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DALLAS INTERMEDIATE SYSTEMS CENTER

Virtual Machine/
Systems Network Architecture
Native Support
Presentation Guide

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This guide provides the material for presenting the chronology of
communications support in VM/SP, announcement information about IBM
native VM/SNA support, and planning information for installations
considering migration to the VM/SNA environment. It gives the presenter
a selection of materials that may be tailored to fit a particular
audience. It includes the visuals (reproducible overhead foil masters)
and a presentation script.

Before using this presentation guide, the presenter should read, become
familiar with, and refer to the *Systems Network Architecture: Concepts
and Products* (GC30-3072) for a basic understanding of SNA, its intended
strategy, and the relationship of this presentation to the other
elements of this environment.

This presentation describes the VM/SNA Native solution today. It looks at the chronology of VM communications support in various communications environments, the decisions that must be made in terms of selecting the proper environment, considerations in migrating from one environment to a VM/SNA Native environments, and a summary of the VM/SNA Native support.

The script gives the presenter an understanding of the content of each foil, the important points that should be made, and the flow of the presentation.

Since presentations of this type tend to generate discussion among the participants, many sections of the script contain auxiliary material that goes beyond the scope of the presentation and helps the presenter in answering questions and guiding the flow of discussions.

OBJECTIVE

This presentation is designed to be used in a seminar for DP managers and planners interested in SNA in a VM environment. It introduces the viewer to IBM's VM/SNA and provides a basic understanding of the communication support in VM, and the VM/SNA Interim and VM/SNA Native support in VM.

ABSTRACT

This presentation (approximately 1 to 1-1/2 hours) can be logically divided into two distinct segments. The first segment discusses the chronology of VM communications support and a detailed description of VM/SNA Interim and VM/SNA Native solutions.

The second segment of the presentation discusses the decisions that must be made in selecting the proper environment, considerations in migrating from one environment to a VM/SNA Native environment, and a summary of the VM/SNA Native support and what this means to your installation today.

Features and potential benefits of VM/SNA Native support are discussed in each segment.

TOPICS

- Chronology

- Communication Environments

- Decisions, Decisions

- Migration

- Summary

AUDIENCE

This presentation is designed primarily for data processing managers and
VM systems programmers as an introduction to VM/SNA products. However,
it is suitable for anyone who is interested in understanding IBM's
VM/SNA products and the way they fit together in a VM communications
network.

HANDOUTS

SNA Marketing Brochures

There is a way out....SNA	G510-0065
Increasing productivity through SNA	G520-3942
IBM 3863, 3864 and 3865 Modems	G520-3456
IBM 3863, 3864 and 3865 Modem Fact Folder	G226-3550

Optional Publications

SNA Concepts and Products	GC30-3072
VM/VCNA General Information	GC27-0501
VSE RSCS/SNA Support for VM/SP	SH20-0080
ACF/VTAM General Information	GC27-0608
ACF/NCP General Information	GC30-3058
NCCF General Information	GC27-0429
NPDA General Information	GC34-2010
Network Program Products General Information	GC23-0108
Network Program Products Planning	SC23-0110
VTAM Installation and Resource Definition Guides	SC23-0111
NCP and SSP Installation and Resource Definition Guides	SC30-3253

This section provides guidance for the presenter on how to use the foils
in Appendix B. The following text is intended as an aid in preparing a
presentation on VM/SNA Native support. The notes are not a script; they
provide background information for the presenter. The presenter should
be familiar with VM/SP and RSCS concepts, features, and functions. The
minimum product knowledge assumed is that which can be obtained from the
appropriate general information manuals.

FOIL 1 SNA IN A VM ENVIRONMENT

With the current growth of VM as an operating system, and the importance
of SNA as IBM's communications architecture for the present and future,
I'd like to present VM/SNA Native support that was announced in August,
1984, and how SNA and VM can effectively coexist in today's VM
environment.

FOIL 2 AGENDA

We'll look at the chronology of VM communications support. Then we'll
discuss the various communications environments that are supported under
VM and the decisions that must be made in selecting the proper
environment for a given installation's migration considerations.
Finally, we'll summarize the overall presentation.

FOIL 3 1972: LOCAL 3270

In 1972, VM/SP made it possible to create functionally equivalent
computers called "virtual machines" in a single processor. VM/SP is a
computer-sharing system for multiple users, as well as a powerful
time-sharing system. The VM communications environment consisted solely
of locally attached 3270s, remote start/stop, and TWX-type devices. VM
started as a migration tool and today is used frequently in these types
of environments:

- Interactive computing through its Conversational Monitor System.
  CMS is a single-server system. Each CMS user has his own virtual
  machine. Examples of typical CMS applications are:

  - Program development

  - End-user computing

  - Interactive transaction processing

  - Problem solving

- Guest operating systems running as independent systems in their own virtual machines.

- Mixed-mode processing in which both the CMS interactive and virtual guest operating systems can run in a single VM/SP processor.

The key is that VM is very much accepted today as one of IBM's mainline system control programs. Although VM does support a large number of terminal types, it only supports two categories of terminals: 3270 and start-stop (TTY) terminals. Both categories have been the mainstay in the past and will continue to exist in the future. But these terminal categories also have limitations in terms of flexibility and efficiency.

FOIL 4 1974: REMOTE 3270

In 1974 support for remote binary synchronous 3270s communication was added.

FOIL 5 1975: REMOTE SPOOLING COMMUNICATIONS SUBSYSTEM (RSCS)

In 1975, VM/SP accommodated the Remote Spooling Communications Subsystem (RSCS) Program Product. RSCS is a multitasking supervisor supporting multiple concurrent spooling operations. RSCS resides in its own virtual machine. It allows the transfer of spooled printed or punched files as well as program decks for compilation to other systems. RSCS supports:

- Workstations like the 2780, 3770 and 3780 families

- 3270 printers like the 3262 and 328X

- Binary synchronous networked systems such as JES2, JES3 and VSE/POWER

RSCS uses binary synchronous communications protocol (BSC) to transmit to the receiving devices.

FOIL 6 1978: PASS-THROUGH (PVM)

In 1978, VM/Pass-Through Program Product, an interactive networking facility, gained widespread acceptance within IBM. The first release of the VM/Pass-Through Program Product was announced on January 30, 1980. VM/Pass-Through allows a single terminal access to many different computers, including those at distant locations, to create time-sharing networks. VM/Pass-Through enables a single VM/SP terminal to access many different computers running a wide variety of software systems.

The foil shows a VM/SP display terminal with access to two remote computers. Input entered by a user at the terminal is transferred by VM/Pass-Through across the telecommunication links that connect the

systems. This input is processed by the remote system and response data are transmitted back through the network to the original display terminal.

VM/Pass-Through supports only terminals in the IBM 3270 family; other VM/SP terminals may not be used to access remote systems.

Although VM/Pass-Through functionally has provided many of the things the VM users have needed, it is still limited to a binary synchronous environment.

Note: Detailed information on supported terminal configurations may be found in the *VM/Pass-Through Facility Guide and Reference Manual* (SC24-5208).

FOIL 7 1979: VM/VTAM COMMUNICATIONS NETWORK APPLICATION (VCNA)

In 1979, Virtual Machine VTAM Communications Network Application (VM/VCNA) was added. This was the first version of SNA support for VM. VM/VCNA provides terminal only support to allow a CMS user access to the SNA network. VM/VCNA runs in the VTAM Service Machine (VSM) under control of a guest operating system - either a DOS/VSE with the VSE/Advanced Function Program Product or OS/VS1 with the Basic Programming Extensions Program Product.

FOIL 8 1982: RSCS/SNA PROGRAM OFFERING

In 1982, the RSCS/SNA Program Offering was added. VM/VCNA provides the terminal solution in the SNA world. To support the requirements for batch transmission, local and remote printing, and shared printer capability, we use RSCS/SNA Program Offering for DOS/VSE and OS/VS1.

FOIL 9 1984: VM/SNA NATIVE (VM/VTAM)

- A new version of ACF/VTAM for VM/SP

- A new release of VM/SP (Release 4) with a corresponding Release 4 of the VM/SP High Performance Option, provide the support for ACF/VTAM, specifically the new VM/Group Control System, which allows VTAM applications to share storage among members of the group

- RSCS Networking Version 2, which includes several useful functional enhancements over Version 1 in addition to the support for VTAM.

- VM users have the ability to do Network Management via Network Communication Control Facility (NCCF), Network Problem Determination Application (NPDA) and Network Logical Data Manager (NLDM). These products run in the VM/Group Control System (VM/GCS) and interact with VTAM to monitor the system and provide problem diagnostics as well as resolution.

FOIL 10   VM COMMUNICATIONS ENVIRONMENTS

Let's review the three types of VM communications environments: Non-SNA
(basic VM support), VM/SNA Interim (VM/VCNA) and VM/SNA Native (VM/VTAM)
support.

FOIL 11   NON-SNA

The non-SNA environment is very similar to what VM supported in 1975.
It is basic VM support of binary synchronous (BSC) and start/stop (S/S)
terminals with support for various RSCS non-SNA links to various hosts
and workstations.

FOIL 12   WHY SNA ?

This announcement makes the benefits of SNA listed on this foil more
easily available to the VM user. The VM BSC procotol will not allow the
sharing of lines between applications. For example, VM/Pass-Through
requires a dedicated line which cannot be shared with RSCS.

SNA does provide today's user significant tangible benefits. Since SNA
supports multidropped control units as well as different control unit
types on a single line, consolidation of resources is possible. Any
terminal can now gain access to any application in the network, no
matter which processor that terminal is tied to or which processor the
application is running on. SDLC line protocol is more efficient in
handling traffic than using binary synchronous protocol. SNA allows the
polling and addressing to be done by the 3705 or 3725 and therefore does
not take cycles from the processor. These two items, coupled with other
advantages such as error diagnostics and recovery, allow better overall
response time and network management.

FOIL 13   VM SNA INTERIM SOLUTION

With the complementary functions of VM/VCNA and RSCS/SNA, a VM system
can participate in an SNA network. Now an SNA terminal can get to the
desired destination, whether it is an application program such as CICS
on the same or on another processor located anywhere in the network or a
CMS PROFS machine in the same processor or somewhere else in the
network.

FOIL 14   VM/VCNA

Terminals in the VM/SNA environment are handled by the VTAM
Communications Network Application (VM/VCNA). VM/VCNA runs in the VTAM
Service Machine (VSM) as an ACF/VTAM application. Virtual console
requests are passed through Console Communication Services (CCS) and
Inter-User Communication Vehicle (IUCV) to VM/VCNA. In a VM/SP system,
the VTAM service machine runs under control of a guest operating system
- either a DOS/VSE with the VSE/Advanced Function Program Product or

OS/VS1 with the Basic Programming Extensions Program Product. The SNA network is managed by ACF/VTAM and a 3705 or 3725 Communication Controller with ACF/NCP. All terminals and lines defined to ACF/VTAM in the VSM are owned by the VTAM service machine.

The VTAM service machine with VM/VCNA supports virtual machine console functions, including CP/CMS command processing, CMS editor processing and full-screen support.

VM/VCNA supports a wide variety of terminal devices in both the SNA 3270 and 377X devices. 3270 printers are not supported except through the program function key COPY command. Below is a list of devices supported by VM/VCNA:

* Most models of the 3278, 3279, and 8775

* Most models of the 3771, 3773, 3774 and 3775

* All models of 3178, 3290, and 3767

* Network Terminal Option (NTO) terminals

* Many models of the 3262, 3283, 3284, 3286, 3287, 3288, and 3289 printers (supported for the program function key COPY command only)

Note: For a complete list of supported devices, see *VM/VCNA General Information* (GC27-0501).

FOIL 15   RSCS/SNA PROGRAM OFFERING

VM/VCNA provides the terminal solution in the SNA world. To support the requirements for batch transmission, local and remote printing, and shared printer capability, we use RSCS/SNA Program Offering for DOS/VSE and OS/VS1.

RSCS/SNA has two major components. The first is an extension of RSCS Networking Release 3 with additional line drivers allowing an interface to SNA devices, while continuing to support the previous BSC line drivers.

The second component is the VTAM RSCS Networking Application (VRNA). Much the same way VM/VCNA runs in the VTAM service machine (VSM) and provides an interface to VTAM, VRNA runs in the VSM and provides a similar function.

A CMS user will SPOOL output to RSCS/SNA with a special TAG. RSCS/SNA then gains access to the VTAM controlled network via VRNA and sends the spool file across the SNA link. Communications path through VM is handled by the Virtual Machine Communication Facility (VMCF).

RSCS/SNA requires that the RSCS Networking Program Product Release 3 (5748-XP1) be installed. The following is a description of the four line driver in RSCS/SNA Program Offering:

The first line driver supports printing on IBM 328X-type printers that are defined as LU type 3 devices to ACF/VTAM. This includes 3286, 3287, 3289, and 3262 printers.

The second line driver supports the IBM 3287-1C or 3287-2C printers and provides the capability to print normal color files as well as Graphical Data Display Manager (GDDM) graphic files in an LU type 3 node.

The third line driver is a modification to the RSCS DMTNJI (Network Job Entry) line driver. This modified line driver provides the capability to transfer VM spool files across an SNA link to RSCS/SNA, VSE/POWER node, or JES2 Release 3 systems as an LU type 1.

The fourth line driver supports printing on the IBM 6670 defined as LU type 4 in ACF/VTAM.

The four line drivers are written to be re-entrant. Each line driver that is started requires a one- or two-page working set. But, once started the additional lines use the same working set.

Keyword entry of the TAG command indicates the type of print support desired. There are six special format files that can be created.

The six file types and their keyword indicators are:

- Monochrome - no keyword

- Color - COLOR

- GDDM - GDDM

- Mixed - MIXED

- Nontranslated - NOTR

- Script - SCRIPT

FOIL 16   VM/SNA NATIVE SOLUTION

VM needed the ability to participate in the SNA environment. With networks growing in size and complexity, the need for any terminal to get to any application, to share printers, to have more efficient peer-to-peer communications, and for ongoing enhancements in the network management area, VM had significant issues to resolve.

The obvious solution was to allow VM to continue communicating to the binary synchronous and start/stop worlds, but to add access to SNA. Today we have a way of overcoming all of these problems and are beginning to take advantage of the SNA benefits.

To solve this dilemma and as a logical step to enhancing both VM/SP and SNA, IBM provided the necessary interface... ACF/VTAM Version 3 for VM/SP. This IBM Program Product allows interaction between SNA network terminals and CMS, plus expands the networking capabilities of VM/SP.

FOIL 17   VM/SP RELEASE 4: VM/GROUP CONTROL SYSTEM

VM/Group Control System (VM/GCS) provides a new, protected execution environment for implementing applications such as ACF/VTAM under VM/SP. It provides operating system supervisor services. Virtual machines in a "machine group" can share read/write common storage. This makes for efficient communication and less dispatching overhead.

Multiple machine groups can be defined. Most MVS/SP 1.3 macros are supported on VM/GCS, and a new macro library containing them is provided. The existing CMS and its macro libraries are not changed by this support.

Under VM/SP Release 4, VM/GCS provides the operating environment for the communications products. It is a multitasking operating system. It is an OS execution environment for VTAM, RSCS, and the communications network management applications. It provides shared read/write storage to allow communication between the virtual machines running in the group; such as VTAM, RSCS and NCCF.

This environment is superior to running these functions under a guest machine in several ways. First, each of the virtual machines is truly a virtual machine in that all of the tuning and monitoring capabilities that we have in VM are valid for these, where this is not so in the guest machine environment. A second advantage is that information is passed between these virtual machines. For instance, using standard VTAM macros, buffers are read or written into the network through shared read/write storage rather than by moving large blocks of data through CP, as in the case of VM/VCNA.

VM/GCS provides direct interface support to ACF/VTAM Version 3 for VM/SP Release 4 and later. RSCS Networking Release 2 and NCCF Release 2 also use this same support. Only one ACF/VTAM can be in a virtual machine group. However, multiple groups can be active concurrently.

FOIL 18   ACF/VTAM VERSION 3 FOR VM/SP

ACF/VTAM for VM/SP runs as part of a virtual machine group using the VM/GCS of VM/SP Release 4.

ACF/VTAM Version 3 for VM/SP Release 4 allows the VM user to take advantage of SNA facilities. The facilities provided by this release of ACF/VTAM are equivalent to those available in ACF/VTAM Version 2 Release 1 for OS/VS. There are some enhancements such as the integration of an enhanced version of the VM/VCNA program product and support for the Integrated Communications Adaptor (ICA).

ACF/VTAM connects to the communications network via the network control program operating in the communications controller or via the ICA. Since NCP allows the multidropping of terminals on the same communications line, VTAM can share the communications controller, the communications links, and the communication terminals and printers in the network. The terminals conversely can connect to more than one application program in the host in a serial fashion.

The SNA network allows a terminal or an application program to interact with any application or terminal in the network. A part of the ACF/VTAM Version 3 is the VM SNA Console Support (VSCS). VSCS replaces the VM/VCNA program product that provides similar functions. The terminal is not tied to a given application but the terminal can be used to communicate with many different applications, one after the other.

ACF/VTAM contains a feature called the multisystem networking feature With this feature, a terminal connected to one host can access an application program in another host. Likewise, an application in one host can access an application in another host. This feature allows an installation to place applications on particular host machines in the most advantageous location in the network.

The ACF/System Support Program (ACF/SSP) Version 3 provides the loading, dumping, and generation facilities for the NCP.

FOIL 19   REMOTE SPOOLING COMMUNICATIONS SUBSYSTEM (RSCS) VERSION 2

RSCS Networking Version 2 is an SNA networking support version of RSCS. It provides processor to processor, channel-to-channel, SNA and non-SNA printers support, color graphics support, printer sharing, and multistreaming of NJE files. Further, there are enhancements to the BSC support which is retained from RSCS Version 1.

The Remote Spooling Communications Subsystem (RSCS) Networking Version 2 has been enhanced to provide native support for Systems Network Architecture (SNA). It replaces the RSCS/SNA program offering that provides similar functions. The only function that is not provided by RSCS Networking Version 2 is SNA 6670 support.

RSCS Networking Version 2 also contains all the functions and device support of RSCS Networking Version 1 Release 3 with the exception of VSE/POWER Version 1.

RSCS Networking Version 2 requires Release 4 of the VM/System Product. The RSCS control program has been restructured to run under the control of the Group Control System (GCS) supervisor. Line drivers are now re-entrant, thereby reducing storage requirements.

Multistreaming enhances RSCS Networking's ability to manage file traffic between adjacent systems by allowing multiple files to be sent and received simultaneously. This capability can further enhanced by the use of customized transmission algorithms. These modules (IBM supplied or user written) control ordering and stream selection.

RSCS Networking Version 2 can accept spooled output from Graphical Data Display Manager (GDDM) Release 3 and print it on a 3270 Information Display System printer. The output can be sent to SNA, non-SNA, or local 3270 printers.

Usability enhancements allow users to control their files after sending them to RSCS for transmission. This support enables the CMS user to control and query files after submitting them to RSCS for transmission. It also enables the installation to reroute files to and from remote systems.

Enhanced file control allows the CMS user to exercise control over spool files that they own after submitting to RSCS Networking Version 2 for transmission.

FOIL 20 NETWORK MANAGEMENT SUPPORT

SNA users can perform network management functions using Network Communication Control Facility (NCCF), Network Problem Determination Application (NPDA), and Network Logical Data Manager (NLDM). The network management products run as applications on ACF/VTAM for VM and monitor the system and provide problem diagnosis as well as resolution.

The Network Communication Control Facility (NCCF) Version 2 for VM/SP licensed program provides a native SNA communications network management capability for VM/SP, operating as part of a VM/Group Control System group with ACF/VTAM.

NCCF provides the network operator with convenient and efficient network control functions. It also supplies communications and data base facilities for the collection, storage, and retrieval of network error data in support of NPDA and NLDM.

Under control of NCCF, NPDA collects, organizes, and displays error statistics and data about communication controllers, line, modems, cluster controllers, control units, and terminals. In this way, it helps the NCCF operator to identify the communications element that may have caused a reported problem.

Under NCCF Control, NLDM provides SNA logical problem determinations and response management capabilities. NLDM is a valuable tool in identifying and isolating problems without having to re-create problems to gather additional information. NLDM also collects and displays actual end-user response times as measured by IBM 3274 SNA control units with the Response Time Monitor feature installed.

Together with ACF/VTAM for VM/SP Release 4 or VM/SP HPO Release 4, NCCF Version 2 extends its network operator and management capabilities to the VM environment in native mode operation. This eliminates the need for a user to install, operate, and maintain a separate guest provided with improved access to the network management features of NCCF and other IBM-written applications that are supported by NCCF.

Command lists (CLISTs) a convenient interface to facilitate the operator's tasks. An installation can predefine sets of command sequences that the operator can invoke with the entry of a single command. NCCF also s capabilities to adapt predefined CLISTs to execution-time situations. Commands in CLISTs can be associated with different sources, such as ACF/VTAM and NCCF.

Restrictions:

*   NPDA Version 3 Release 2 for VM does not support the NPDA 3600/4700 Threshold Analysis Remote Access Feature.

*   NPDA Version 3 Release 2 for VM does not support the NPDA link to the Information Management program product.

*   NPDA Version 3 Release 2 for VM does not support the 3710 Network Controller in the VM/SP network domain.

*   NPDA Version 3 Release 2 for VM does not support local channel attached devices.

*   NPDA Version 3 Release 2 for VM does not support EP devices.

*   NPDA Version 3 Release 2 for VM does not support the Integrated Communications Adapter (ICA) on 43X1 processors.

FOIL 21   NETWORK MANAGEMENT

The foil shows a multiprocessor network control done from one primary point, with some limited subset of commands available anywhere in the system. SNA makes this possible.

In an SNA environment, systems management is functionally located in the various components of the network itself. This architectural approach to systems management enables the user to control his network in a hierarchical fashion and to exercise systems management capabilities when required.

Network management involves NCCF, NPDA, and NLDM running under ACF/VTAM in an SNA host. Network management provides a high-level interface for host applications to collect network management statistics, and provides for centralized network control. Other systems management capabilities can be found throughout the network in these components:

*   In ACF/NCP - to assist network management in analyzing activities both within the communications controller and on lines and devices attached to the communications controller.

*   In the IBM 3833, 3834, 3863, 3864, 3865, and 3868 modems that provide additional information on line problems and line quality and that perform tests on both locally and remotely attached modems.

In SNA controllers that collect systems management statistics such as error data, SDLC link test results, and engineering change levels. All this information can be displayed locally or remotely on any authorized terminal in the network.

FOIL 22   PROGRAM PRODUCT SUPPORT FOR VM/SNA NATIVE

This list of program products shows the breadth and depth of support available to the VM/SP user as he migrates to or expands his SNA environment.

- Virtual Machine/System Product (VM/SP) Release 4

- VM/SP High Performance Option (HPO) Release 4

- ACF/VTAM Version 3 for VM/SP

- Remote Spooling Communications Subsystem (RSCS) Networking Version 2

- Network Communications Control Facility (NCCF) Version 2

- Network Problem Determination Application (NPDA) Version 3 Release 2

- Network Logical Data Manager (NLDM) Release 2

- ACF/NCP Version 3

- ACF/System Support Program (ACF/SSP) Version 3

- Network Terminal Option (NTO) Release 2.1

- EP/3705

- EP/3725 Release 2

In addition to the announced products, it is IBM's intent to provide support for the native VM/SP environment for the following product:

X.25 NCP Packet Switching Interface (X.25 NPSI).

FOIL 23   DECISIONS, DECISIONS

Let's now look at the considerations of selecting one of the three types of VM Communications environments: Non-SNA, VM/VCNA, or VM/VTAM.

FOIL 24 WHO NEEDS IT ?

The first consideration is "Who needs it ?"

There are three major types of VM environments:

- CMS intensive

- Production guests

- Networking

Note: At this point select the environment your audience is interested in discussing, then show only those foils. For example, if your installation has a CMS intensive environment and is interested in migrating to SNA, use foils 25 and 26 only.

FOIL 25 IF YOU ARE: CMS INTENSIVE - VM/SNA INTERIM SOLUTION

If you are a CMS-intensive shop the decision is relatively easy, since the implementation of a guest machine to run VM/VCNA would probably be considered additional overhead, support, and maintenance for a guest operating system (DOS/VSE or VS/1).

FOIL 26 CMS INTENSIVE VM/SNA NATIVE

The VM/VTAM SNA Native approach clearly is the best choice here. No guest SCP is required. You have a current program product and unlimited future opportunity to expand and enhance your system.

FOIL 27 IF YOU ARE: VSE PRODUCTION - VM/SNA INTERIM SOLUTION

Today's VM/VSE user that already has SNA terminal support is using VM/VCNA, with SNA printing provided by the RSCS/SNA Program Offering (5796-PXF).

This is an interim solution to the ACF/VTAM for VM/SP support, which can be recommended to most VSE installations who need remote terminals for CMS.

One of the limitations of this interim solution is that VM/VCNA does not support the DIAL command. Thus access to a test CICS system is not possible from SNA terminals without also using VM/Pass-Through or a cross-domain session. Also, RSCS/SNA program offering tends to mean that back-level versions of RSCS (and possibly VSE) are needed.

With the VM/SNA Interim solution, the addition of VM/VCNA gives the availability of SNA to the CMS network. It's available immediately; it's an easy migration to VM/VTAM should that become desirable; and it is a low-cost solution. On the minus side, there is no dial support and RSCS/SNA (VRNA) is a program offering.

FOIL 28 VSE PRODUCTION VM/SNA NATIVE

If the user's terminal network is split between CMS and CICS, then with ACF/VTAM for VM/SP he can run two versions of VTAM, allowing efficient access to either service. This does require a second channel adapter on the 37X5.

Alternatively, if the CICS terminal load is from relatively few screens, access to CICS could be via ACF/VTAM for VM/SP using the DIAL command, and only one 37X5 channel adapter and one guest VTAM would be required.

Of course, moving to RSCS Networking Version 2 and ACF/VTAM for VM/SP also allows the user to take advantage of the other functional enhancements.

VM/SNA Native is a possible alternative even with the VSE production. It gives the dial support and ongoing VTAM enhancements that includes the functions of VM/VCNA and RSCS/SNA program offering.

FOIL 29 VSE PRODUCTION ICA VM/SNA NATIVE (ALTERNATE)

If the use of VM/SNA Native is practical, a 4361 with an Integrated Communications Adapter (ICA) makes an attractive package.

FOIL 30 IF YOU ARE: MVS PRODUCTION - VM/SNA INTERIM SOLUTION

A VM/MVS user who wants to provide SNA terminal access to CMS services (for example, PROFS) currently has to install VM/VCNA and either VS1 or VSE. With the VS1 version, VS1/VTAM and MVS/VTAM can communicate via a virtual channel-to-channel adapter (CTCA) support or use two channel adapters on the 37X5 and cross-domain session to improve performance.

SNA 3270 printing is available via RSCS/SNA (using the JES2, 328X support) program offering (5798-DMJ).

Using VM/VCNA and RSCS/SNA program offering is a feasible solution and should be recommended as an interim step for users who wish to provide a CMS service in an SNA network prior to the availability of ACF/VTAM for VM/SP. However, most VM/MVS users would prefer not to install VS1 or VSE, and will probably want to make plans to migrate from VM/VCNA to ACF/VTAM for VM/SP as soon as reasonably possible.

In the MVS production guest environment, VM/VCNA is an option only with the addition of a second guest (usually VS1). This configuration does allow SNA access to CMS but represents a complex system which is difficult to service and support.

FOIL 31 MVS PRODUCTION VM/SNA NATIVE

With the ACF/VTAM for VM/SP announcement, CMS SNA terminal support can be provided without VSE or VS1 operating system.

For shared VM and MVS application access, both the VM and MVS version of
ACF/VTAM are required, communicating via a virtual CTCA, or via two
channel adapters on a 37X5.

Using VM/SNA Native in this environment is a better solution because you
don't need a guest SCP for your VM/SNA support. By having VM/SNA Native
installed, you have positioned your installation in the mainstream for
future SNA growth.

FOIL 32 NETWORKING: VM/VCNA OR VM/VTAM

In the networking arena, the choice is between VM/VCNA with RSCS Version
1 Release 3 or VM/VTAM with RSCS Networking Version 2.

FOIL 33 VM/VCNA, RSCS/SNA, AND RSCS VERSION 1.3

The VM/VCNA and RSCS/SNA Program Offering environment provides a
significant subset of SNA support and is available now.

FOIL 34 VM/VTAM AND RSCS NETWORKING VERSION 2

VM/VTAM with RSCS Networking Version 2 offers current, fully supported
SNA functions. Also, RSCS Networking Version 2 is enhanced to include
multistreaming NJE support, full support (with sharing) of color
graphics printers, and re-entrant line drivers. VM/SP Release 4 with
VM/VTAM also supports TWX/TTY (glass teletypes) consistent with support
in the VM/SP Control Program (CP).

FOIL 35 MIGRATION

Migration considerations include three major scenarios:

* Non-SNA

* VM/VCNA

* Networking

Let's look at a common installation scenario - one which will apply to
all these environments.

FOIL 36 INSTALL

The key for a successful migration is planning, planning, planning. The
plan is to install VM/SP4 to replace the current release of VM - just as
though we had no further plans. Install it, test it, and get it **stable**.
Then, define VM/GCS to support RSCS Networking Version 2 and VM/VTAM,
and any of the Network Management products that you **plan** to install.

Then install in binary synchronous mode by simply replacing your current level of RSCS. **Remember:** RSCS Networking Version 2 only communicates to RSCS Version 1 Release 3.

While that is stabilizing, begin your VTAM and NCP definitions. If you have a twin-tail, you can begin testing in parallel. You can also (if you now have VS1/VCNA) use a virtual CTCA to begin testing.

The last step is to install the Network Management Products.

All these options are documented in the following manuals:

- *Network Program Products General Information* (GC23-0108)

- *Network Program Products Planning* (SC23-0110)

- *VTAM Installation and Resource Definition Guides* (SC23-0100)

- *NCP and SSP Installation and Resource Definition Guides* (SC23-0110)

FOIL 37 CASE 1 - NON-SNA

To perform the migration to ACF/VTAM V3 the following steps are necessary.

- Install VM/SP Release 4.

- Define a VM/GCS Group.

- Generate and save the VM/GCS Group.

- Install ACF/VTAM (with VSCS) in the VM/GCS Group.

- Define the ACF/VTAM network.

- Install ACF/NCP V3.

- Install RSCS Networking Version 2.

Transfer control of lines to ACF/VTAM. A line-by-line transfer is easier to manage and has less user impact. Replace BSC lines by SDLC lines where it is feasible. Use the following iterative steps for each line or group of lines:

1. Update:

   - The RSCS CONFIG file

   - The ACF/NCP definition deck to include the line(s)

2. Generate an ACF/NCP V3 or PEP.

3. Load the 37X5 with ACF/NCP or PEP.

Loading with a PEP control program allows guest operating systems, application programs, and remote CMS users to continue using existing BSC lines, until the migration has completed. The ACF/VTAM virtual machine controls the ACF/NCP part.

SNA terminals may now use VSCS to logon to VM/SP or to DIAL to a virtual machine. CP owned terminals can DIAL to the ACF/VTAM virtual machine and use the SNA network to reach old or new applications.

An existing Pass-Through virtual machine may now be discontinued except for some special cases like the use of the NOTEPAD facility (recording screen images in a disk file).

Locally attached control units can be replaced by SNA control units. These need only one address per control unit. This allows more terminals to be attached to the system.

The PEP control program can be replaced by NCP in all cases where the attached devices are fully supported by NCP and NTO.

Coming to VM/VTAM from a non-SNA environment is the simplest - but perhaps the most difficult. The challenges here are education and planning. Everyone should understand that for a shop with no existing SNA skills planning cannot begin until the staff is well along the learning curve.

FOIL 38   CASE 1 - VM/SNA NATIVE

Here we see the target configuration. It shows that although we have moved into an SNA environment, we still have some binary synchronous links in the network, both NCP owned and EP owned. PEP (Partitioned Emulation Program) is shown as its NCP and EP parts for clarity.

FOIL 39   CASE 2 - VSE/VCNA STAND-ALONE

Some installations already have VM/VCNA installed and now will migrate to VSCS.

VM/VCNA is an ACF/VTAM application that runs in a partition of an OS/VS1 or VSE guest virtual machine that allows a supported terminal (for example, 3270) to become a virtual machine console. The virtual machine running VM/VCNA is known as the VTAM Service Machine (VSM). The equivalent function to VM/VCNA is provided by VSCS running under control of VM/GCS.

Often another application such as CICS is run in another partition of the VSM. In this case, the guest virtual machine will continue after the transfer is complete with VSCS running in another domain.

The steps required to migrate to a VM/SNA Native environment are:

1.   Install VM/SP Release 4.

2. Define a VM/GCS Group.

3. Generate and save the VM/GCS Group.

4. Install ACF/VTAM (with VSCS) in the VM/GCS Group.

5. Install ACF/NCP Version 3.

6. Regenerate an NCP using existing definitions from the VSM.

7. Transfer the ACF/VTAM definition from the VSM and modify as
    required. Include cross-domain definitions for both domains.

8. Transfer the VM/VCNA definitions (DTIGEN Macro) to VSCS, and
    generate the required DTIUSERx modules.

9. When the transfer of the network ownership from the VSM to the VM/SP
    ACF/VTAM is complete the VSM can be discontinued, unless an
    additional application, such as CICS, is running in the VSM.

The way to transfer the network ownership depends on the operating
system VM/VCNA is running under.

If the VSM is OS/VS1 based, virtual CTCAs can be used to allow both
ACF/VTAMs to access the network. This means VSCS and VM/VCNA can
coexist with ACF/VTAM for VM/SP which is added as another domain to the
existing network. At this stage, the existing ACF/NCP from the VSM is
still being used and the VSM is still the network owner. When VSCS is
functioning satisfactorily the new V3 based NCP can be loaded from the
VM/SP ACF/VTAM and the new ACF/VTAM will be the network owner. VM/VCNA
continues to be accessible, now as a cross-domain application. Finally
the VSM can be discontinued when no longer required.

The second configuration is a stand-alone VCNA system running VM/VCNA.
The foil shows a VSE-based system. However, the considerations apply
equally well to a VS1 system running VM/VCNA.

Note: VM/VTAM supports the NCP in the following manner:

	GENERATE	LOAD	DUMP	ACTIVATE
NCP Version 2		X	X	X
NCP Version 3	X	X	X	X
NCP Version 4				X

FOIL 40 CASE 2 - VM/SNA NATIVE

We see again that PVM is retained - this assumes that there is an
associated system which remains non-SNA. We also see, again, the mix of
local, BSC, and SNA terminals. All of these may be permanent or part of
the ongoing migration.

FOIL 41 CASE 3 - COMMUNICATIONS NETWORKING

The third case is the most complex. However, its complexity is simply
an extension of what we saw in Case 2. Once again **planning** is the key.
We must ensure that the required products at the required levels with
the required maintenance are available. We must plan to install one
system and then another in such a way as to allow them to continue to
operate in the meantime. We must determine what system to install first
by looking at the trade-off between time, expense, and risk.

FOIL 42 CASE 3 - VM/SNA NATIVE

This network with VM/SNA Native replacing the VM/SNA Interim solution
involved multiple geographic locations and multiple organizations. In
this environment a central planning group should be considered.

FOIL 43 SYSTEMS NETWORK ARCHITECTURE (SNA) ADVANTAGES FOR VM

In summary, the benefits of SNA are now announced for the VM
environment. VM/SNA Native provides the capability for your VM
installation to interface to SNA today. With VM's growth and acceptance
as a mainline SCP, and IBM's commitment to SNA for its communications
architecture, it's critical to have SNA support in VM.

FOIL 44 ANNOUNCEMENT SUMMARY

VM can now participate fully in an SNA network. Only one non-VM host is
shown in this visual, but characteristically there would be many,
integrating VM into today's large SNA networks.

Now is the time to get your installation started with VM/VCNA and
RSCS/SNA to take advantage of the benefits of the SNA world. You should
also start developing the skills required to manage an SNA network.
This will put your installation in a position to easily migrate from
VM/VCNA and RSCS/SNA to the VM/SNA native support.
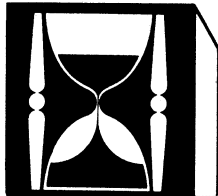
The master copy of the foils follows.

VM/SNA

VM/SNA

Native SNA Support for VM/SP

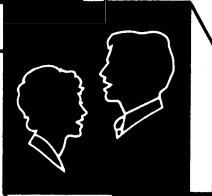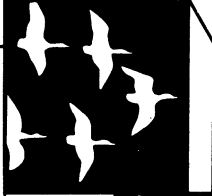# VM/SNA

Agenda

Chronology
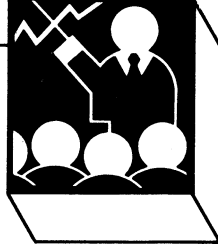
Communications Environments

Decisions, Decisions

Migration

Summary
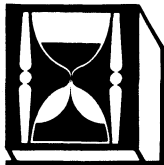
VM Chronology

1972: Local 3270
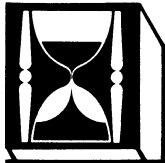
CMS
CMS
GUEST

VM/SP

Local 3270

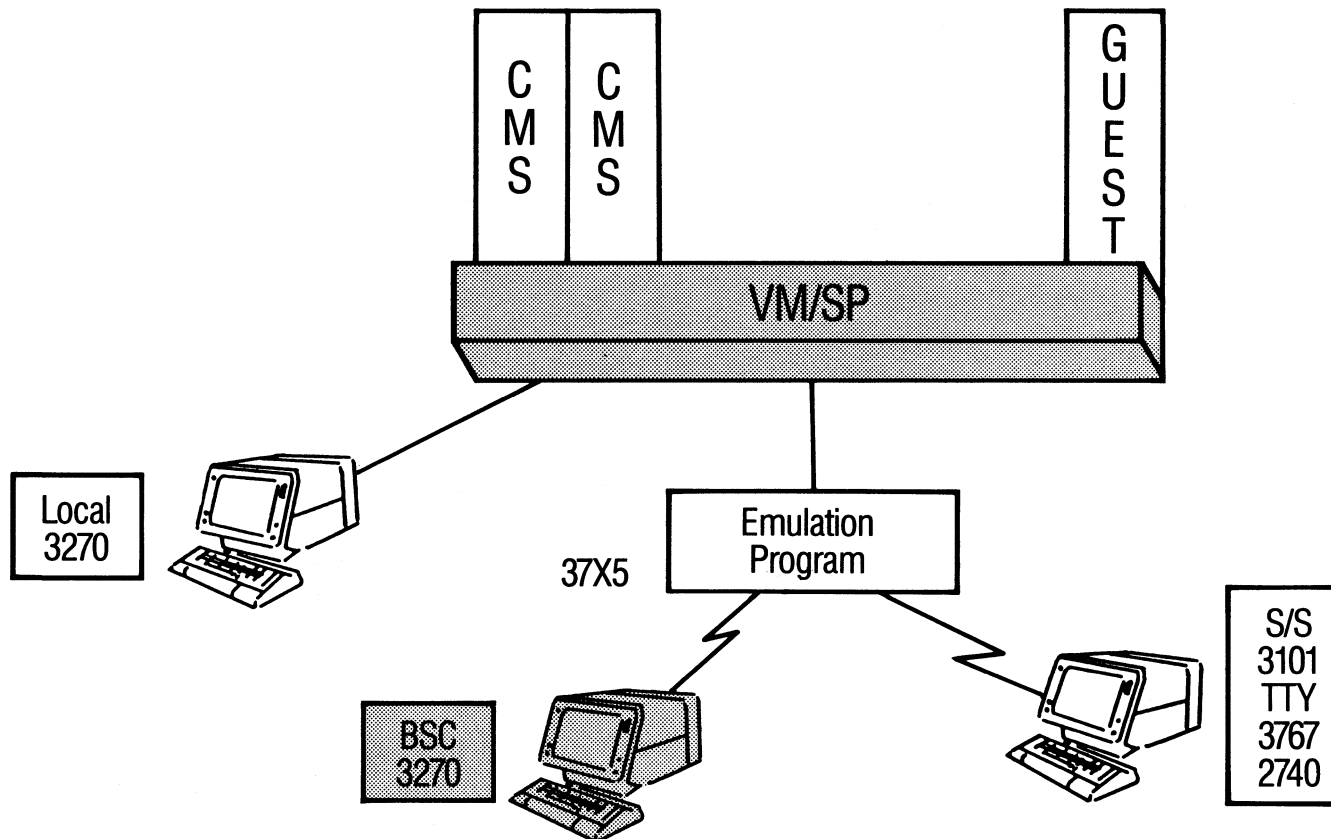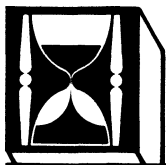37X5 Emulation Program

S/S 3101 TTY 3767 2740
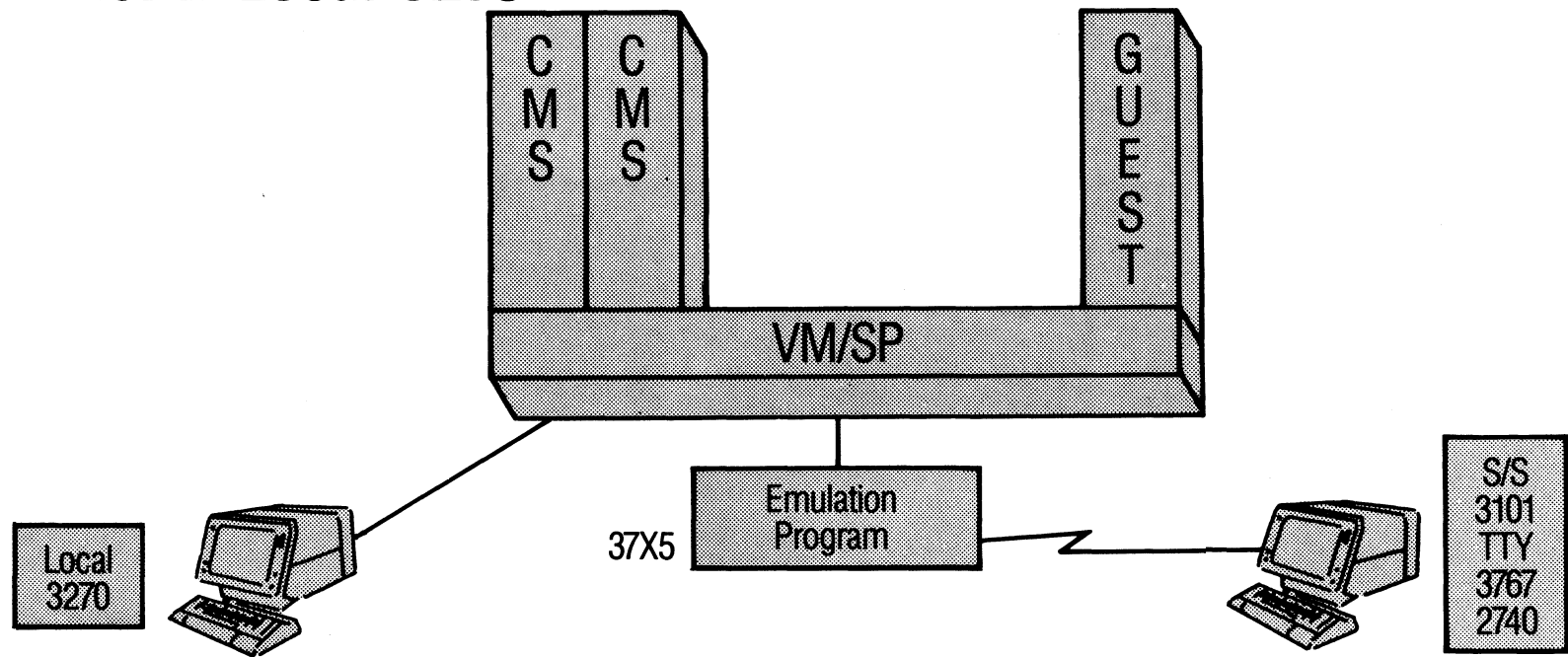
- Environments
  - Migration tool
  - CMS interactive computing
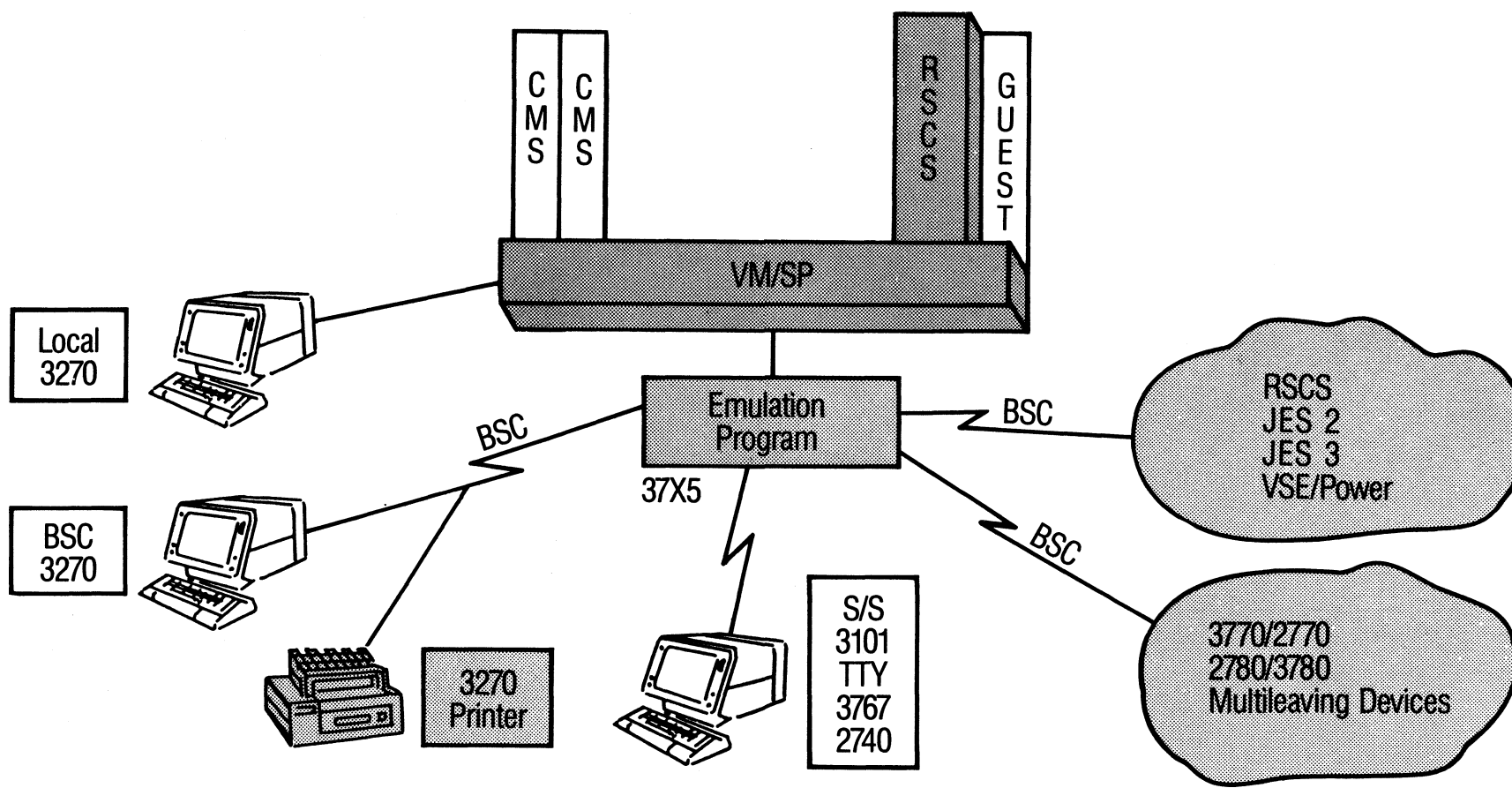 - Program development
  - Guest operating systems

VM Chronology

1974: Remote 3270

CMS CMS

GUEST

VM/SP

Local 3270

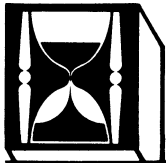37X5 Emulation Program

BSC 3270

S/S
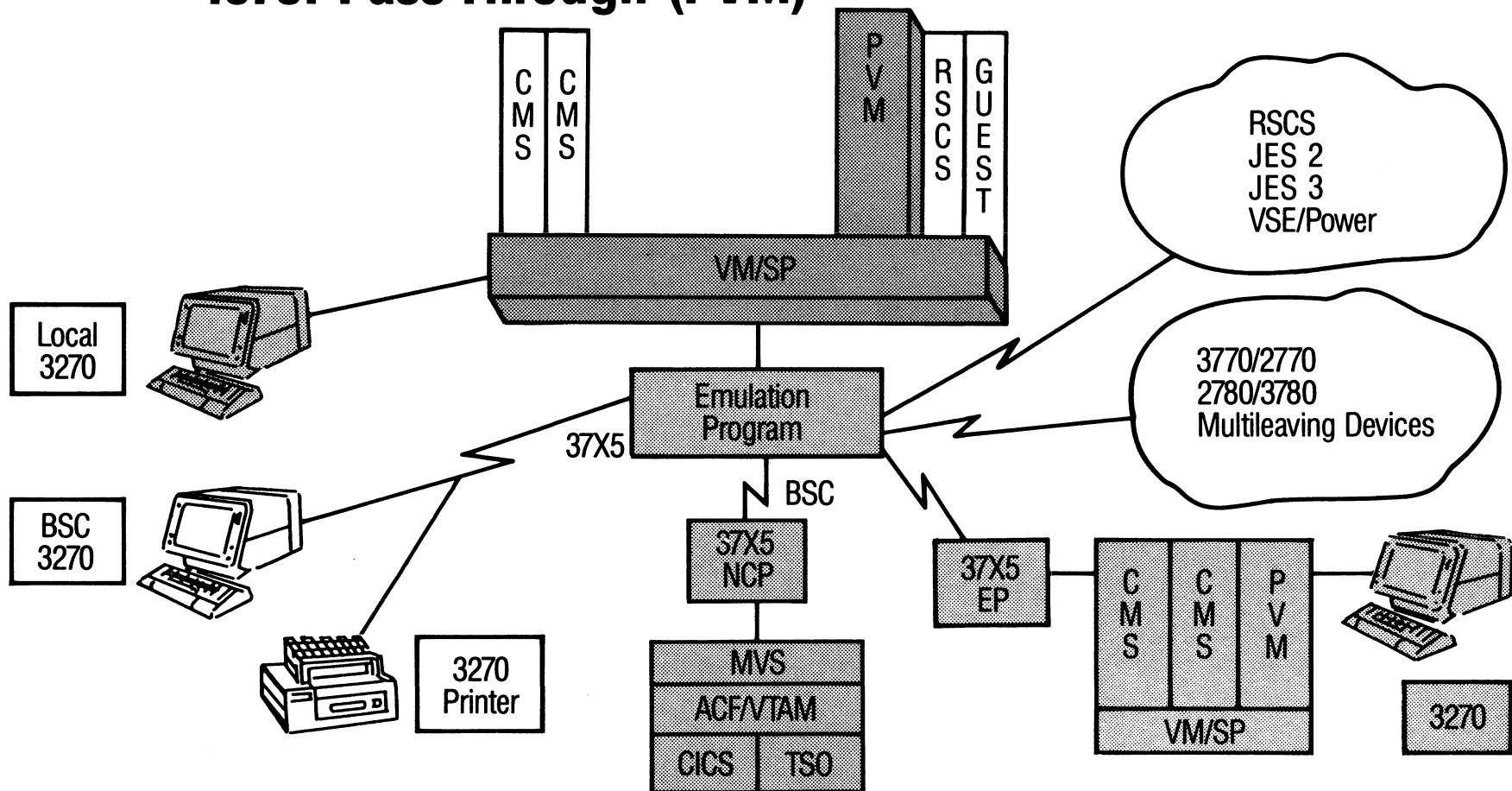3101
TTY
3767
2740

VM Chronology

1975: Remote Spooling Communications Subsystem (RSCS)

VM Chronology

1978: Pass-Through (PVM)

Stack labels (left, above VM/SP): C M S | C M S | P V M | R S C S | G U E S T

VM/SP

Cloud (upper right):
RSCS
JES 2
JES 3
VSE/Power

Cloud (lower right):
3770/2770
2780/3780
Multileaving Devices

Local 3270

BSC 3270

3270 Printer

37X5

Emulation Program

BSC

37X5 NCP

MVS
ACF/VTAM
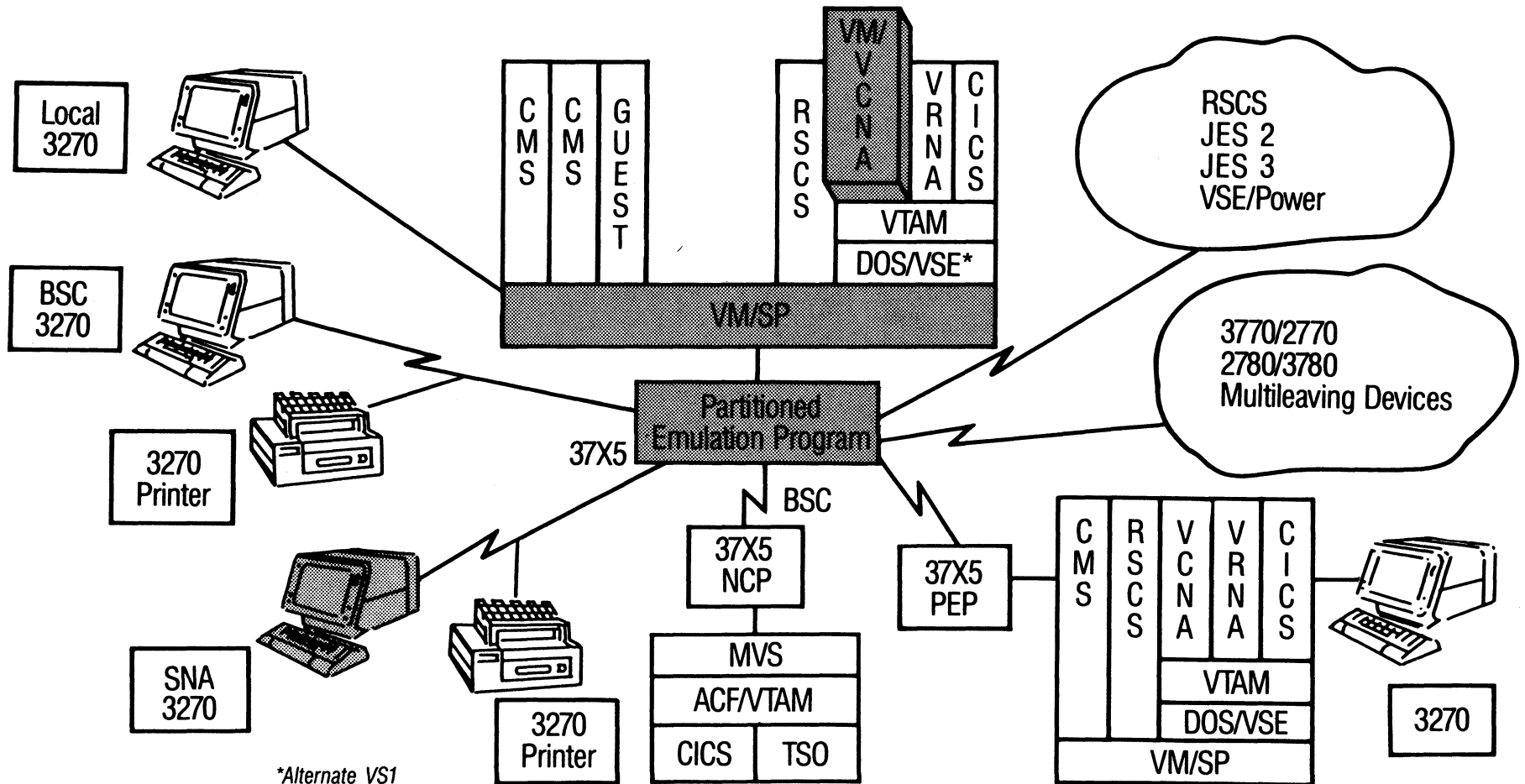**CICS** | **TSO**

37/X5 EP
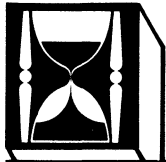
C M S | C M S | P V M
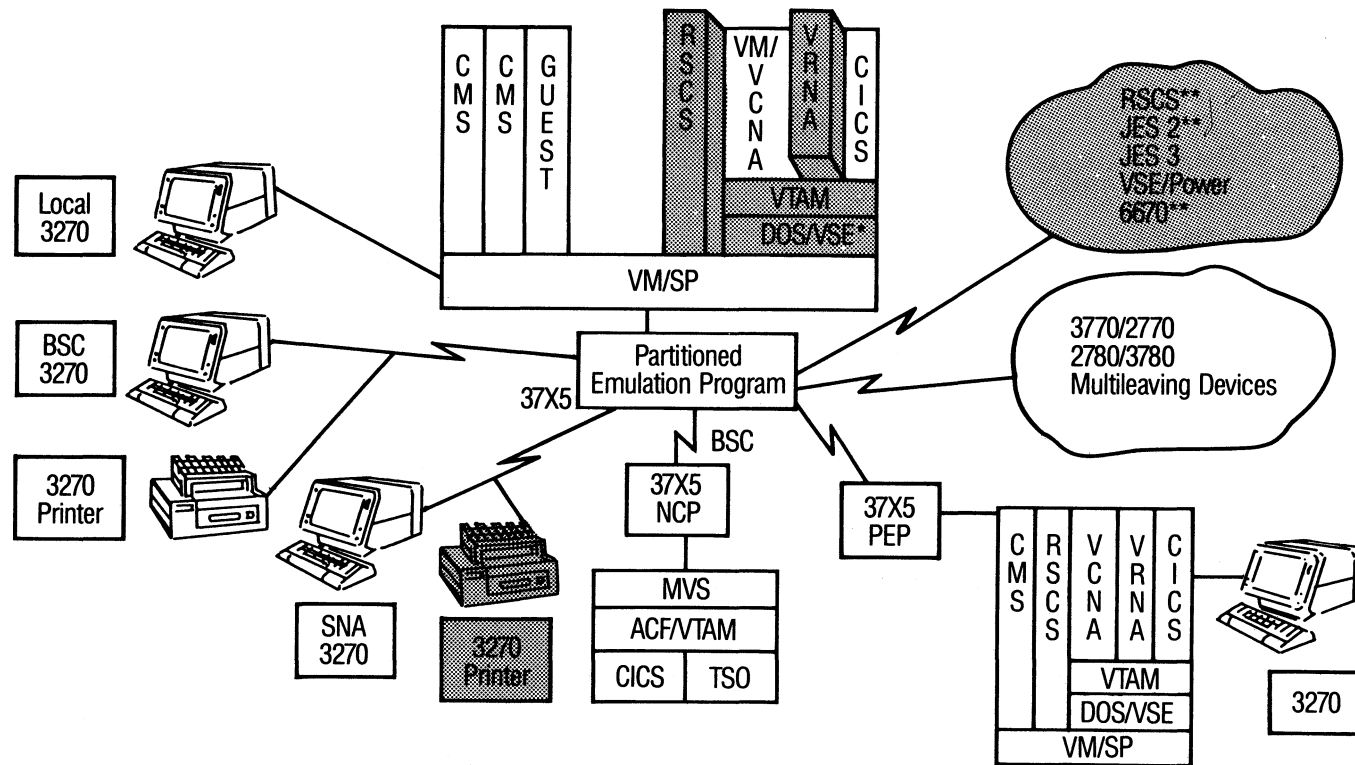**VM/SP**

3270
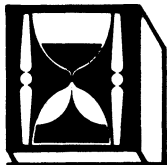
VM Chronology

1979: Virtual Machine/VTAM Communications Network Application (VM/VCNA)

*Alternate VS1

1982: RSCS/SNA Program Offering
VTAM RSCS Networking Application (VRNA)

Local 3270

BSC 3270

3270 Printer

SNA 3270

3270 Printer

C M S | C M S | G U E S T | R S C S | VM/ V V C N A | V R N A | C I C S

VTAM

DOS/VSE*

VM/SP

37X5 — Partitioned Emulation Program

BSC

37X5 NCP

MVS

ACF/VTAM

CICS | TSO

37X5 PEP

RSCS**
JES 2**
JES 3
VSE/Power
6670**

3770/2770
2780/3780
Multileaving Devices

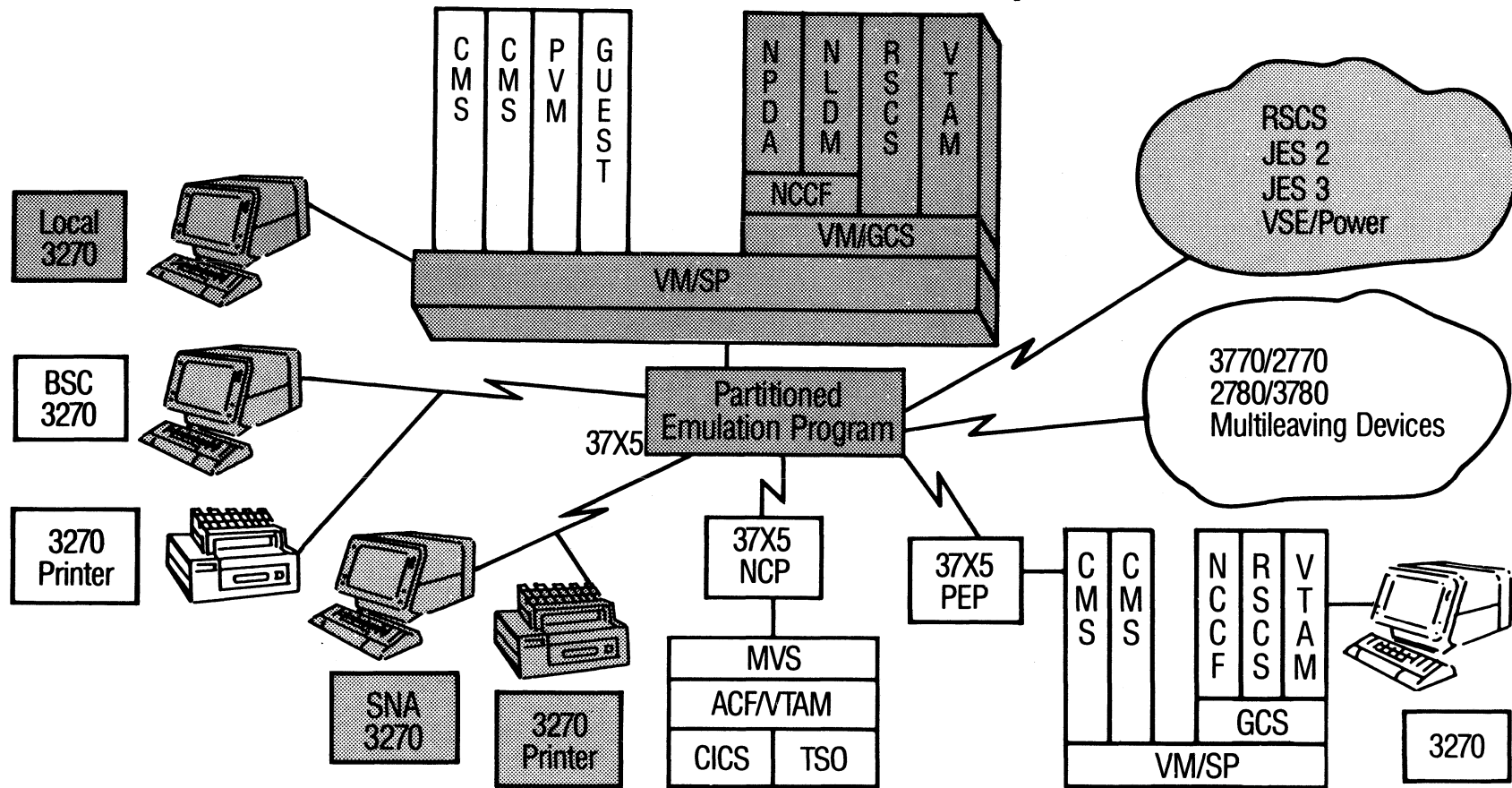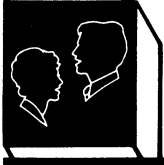C M S | R S C S | V C N A | V R N A | C I C S

VTAM

DOS/VSE

VM/SP

3270

*VS1 Alternate
**SNA supported by RSCS/SNA program offering
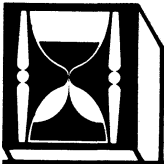
VM Chronology

1984: VM/SNA Native (VM/VTAM)

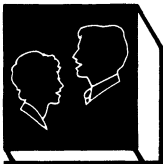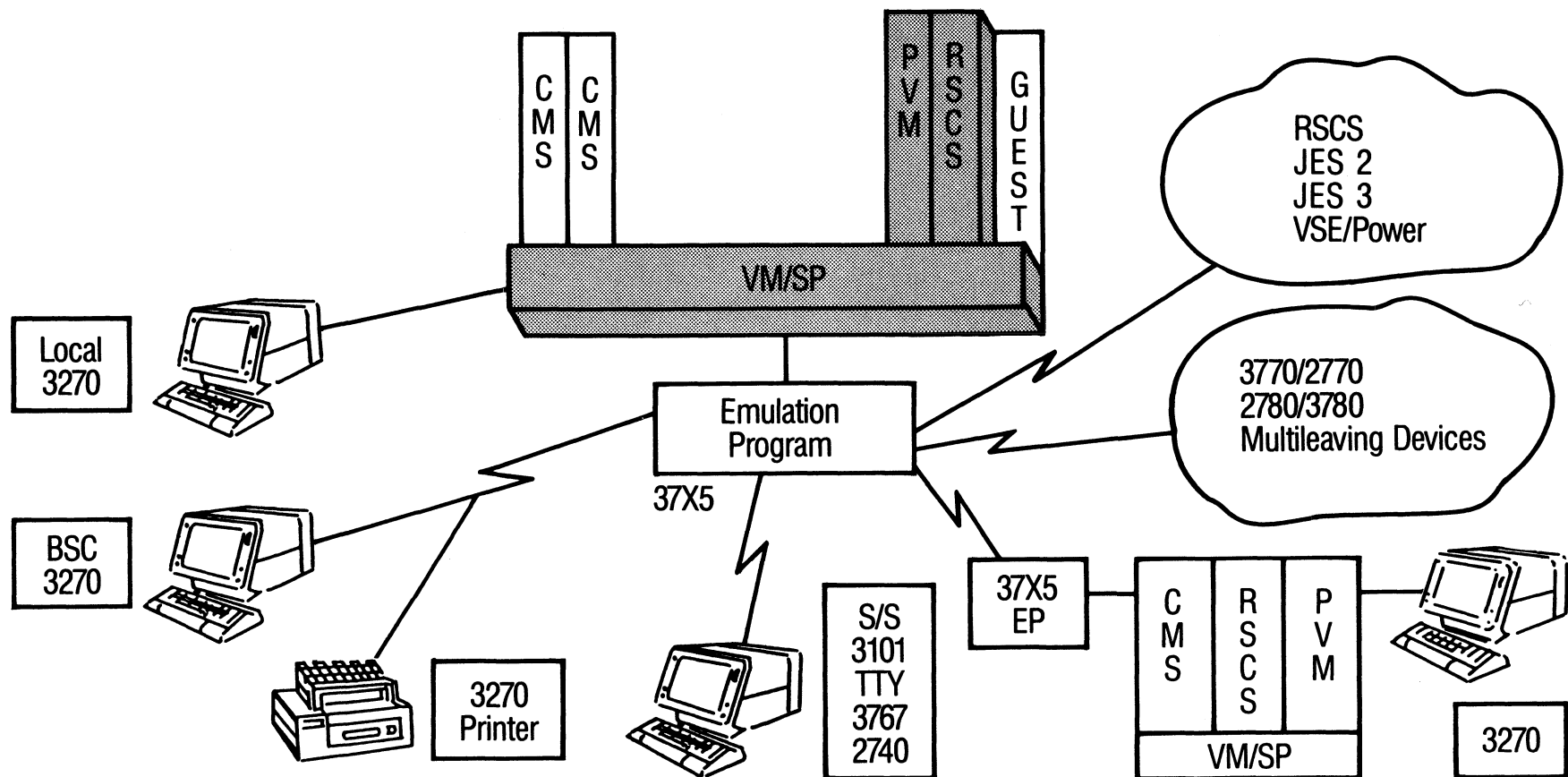# VM Communications Environments

- Non-SNA

- VM/SNA Interim (VM/VCNA)

- VM/SNA Native (VM/VTAM)

VM Communications Environments

Non-SNA

CMS | CMS | PVM | RSCS | GUEST

VM/SP

RSCS
JES 2
JES 3
VSE/Power

3770/2770
2780/3780
Multileaving Devices

Local 3270

BSC 3270

Emulation Program

37X5

3270 Printer

S/S
3101
TTY
3767
2740

37X5 EP

CMS | RSCS | PVM

VM/SP

3270
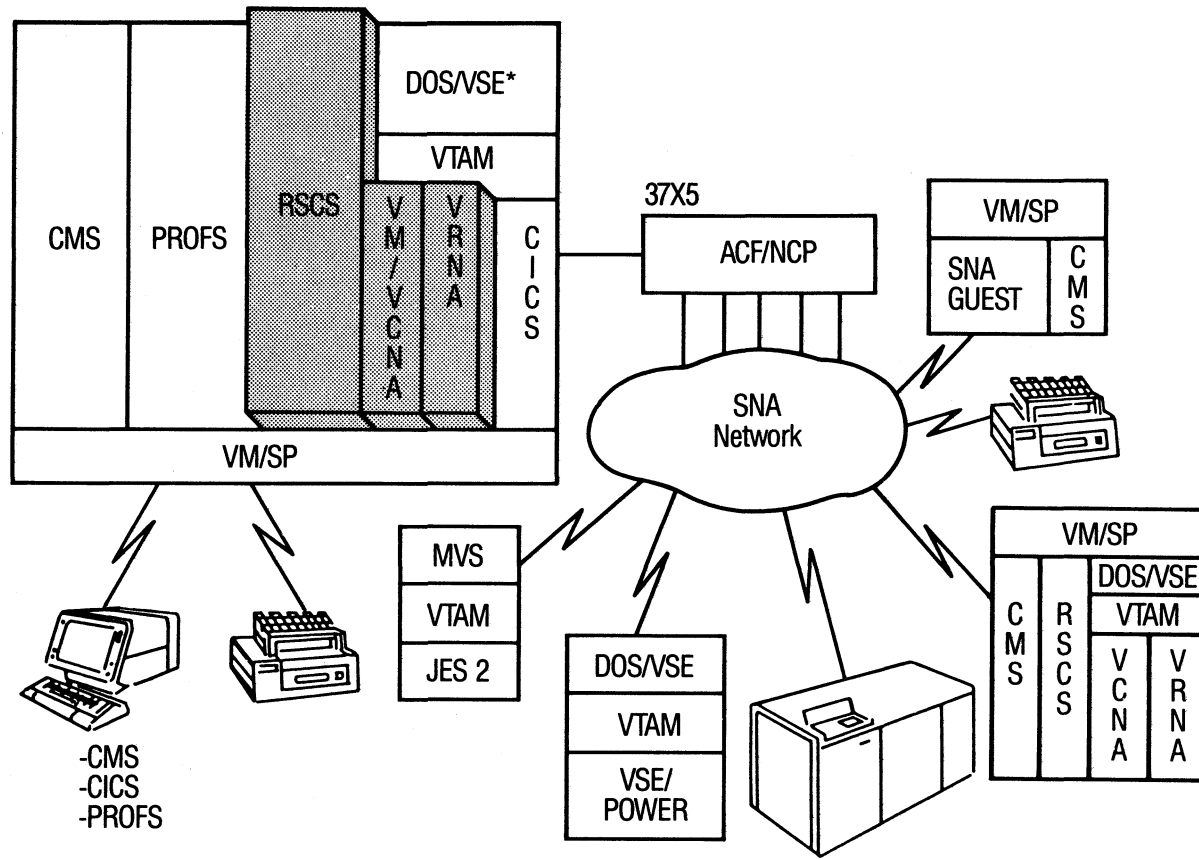
VM Communications Environments

Why SNA ?

- Sharing of lines, terminals, and controllers

- Sharing of functions and applications

- Support of permanent network growth

- Network performance and availability

VM Communications Environments
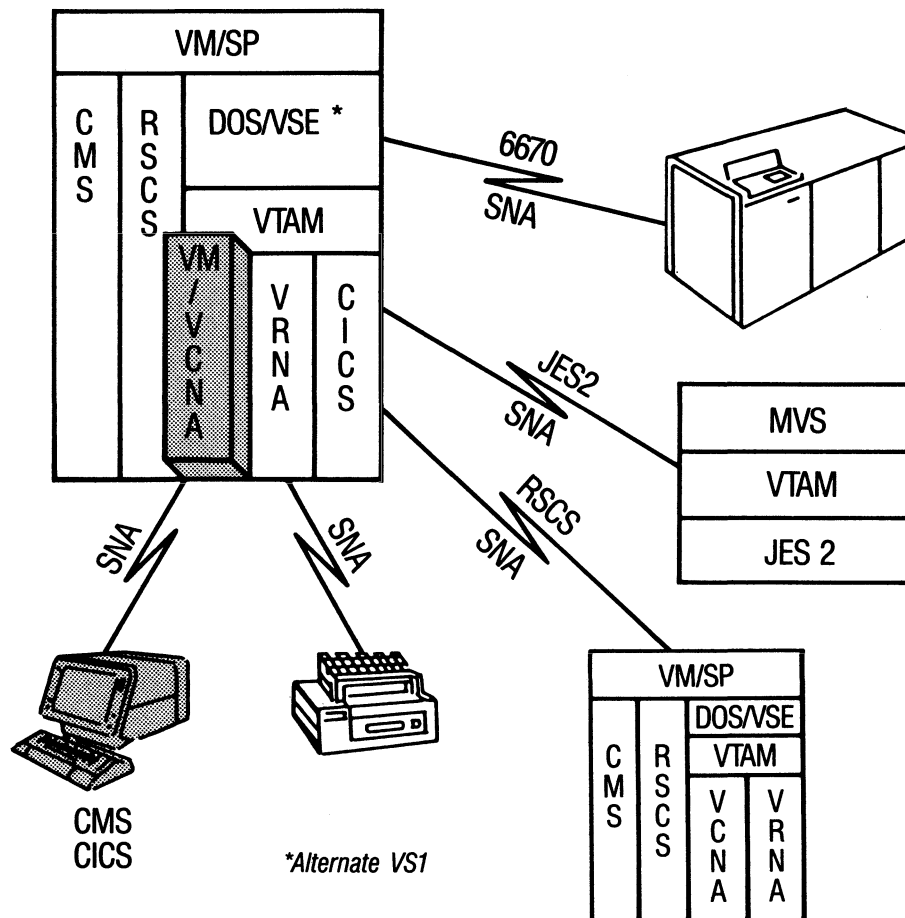
VM/SNA Interim Solution
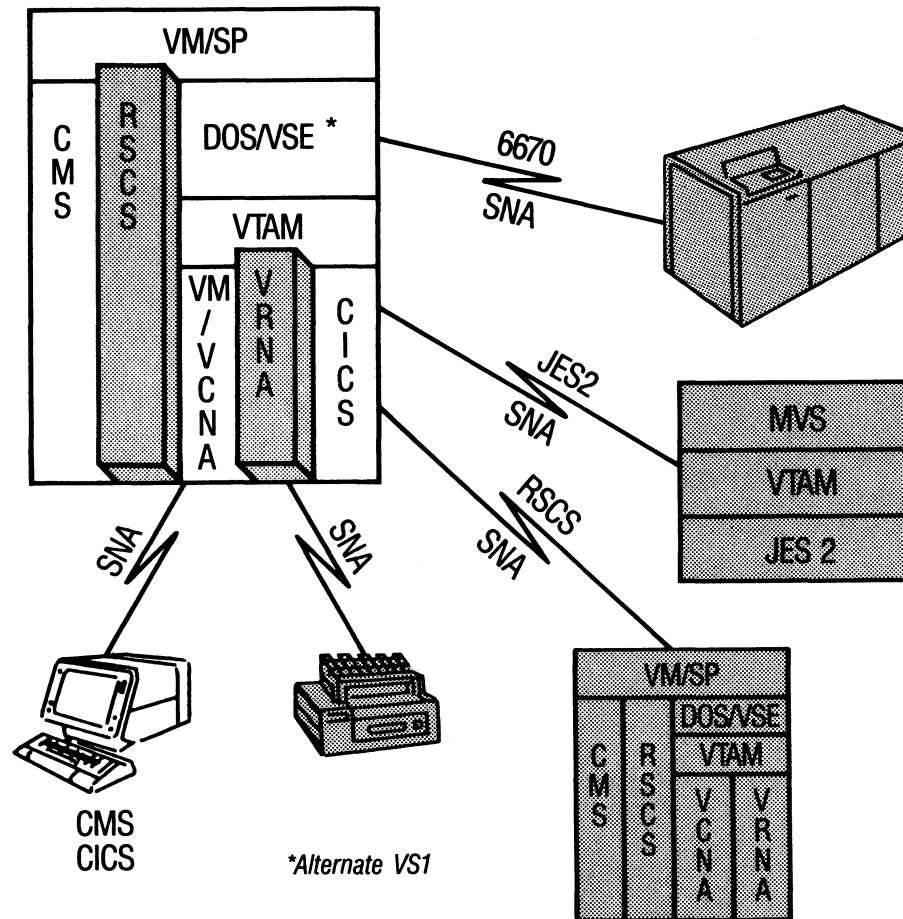
* Alternate VS1

VM Communications Environments

VM/VCNA

VM Communications Environments

RSCS/SNA Program Offering

CMS
CICS

*Alternate VS1
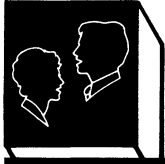
VM Communications Environments

VM/SNA Native Solution

- ACF/VTAM Version 3 for VM/SP and associated SNA products

- VM/SP and VM/SP-HPO Release 4

- RSCS Networking Version 2

- NCCF Version 2 for VM/SP

- NPDA Version 3 Release 2 for VM/SP

- NLDM Release 2 for VM/SP

CMS | CMS | RSCS V2 | NPDA V3 R2 | NLDM R2 | ACF/VTAM V3

NCCF V2

VM/GCS

VM/SP R4

ACF/NCP

X.25* NPSI | NTO

SNA Network
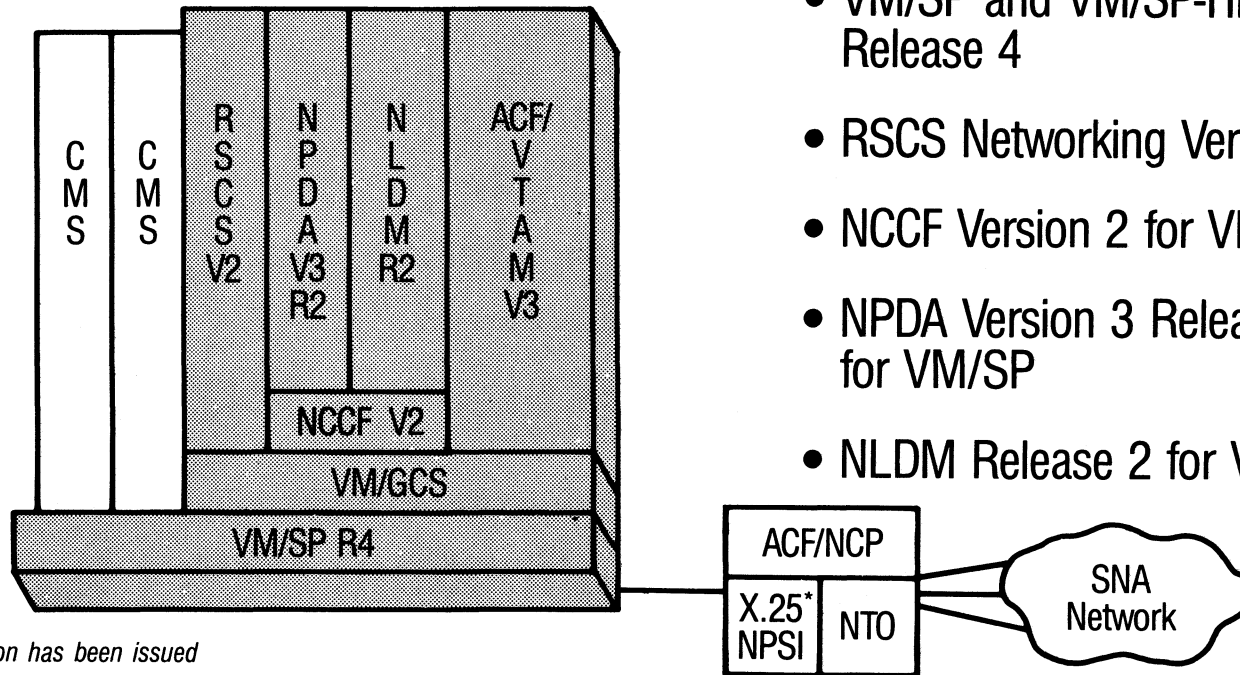
*Statement of direction has been issued

VM Communications Environments

VM/SP Release 4: VM/Group Control System

```
        Shared Buffers
 ┌───┬───┬───┬───┬─────┐
 │   │   │   │   │ ACF/│
 │ C │ C │ N │ R │  V  │
 │ M │ M │ C │ S │  T  │
 │ S │ S │ C │ C │  A  │
 │   │   │ F │ S │  M  │
 │   │   │ V2│ V2│  V3 │
 └───┴───┴───┴───┴─────┘
          VM/GCS
        VM/SP R4
```
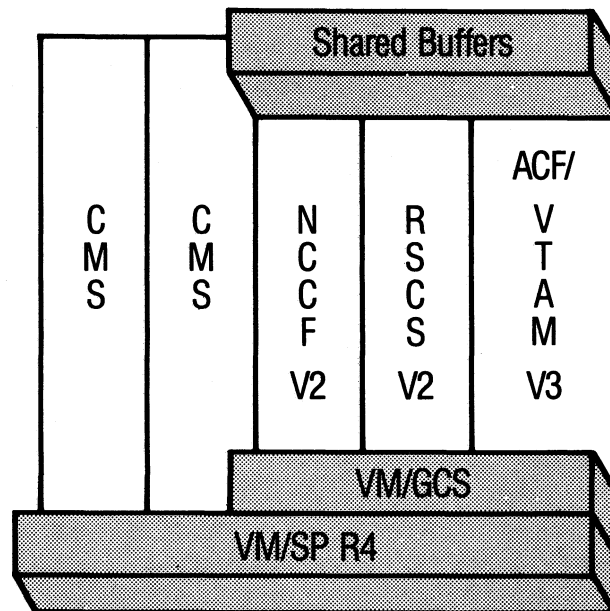
- Multitasking

- OS execution environment for ACF/VTAM, RSCS and network management applications

- Shared read/write storage
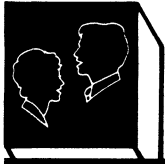
VM Communications Environments

ACF/VTAM Version 3 for VM/SP

```
┌─────────────────────────────────────────┐
│  C   C   N   R   ┌──────────┐            │      ┌─────────┐    ╭────────╮
│  M   M   C   S   │ ACF/     │            │      │ ACF/NCP │────│  SNA   │
│  S   S   C   C   │ VTAM V3  │            │──────│         │    │Network │
│          F   S   ├────┬─────┤            │      └─────────┘    ╰────────╯
│          V2  V2  │ V  │  S  │            │
│   ┌──┐           │ S  │  S  │            │
│   │SSP│          │ C  │  P  │            │
│   │V3 │          │ S  │  V3 │            │
│   └──┘           └────┴─────┤            │
│         VM/GCS              │            │
├────────────────────────────┘            │
│         VM/SP R4                         │
└──────────────────────────────────────────┘
```
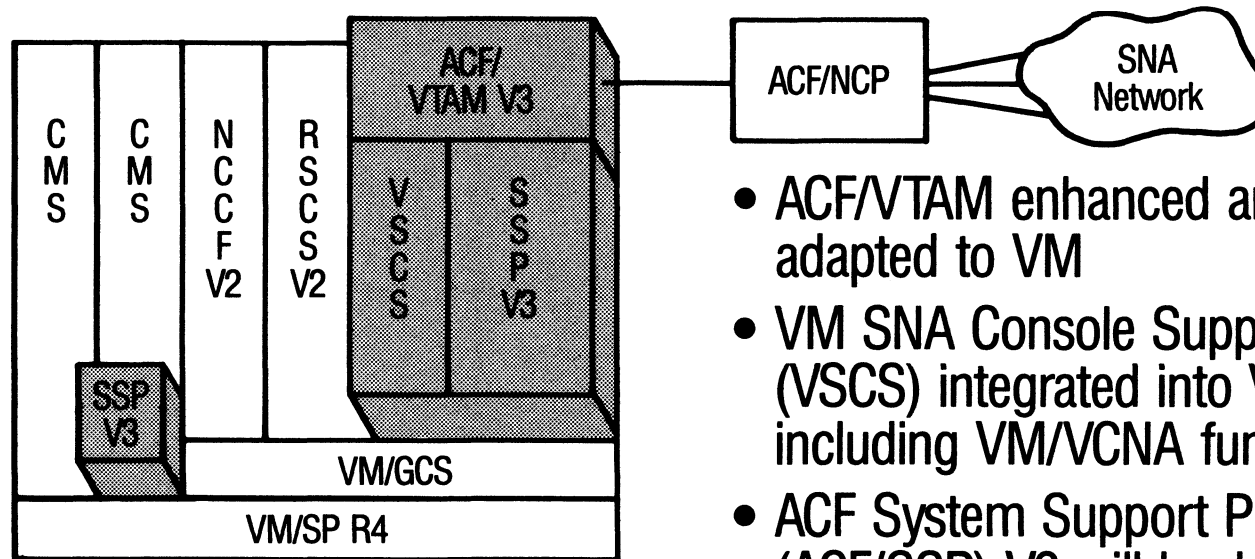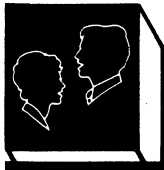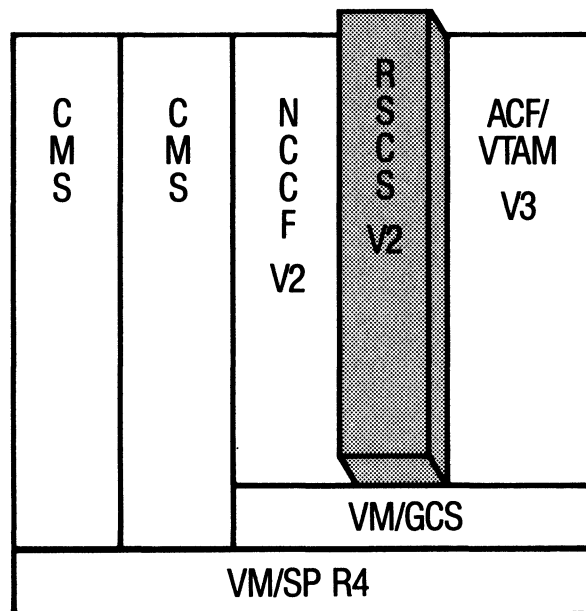
- ACF/VTAM enhanced and adapted to VM

- VM SNA Console Support (VSCS) integrated into VTAM including VM/VCNA functions

- ACF System Support Program (ACF/SSP) V3 will load and dump the NCP

- Implementation of Multisystem Communications Networks

- Integrated Communications Adapter (ICA) Support

VM Communications Environments

Remote Spooling Communications Subsystem (RSCS) Networking Version 2

```
┌─────┬─────┬─────┬─────┬─────┐
│  C  │  C  │  N  │  R  │ACF/ │
│  M  │  M  │  C  │  S  │VTAM │
│  S  │  S  │  C  │  C  │     │
│     │     │  F  │  S  │ V3  │
│     │     │     │  V2 │     │
│     │     │  V2 │     │     │
│     │     ├─────┴─────┴─────┤
│     │     │     VM/GCS       │
├─────┴─────┴─────────────────┤
│          VM/SP R4            │
└─────────────────────────────┘
```
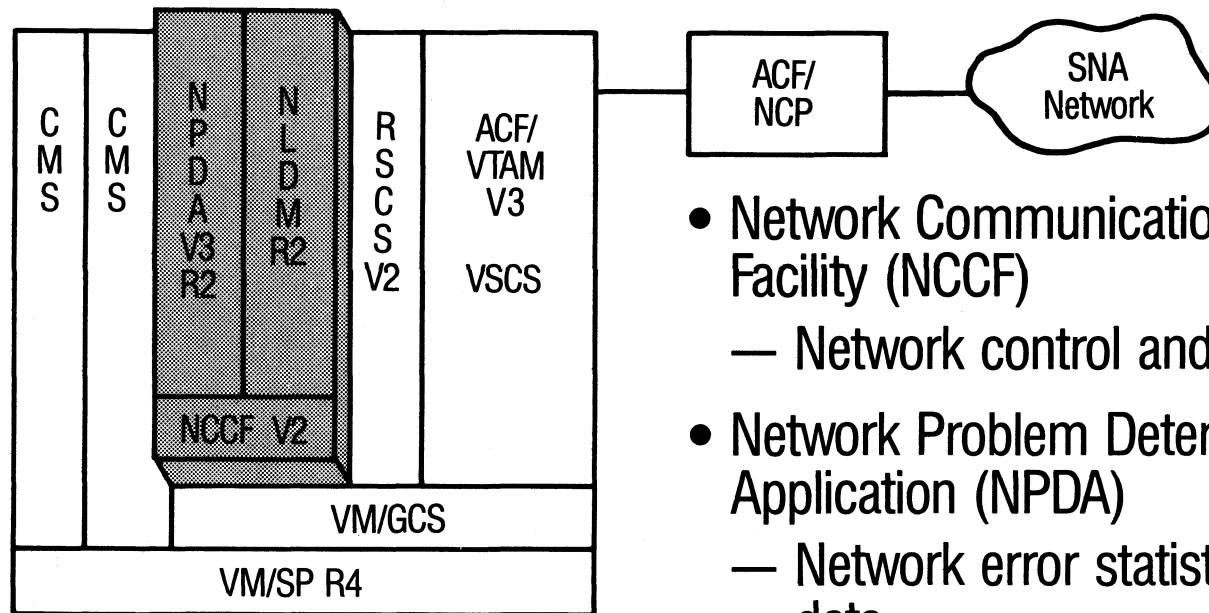
- RSCS/SNA (VRNA) replaced by RSCS Networking V2 which includes SNA line drivers.
- SNA Networking support
  - CPU to CPU
  - Channel to Channel (CTC)
  - SNA and non-SNA printer support
  - Color and graphics
  - Printer sharing
  - Multistreaming of job files
- BSC enhancements

VM Communications Environments

Network Management Support

```
┌─────┬─────┬─────┬─────┬─────┬─────────┐        ┌────────┐      ╭──────────╮
│  C  │  C  │  N  │  N  │  R  │  ACF/   │────────│ ACF/   │──────│   SNA    │
│  M  │  M  │  P  │  L  │  S  │  VTAM   │        │ NCP    │      │ Network  │
│  S  │  S  │  D  │  D  │  C  │  V3     │        └────────┘      ╰──────────╯
│     │     │  A  │  M  │  S  │         │
│     │     │  V3 │  R2 │  V2 │  VSCS   │
│     │     │  R2 │     │     │         │
│     │     ├─────┴─────┤     │         │
│     │     │ NCCF  V2  │     │         │
│     │     └───────────┴─────┴─────────┤
│     │     │        VM/GCS             │
├─────┴─────┴──────────────────────────┤
│             VM/SP R4                  │
└───────────────────────────────────────┘
```
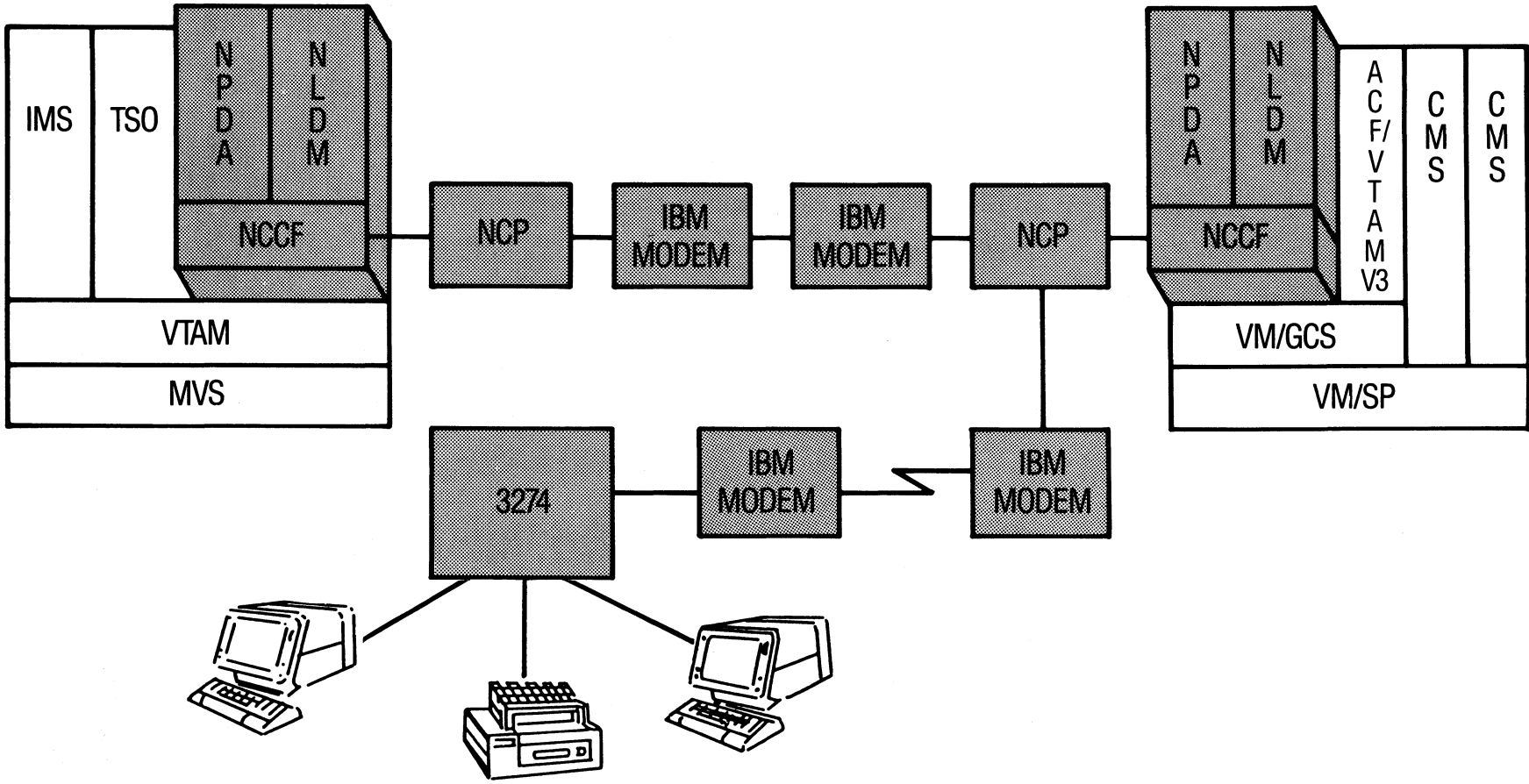
- Network Communications Control Facility (NCCF)
  - Network control and operation

- Network Problem Determination Application (NPDA)
  - Network error statistics and data

- Network Logical Data Manager (NLDM)
  - Collects session-related data

VM Communications Environments

Network Management

VM Communications Environments

Program Product Support for VM/SNA

- Virtual Machine/System Product (VM/SP) Release 4
- VM/SP High Performance Option (HPO) Release 4
- ACF/VTAM Version 3 for VM/SP
- Remote Spooling Communications Subsystem (RSCS) Networking Version 2
- Network Communications Control Facility (NCCF) Version 2
- Network Problem Determination Application (NPDA) Version 3 Release 2
- Network Logical Data Manager (NLDM) Release 2

- ACF/NCP Version 3
- ACF/System Support Program (ACF/SSP) Version 3
- Network Terminal Option (NTO) Release 2.1
- EP/3705
- EP/3725 Release 2

Statement of Direction

- X.25 Packet Switching Interface (X.25 NPSI)

? Decisions, Decisions

PVM?

VM/VCNA?
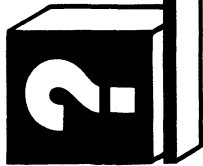
RSCS Version 2?

VRNA?

VSE RSCS/SNA?

VM/VTAM?

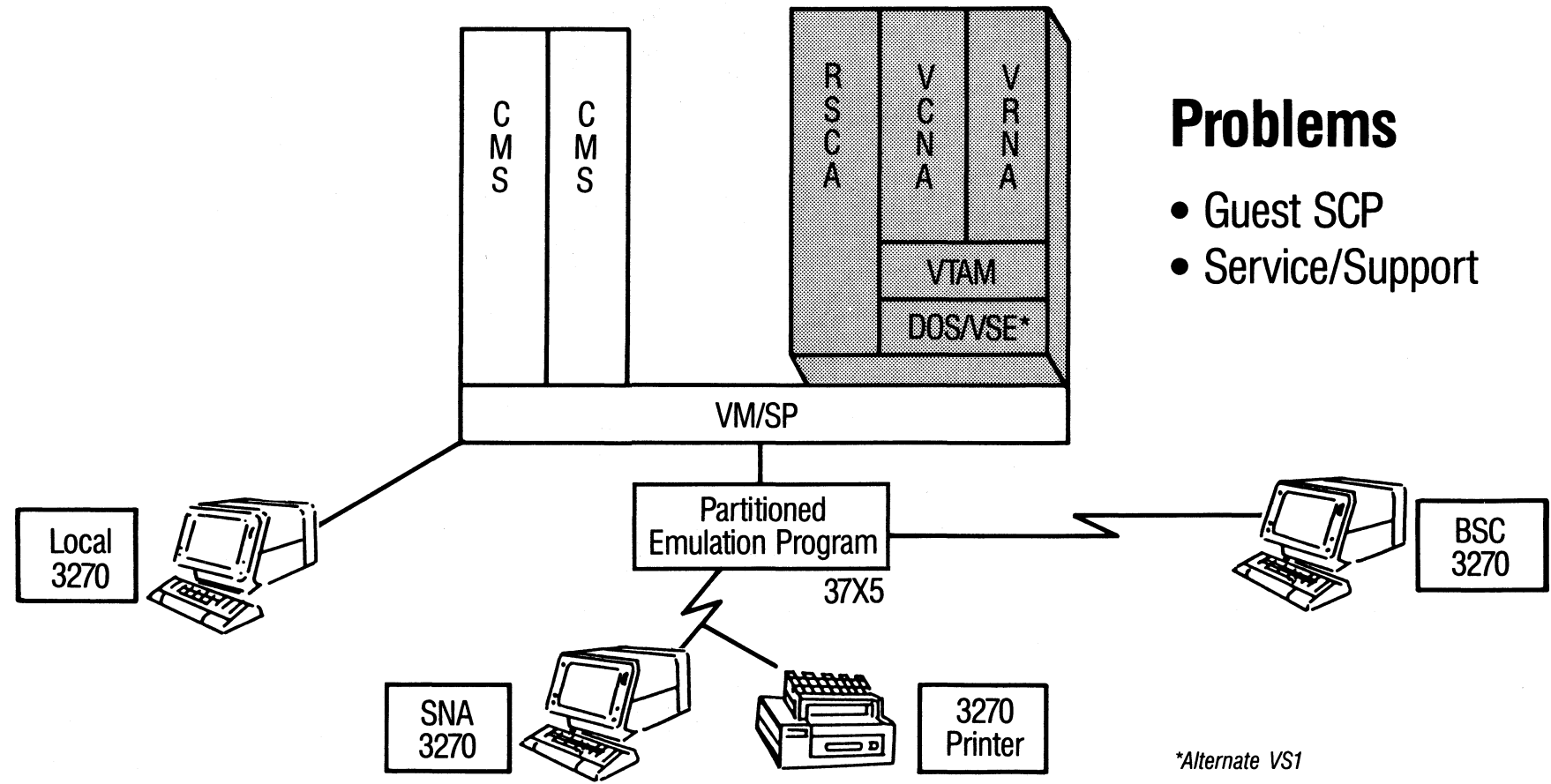## ? Decisions, Decisions

Who needs it ?

- CMS intensive

- Production guest
  - VSE
  - VS/1
  - MVS

- Networking

? Decisions, Decisions

If you are: CMS Intensive—VM/SNA Interim Solution

CMS | CMS

RSCA | VCNA | VRNA
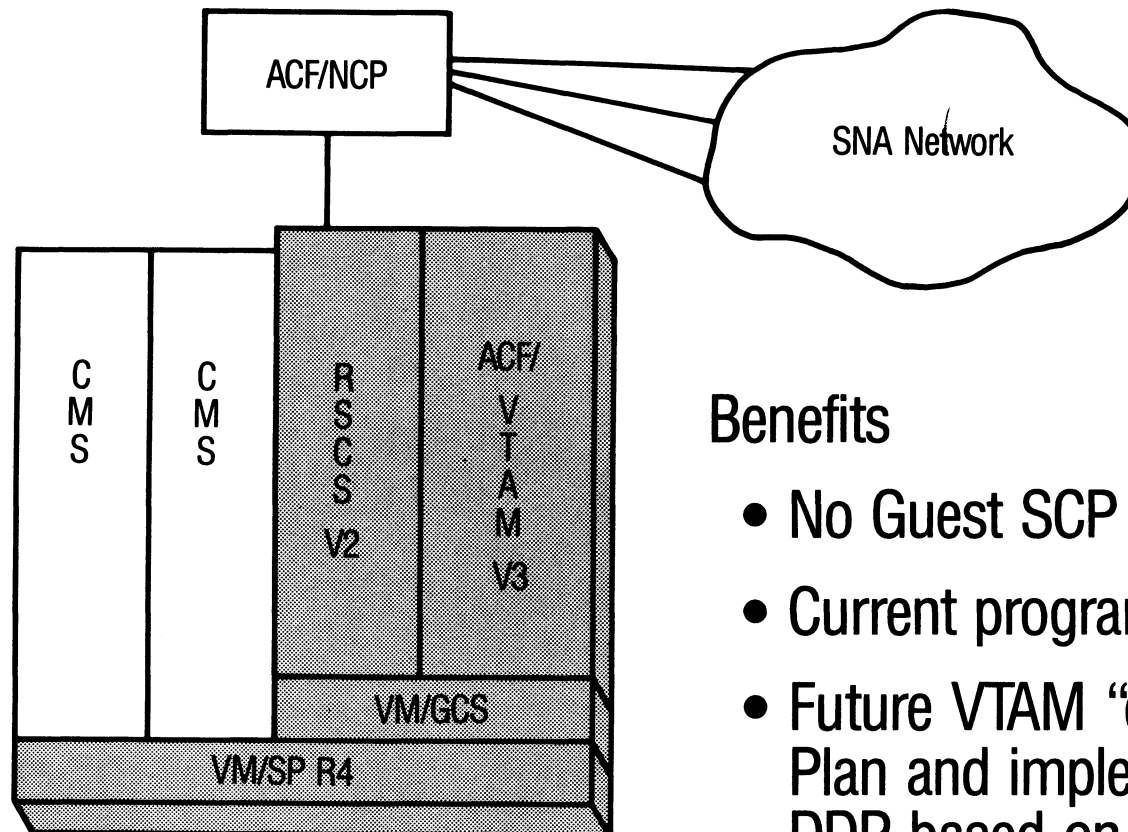
VTAM

DOS/VSE*

VM/SP

Problems

- Guest SCP
- Service/Support

Local 3270

Partitioned Emulation Program

37X5

BSC 3270

SNA 3270

3270 Printer

*Alternate VS1

? Decisions, Decisions

CMS Intensive VM/SNA Native

ACF/NCP

SNA Network

C M S

C M S

R S C S V2
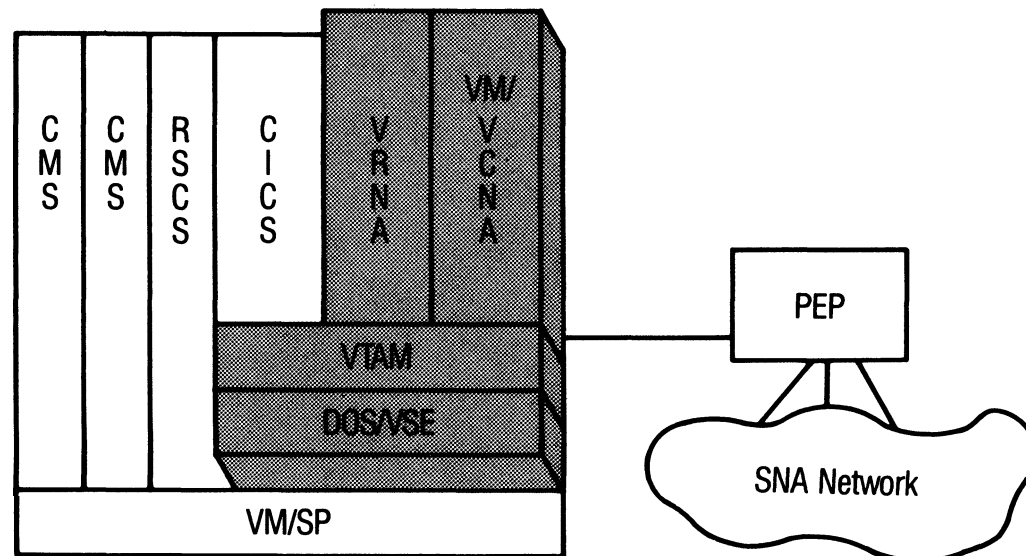
ACF/ V T A M V3

VM/GCS

VM/SP R4

Benefits

- No Guest SCP required

- Current program product

- Future VTAM "opportunity"
  Plan and implement your future
  DDP based on SNA

? Decisions, Decisions

If you are: VSE Production—VM/SNA Interim Solution

The diagram shows a stack with layers labeled (left to right): C M S, C M S, R S C S, C I C S, VRNA, VM/VCNA, over VTAM, DOS/VSE, on VM/SP. Connected to PEP box, linked to SNA Network cloud.

+

- Available today
- Easy migr. to VM/VTAM
- Low cost solution

−
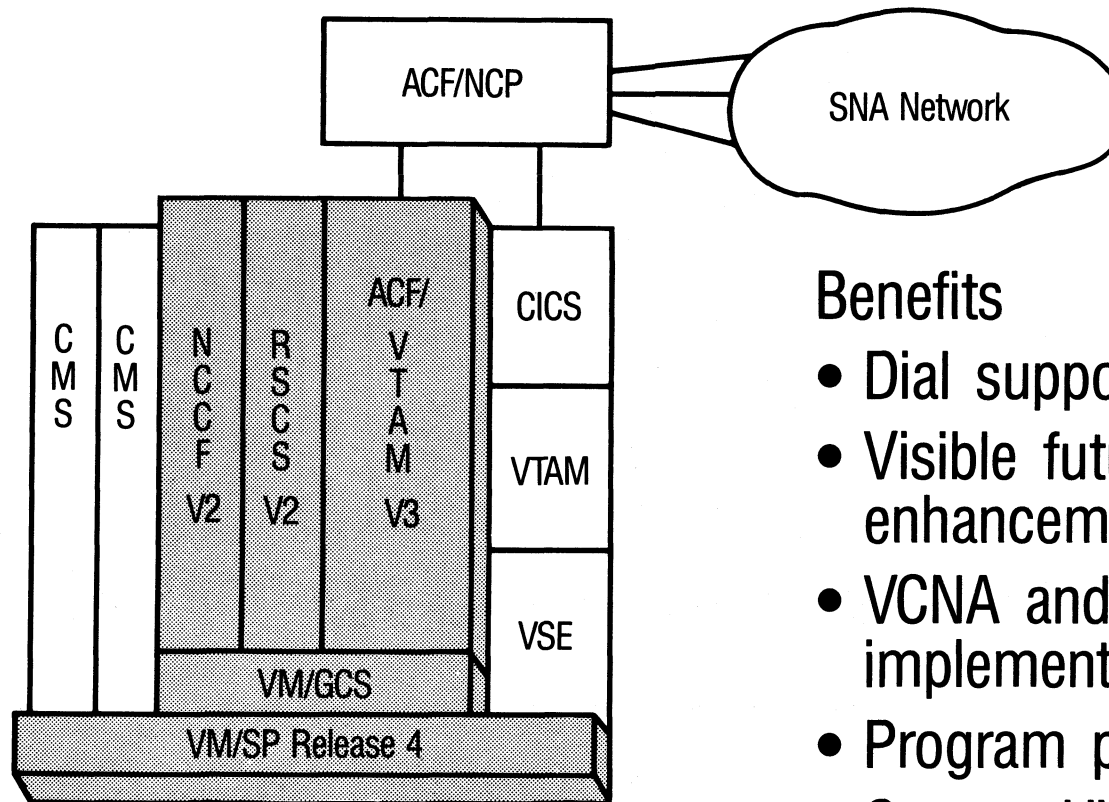
- No dial support
- RSCS/SNA (VRNA) is a Program Offering

Decisions, Decisions

VSE Production VM/SNA Native

ACF/NCP

SNA Network

C M S

C M S

N C C F V2

R S C S V2
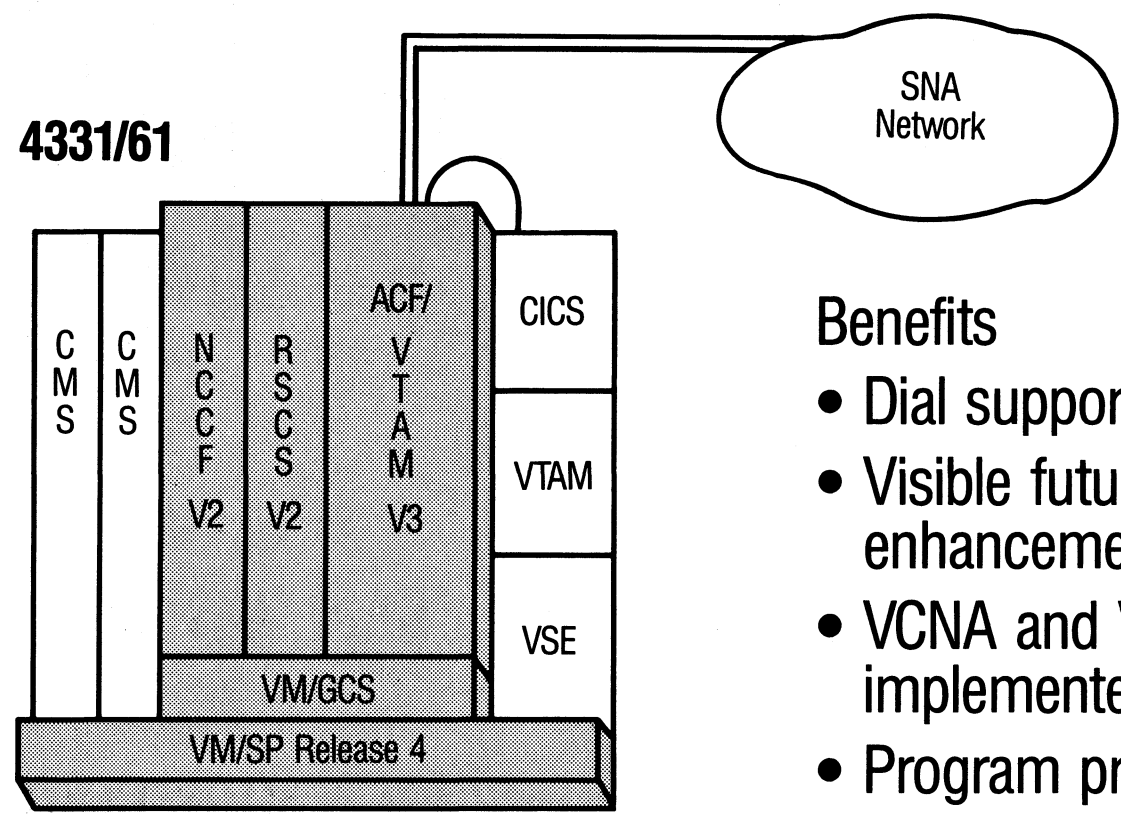
ACF/ V T A M V3

VM/GCS

VM/SP Release 4

CICS

VTAM

VSE

Benefits

- Dial support
- Visible future VTAM enhancements
- VCNA and VRNA functions implemented
- Program product
- Current HW support

VSE Production ICA VM/SNA Native

4331/61

Foil 29

SNA Network

C M S	C M S	N C C F V2	R S C S V2	ACF/ V T A M V3	CICS
					VTAM
					VSE

VM/GCS

VM/SP Release 4

Benefits
- Dial support
- Visible future VTAM enhancements
- VCNA and VRNA functions implemented
- Program product
- Current HW support

? Decisions, Decisions

If you are: MVS Production—VM/SNA Interim Solution

PEP

SNA Network

VCNA | VRNA | CICS

CMS | RSCS

CICS | NCCF | TSO

VTAM

** **

VTAM

VS1* | MVS

VM/SP
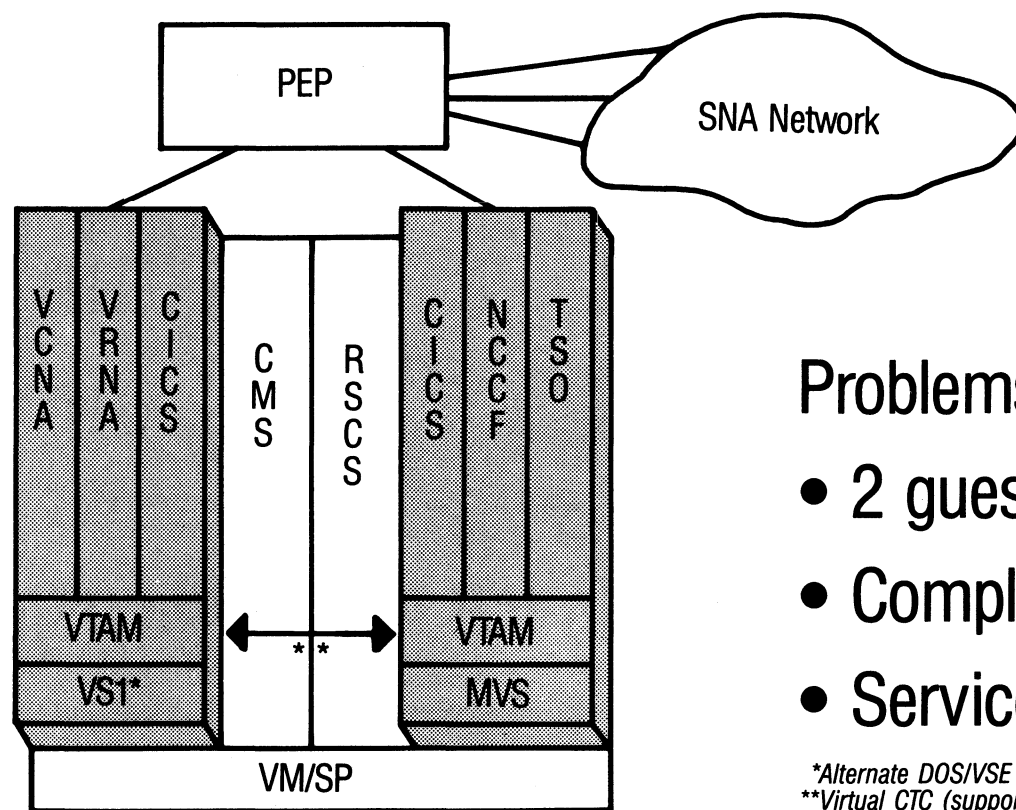
Problems
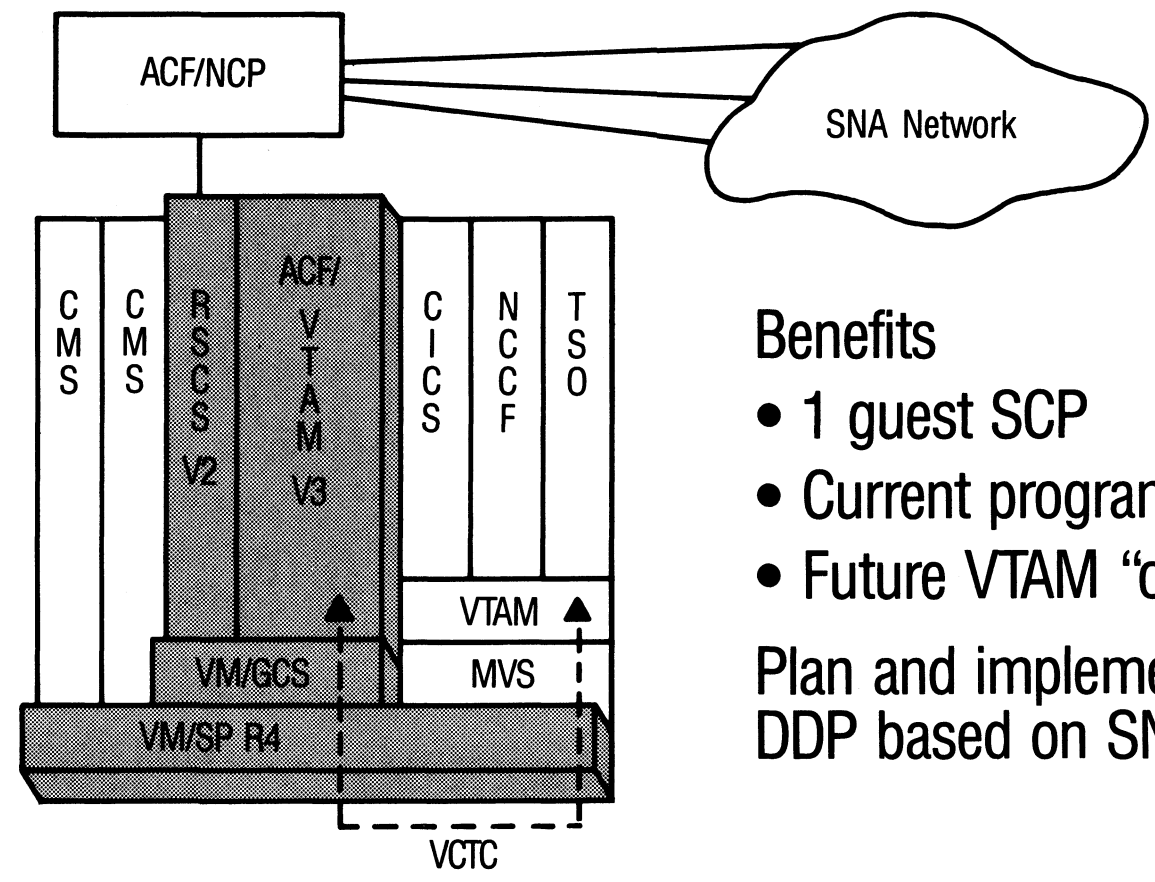
- 2 guest SCPs
- Complex solution
- Service/support

*Alternate DOS/VSE
**Virtual CTC (supported by VS1 only)

? Decisions, Decisions

MVS Production VM/SNA Native

Benefits
- 1 guest SCP
- Current program product
- Future VTAM "opportunity"

Plan and implement your future DDP based on SNA
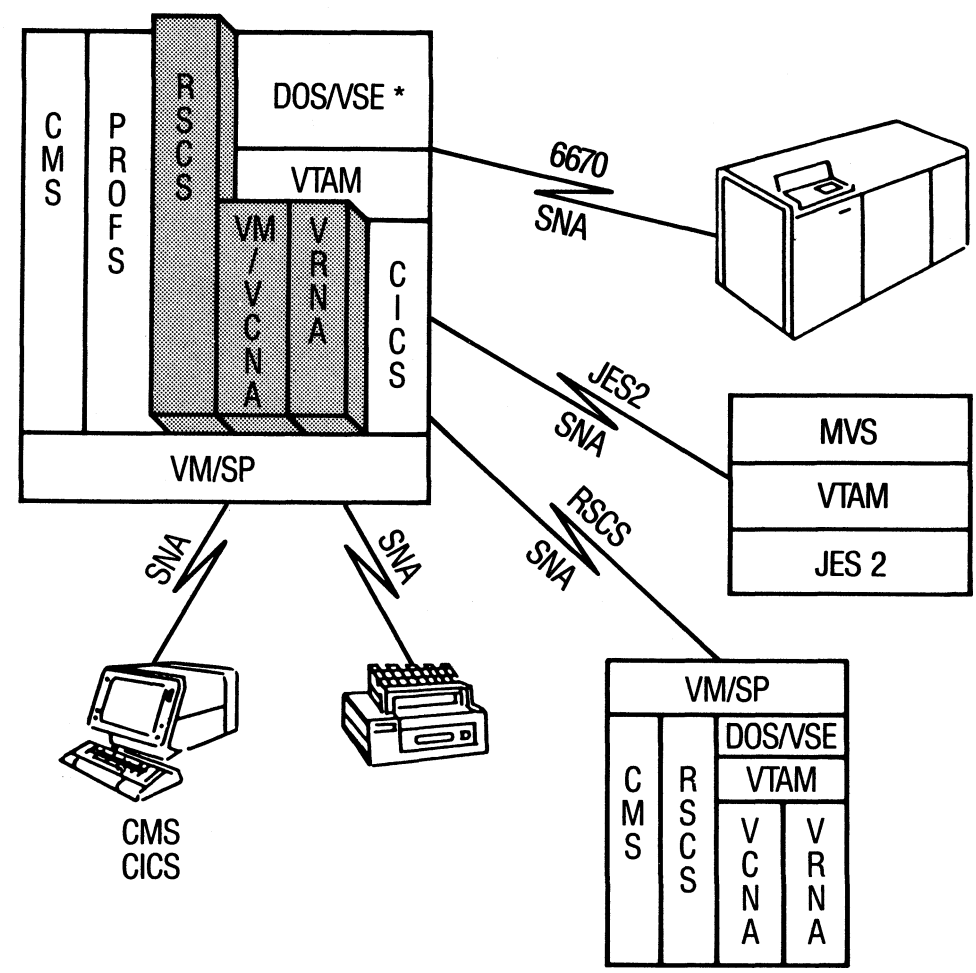
? Decisions, Decisions

Networking

VM/VCNA
or
VM/VTAM

Foil 32

Decisions, Decisions
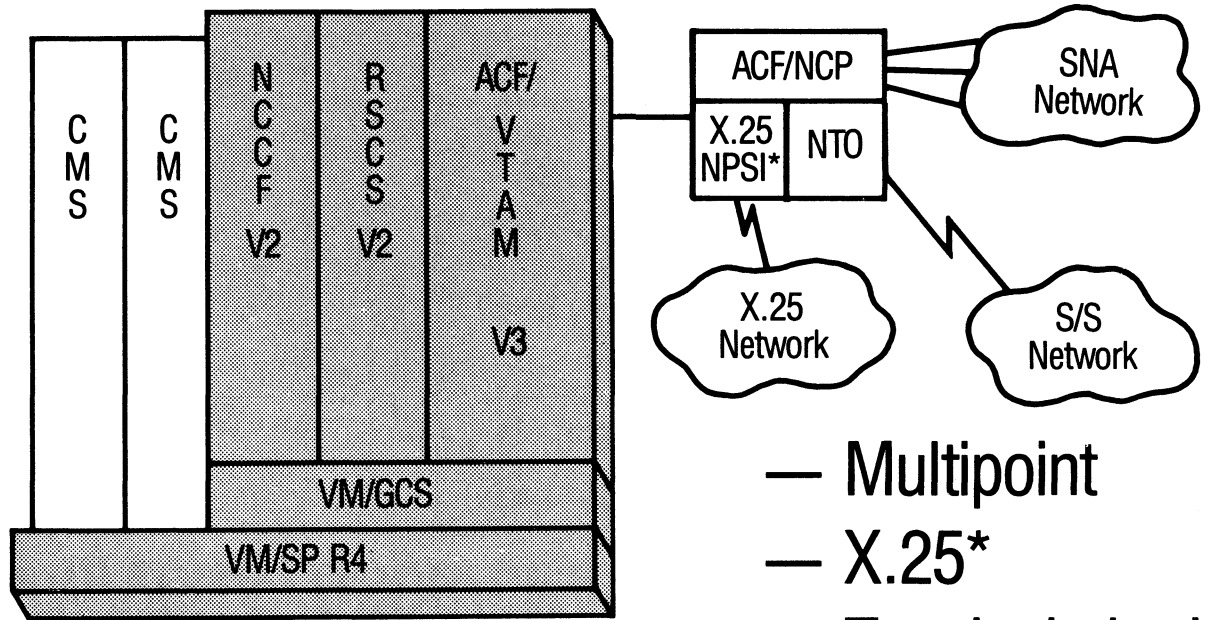
VM/VCNA, RSCS/SNA & RSCS Version 1.3

* VS1 Alternate

? Decisions, Decisions

VM/VTAM and RSCS Networking Version 2

Diagram components:

- CMS
- CMS
- NCCF V2
- RSCS V2
- ACF/VTAM V3
- VM/GCS
- VM/SP R4
- ACF/NCP
- X.25 NPSI*
- NTO
- SNA Network
- X.25 Network
- S/S Network

— Multipoint
— X.25*
— Terminal sharing
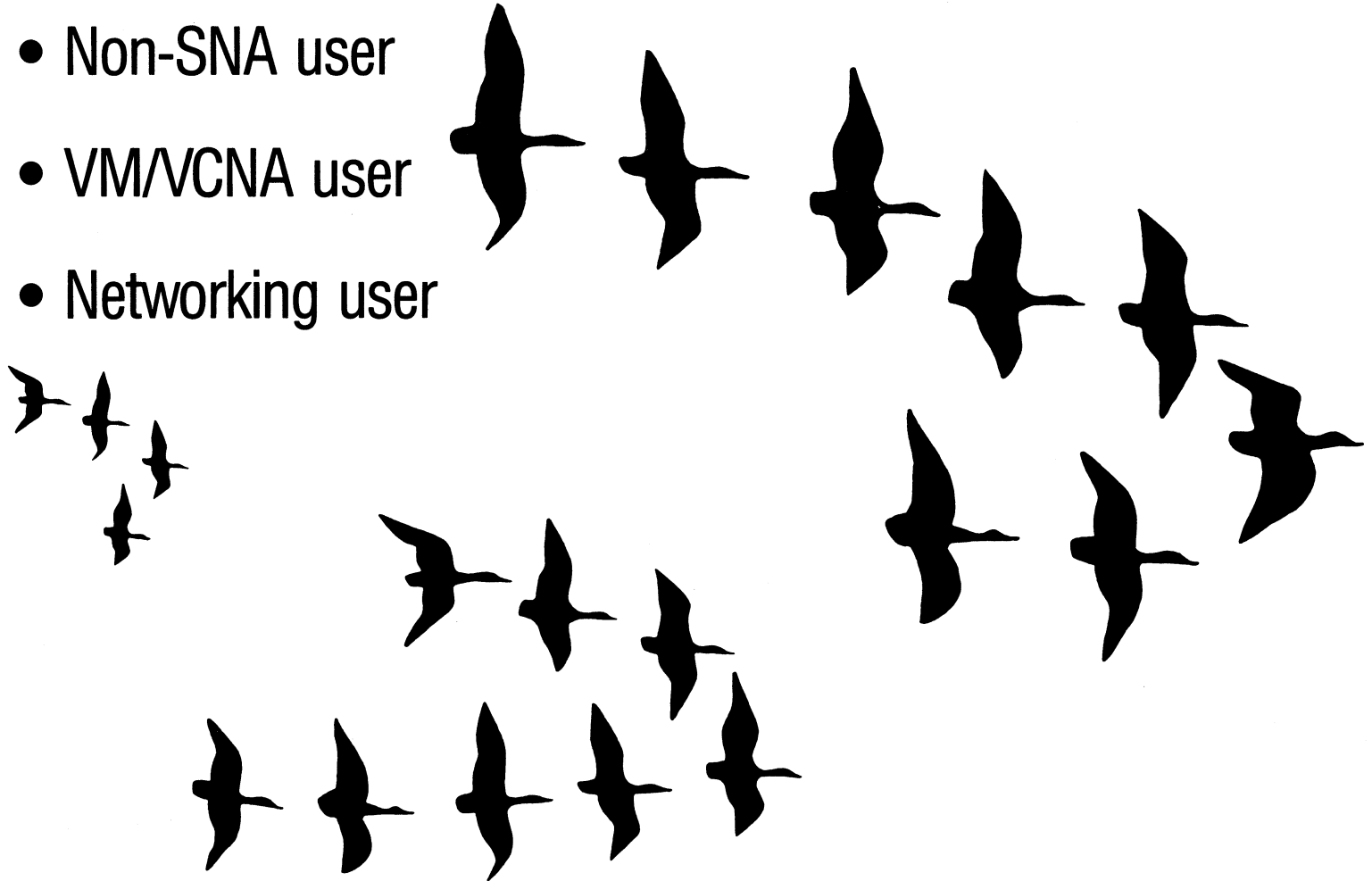— Application sharing
— Start/stop (s/s) terminals

*Statement of direction has been issued

Migration

- Non-SNA user

- VM/VCNA user

- Networking user

Migration

Install:

- Planning, Planning, Planning

- VM/SP Release 4

- VM/GCS

- RSCS Networking V2

- VM/VTAM
  - SSP V3
  - NCP V3
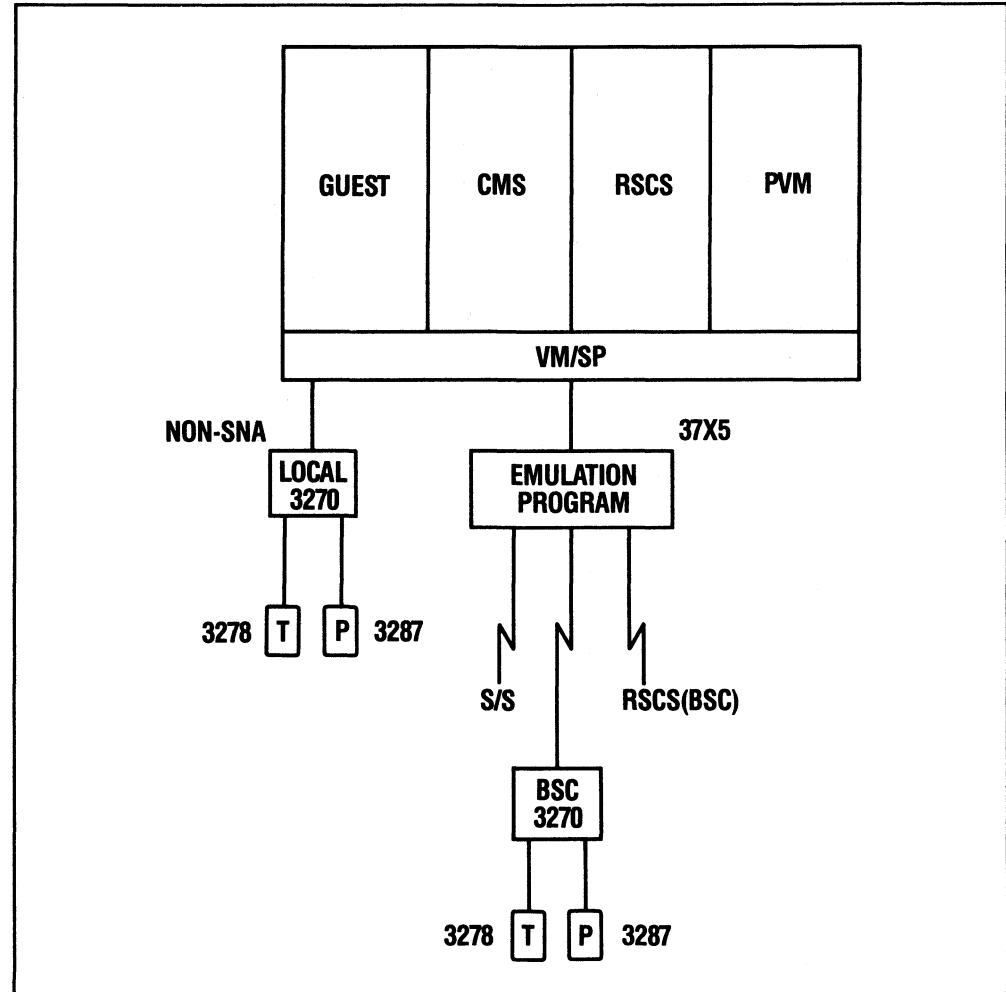
- Network Management Products (NMP)

Migration

CASE 1

Non-SNA

Initial
Configuration
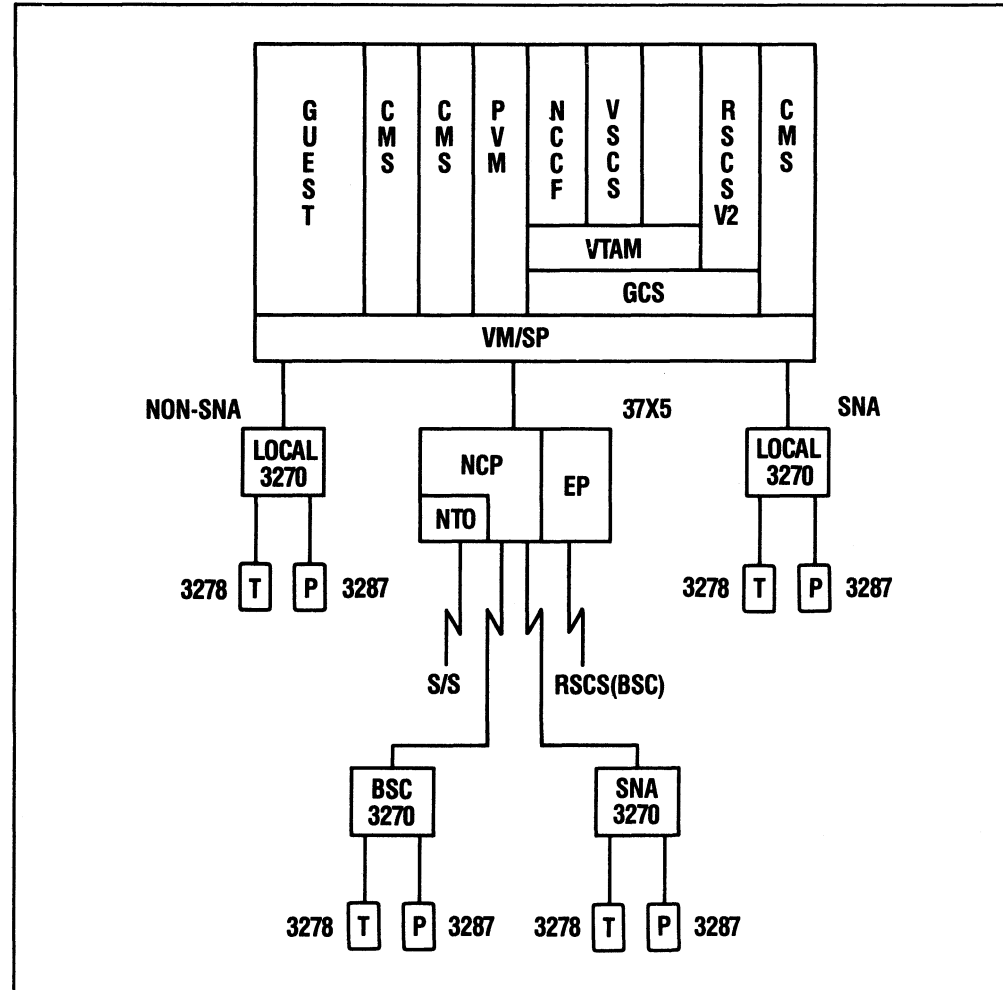
```
        ┌────────┬────────┬────────┬────────┐
        │        │        │        │        │
        │ GUEST  │  CMS   │  RSCS  │  PVM   │
        │        │        │        │        │
        ├────────┴────────┴────────┴────────┤
        │              VM/SP                │
        └───────────────────────────────────┘

NON-SNA                              37X5

        ┌────────┐        ┌──────────────┐
        │ LOCAL  │        │  EMULATION   │
        │  3270  │        │   PROGRAM    │
        └────────┘        └──────────────┘

      ┌─┐  ┌─┐
3278  │T│  │P│ 3287
      └─┘  └─┘
                         S/S      RSCS(BSC)

                         ┌──────┐
                         │ BSC  │
                         │ 3270 │
                         └──────┘

                       ┌─┐  ┌─┐
                  3278 │T│  │P│ 3287
                       └─┘  └─┘
```

Migration

CASE 1

VM/SNA Native

Target
Configuration

G U E S T	C M S	C M S	P V M	N C C F	V S C S		R S C S V2	C M S

VTAM

GCS

VM/SP

NON-SNA   37X5   SNA

LOCAL 3270   NCP   EP   LOCAL 3270

NTO

3278 [T] [P] 3287   3278 [T] [P] 3287

S/S   RSCS(BSC)

BSC 3270   SNA 3270

3278 [T] [P] 3287   3278 [T] [P] 3287

Migration

CASE 2

VSE/VCNA Stand-Alone

Initial
Configuration
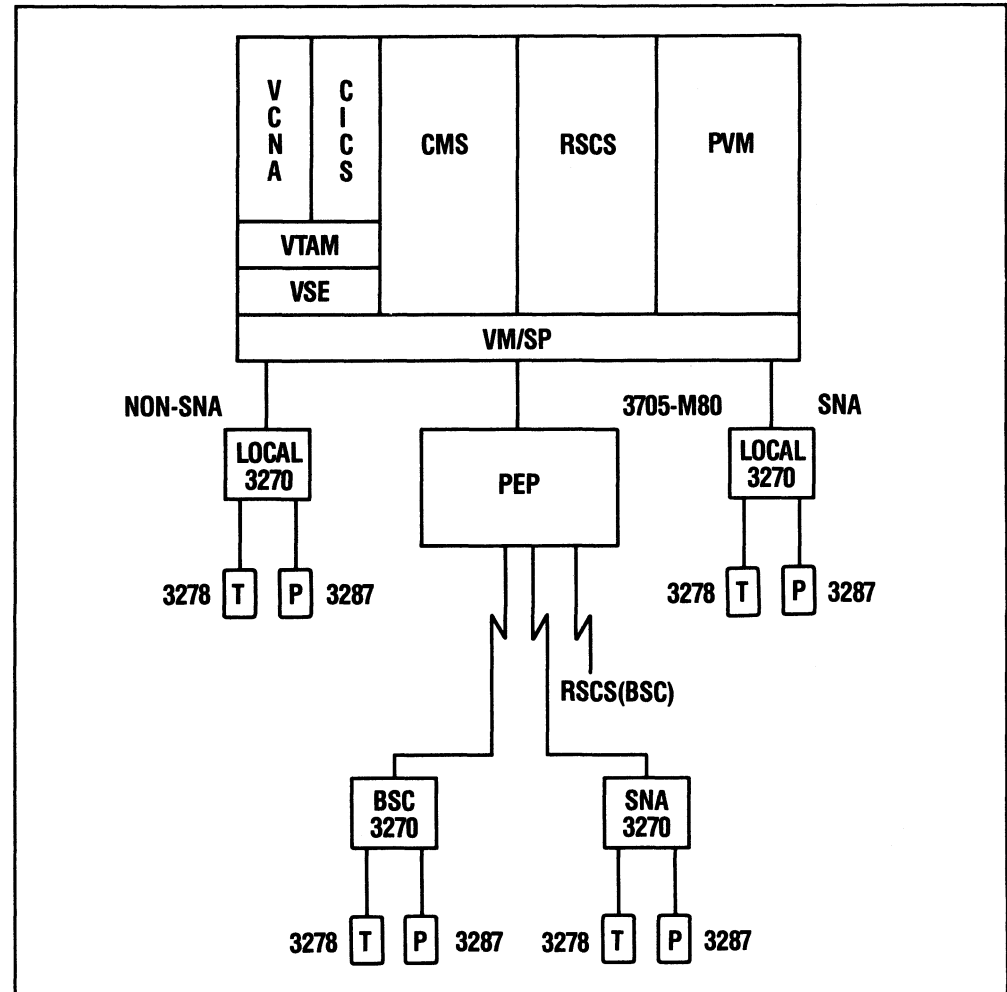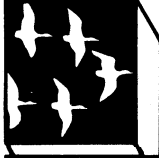
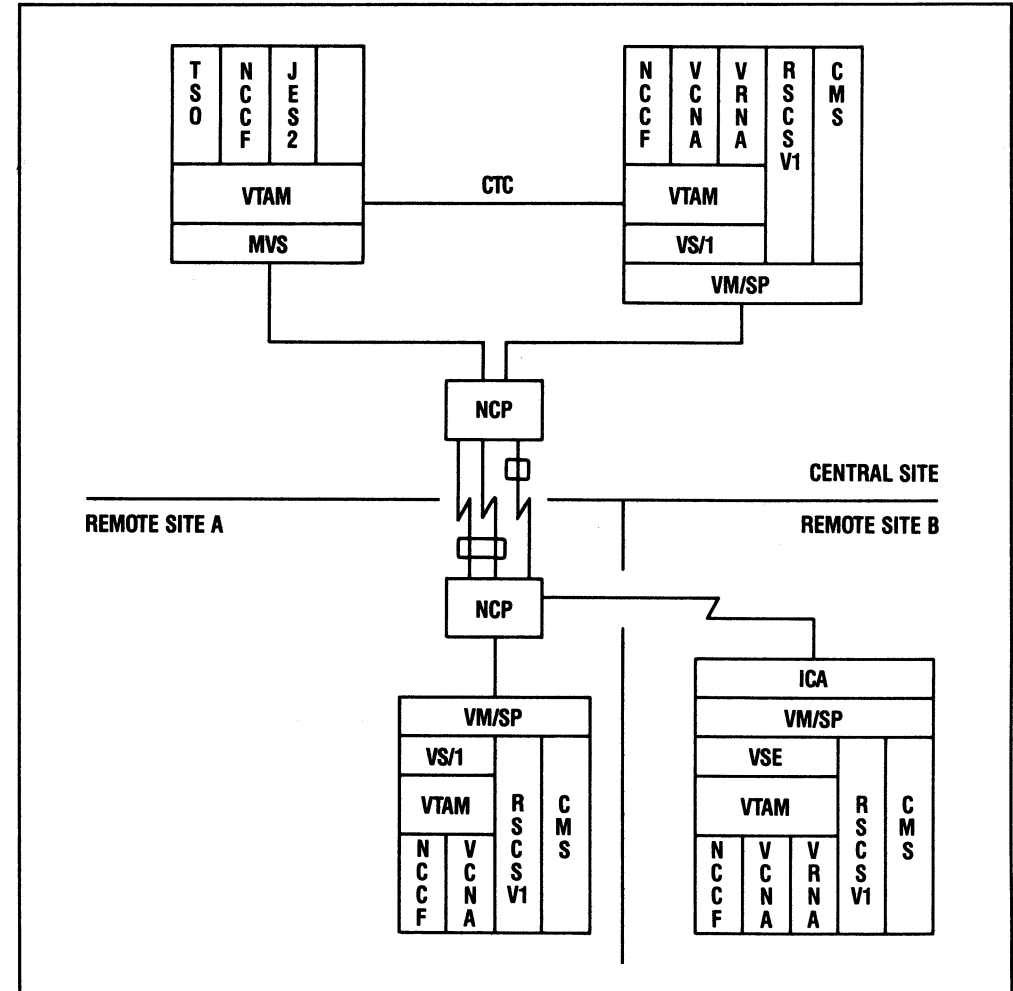# Migration

CASE 2

VM/SNA Native

Target
Configuration
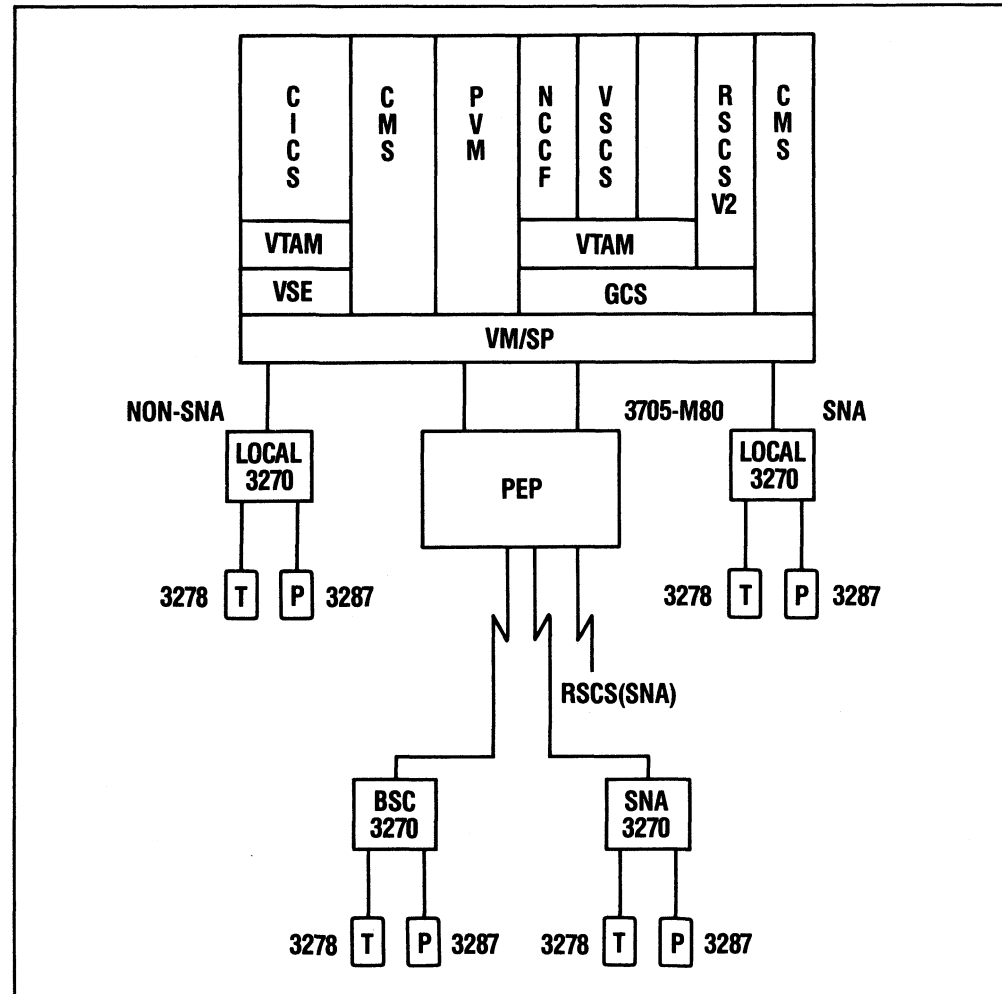
Migration

CASE 3

Communications Networking

Initial
Configuration

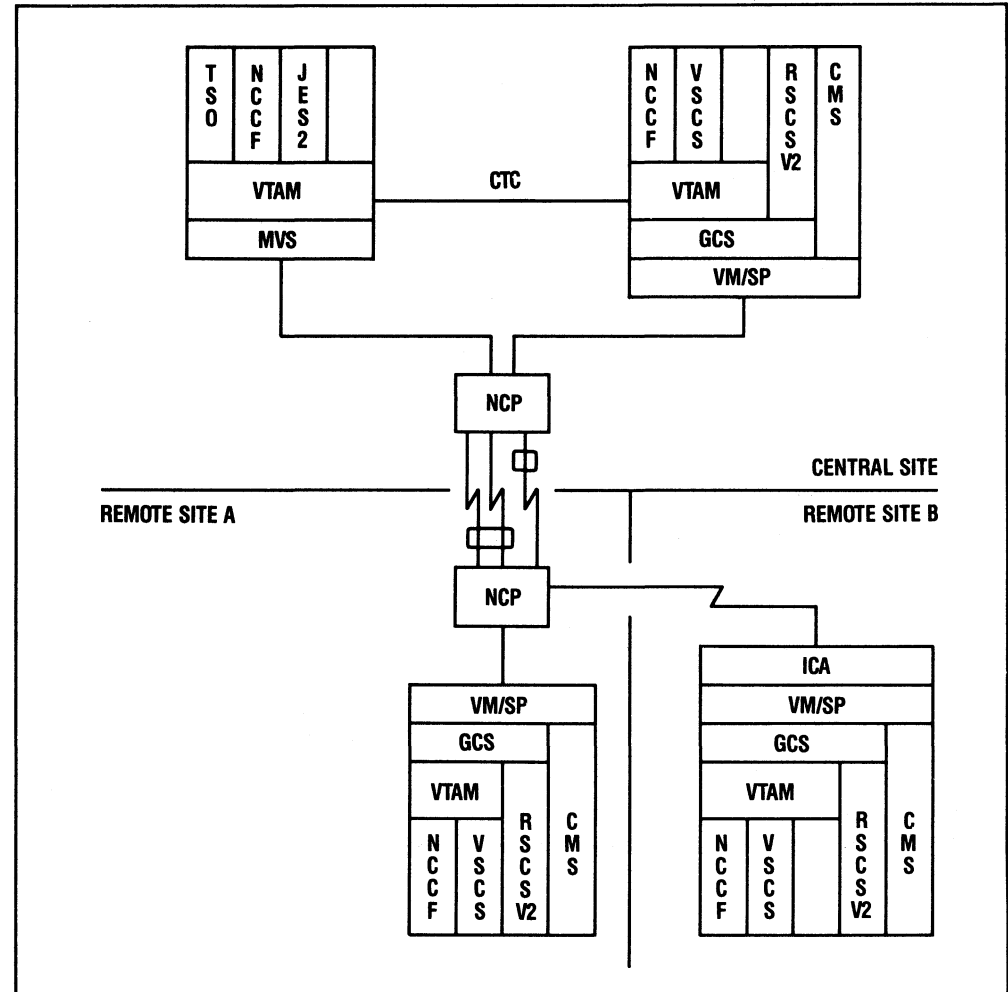Diagram labels:

- TSO / NCCF / JES2 | VTAM | MVS
- CTC
- NCCF / VCNA / VRNA / RSCSV1 / CMS | VTAM | VS/1 | VM/SP
- NCP
- NCP
- CENTRAL SITE
- REMOTE SITE A
- REMOTE SITE B
- VM/SP | VS/1 | VTAM | NCCF / VCNA / RSCSV1 / CMS
- ICA | VM/SP | VSE | VTAM | NCCF / VCNA / VRNA / RSCSV1 / CMS
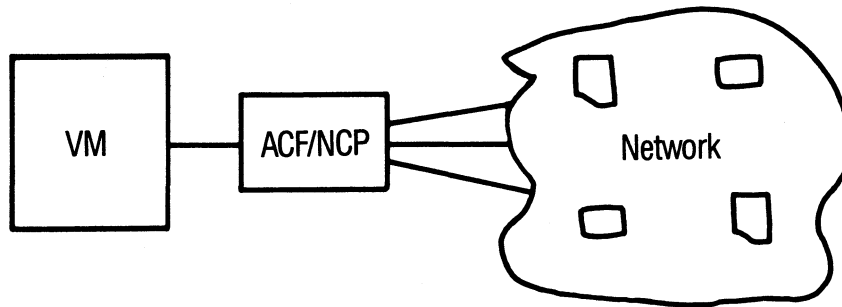
Migration

CASE 3

VM/SNA Native

Target
Configuration

Summary
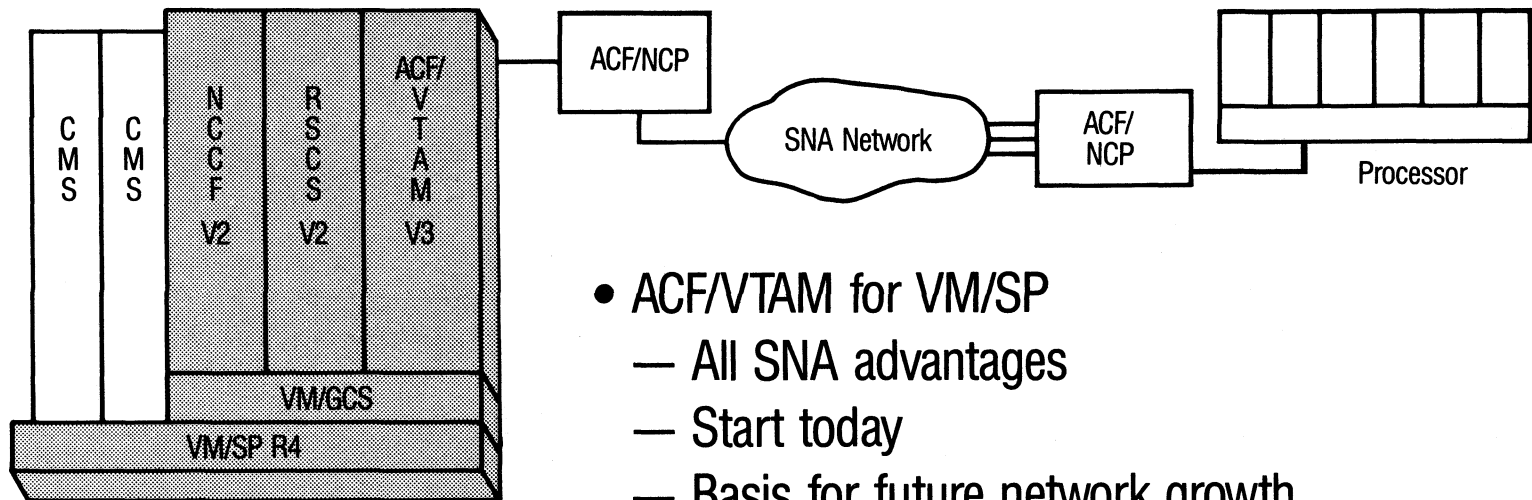
Systems Network Architecture (SNA) Advantages for VM

VM	ACF/NCP	Network
	Terminal	— Sharing of applications and systems
		— Response time measurement
	Line	— Sharing
		— Performance and availability improvement
		— X.25 support*
	Network Management	— Performance
		— Problem identification/ resolution
		— Central control
	SNA	IBM's Strategic Networking Architecture

Statement of direction has been issued

Summary

Announcement Summary

A diagram showing stacked boxes labeled CMS, CMS, NCCF V2, RSCS V2, ACF/VTAM V3, with VM/GCS and VM/SP R4 beneath them, connected to ACF/NCP, SNA Network, ACF/NCP, and Processor.

- ACF/VTAM for VM/SP
  - All SNA advantages
  - Start today
  - Basis for future network growth

- VM/SP-HPO Release 4
  - VM/SNA Native support
  - Enhancements for all VM users

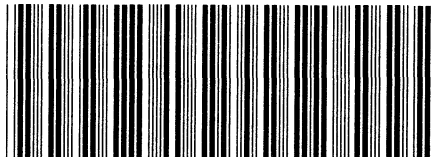- **IBM Intends to continue the enhancements of ACF/VTAM for the native VM/SP environment**

IBM

G360-1003-0

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