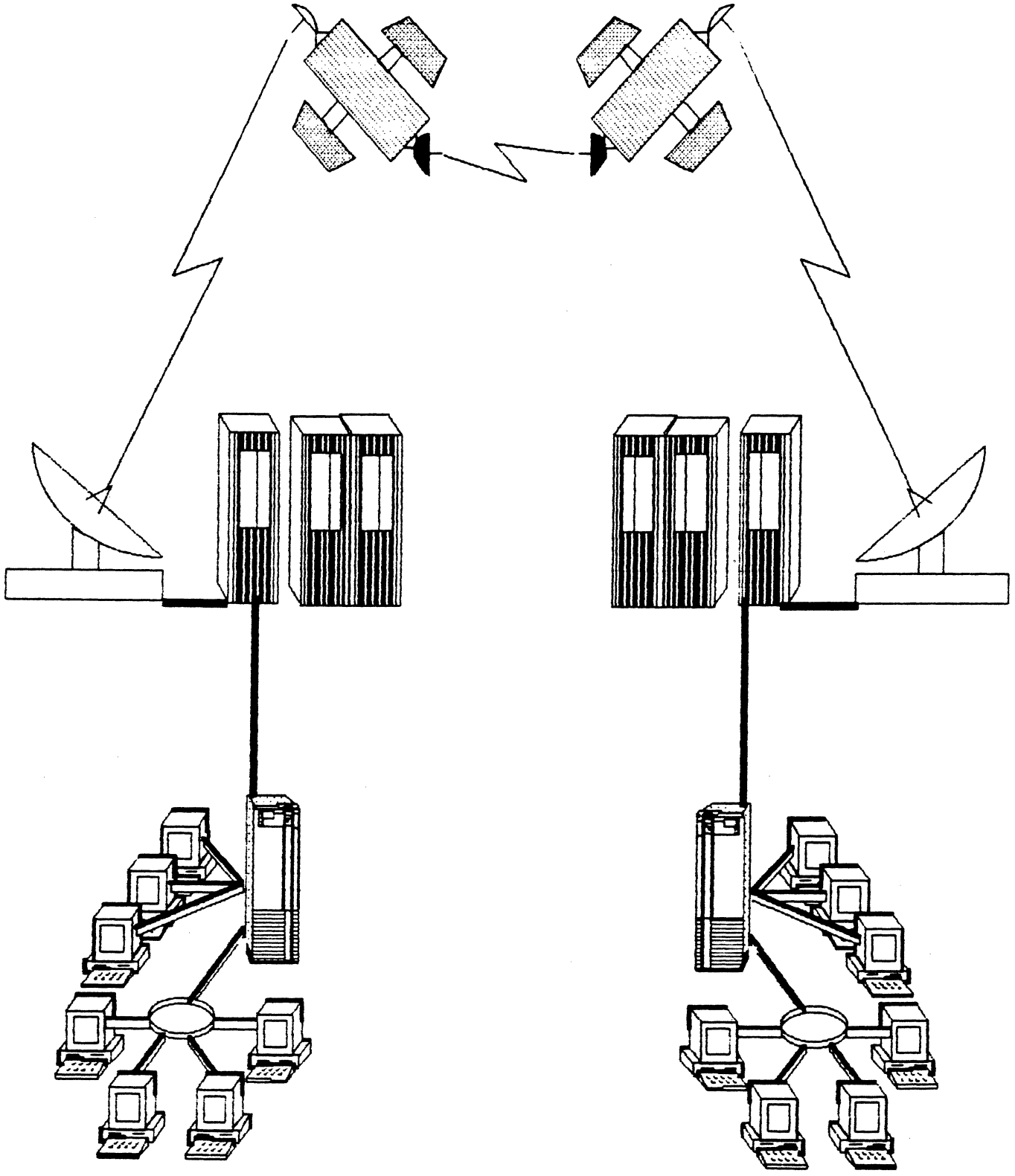
Philosophy

- Backbone Network
- Fault-Tolerance
- Gateways
- Modular Expandability

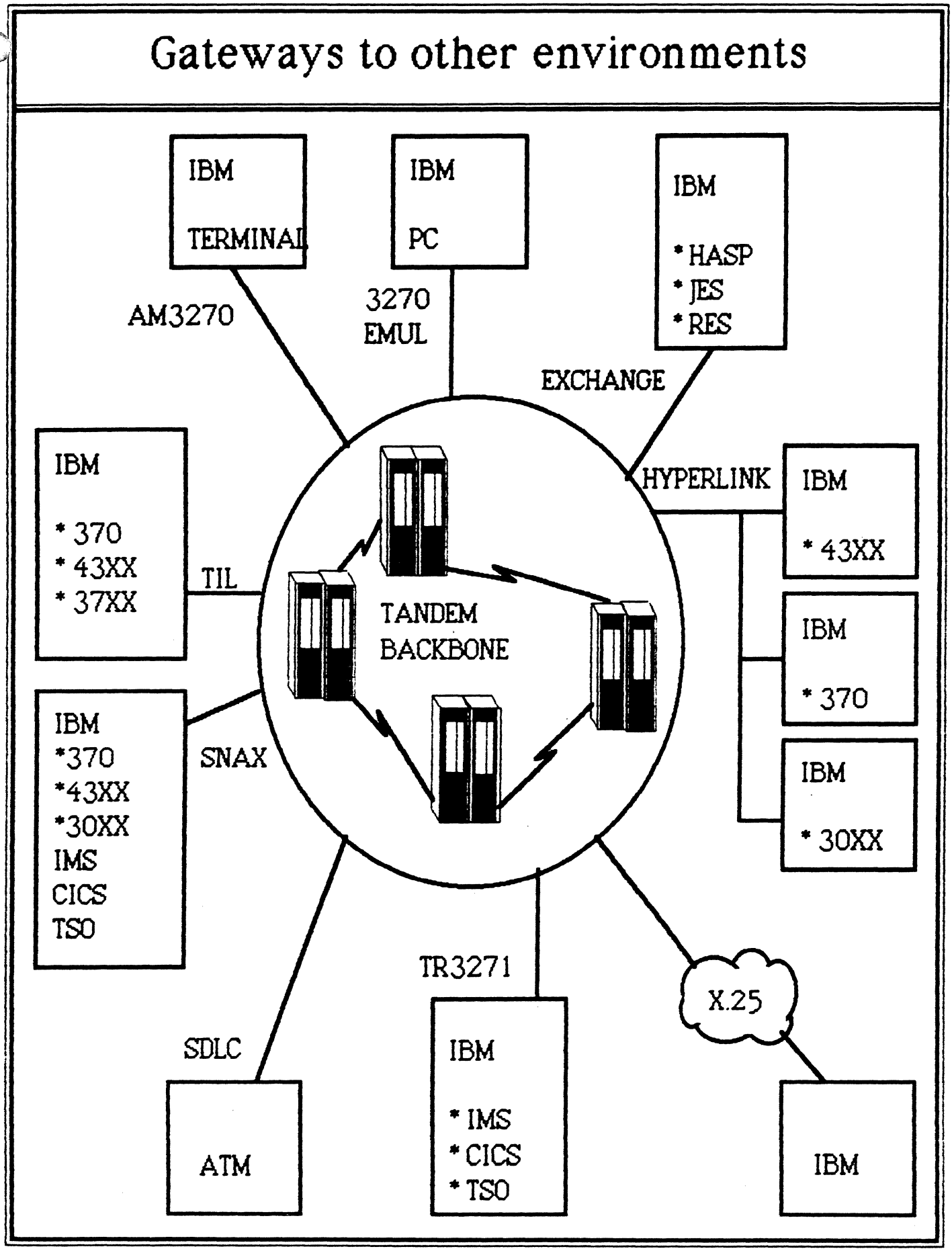
Fault-Tolerance



Expand



Gateways to other environments



Integrated File-system support

- Supports all Tandem file formats
  - Key-Sequenced files
  - Relative Record files
  - Entry Sequenced files
  - Unstructured files
- OS/FT databases compatible
  - Cobol
  - Pascal
  - Fortran
  - C
  - PATHWAY
  - SQL
- Supports Tandem utilities
  - Backup/Restore
  - FUP
  - CMI

Integrated Expand networking

- Network files are transparent to applications
- Databases may be distributed
- Q-Pointer access to all networked systems
- Full spectrum of Tandem file security

Integrated Message-system support

- Supports the Tandem message system
- Processes may communicate via messages
- Custom communications protocols available

Multilan support for PC-networks

- Allows attachment of PC-networks
- Modular, expandable system
- Tandem acts as server for DOS files
- PC's may access Tandem files
- Print spoolers and tapes accessable

NETWORKING PRODUCT LINE

* DECnet
  - Digital to Digital
  - Digital to non Digital(DECnet-DOS)

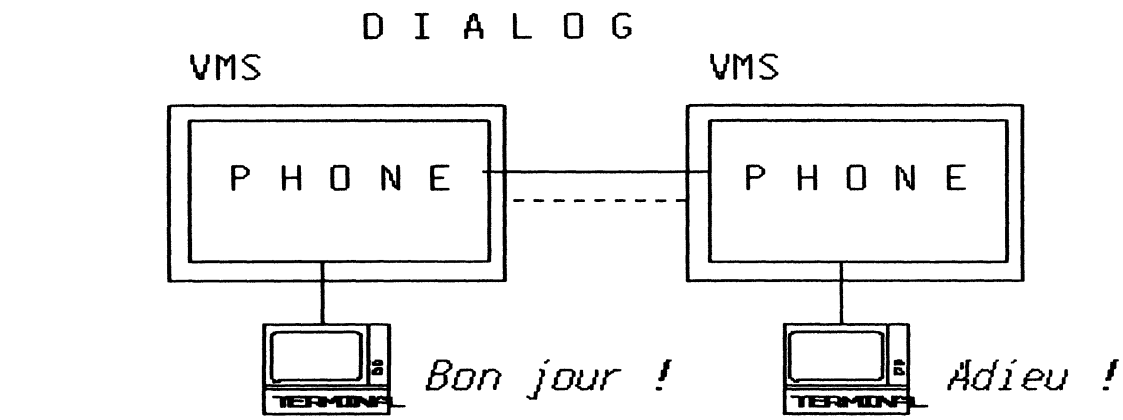
* Internet
  - Digital to IBM and other vendors systems (Wang, CDC, UNIX, Univac)

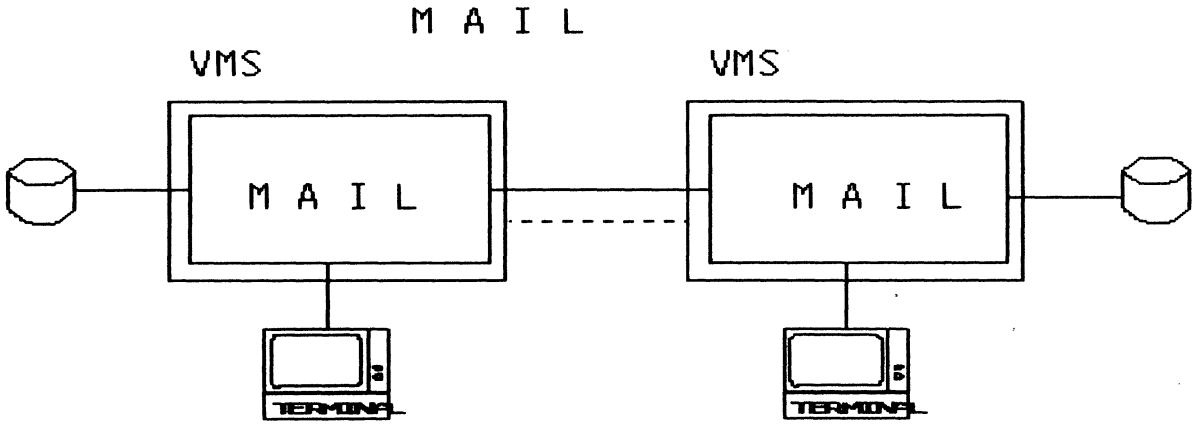
* Packetnet
  - Digital to Digital via X.25 PSDN
  - Digital to non Digital via X.25 PSDN

DECnet USER UTILITIES

- TERMINAL-TO-TERMINAL (PHONE)
- USER-TO-USER (MAIL)
- NETWORK COMMAND TERMINALS (SET HOST)
- NETWORK FILE TRANSFER AND RESOURCE ACCESS (DCL)
- NETWORK COMMAND PROCEDURES (DCL, SUBMIT/REMOTE)

TERMINAL ACCESS

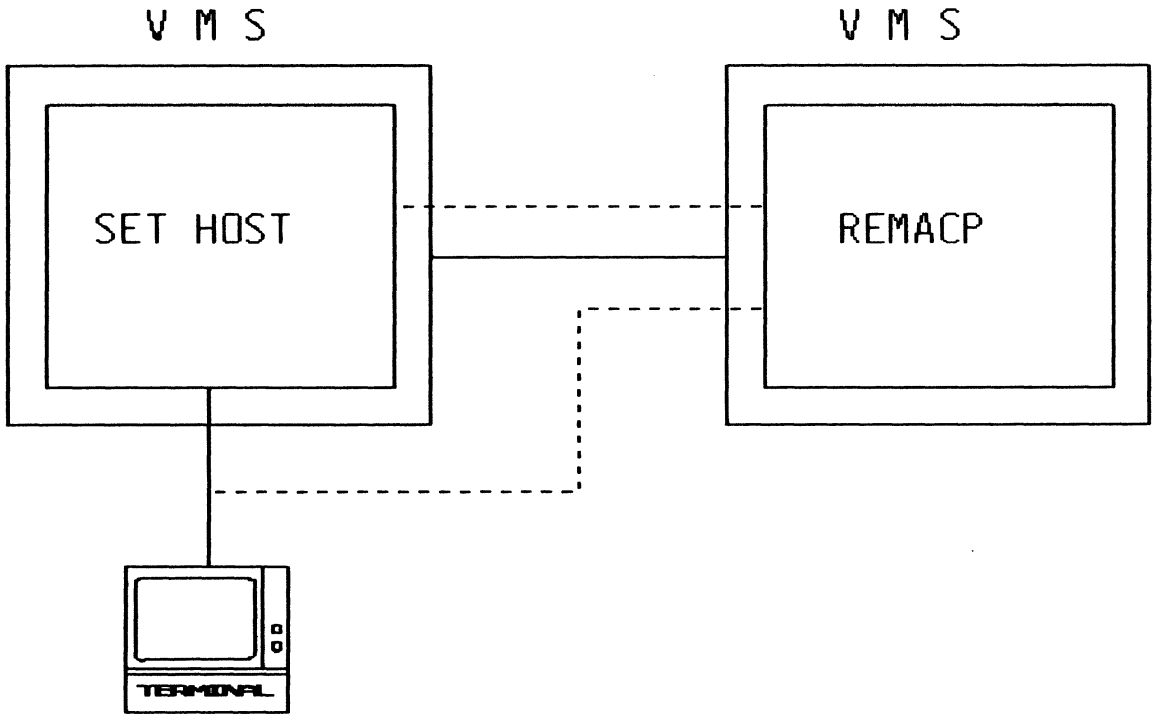




READ
SEND
FILE
PRINT
REPLY
FORWARD
DELETE
DIRECTORY
DISTRIBUTION LIST

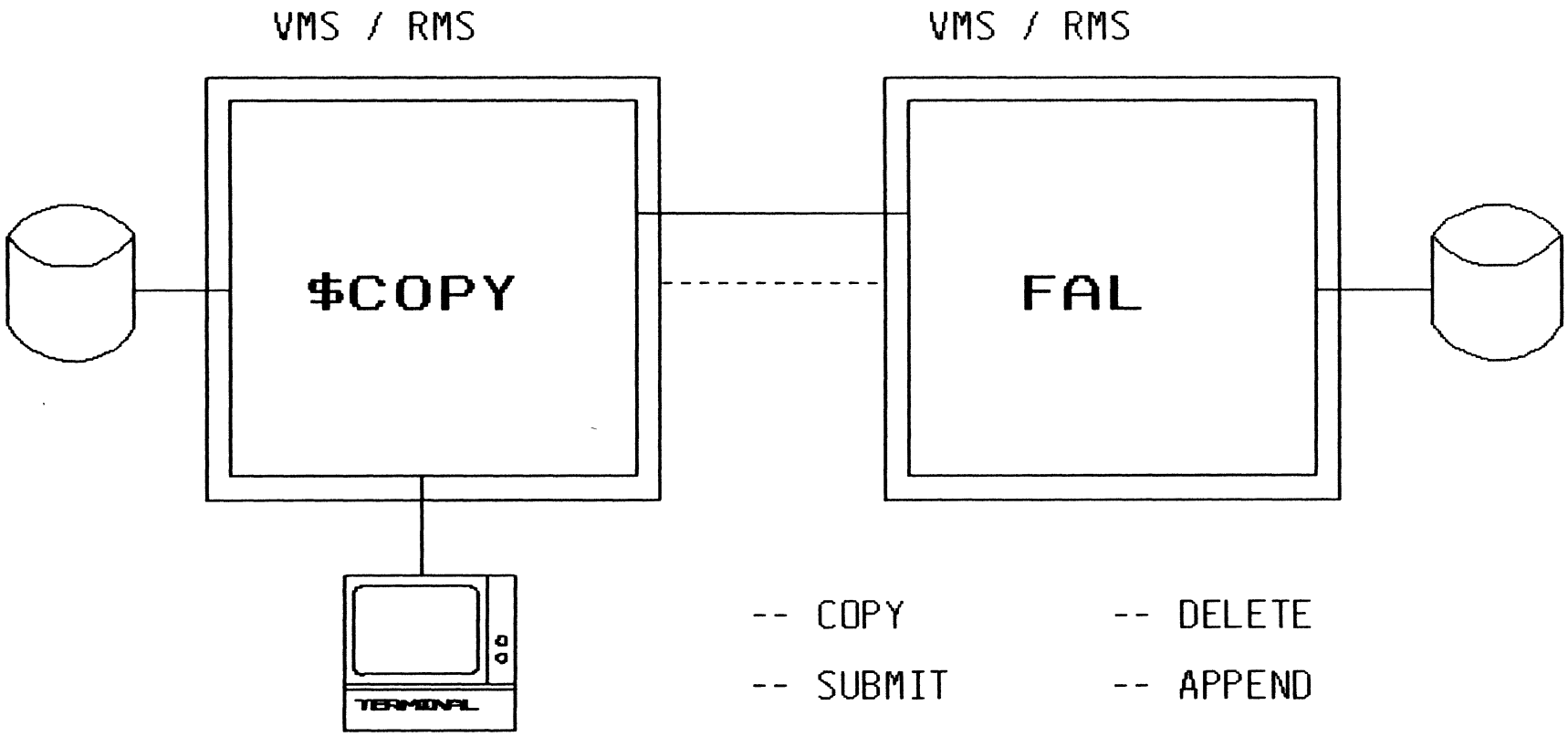
uf 05

NETWORK COMMAND TERMINAL



uf 06

FILE TRANSFER



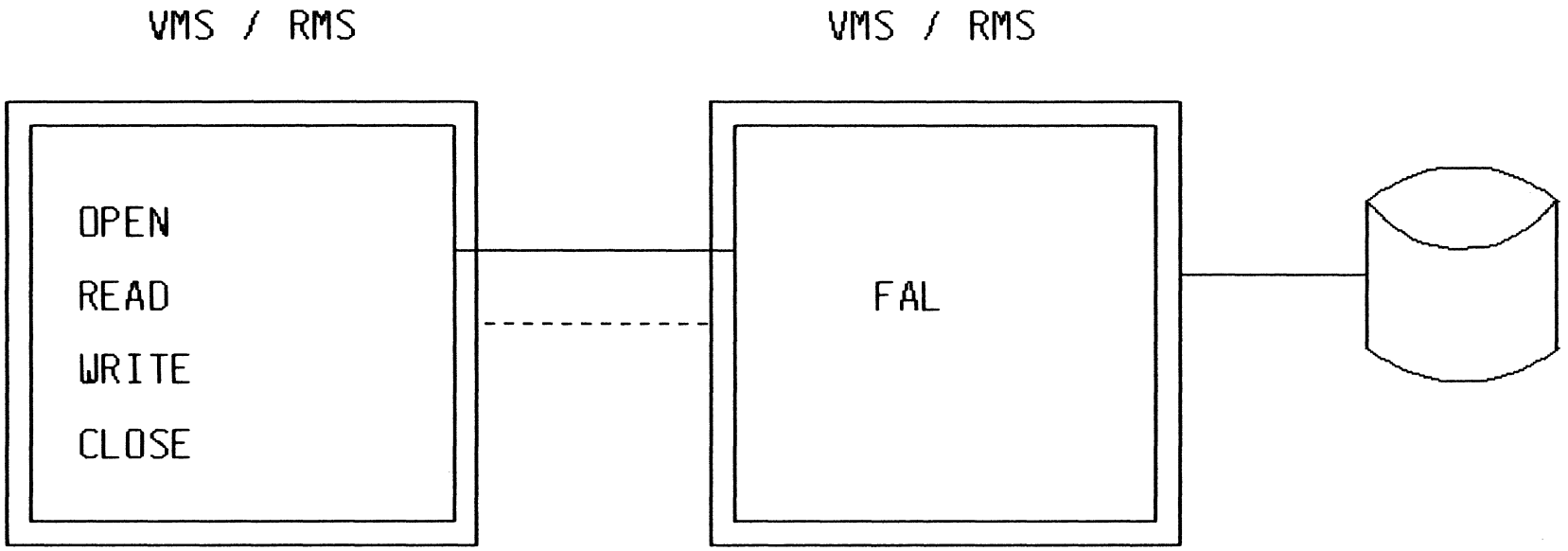
-- COPY -- DELETE

-- SUBMIT -- APPEND

-- PRINT -- DIRECTORY etc.

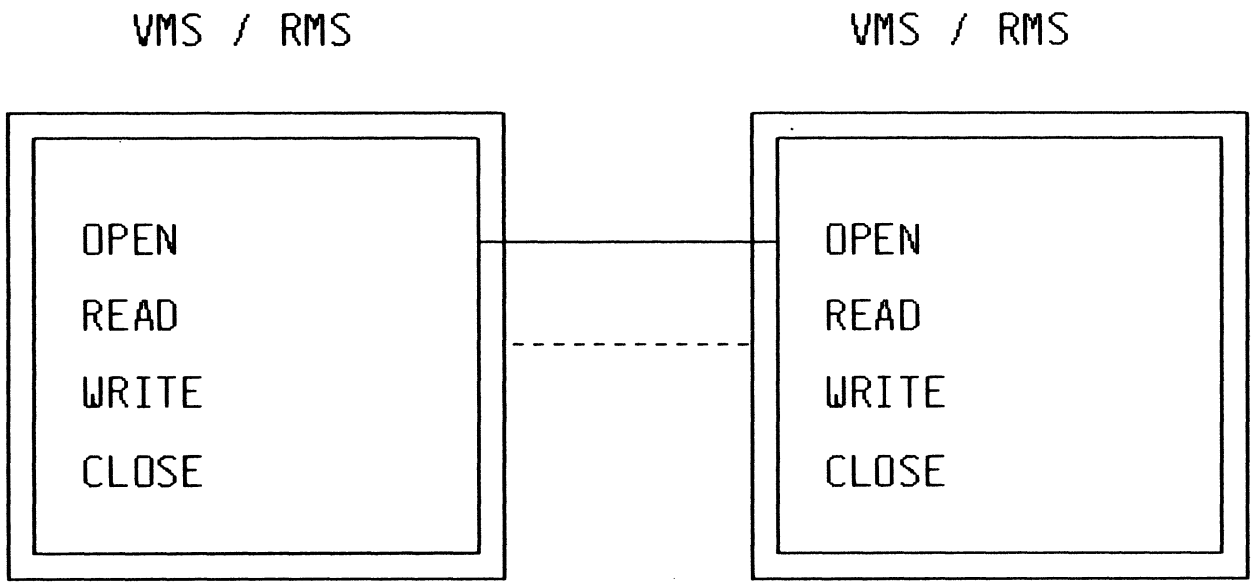
uf 04

FILE ACCESS



FAL = File Access Listener (DECnet service program)

PROGRAM - TO - PROGRAM



VMS / RMS : TRANSPARENT AND NONTRANSPARENT

uf 02

NMCC/DECnet MONITOR

KERNEL
- NCP COUNTERS
- POLLING
- EVENT MONITOR LOGGING

USER INTERFACE
- VT240/241 (GKS)
- REALTIME, NODES, LINES STATISTICS

NMCC/REPORT
- DAILY, WEEKLY, OTHER
- CONFIGURATION, TRAFFIC, ERROR, AVAILABILITY
- GRAPHS
- DATATRIEVE
- RDB

DSS Program

INITIAL PRODUCT OFFERINGS

- **VAX DISTRIBUTED FILE SERVICE V1.0**
  High performance distributed file access

- **VAX DISTRIBUTED QUEUING SERVICE V1.0**
  Sharing & managing distributed printing resources

- **REMOTE SYSTEM MANAGER V2.0**
  Centralized management of distributed systems.

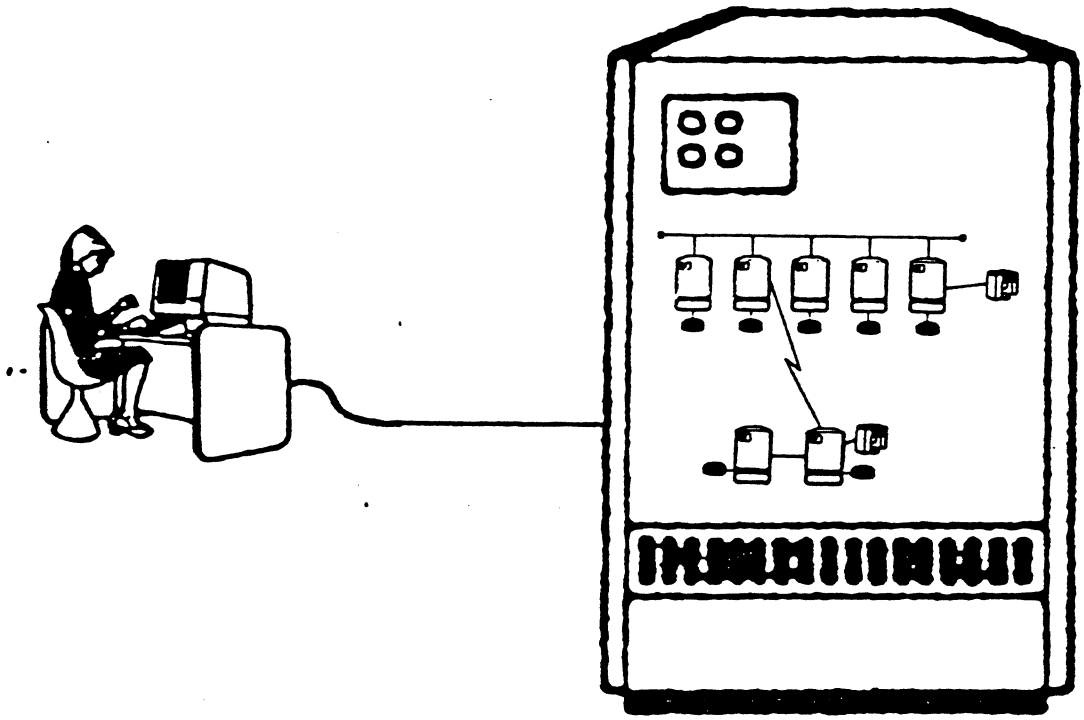
- **VAX DISTRIBUTED NAME SERVICE V1.0**
  Network-wide naming service used by DFS V1.0 and RSM V2.0

RELATED PROGRAM

- **VAX Remote Procedure Call**

DSS Program

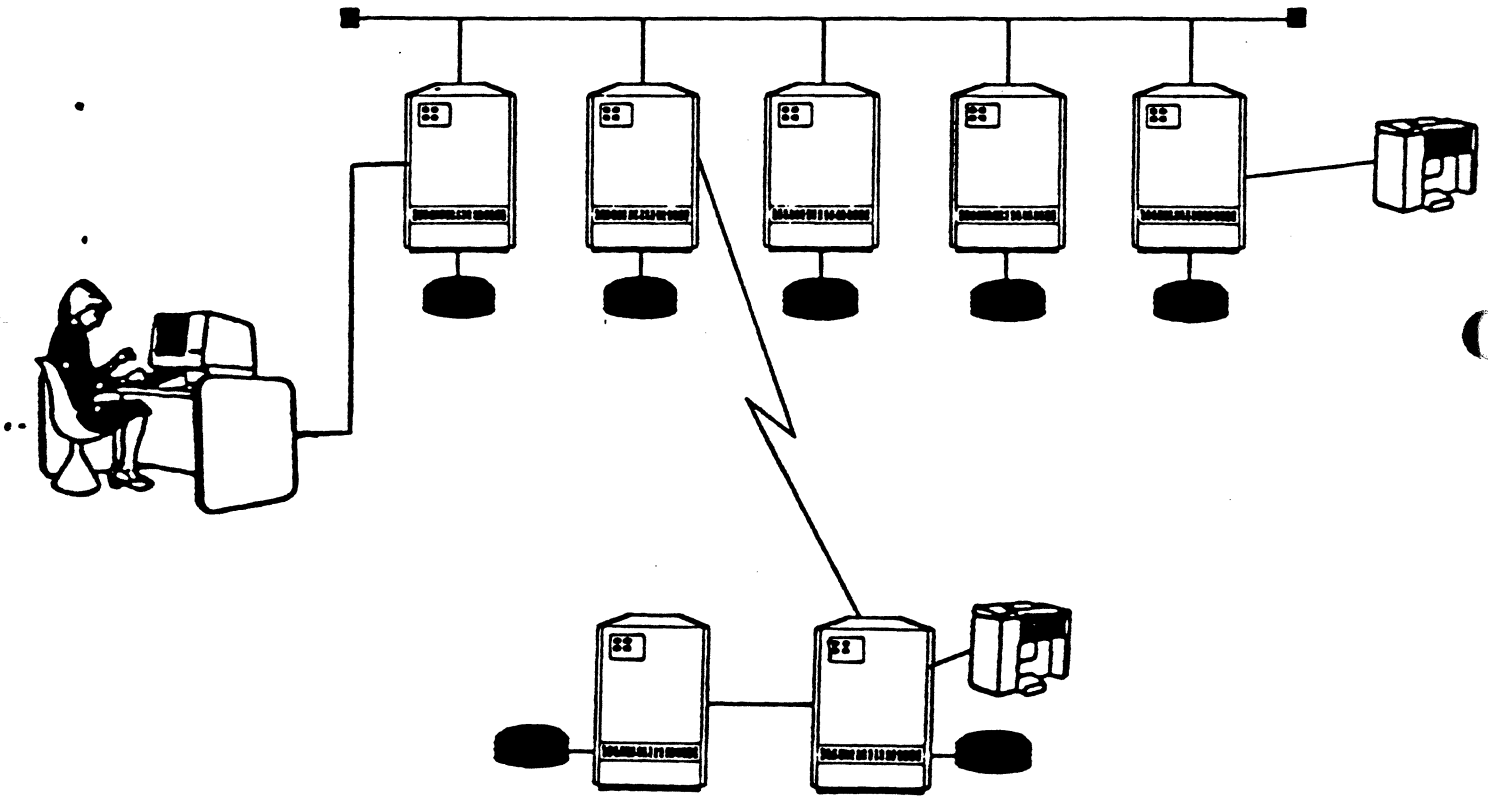
DSS—Computing Of The 90's
The Network Is The System



THE NETWORK VIEWED AS A SINGLE SYSTEM

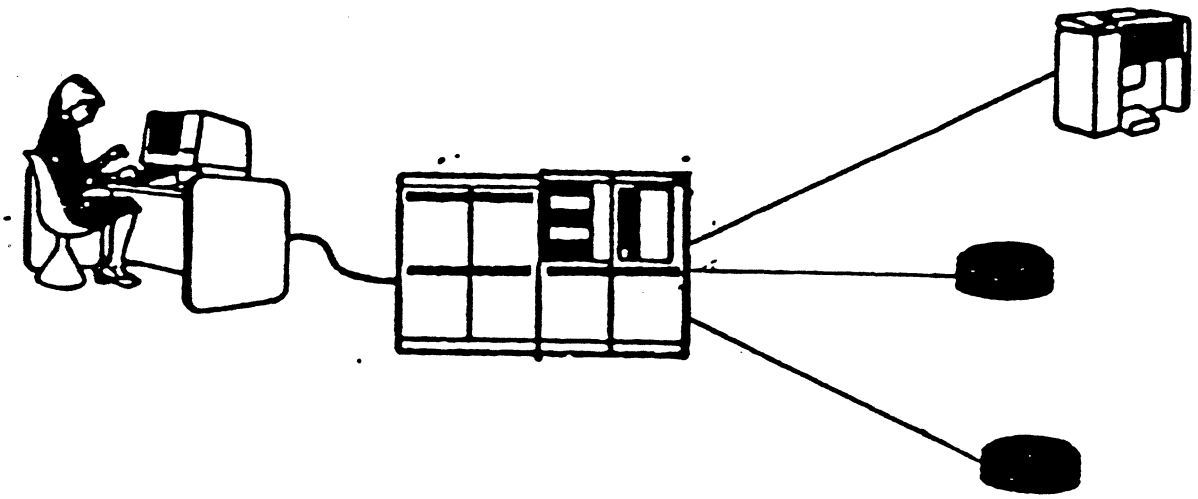
DSS Program

Computing In The Early 80's
Networking Systems Together



DSS Program

Computing in the 60's and 70's
The Computer Is The System

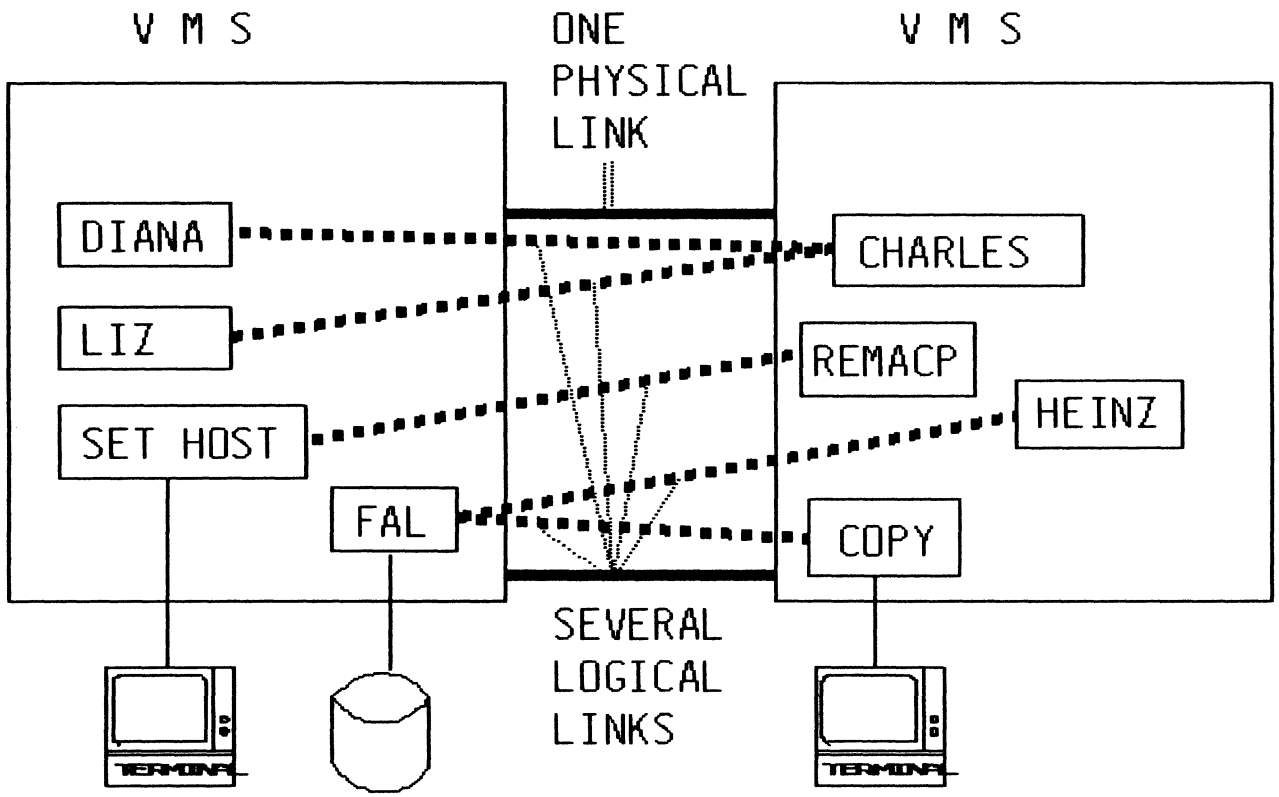


DSS Program

Make it easy for customers to use networked systems

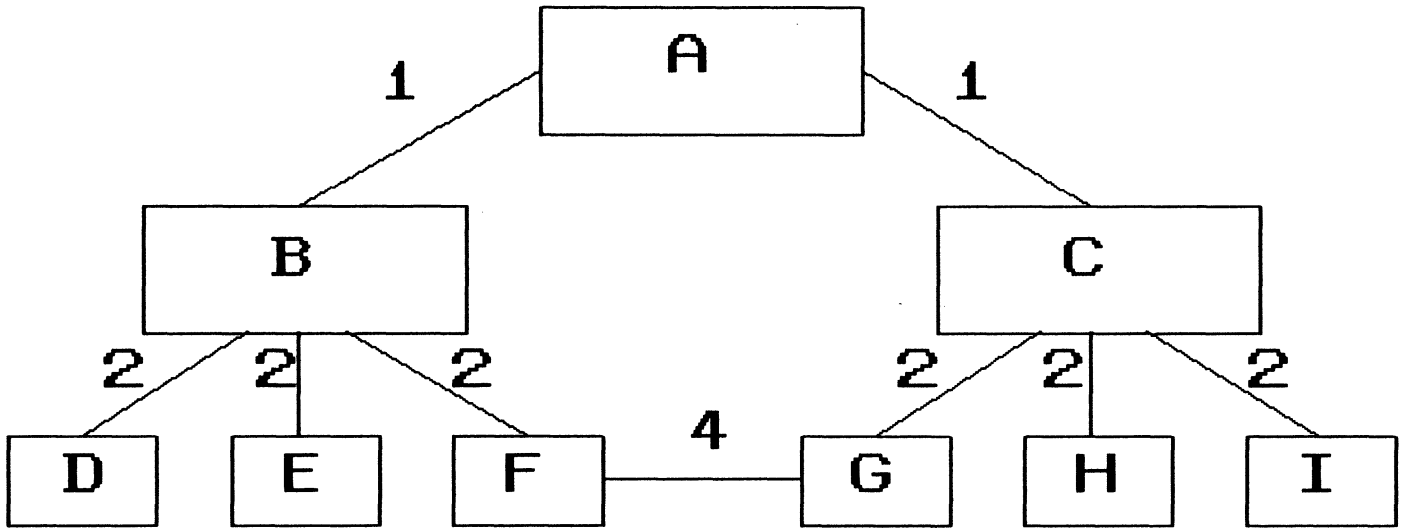
1. Sharing...
   - Data
   - Peripherals
2. Transparent...
   - Users
   - Application Programs
3. Local & Wide Area Networks
4. High Performance
5. Preferred way to share data & system resources between...
   - Systems
   - VAXclusters
   - LAVc's
   - LAVc's & VAXclusters

MULTIPLE LOGICAL LINKS



uf 07

ADAPTIVE ROUTING

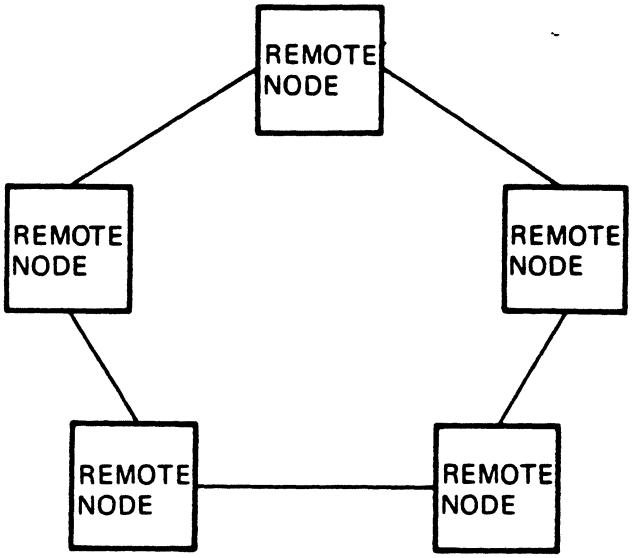


PARAMETERS: LINE COST
MAXIMUM HOPS
MAXIMUM VISITS
MAXIMUM ADDRESS
MAXIMUM COST

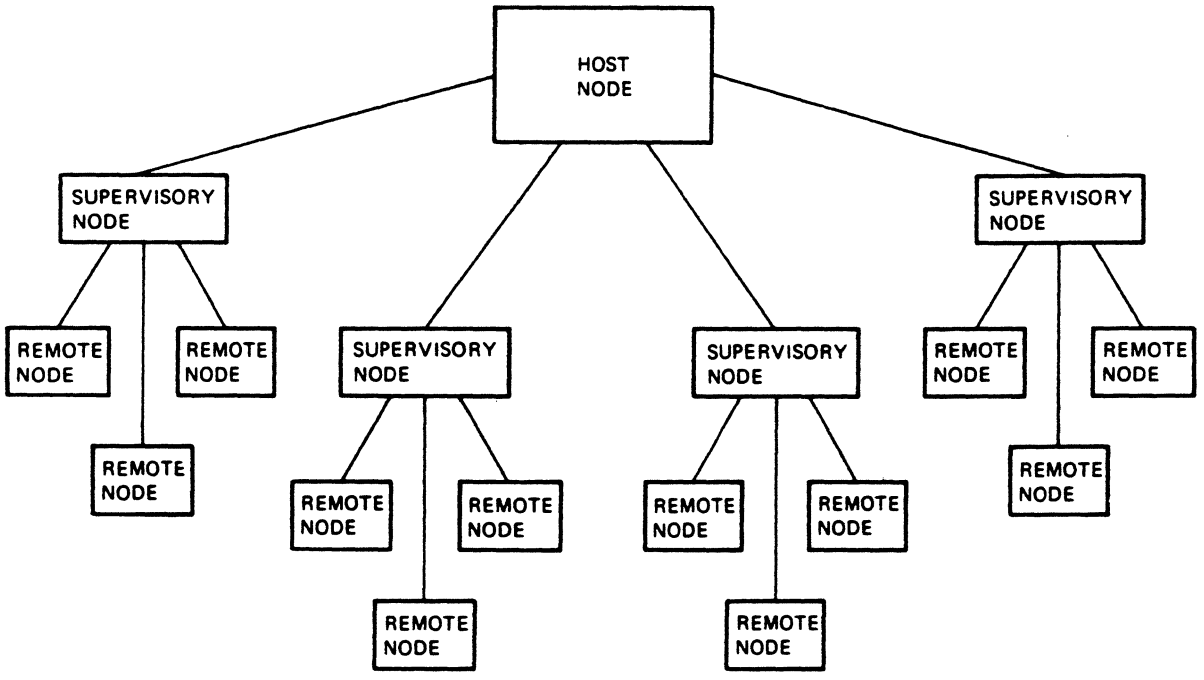
ADAPTIVE THROUGH: EVENTS
OPERATOR COMMANDS
TRANSPARENT TO
USER OR NOT

PRIVATE NETWORKS

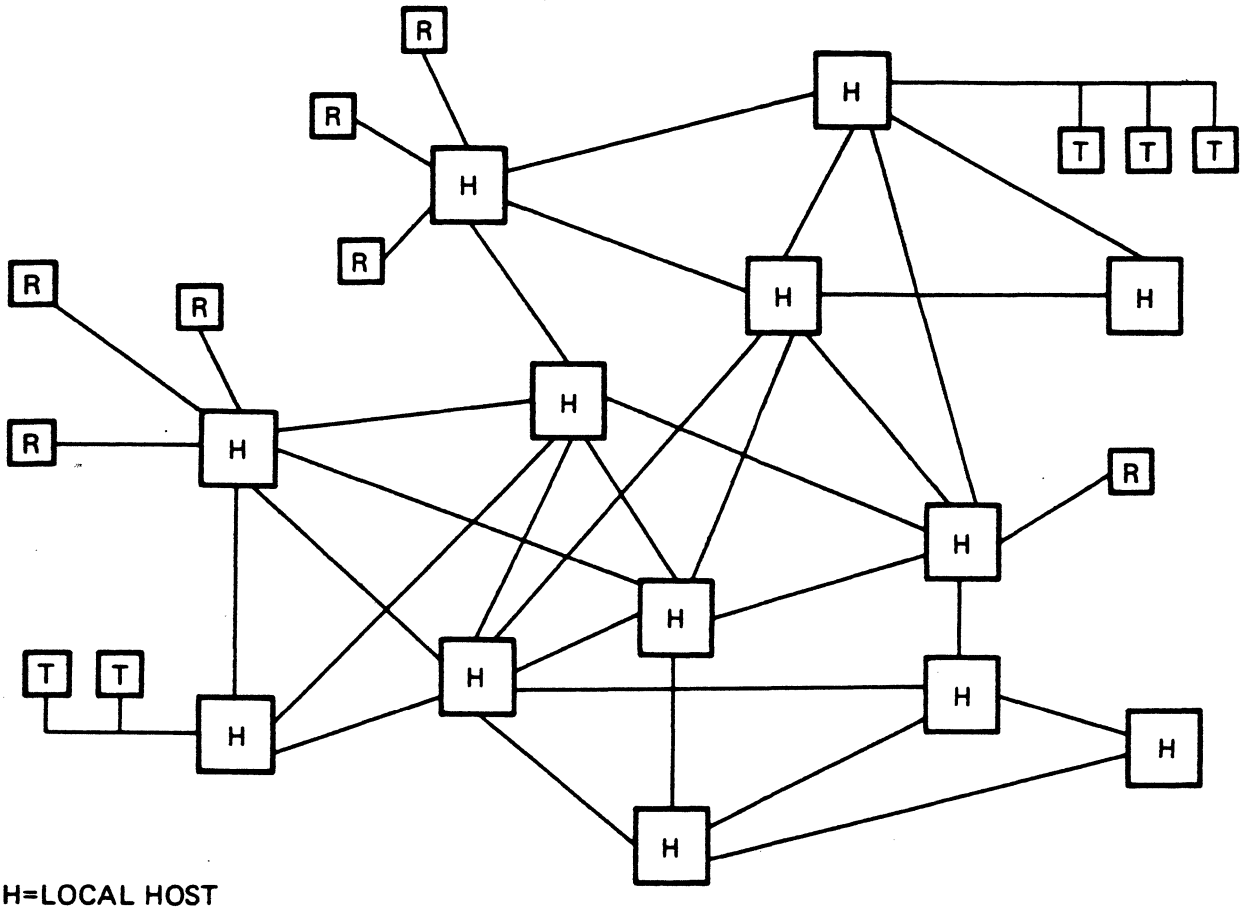
- Network Types
  - Terminal
  - Distributed Data Processing
- Connection Methods
  - Point-to-Point
  - Multipoint
  - Multiaccess
- Topologies
  - Star (Centralized)
  - Tree (Hierarchical)
  - Ring (Loop)
  - Distributed (Multistar, Mesh)



TK-8324



TK-5687


R
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H
H=LOCAL HOST
R=REMOTE NODE
T=TRIBUTARY
TK-8325

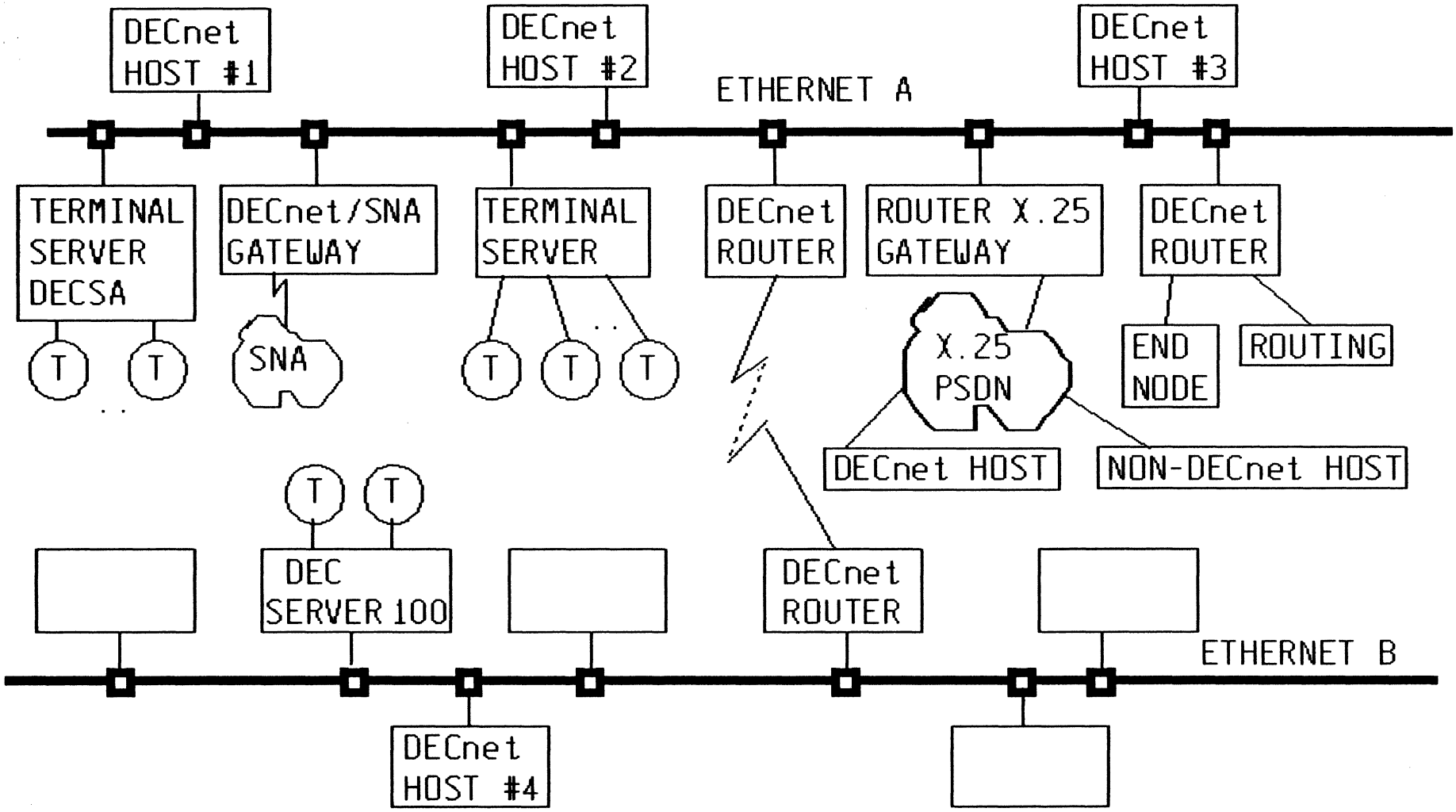
LOCAL AREA NETWORKS

- Use broadcasting
- Use packet techniques
- Requires communications facilities and interfaces
- May not be compatible due to design uniqueness

ETHERNET ADVANTAGES

- Simplified network design
- Simplified installation
- Reduction of wiring
- Flexibility for future growth
- Reliability
- High-speed communication
- Shared data bases
- Shared resources
- Interconnection of diverse equipment

ETHERNET: SYSTEM OVERVIEW

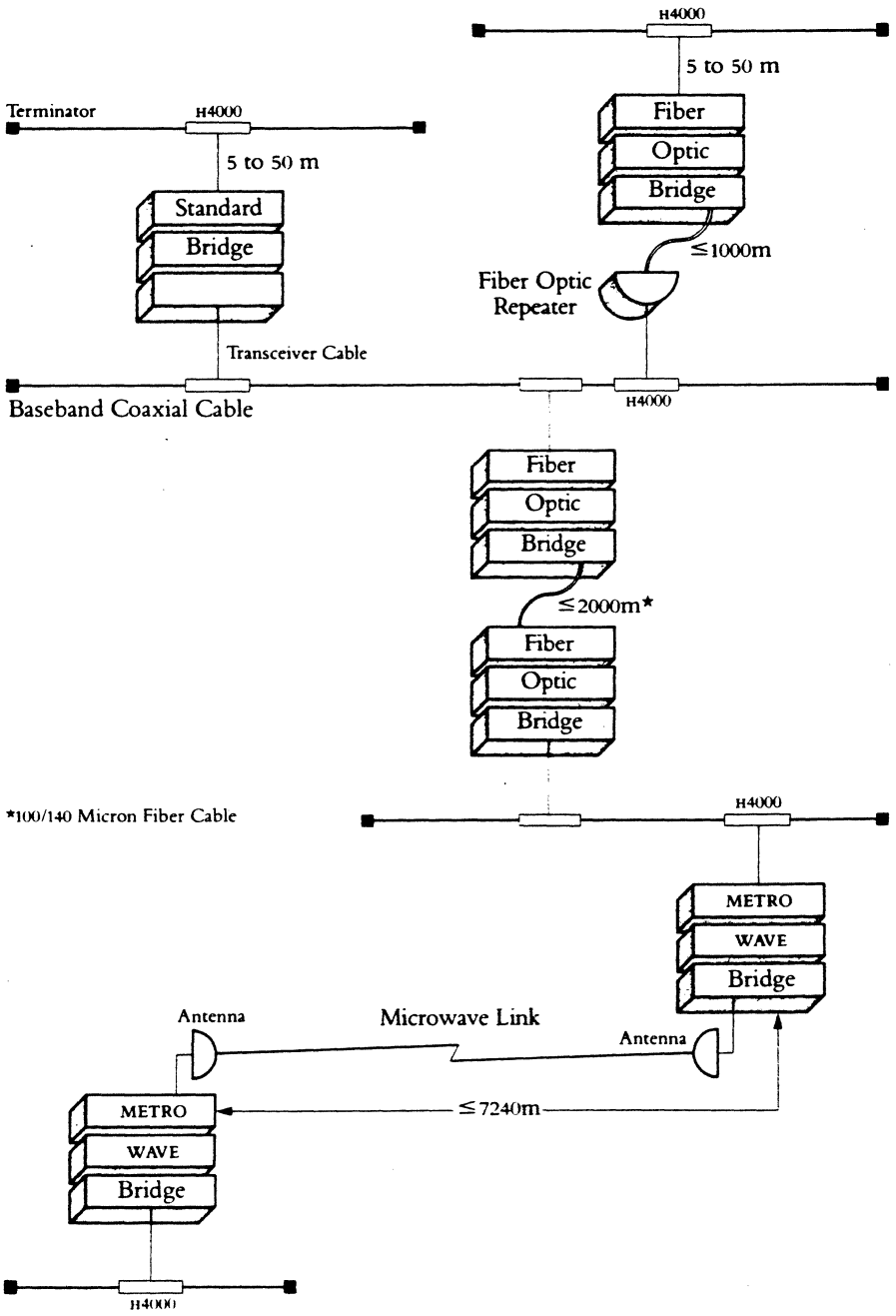


CN 08

- Two METROWAVE Bridges connected by a microwave link count as two in the seven bridge limitation.
- Although it is packaged with an H4000 transceiver, the METROWAVE Bridge can also be attached to standard Ethernet cable using a DELNI, to ThinWire cable using a DESTA, or to broadband cable using a DECOM.

The following figure illustrates the Extended Baseband LAN configuration and distance guidelines.

Figure 2.50
Extended Baseband LAN Configuration and Distance Guidelines (Standard, Fiber Optic, and METROWAVE Bridges)

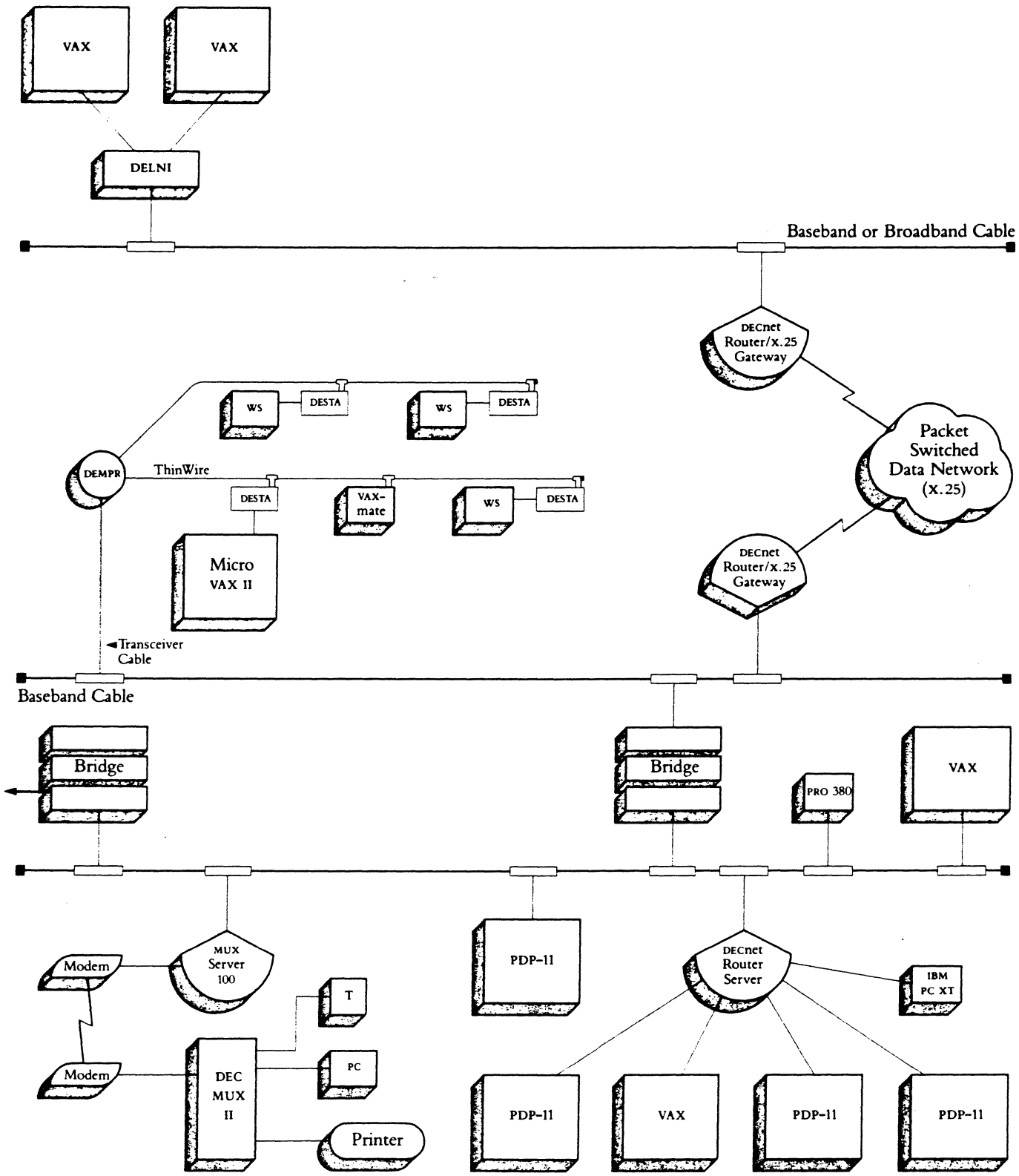


Distributed System Cost Parameters

- Advantages
  - Lower communication costs
  - Modest startup costs (see below)
  - Low incremental expansion cost
  - Higher share of raw computing power available to the user
  - Better cost performance; faster reaction to new technological advances
  - Higher availability
- Disadvantages
  - High costs for extensive conversion

Distributed Systems Personnel Parameters

- Greater interest and motivation at local level.
- Identification with task of individual department's organization.
- More opporrtunities to communicate with and transfer into line management.
- Fewer skilled personnel required at each site.


VAX
VAX
DELNI
Baseband or Broadband Cable
DECnet Router/X.25 Gateway
WS
DESTA
WS
DESTA
DEMPR
ThinWire
DESTA
VAX-mate
WS
DESTA
Micro VAX II
Packet Switched Data Network (X.25)
DECnet Router/X.25 Gateway
Transceiver Cable
Baseband Cable
Bridge
Bridge
PRO 380
VAX
Modem
MUX Server 100
T
Modem
DEC MUX II
PC
Printer
PDP-11
DECnet Router Server
IBM PC XT
PDP-11
VAX
PDP-11
PDP-11

Factory Applications

The following figure illustrates a typical application of Ethernet in a factory. Such a configuration provides control of automatic assembly/test devices. Data entry stations provide timely information on the entire manufacturing process. Exchange of data between the manufacturing site and the rest of the corporation is handled through a router server.

Figure 2.9
Baseband Ethernet Factory Application

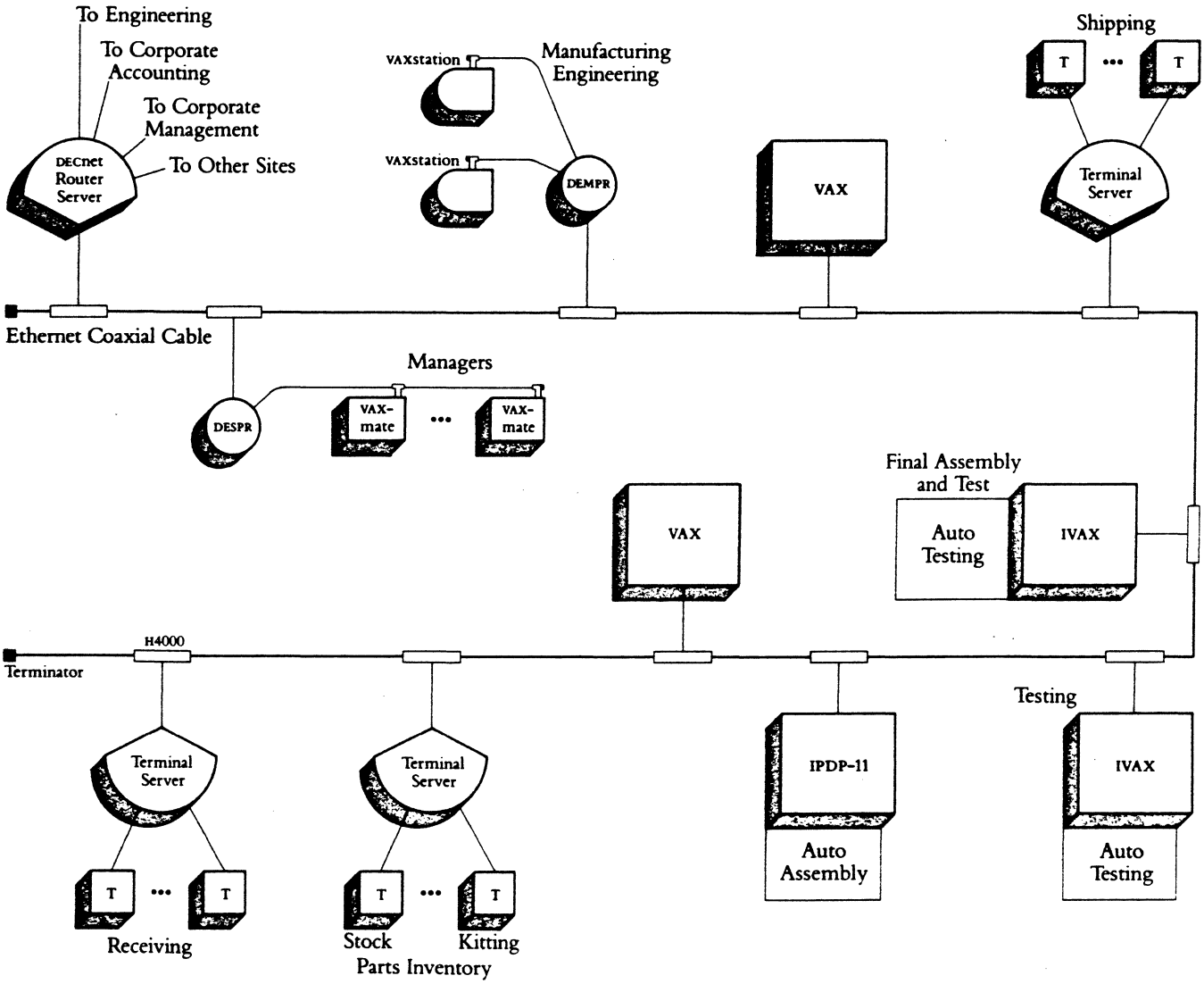
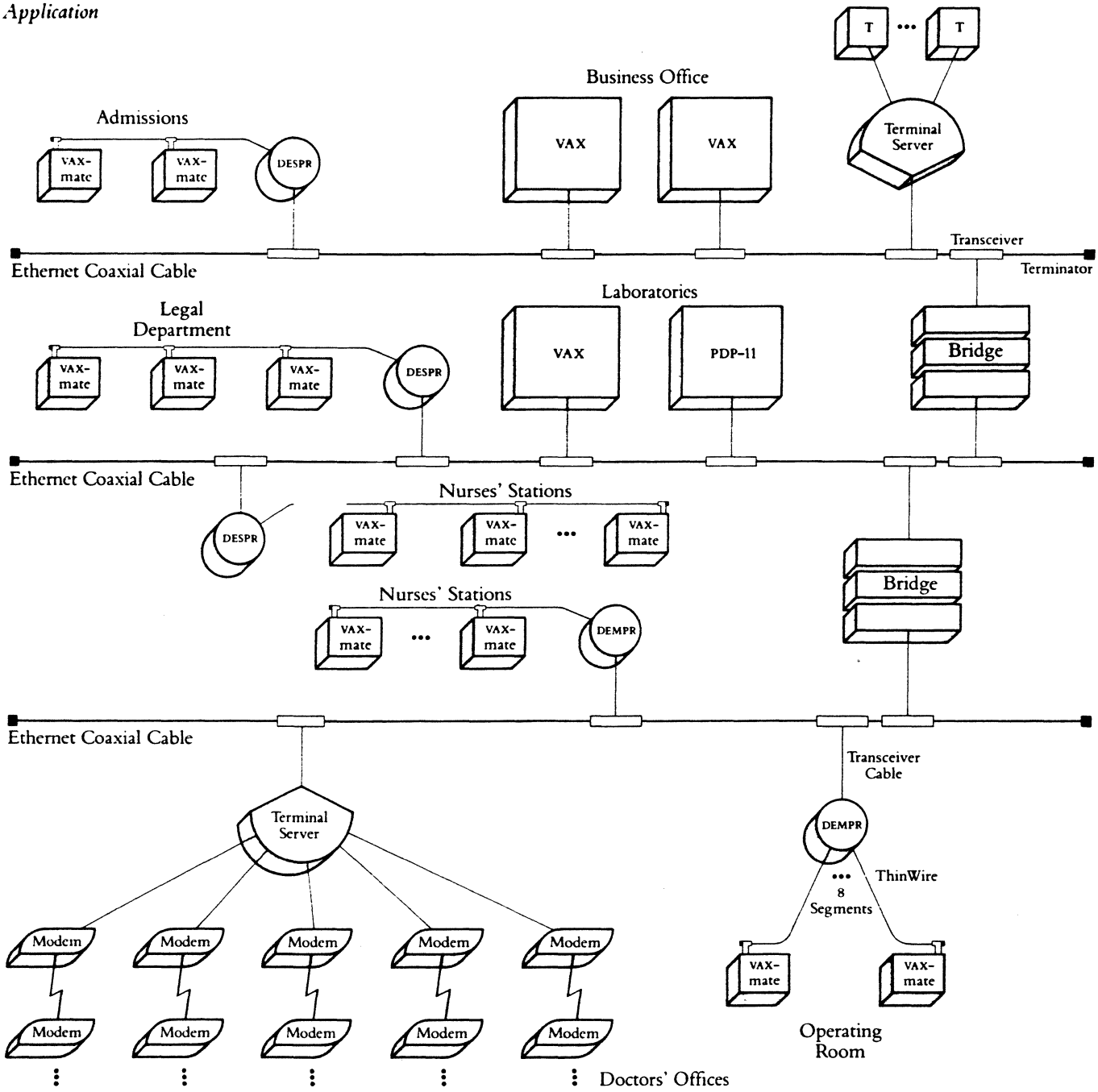
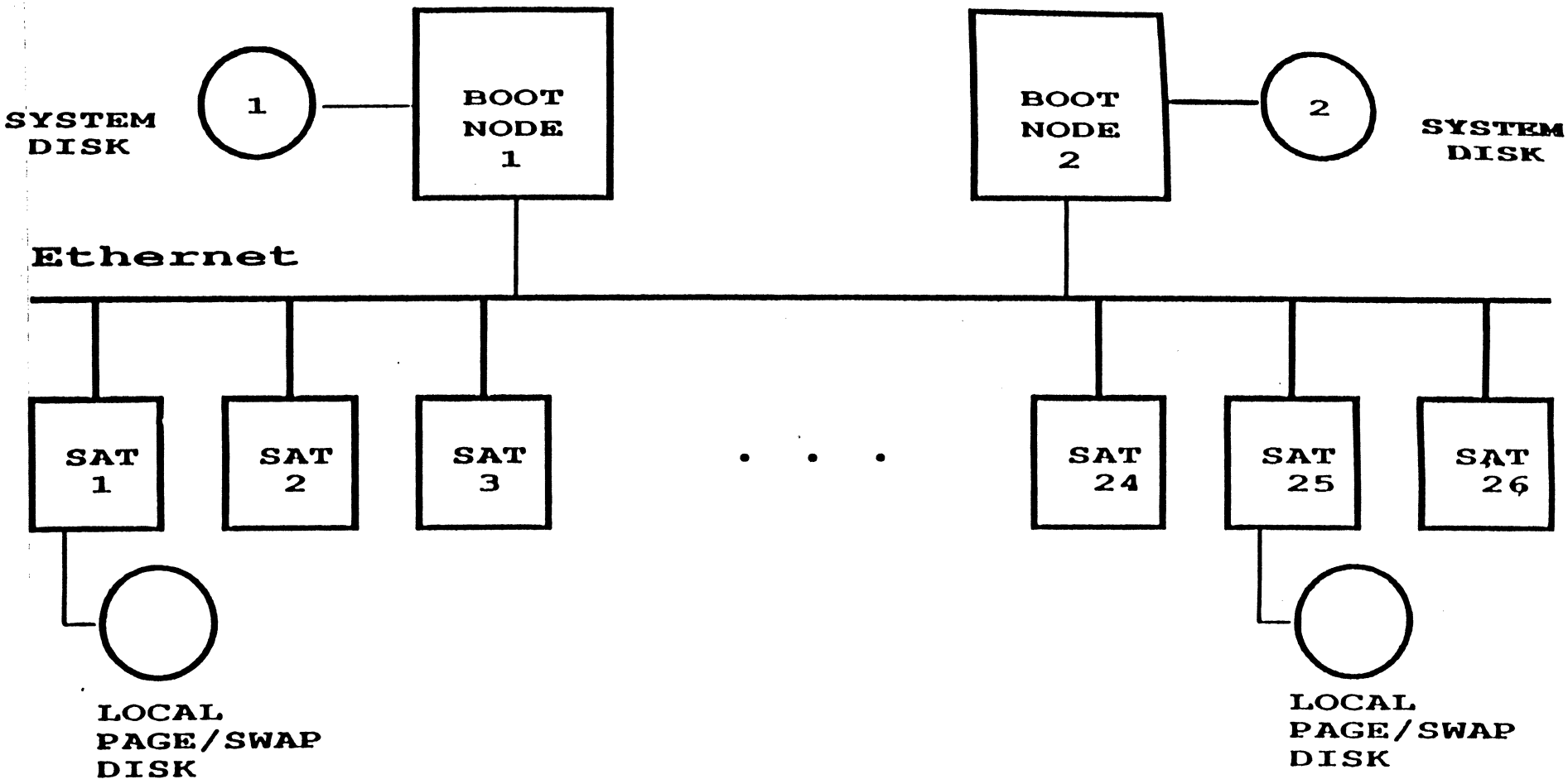


Figure 2.11
Baseband Ethernet Hospital Application

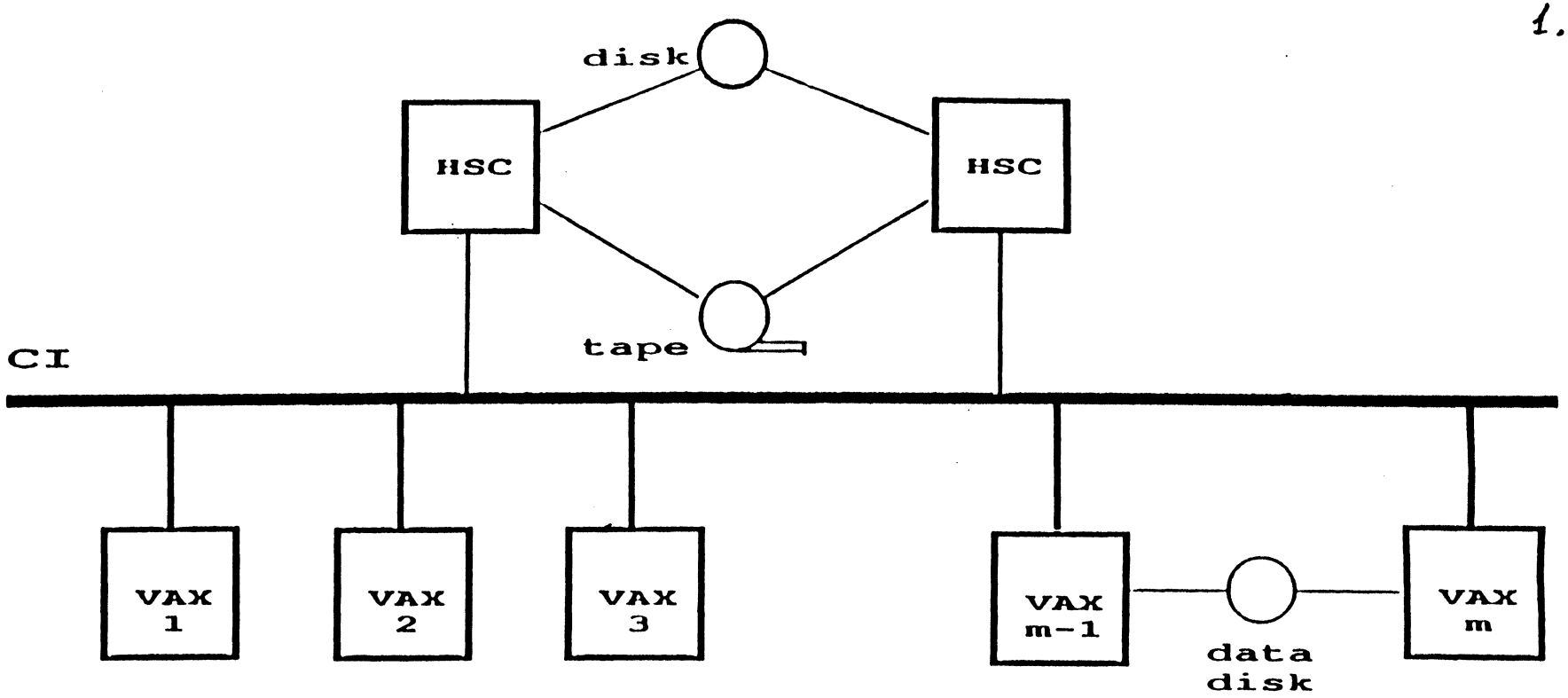




501

ETHERNET-ONLY CONFIGURATION

- DUAL BOOT NODE
- UP TO 26 SATELLITES



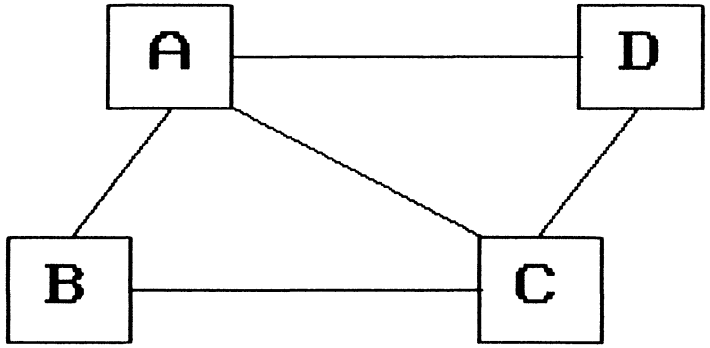
CI-only CONFIGURATION

DECnet CONFIGURATIONS

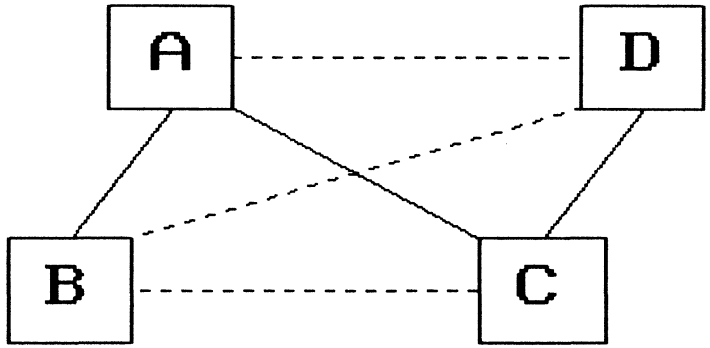
- POINT-TO-POINT
- ADAPTIVE ROUTING
- MULTIPOINT
- PACKET-SWITCHED (X.25/PSI)
- ETHERNET
- SERVERS AND GATEWAYS

CONFIGURATIONS

POINT-TO-POINT



ADAPTIVE ROUTING



digital

NST17

Figure 1.1
The Phases of DNA and Associated Capabilities

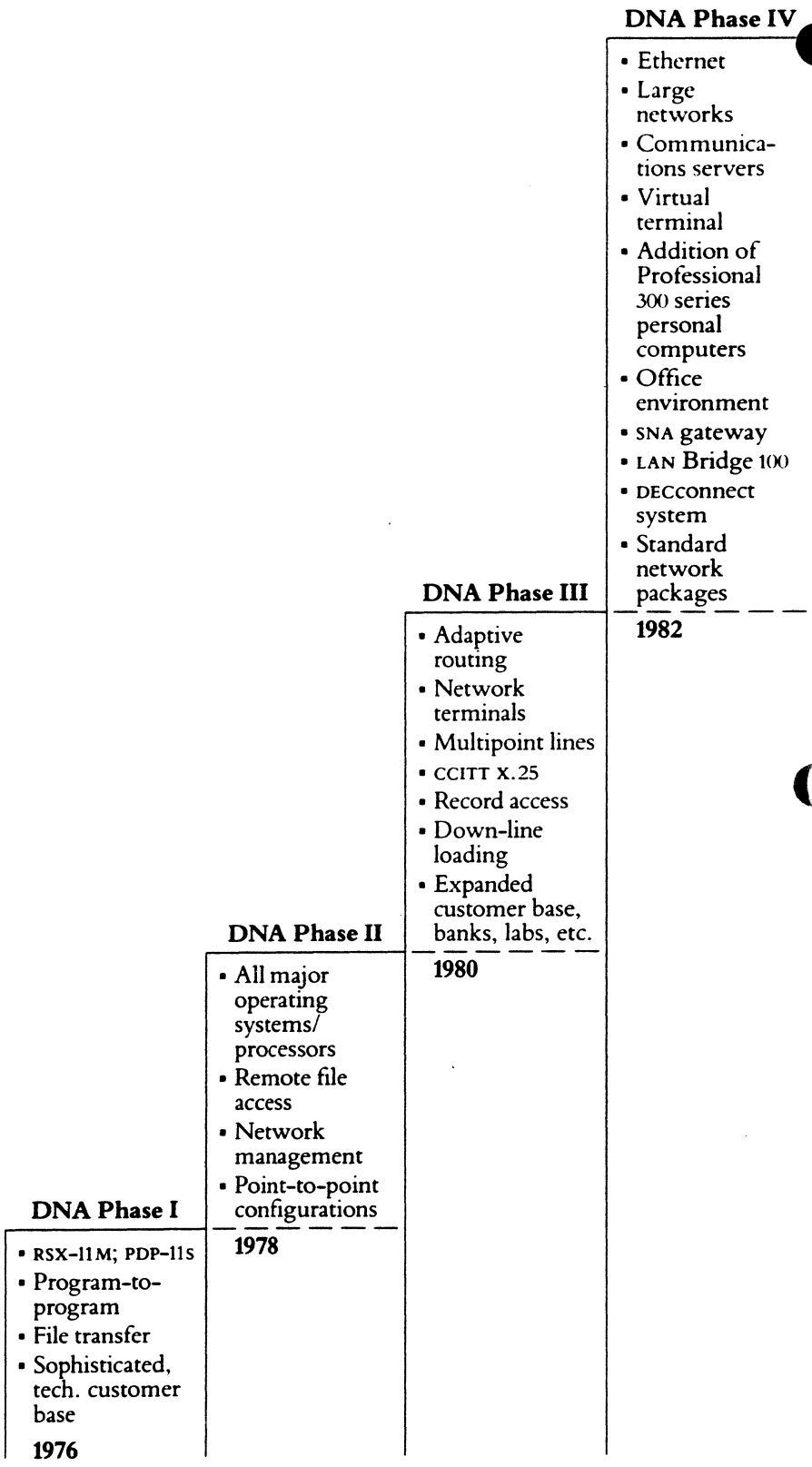
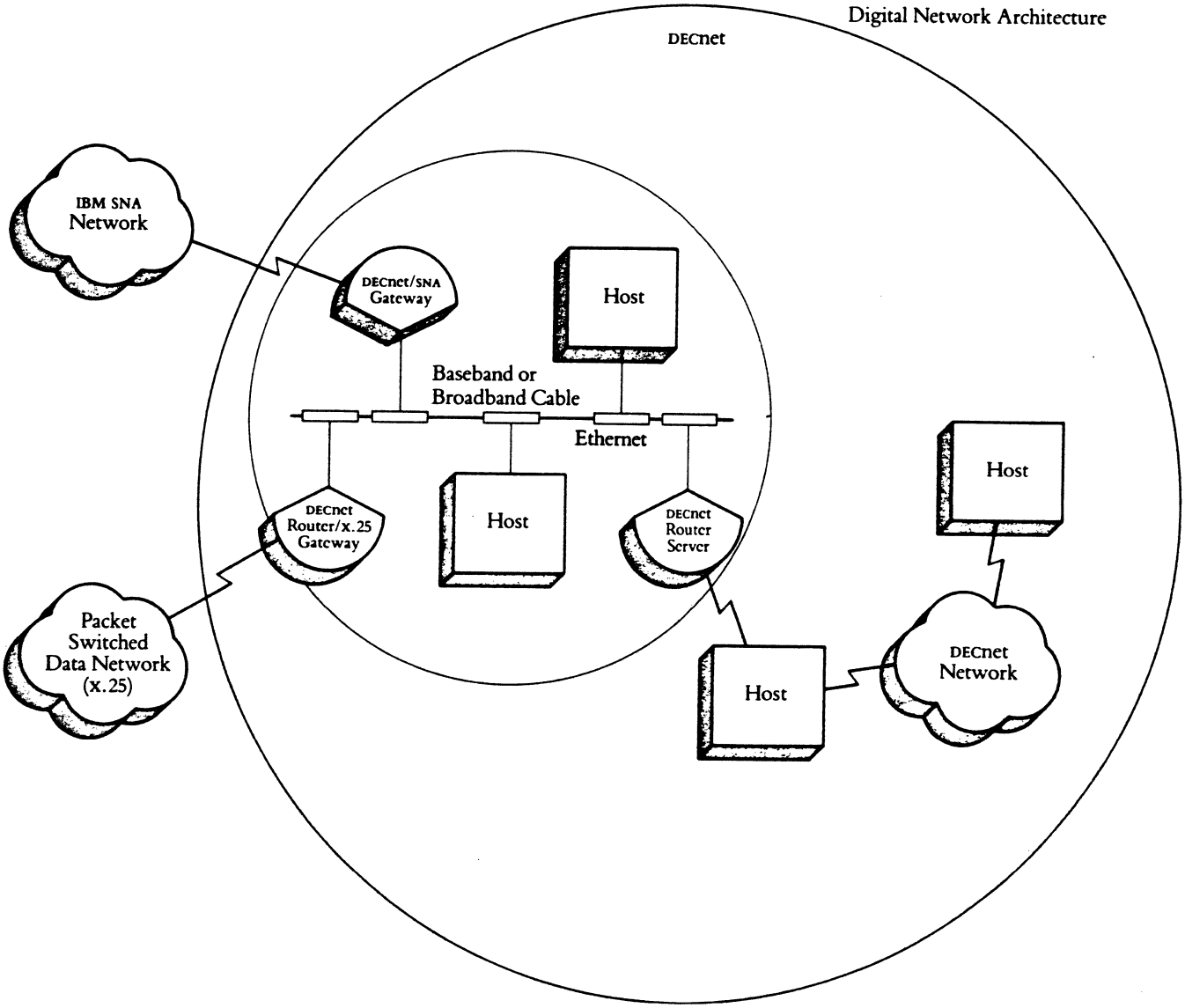
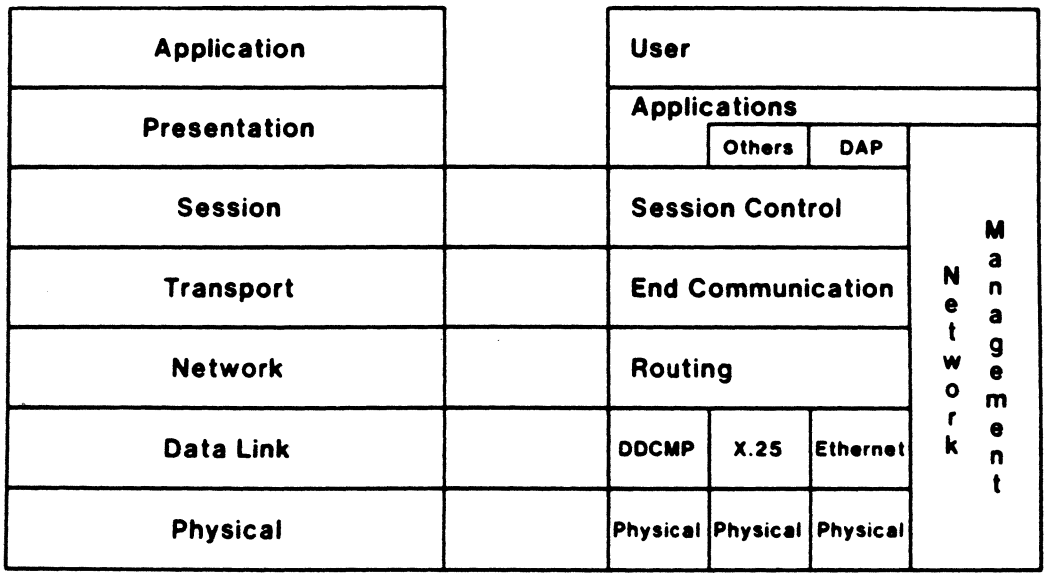
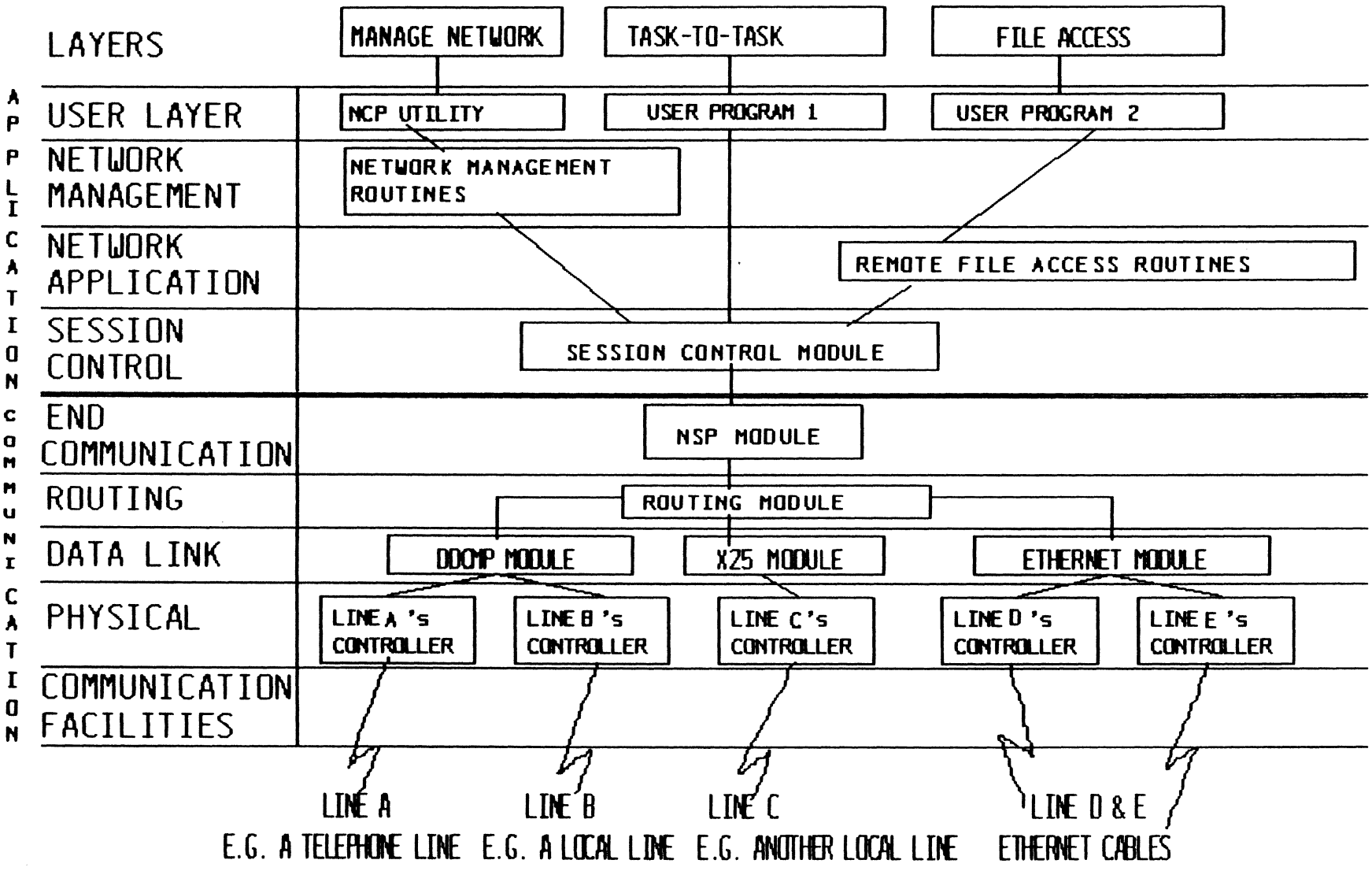


Figure 1.4
Ethernet, DECnet, and DNA Relationships




Application
Presentation
Session
Transport
Network
Data Link
Physical
User
Applications
Others
DAP
Session Control
End Communication
Routing
DDCMP
X.25
Ethernet
Physical
Physical
Physical
Network
Management
OSI
DNA

DNA MODULES RESIDENT IN A DECnet NODE



PR 03

OSI and DNA

1.3.2 The Layers of DNA

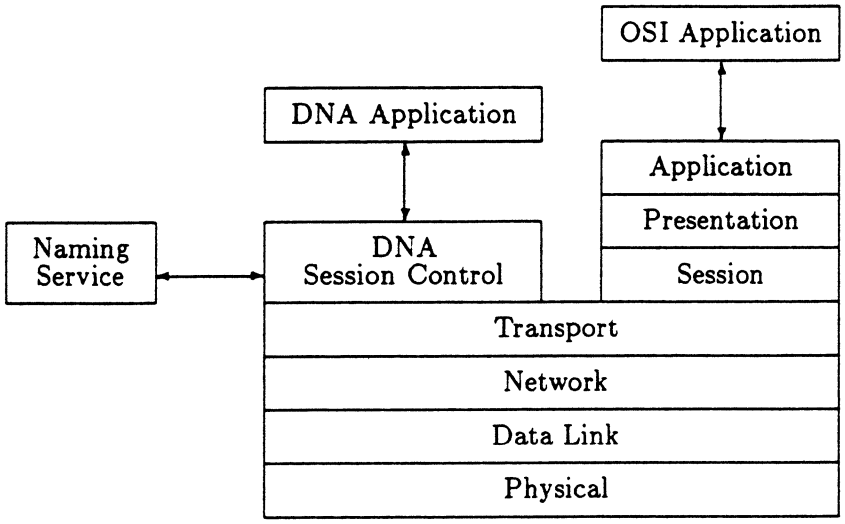


Figure 1.3: The Layers of DNA

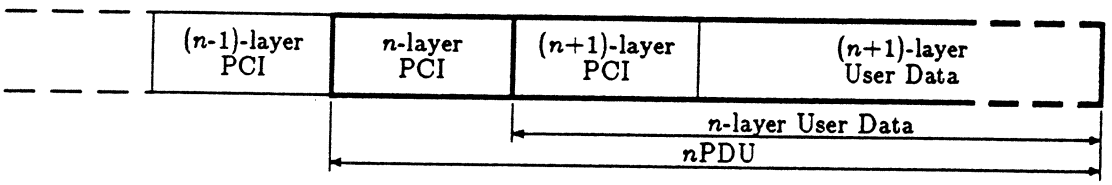
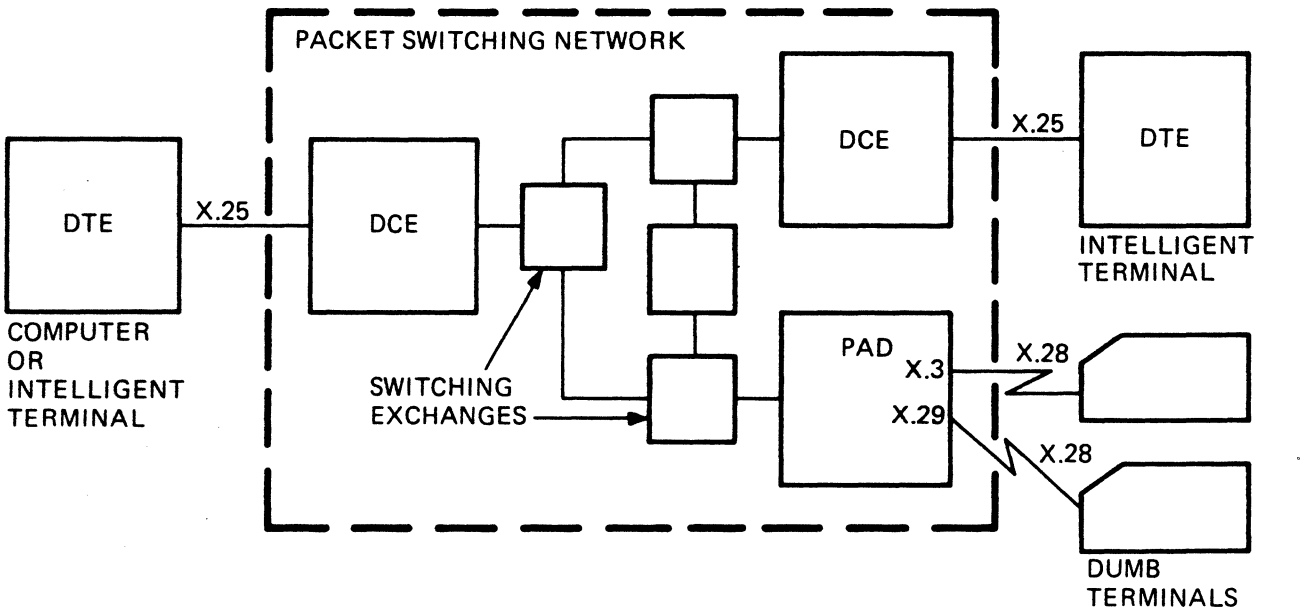


Figure 1.2: Nesting of Protocol Control Information

X.25

- Specifies the communication interface between DTEs and DCEs on the PPSN.
- Defines three functional levels (similar to RS232-C and to the lower levels of DNA).
  - Level 1 (Physical Interface) - Defines the physical and electrial characteristics of the connection between the DTE and the DCE.
  - Level 2 (Frame Level) - Defines the rules for transmitting data between the DTE and DCE.
  - Level 3 (Packet Level) - Defines the rules for transmitting and controlling the packet.
- CCITT's X.3, X.28, and X.29 recommendations define an interactive terminal interface for devices such as ansynchronous hardwired terminals that want to communicate over a PPSN, but cannot be programmed according to the X.25 format.

X.25, X.28, X.3, X.29, X.75 STANDARDS
(RECOMMENDATIONS)



Digital's Interconnect Strategy with IBM

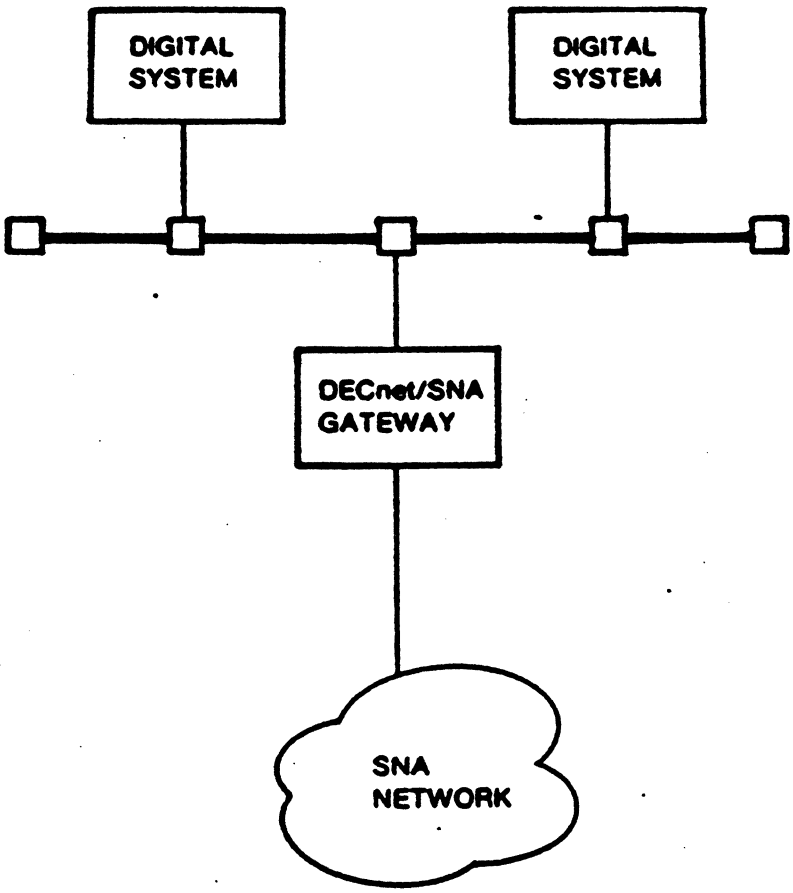
To create an environment which accommodates the *transparent, bi-directional flow of information* between Digital and IBM data processing systems.

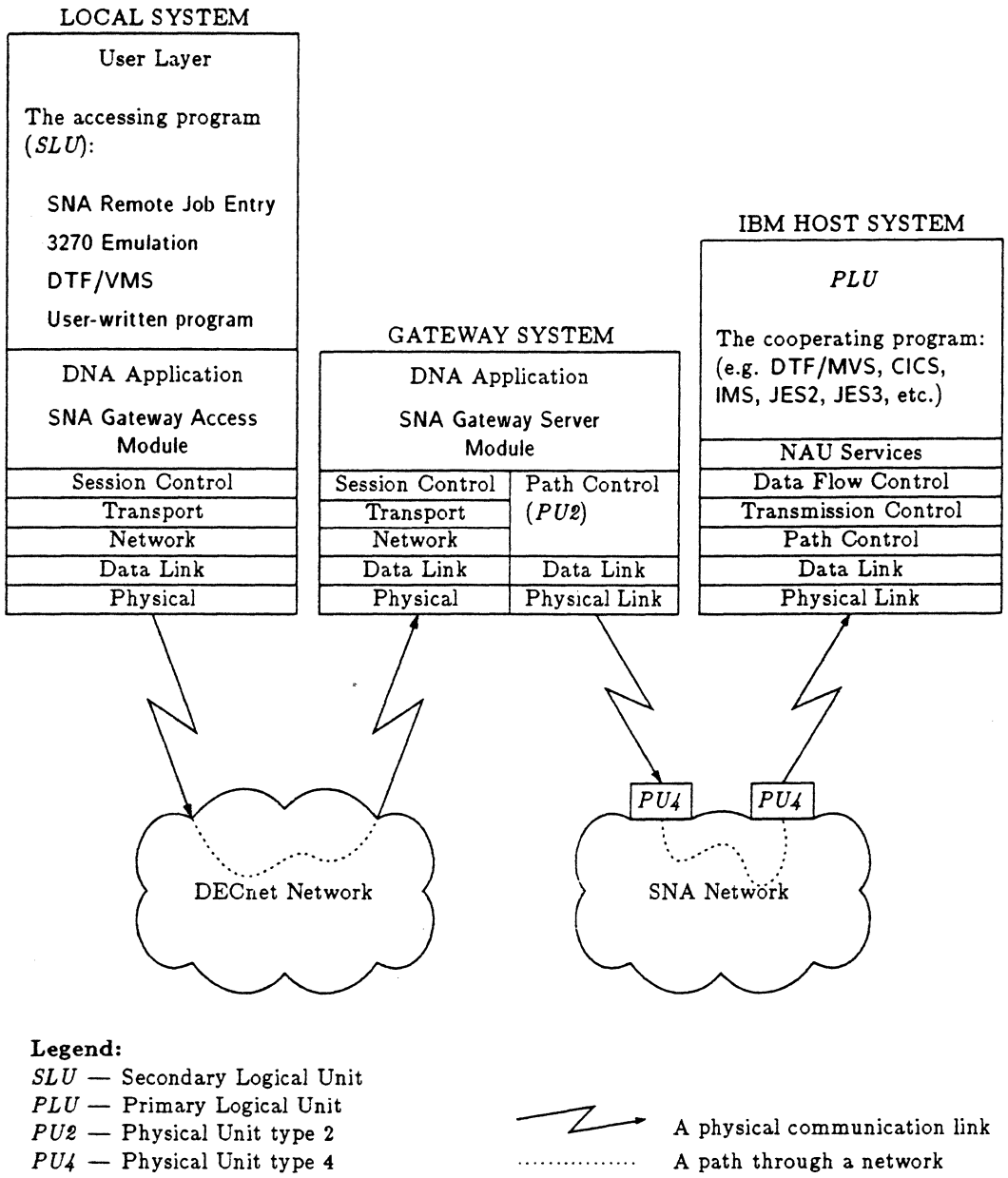
Complementary Computing

- Gateway concept
  - Provides access between the Digital and IBM processing *environments*
  - Allows either vendor's *network* to expand based on the customer's needs
- User Transparency
  - Insulates the users and their applications from changes in the network
  - Allows for enhancements and changes in either network
- Provide a *Network-to-Network* solution between the two vendors
  - Viable in any arbitrary topology supported by DECnet

Digital's
SNA
Product Set Architecture

An example of the DECnet/SNA Gateway



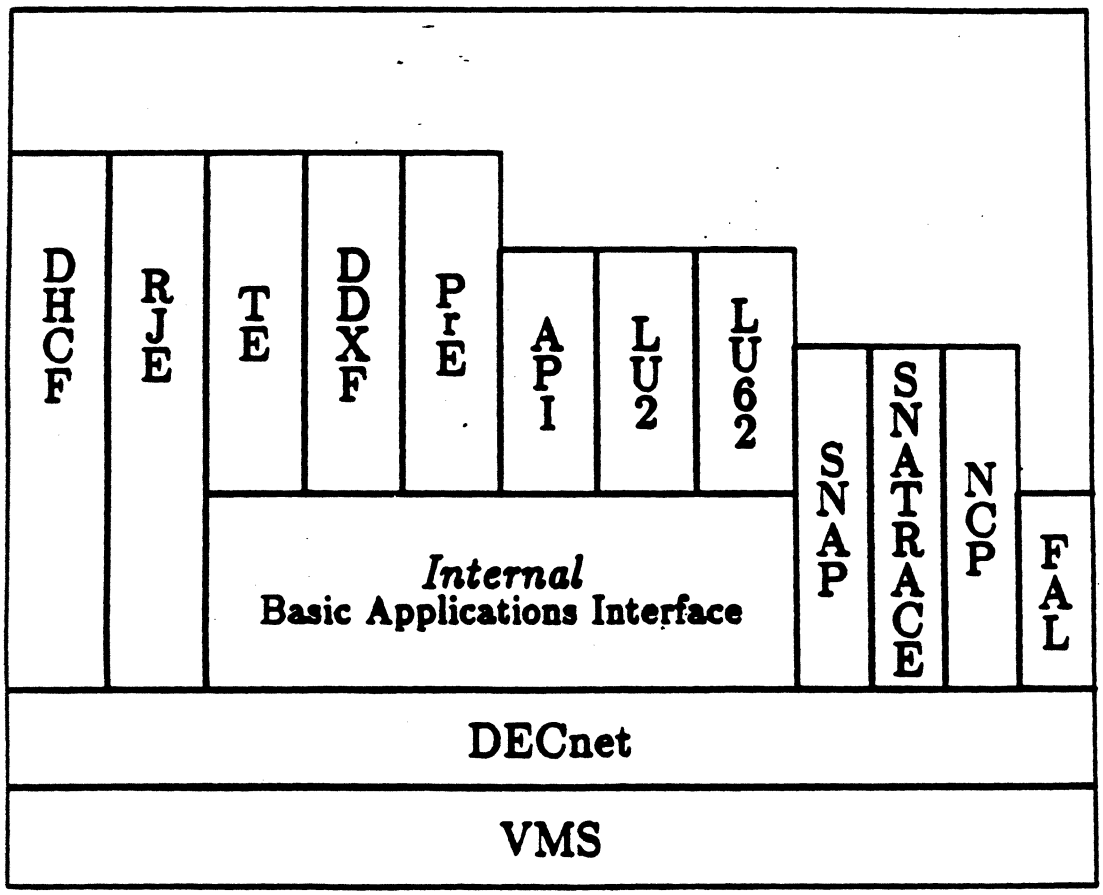


Legend:
SLU — Secondary Logical Unit
PLU — Primary Logical Unit
PU2 — Physical Unit type 2
PU4 — Physical Unit type 4

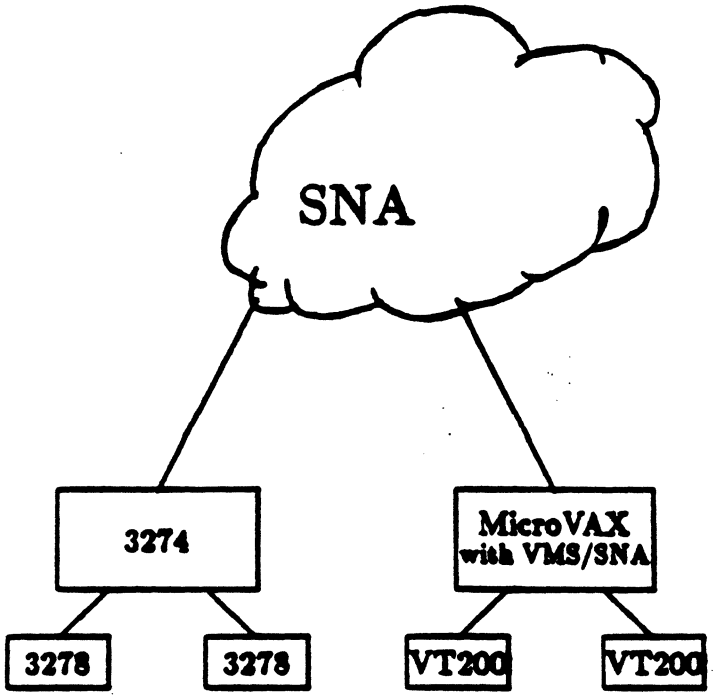
A physical communication link
A path through a network

Figure 11.1: SNA Gateway Access Operation

Routines Involved in using the Gateway

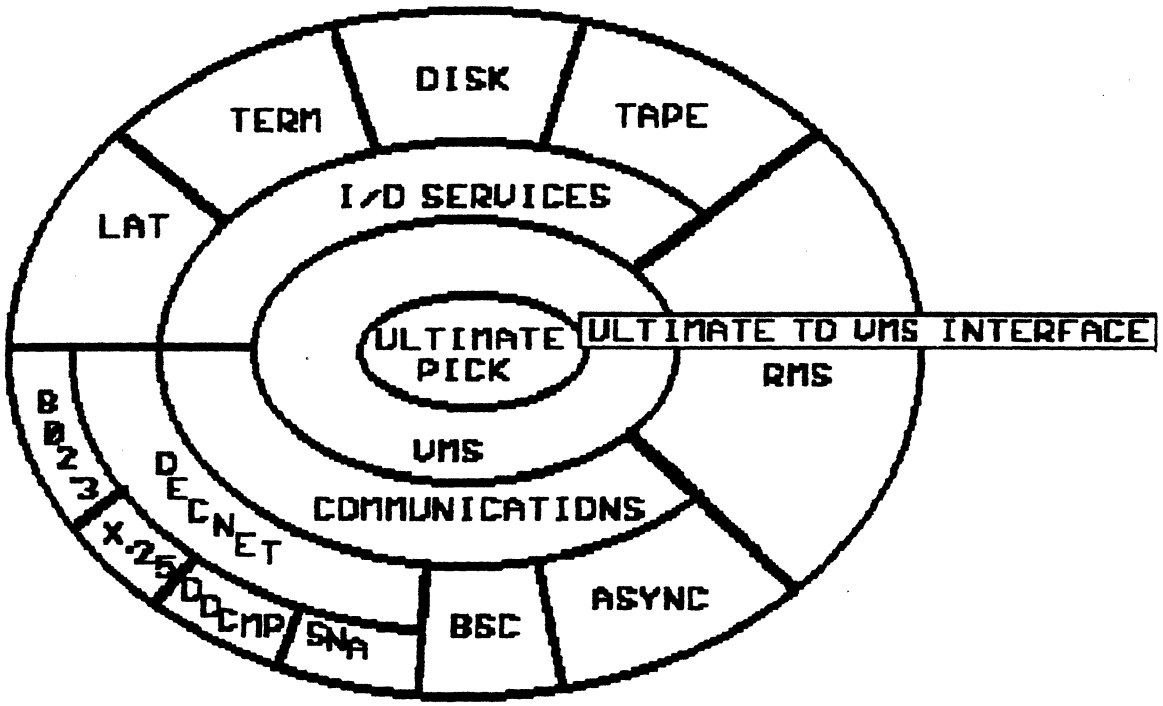


An Example of VMS/SNA



Programming Interfaces

- DECnet/SNA VMS Application Programming Interface (API)
- DECnet/SNA VMS 3270 Data Stream Programming Interface (3270 DS)
- DECnet/SNA VMS APPC/LU6.2 Programming Interface (APPC/LU6.2)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