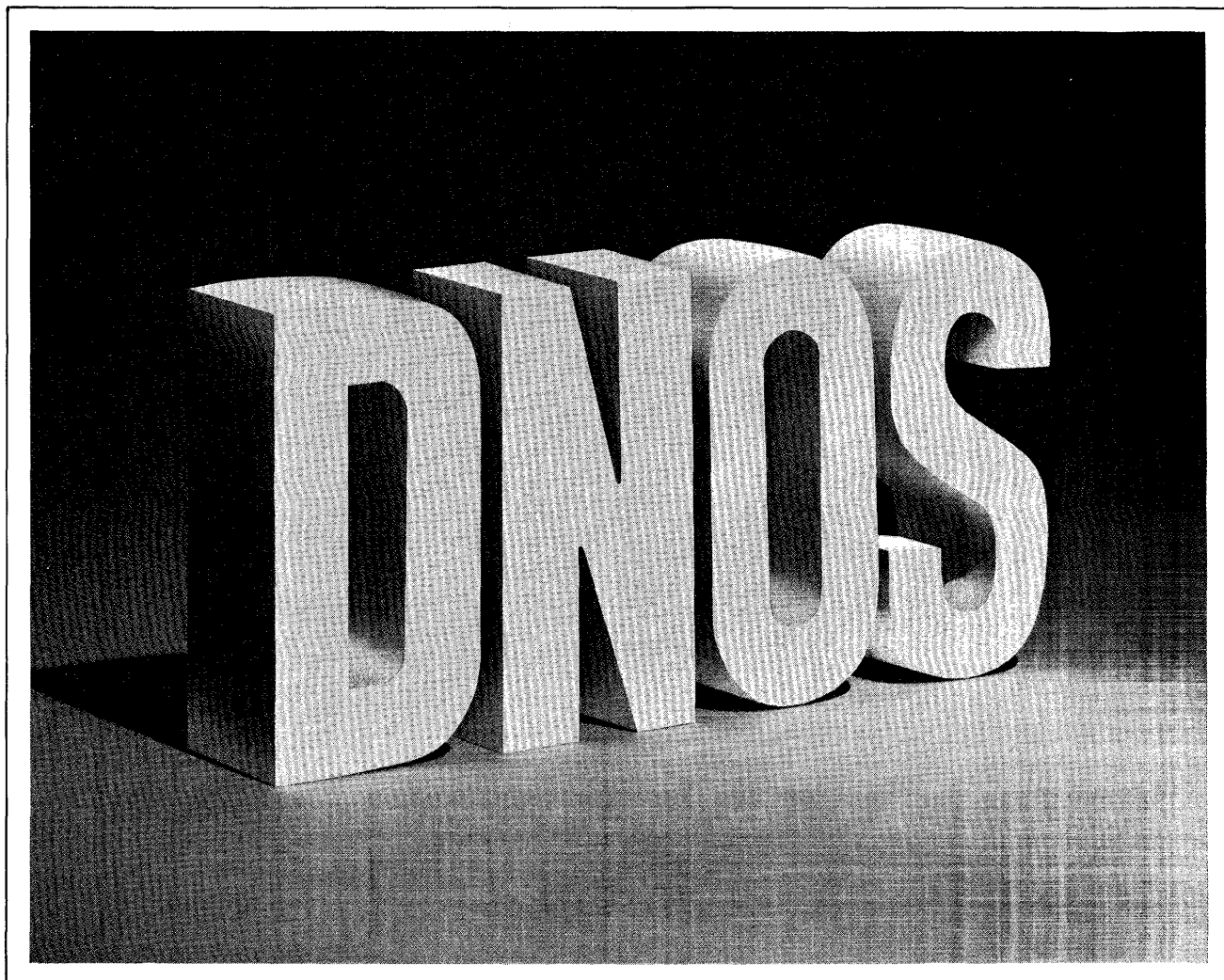


DNOS DNCS System Generation Reference Manual



Part No. 2302648-9701 **
1 February 1983



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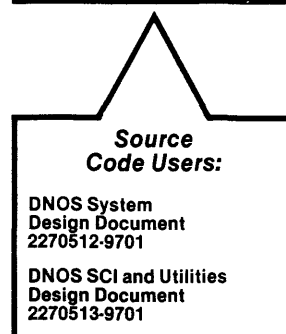
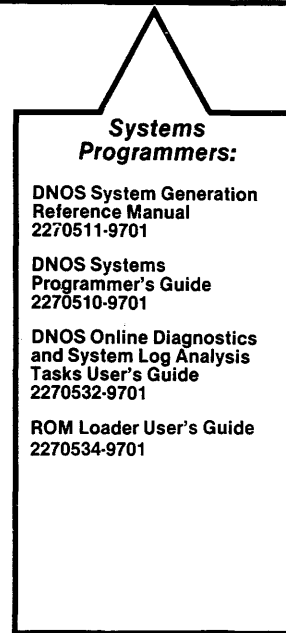
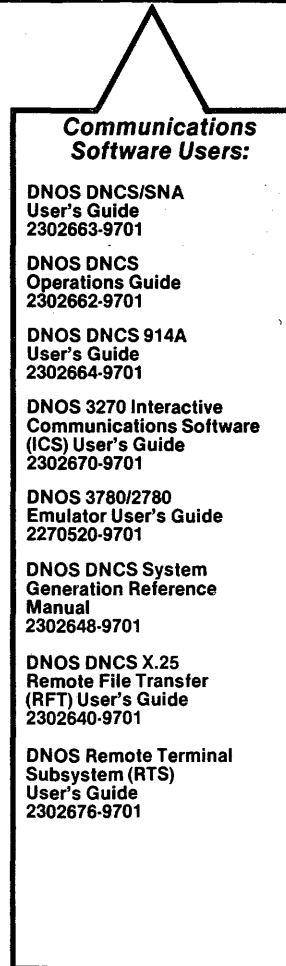
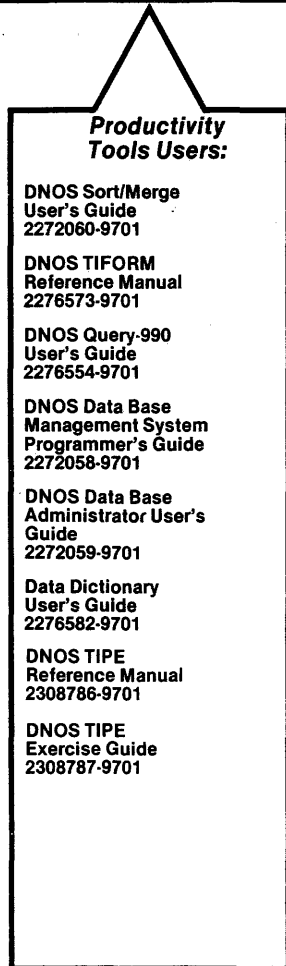
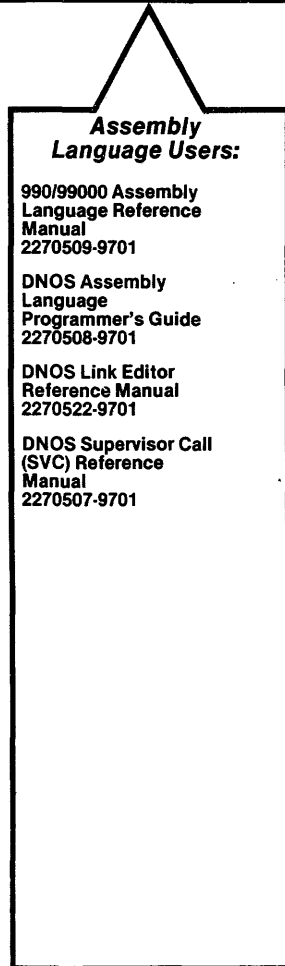
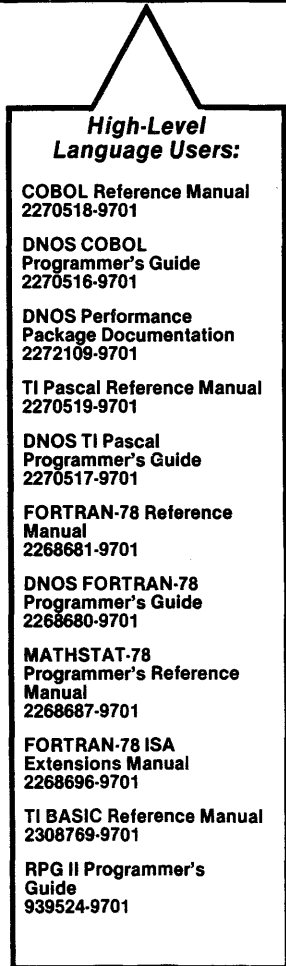
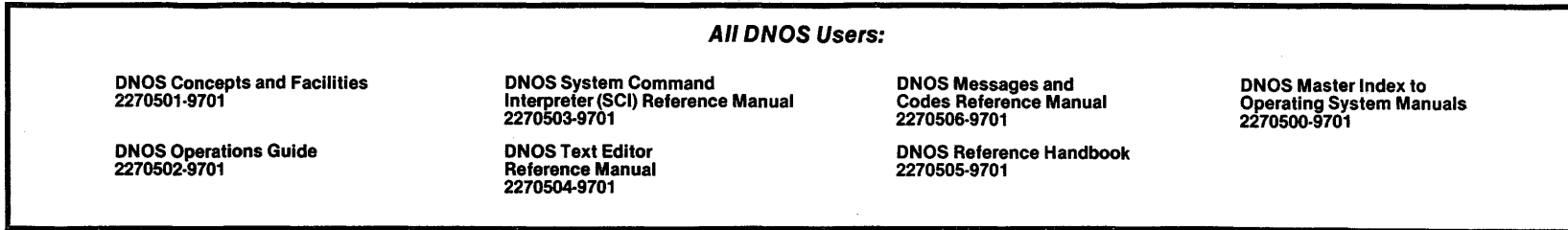
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DNOS Software Manuals

This diagram shows the manuals supporting DNOS, arranged according to user type. Refer to the block identified by your user group and all blocks above that set to determine which manuals are most beneficial to your needs.

2302648-9701



DNOS Software Manuals Summary

Concepts and Facilities

Presents an overview of DNOS with topics grouped by operating system functions. All new users (or evaluators) of DNOS should read this manual.

DNOS Operations Guide

Explains how to perform daily tasks at a DNOS installation; includes step-by-step procedures for performing such tasks as operating peripherals, initializing and backing up the system, and manipulating disk files.

System Command Interpreter (SCI) Reference Manual

Describes how to use SCI in both interactive and batch jobs. Describes command procedures and primitives and gives a detailed presentation of all SCI commands in alphabetical order for easy reference.

Text Editor Reference Manual

Explains how to use the Text Editor on DNOS and describes each of the editing commands and function keys.

Messages and Codes Reference Manual

Lists the error messages, informative messages, and error codes reported by DNOS.

DNOS Reference Handbook

Provides a summary of commonly used information for quick reference.

Master Index to Operating System Manuals

Contains a composite index to topics in the DNOS operating system manuals.

Programmer's Guides and Reference Manuals for Languages

Contain information about the languages supported by DNOS. Each programmer's guide covers operating system information relevant to the use of that language on DNOS. Each reference manual covers details of the language itself, including language syntax and programming considerations.

Performance Package Documentation

Describes the enhanced capabilities that the DNOS Performance Package provides on the Model 990/12 Computer.

Link Editor Reference Manual

Describes how to use the Link Editor on DNOS to combine separately generated object modules to form a single linked output.

Supervisor Call (SVC) Reference Manual

Presents detailed information about each DNOS supervisor call and general information about DNOS services.

DNOS System Generation Reference Manual

Explains how to generate a DNOS system for your particular configuration and environment.

User's Guides for Productivity Tools

Describe the features, functions, and use of each productivity tool supported by DNOS.

User's Guides for Communications Software

Describe the features, functions, and use of the communications software available for execution under DNOS.

Systems Programmer's Guide

Discusses the DNOS subsystems at a conceptual level and describes how to modify the system for specific application environments.

Online Diagnostics and System Log Analysis Tasks User's Guide

Explains how to execute the online diagnostic tasks and the system log analysis task and how to interpret the results.

ROM Loader User's Guide

Explains how to load the operating system using the ROM loader and describes the error conditions.

DNOS Design Documents

Contain design information about the DNOS system, SCI, and the utilities. This information is helpful when used with a source kit.

Preface

The *DNCS System Generation Reference Manual* describes the Distributed Network Communication System (DNCS) System Generation utility. This manual is intended for the system programmer responsible for generating and maintaining DNCS. You use the DNCS System Generation utility to generate or modify a working DNCS system. The chapters of this manual describe DNCS system generation:

Section

- 1 **DNCS Generation** — Describes the major stages for defining a DNCS configuration including support for one or more DNCS-based communications products. It explains how the DNOS system generation and the DNCS system generation affect one another. It also lists the naming conventions, keywords, and notation that this manual uses. Finally, this section describes network hierarchy, the communications hierarchy, and the user access hierarchy for both Systems Network Architecture (SNA) and X.25 Remote File Transfer (RFT) subsystems.
- 2 **Planning a DNCS Configuration** — Describes the planning required before generating a DNCS system with SNA and/or X.25 RFT. In particular, it describes the planning required for the user access hierarchy, the communication hierarchy, and the network hierarchy.
- 3 **Using the DNCS System Generation Utility** — Describes the DNCS System Generation utility. It describes the SCI commands that DNCS provides to activate the utility and verify the system that you generate. This section also describes how to operate the DNCS System Generation utility and how to execute all of the commands it provides.
- 4 **Using Sample SNA Configurations** — Provides step-by-step instructions for planning and generating a DNCS system including SNA support. It also demonstrates how to modify this example configuration to create a new configuration.
- 5 **Using Sample X.25 RFT Configurations** — Provides step-by-step instructions for planning and generating a DNCS system including X.25 RFT support.
- 6 **Additional DNCS Configuration Examples** — Provides additional DNCS configuration examples, listings, and completed planning forms. These examples include SNA and X.25 RFT combined on the same system and a network interface adapter (NIA) SNA using an X.25 circuit. This section includes listings and completed planning forms for each of these configurations.

Appendix

- A DNCS Configuration Planning Forms — Includes one copy of each form used during the planning of a DNCS configuration.
- B Coordination of SNA Host and DNCS System Generation — Describes the parameters that must be coordinated between the DNCS generation and the advanced communications function/virtual telecommunications access method/network control program (ACF/VTAM/NCP) generation on the SNA host. It presents this information from the viewpoint of the individual who defines the SNA host configuration.
- C Network Authority Forms — Includes three example configurations with completed packet switched network (PSN) subscription forms and DNCS X.25 circuit planning forms. Each example includes two X.25 circuits for each of the following PSNs:
 - TRANSPAC
 - DATEX-P
 - PSS
- D DNCS Configuration Diagnostics — Lists all error messages that the Verify DNCS Configuration utility issues. It also explains the messages and suggests corrective actions.

The DNOS software manuals shown on the support manual diagram (frontispiece) contain information related to DNCS system generation. Also, the following document contains information essential to DNCS system generation:

DNOS DNCS Nucleus Object Installation (part number 2302660-9701)

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DNCS Generation

1.1 GENERATION OVERVIEW

Generating the Distributed Network Communication System (DNCS) means configuring system resources for use with DNCS. It involves planning the configuration, executing the DNCS System Generation utility, and keeping a record of the configuration. The utility provides a command language for adding, modifying, and deleting resources from the configuration. It displays prompts to obtain the necessary information, shows the configuration being built, and provides help messages on command. This manual describes how the system programmer uses the DNCS system generation utility to generate a DNCS configuration that matches the requirements of the network.

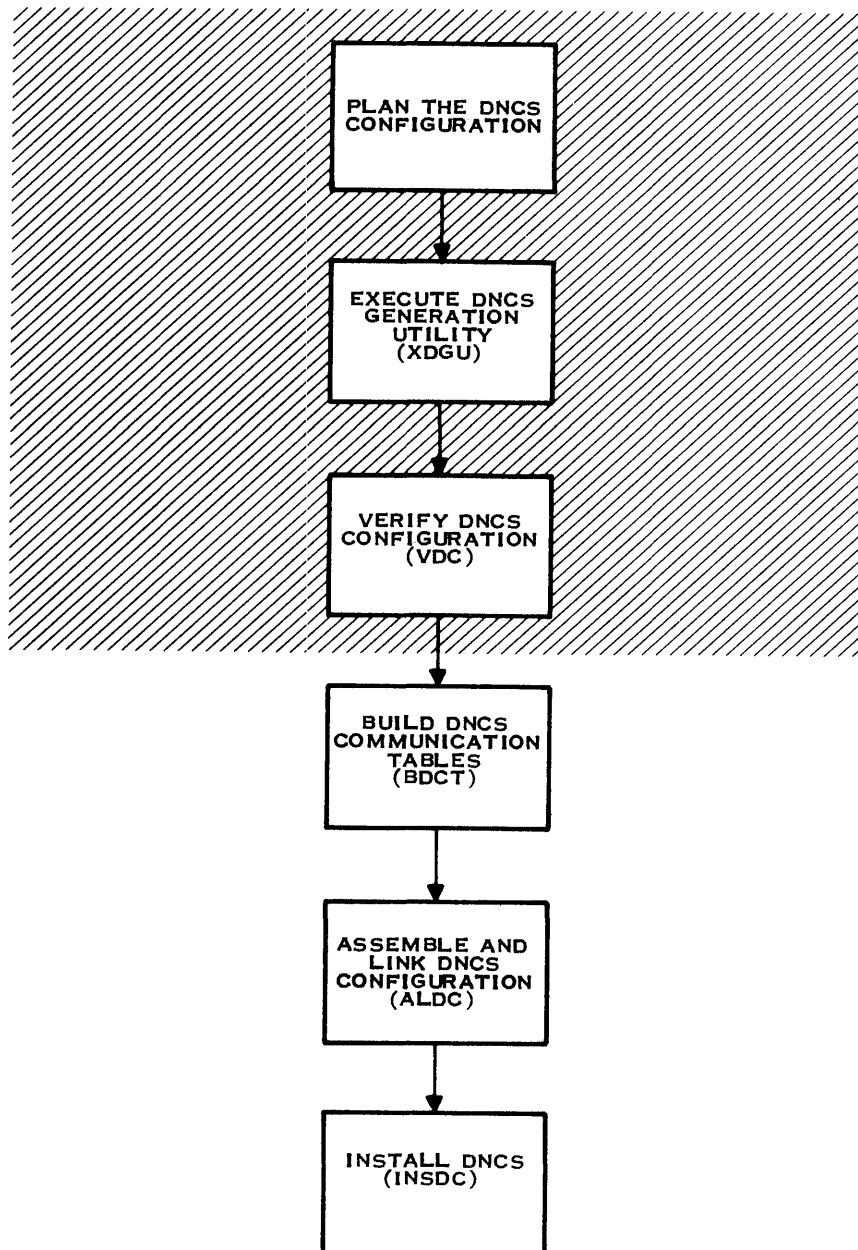
Once you define a configuration, you can change it by reexecuting the DNCS generation utility or by using the DNCS Command Interpreter (DNCS CI). DNCS maintains the configuration information used to build the system on a disk file. This provides you with the option of using an existing configuration as the starting point for building a new one. Modifications to an existing configuration take effect with the next installation of DNCS.

DNCS CI commands can start and stop resources but cannot add new resources to the configuration. DNCS CI commands can also modify port/circuit assignments temporarily. However, these modifications apply only to the active system, not to the configuration file used to build the system. Consequently, the changes remain in effect only until DNCS is terminated. Activating DNCS restores all resources to their original states. The *DNCS Operations Guide* describes the DNCS CI commands and how to use them.

1.2 DNOS GENERATION AND DNCS GENERATION

DNOS generation and DNCS generation follow similar paths. Both begin when you execute utilities that issue prompts to gather information about system resources. Then, the utilities build the communications software required to support the resources, assemble and link the system, and install the new configuration. Figure 1-1 provides an overview of the DNCS generation process. This manual describes the operations contained in the shaded area of Figure 1-1.

The *DNOS DNCS Nucleus Object Installation* document describes how to define the elements necessary for DNCS when you perform a DNOS system generation. The System Configuration utility that DNOS provides for modifying a DNOS system dynamically does not comprehend communications devices. To add or modify a communications device, you must reexecute the DNOS System Generation utility.



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Figure 1-1. DNCS Generation

1.2.1 Generating DNCS Boards and Ports

Since DNCS depends on DNOS to perform input/output (I/O) for the system, support for DNCS communications must be specified during the generation of DNOS. DNOS generation treats DNCS ports as channels on communication devices and assigns them communication device names of the form CMxx.

DNCS uses two types of boards — physical and virtual. Physical boards consist of the four channel communications controller (FCCC) and the bit-oriented/character-oriented/asynchronous interface module (BCAIM).

NOTE

In the January 1983 Texas Instruments *Computer Family Catalog* (and all subsequent catalogs), the names for several communications products have been changed. BCAIM appears in the catalog as CP501. The X.21 BCAIM appears in the catalog as CP502. FCCC appears in the catalog as CP503. This manual uses the common abbreviations for these communications products. All references to BCAIM encompass either the CP501 or the CP502 communications processor. In correspondence or formal discussions concerning system configurations, refer to the catalog names.

The FCCC provides four channels for communication with SNA hosts, 914A terminals, or packet switched networks (PSNs). The BCAIM provides one channel for communication with SNA hosts. The BCAIM does not support PSN links. The virtual board is a DNCS software construct that provides interprocess communications (DNCS IPC) channels for the SNA Emulators, the operator interface, and the RFT subsystem.

- FCCC board — You can define up to four channels for each FCCC board. An FCCC channel supports links to the following:
 - SNA host — Requires one channel for each host circuit. Define host access channels with the COMA or SDLC protocol. The COMA protocol means that the line control discipline (LCD) is not part of the device service routine (DSR). DNCS will download the LCD to the board. The SDLC protocol means that the LCD runs as part of the DSR. Section 2 discusses the advantages of each.
 - 914A terminals — Requires one channel for each 914A circuit. Define 914A access channels with the COMA protocol.
 - PSN — Requires one channel for each PSN circuit. Define PSN access channels with the COMA protocol.
- BCAIM board — For communications with SNA host. The BCAIM board is a communications device with only one channel. Define the host access channel with the SDLC protocol. The SDLC protocol means that the LCD runs as part of the DSR.

- Virtual board — You can define all of the logical channels that you need on one virtual board. The virtual board requires two channels for each of the following:
 - SNA Emulators — Two channels for each SNA Emulator circuit. The first channel is the master channel that the DNCS nucleus uses. The second channel is the slave channel that the SNA Emulators use. Define SNA Emulator access channels with the CMNS protocol.
 - CI operator interface — Two channels for the operator interface circuit (XCI). Since all DNCS stations share access to CI, only one CI interface is required. Therefore, you only need to define two channels. The first channel is the master channel that the DNCS nucleus uses. The second channel is the slave channel that the operator interface uses. Define operator interface access channels with the CMNS protocol.
 - RFT Subsystem — Two channels for each RFT subsystem circuit. The first channel is the master channel that the DNCS nucleus uses. The second channel is the slave channel that the X.25 RFT subsystem uses. Define RFT subsystem access channels with the CMNS protocol.

The CMNS protocol means that the LCD is for a logical circuit and runs as part of the CMNS DSR.

If you need to add another DNCS communications channel (port), you must regenerate your DNOS system to include the new channel. After you regenerate your DNOS system to include the new channel, you can use the DNCS Command Interpreter (CI) to add the new channel dynamically. Once you define the new channel to DNCS and test it, you can reexecute the DNCS System Generation utility to install the new channel permanently.

1.2.2 Defining Communications DSR Components

To build the DNOS communications device service routines (DSRs), you must specify the number of sessions for each channel that uses the CMNS protocol. These sessions correspond to either the number of DNCS stations or the number of X.25 RFT concurrent file transfers.

- SNA Emulators — The pair of channels used for SNA Emulators can support up to 255 sessions. The number of sessions required depends on the number of Emulator stations in the configuration. This number appears on the SNA circuit planning form (see Appendix A) in the blank for step 7. Include all of the Emulator stations (type VDT2, PTR3, PTR1, KSR, V914, P914, PSC2, PSC3, and SVQ) in your configuration and add a couple of extra stations to allow for future expansion.
- Operator interface — The pair of channels that the operator interface uses supports only one station. Since every station on the system can access the operator interface, one session suffices for all users. Therefore, you should always specify only one session for the operator interface.
- X.25 RFT subsystem — The pair of channels that the RFT subsystem uses can support up to 255 sessions. The number you specify depends on the number of concurrent transfers you require. This number appears on the RFT subsystem planning form (see Appendix A) in the blank for step 25.

Once you plan your DNCS configuration, you build the configuration using the DNCS System Generation utility, and you verify it using the Verify DNCS Configuration utility. Configurations reside on disk files. You can modify a configuration at any time by reexecuting the DNCS generation utility.

1.3 NAMING CONVENTIONS, KEYWORDS, AND NOTATION

Table 1-1 indicates the naming convention used for each component type throughout this manual. With few exceptions, DNCS requires only that its component names consist of no more than eight alphanumeric characters and begin with a letter. The component names must not duplicate keywords used by DNCS CI, listed in Table 1-2. However, the adoption of naming conventions can aid in expressing relationships among components, identifying their types, and interpreting DNCS CI displays.

Table 1-1. Naming Conventions

Component	Naming Convention
Node	The letters DEX followed by two digits to identify an individual node (for example, DEX03).
PU	The name supplied by the SNA host administrator (for example, CDAANR). For the Display Node command to function properly, the PU name must consist of six characters and begin with C.
LU	Two digits to identify the individual LU (for example, 08). Although some LU numbers in the examples have leading zeros, they are decimal numbers. In DNCS, LU numbers range from 01 through 255. The Display Node command requires a special LU name derived from the PU name. This special LU name is obtained by changing the initial C of the PU name to an L and appending the hexadecimal equivalent of the LU number. For example, if CDAANR is the PU name, LDAANR0A is the special LU name for LU number 10.
VPU	The letter V followed by an identifying number (for example, V01).
Application	The name supplied by the SNA host administrator (for example, ALEIMA). Application synonyms are the common names for the application systems, followed by a digit to identify the VPU providing access where necessary (for example, IMS2).
Board	The letter B followed by a unique two-digit number (for example, B01).
Port	The letter P, followed by two digits to identify the board providing the port, followed by a digit to identify the port on the board. (For example, P021 is the first port on board B02.)

Table 1-1. Naming Conventions (Continued)

Component	Naming Convention																								
Circuit	The letter C followed by two digits to identify the individual circuit (for example, C01).																								
Resource	According to resource type, as follows:																								
	<table border="1"> <thead> <tr> <th>Type</th> <th>Station Name</th> </tr> </thead> <tbody> <tr> <td>V911</td> <td>The DNOS station name, consisting of the letters ST followed by two digits to identify the individual station (for example, ST01). This convention is chosen for user convenience, not because of any requirement of DNOS or DNCS.</td> </tr> <tr> <td>PTR1</td> <td>The DNOS printer name consisting of the letters LP followed by two digits to identify the individual printer (for example, LP02). This convention is chosen for user convenience, not because of any requirement of DNOS or DNCS.</td> </tr> <tr> <td>PTR3</td> <td>Same as PTR1.</td> </tr> <tr> <td>KSR</td> <td>The letters KSR followed by a digit to identify the sequentially numbered KSR stations.</td> </tr> <tr> <td>PSC2</td> <td>The letters VPSC followed by a digit to identify the individual station (for example, VPSC1). The V labels the station as an SLU.T2 station, a PSC program emulating a video display terminal (VDT) device.</td> </tr> <tr> <td>PSC3</td> <td>The letters PPSC followed by a digit to identify the individual station (for example, PPSC1). The first P labels the station as an SLU.T3 station, a PSC program emulating a printer device.</td> </tr> <tr> <td>V914</td> <td>The characters V914A followed by a digit to identify the individual station (for example, V914A1).</td> </tr> <tr> <td>P914</td> <td>The characters P914P followed by a digit to identify the individual station (for example, P914P1).</td> </tr> <tr> <td>DTE</td> <td>The letters DTE followed by two digits to identify the DTE.</td> </tr> <tr> <td>SVQ</td> <td>The letters SVQ followed by a digit to identify the sequentially numbered SVQ stations.</td> </tr> <tr> <td>CIRES</td> <td>The letters XCI followed by 1. For Emulator access to DNCS CI, DNCS requires only one station of type CIRES. The poll address for this station must be 1.</td> </tr> </tbody> </table>	Type	Station Name	V911	The DNOS station name, consisting of the letters ST followed by two digits to identify the individual station (for example, ST01). This convention is chosen for user convenience, not because of any requirement of DNOS or DNCS.	PTR1	The DNOS printer name consisting of the letters LP followed by two digits to identify the individual printer (for example, LP02). This convention is chosen for user convenience, not because of any requirement of DNOS or DNCS.	PTR3	Same as PTR1.	KSR	The letters KSR followed by a digit to identify the sequentially numbered KSR stations.	PSC2	The letters VPSC followed by a digit to identify the individual station (for example, VPSC1). The V labels the station as an SLU.T2 station, a PSC program emulating a video display terminal (VDT) device.	PSC3	The letters PPSC followed by a digit to identify the individual station (for example, PPSC1). The first P labels the station as an SLU.T3 station, a PSC program emulating a printer device.	V914	The characters V914A followed by a digit to identify the individual station (for example, V914A1).	P914	The characters P914P followed by a digit to identify the individual station (for example, P914P1).	DTE	The letters DTE followed by two digits to identify the DTE.	SVQ	The letters SVQ followed by a digit to identify the sequentially numbered SVQ stations.	CIRES	The letters XCI followed by 1. For Emulator access to DNCS CI, DNCS requires only one station of type CIRES. The poll address for this station must be 1.
Type	Station Name																								
V911	The DNOS station name, consisting of the letters ST followed by two digits to identify the individual station (for example, ST01). This convention is chosen for user convenience, not because of any requirement of DNOS or DNCS.																								
PTR1	The DNOS printer name consisting of the letters LP followed by two digits to identify the individual printer (for example, LP02). This convention is chosen for user convenience, not because of any requirement of DNOS or DNCS.																								
PTR3	Same as PTR1.																								
KSR	The letters KSR followed by a digit to identify the sequentially numbered KSR stations.																								
PSC2	The letters VPSC followed by a digit to identify the individual station (for example, VPSC1). The V labels the station as an SLU.T2 station, a PSC program emulating a video display terminal (VDT) device.																								
PSC3	The letters PPSC followed by a digit to identify the individual station (for example, PPSC1). The first P labels the station as an SLU.T3 station, a PSC program emulating a printer device.																								
V914	The characters V914A followed by a digit to identify the individual station (for example, V914A1).																								
P914	The characters P914P followed by a digit to identify the individual station (for example, P914P1).																								
DTE	The letters DTE followed by two digits to identify the DTE.																								
SVQ	The letters SVQ followed by a digit to identify the sequentially numbered SVQ stations.																								
CIRES	The letters XCI followed by 1. For Emulator access to DNCS CI, DNCS requires only one station of type CIRES. The poll address for this station must be 1.																								

Table 1-1. Naming Conventions (Continued)

Component	Naming Convention
Mode	The letter M followed by the station name and (if required) a digit to identify the individual mode for the station (for example, MVPSC2).
Virtual Circuit	The letters VC followed by two or more decimal digits to identify the virtual circuit under the DTE.

Table 1-2. DNCS Keywords

A	DIS	IF	NODE	START
ACT	DISPLAY	II	NONE	STATS
ACTSTS	DUMMY	INACT	P	STOP
ADR	DL	INACTF	PGM	SUP
ALL	DOWNLOAD	INACTI	PORTS	SUPPRESS
ASSIGN	DWNLD	INACTR	PSW	TERMS
B	E	IR	PU	TMO
BACKUP	ERR	LINES	R	TO
BOARDS	EVERY	LOGOFF	RCIN	TRACEOFF
CANCEL	F	LOGON	RCOUT	TRACEON
CCNS	FCCCS	LU	RESTART	V
CIR	FILE	MODIFY	RESTORE	VARY
CIRCUITS	FLASH	N	S	VDU
COLS	H	NEGPOLL	SID	X
CUG	HARDCOPY	NEWPSW	SITE	X25
D	HELP	NEWS	SITES	X25NA
DEST	ID	NEWSIT	SKIP	

1.4 DNCS CONFIGURATION DEFINITION

You build a new DNCS configuration in three stages. Each stage is concerned with different components of the system and the following different viewpoints of its structure:

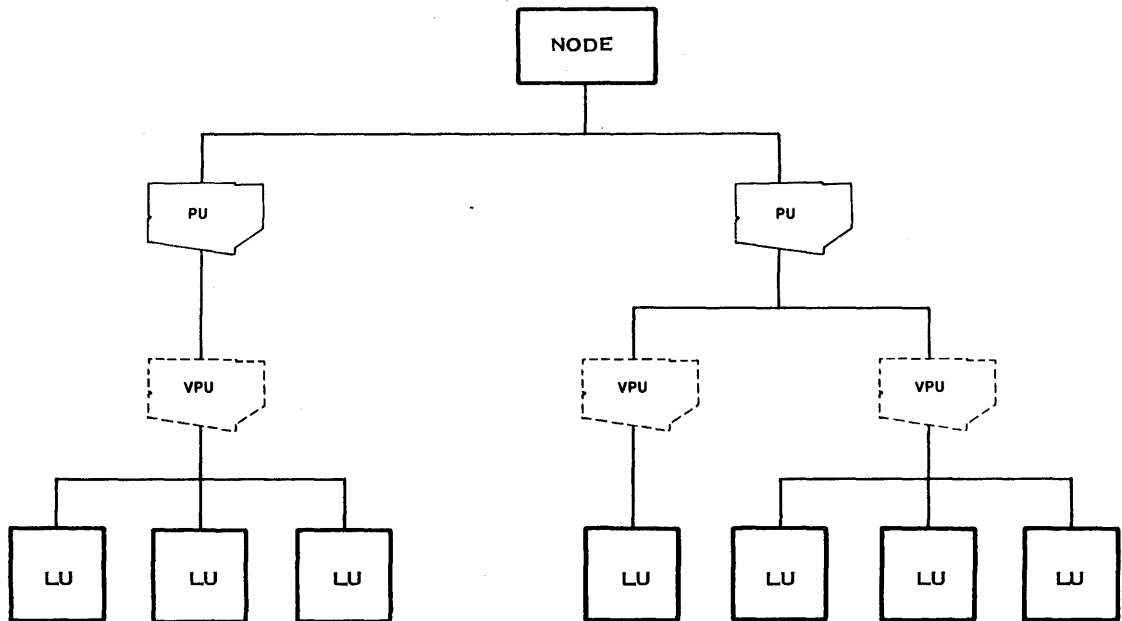
- In the first stage, you determine the network environment of the system. The components of the network hierarchy required depend on the type of product that you are defining. This stage defines the system from the viewpoint of the SNA host or PSN.
 - SNA — The node, physical units (PUs), applications, logical units (LUs), and—as an intermediary between PUs and LUs—virtual physical units (VPUs)
 - X.25 — Subsystem and sites.
- In the second stage, you determine the communication environment of the system by defining the communication boards and ports used to transport data through the system. This stage defines the system from the viewpoint of DNOS.
- In the third stage, you determine the user environment of the system by defining the way it can be accessed. This stage defines the system from the viewpoint of the user. The components you define in this phase depend on the product that you are defining.
 - SNA user access components include circuits, resources (stations), and modes.
 - X.25 user access components include circuits, DTEs, and virtual circuits.

Each stage defines a hierarchy of components. In these hierarchies, lower-level components belong to higher-level components in a many-to-one relationship. For instance, the SNA network hierarchy joins to the user access hierarchy at the node level, where stations use LUs to obtain access to host applications. The communication and user access hierarchies join at the port level, where circuits connect to the boards that deliver their data.

1.4.1 Defining the Network Hierarchy

The following paragraphs explain how to define the network hierarchy. Paragraph 1.4.1.1 describes how to define the SNA network hierarchy. Paragraph 1.4.1.2 describes how to define the X.25 network hierarchy.

1.4.1.1 Defining the SNA Hierarchy. The SNA hierarchy has the node at the top, one or more PUs below the node, one or more VPUs below each PU, and one or more LUs below each VPU. The VPU divides the PU into session domains, allowing multiple concurrent sessions with applications through one PU (one per VPU). Under each VPU, the LUs can be either dedicated to particular applications or assigned to the LU pool. While dedicated LUs provide continuous access to specific applications at specific stations, pooled LUs allow any station to access any of the applications available on the SNA host. Figure 1-2 depicts the SNA hierarchy.

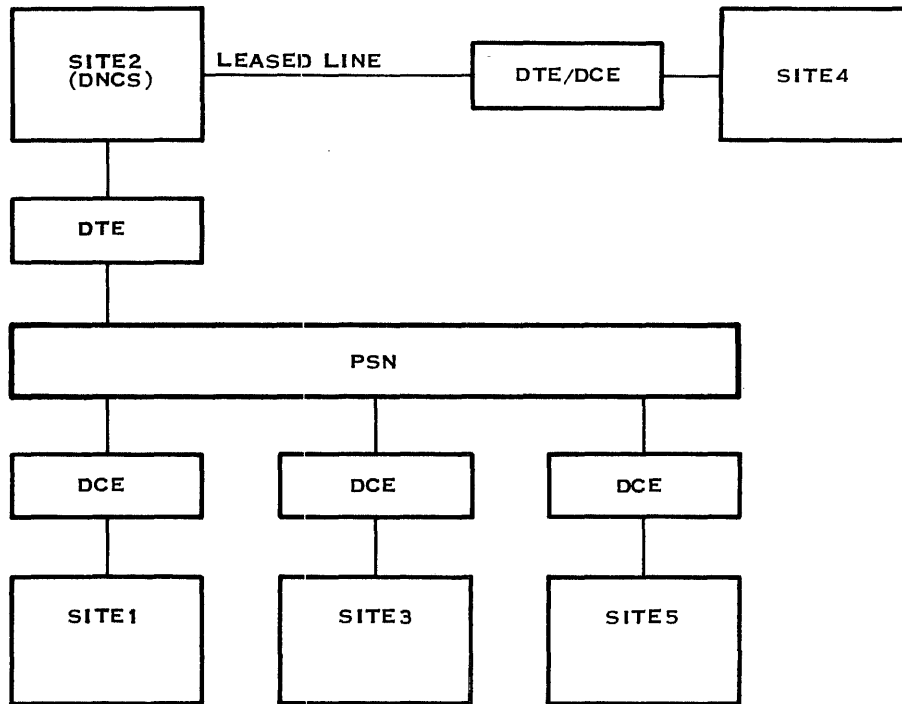


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Figure 1-2. SNA Hierarchy

In the SNA stage of building the configuration, the node is the first component defined, followed by the first PU. The first VPU is defined immediately after the first PU and before any other PUs that belong to the node. The VPU definition includes a list of pooled LUs used to access applications through the VPU. As a user convenience, DNCS synonyms for commonly accessed applications can be defined below each VPU. The application synonym stands for the VPU name and the name of the application that the SNA host uses.

1.4.1.2 Defining the X.25 Network Hierarchy. The X.25 network hierarchy has the RFT subsystem at the top and one or more sites on the subsystem. The X.25 network hierarchy defines the remote sites that your configuration can access. You must define the RFT subsystem to enable the interconnection of your DNCS X.25 RFT sites to the packet switched network (PSN). Figure 1-3 shows how sites relate to the PSN.



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Figure 1-3. RFT Overview

Figure 1-3 shows the DNCS X.25 RFT node as site 2, a virtual circuit connected by leased line as site 4, and remote sites 1, 3, and 5 connected through a PSN. You define each of these sites to DNCS, including one and only one local site (your X.25 node).

The natural order of the DNCS System Generation utility follows the hierarchy:

- RFT subsystem (highest) — When adding the RFT subsystem to your DNCS configuration, you name your RFT subsystem and identify it as type RFT. You also specify the following parameters:
 - Sites table size — To identify the maximum number of remote sites with which your site can communicate through the PSN.
 - Multiplexing — To identify the transport level multiplexing factor.
 - Concurrent transfers — To identify the maximum number of concurrent transfers that your site can handle. This number is also the number of sessions that you specify when creating the DNCS IPC channels for RFT.
 - File record length — To identify the maximum physical record length for file transfer.

- **Site (lowest)** — When adding an RFT site to your DNCS configuration, you must define each site with which you intend to communicate. You must specify the following parameters:
 - **Site name** — Identifies the site to your RFT.
 - **Site location** — Tells whether the site is local or connected through the PSN or leased line.
 - **Network name** — Identifies the PSN or leased line to your RFT.
 - **Reverse charging called** — Indicates that you can call a remote site collect through the PSN.
 - **Reverse charging calling** — Indicates that your RFT can accept a collect call from a remote site through the PSN.
 - **Closed user group** — Indicates whether the site is defined as a closed user group to the PSN.

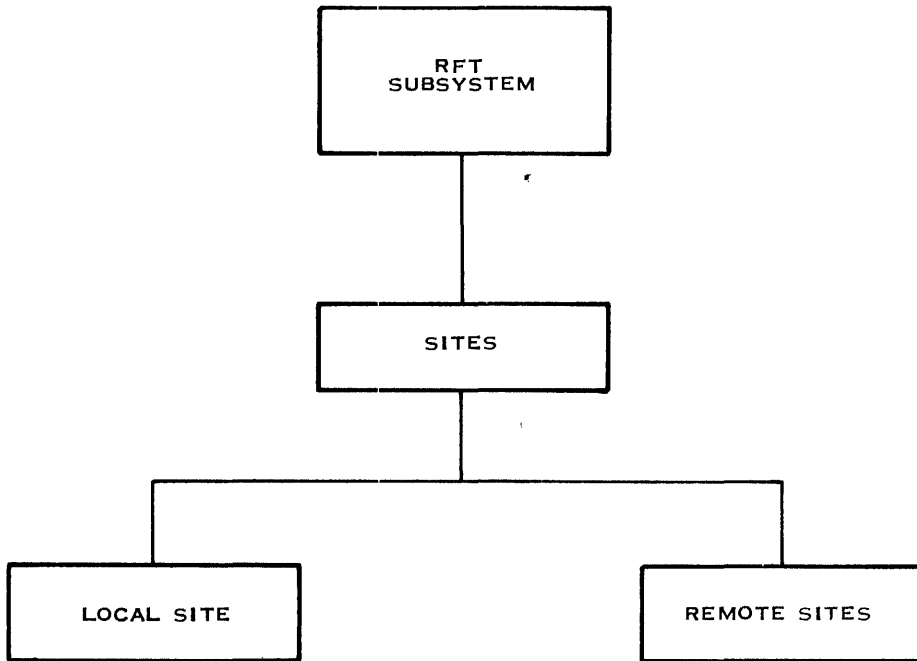
Most of these parameters are required only for remote sites with which RFT communicates through the PSN. Figure 1-4 shows the RFT hierarchy from the viewpoint of the DNCS System Generation utility.

When defining sites to DNCS, you only specify whether it is the local site or a remote site. Later, when defining the user access hierarchy, you include one DTE as the link to the PSN and up to 300 virtual circuits for remote sites accessed directly through X.25 RFT.

1.4.2 Defining the Communication Hierarchy

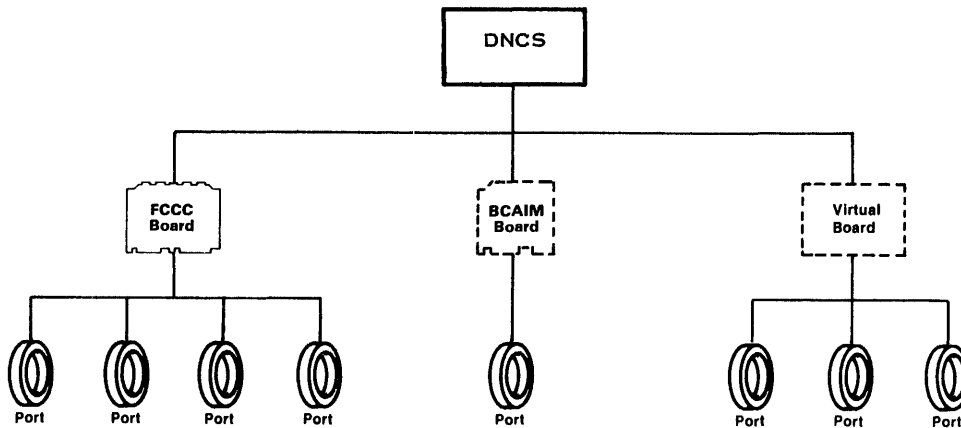
The following paragraphs describe how to define the communication hierarchy. The communication hierarchy has the node at the top, one or more boards below the node, and one or more ports below each board. The ports provide the operating system interface to circuits in the access hierarchy. As a precaution against failure of a board or port, DNCS allows each port to have one or more backup ports. When the original (primary) port fails, DNCS CI commands allow the backup port to operate the circuit.

Besides the physical circuits used for remote stations, DNCS also provides logical circuits for use with the SNA Emulators and DNCS CI. These logical circuits use DNCS IPC to deliver information to their stations. DNOS identifies them with communications device names, the same as physical circuits. In the DNCS communication hierarchy, the ports for the logical circuits can reside together on a single virtual board or separately on individual virtual boards. Figure 1-5 depicts the communication hierarchy.



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Figure 1-4. RFT Hierarchy



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Figure 1-5. Communication Hierarchy

In the communication stage of the configuration process, boards are defined first, followed by ports. Since each board provides one or more ports, the natural order defines all the ports for one board before going to the next board.

1.4.3 Defining the User Access Hierarchy

The following paragraphs explain how to define the user access hierarchy. Paragraph 1.4.3.1 describes how to define the SNA user access hierarchy, and paragraph 1.4.3.2 describes how to define the X.25 user access hierarchy.

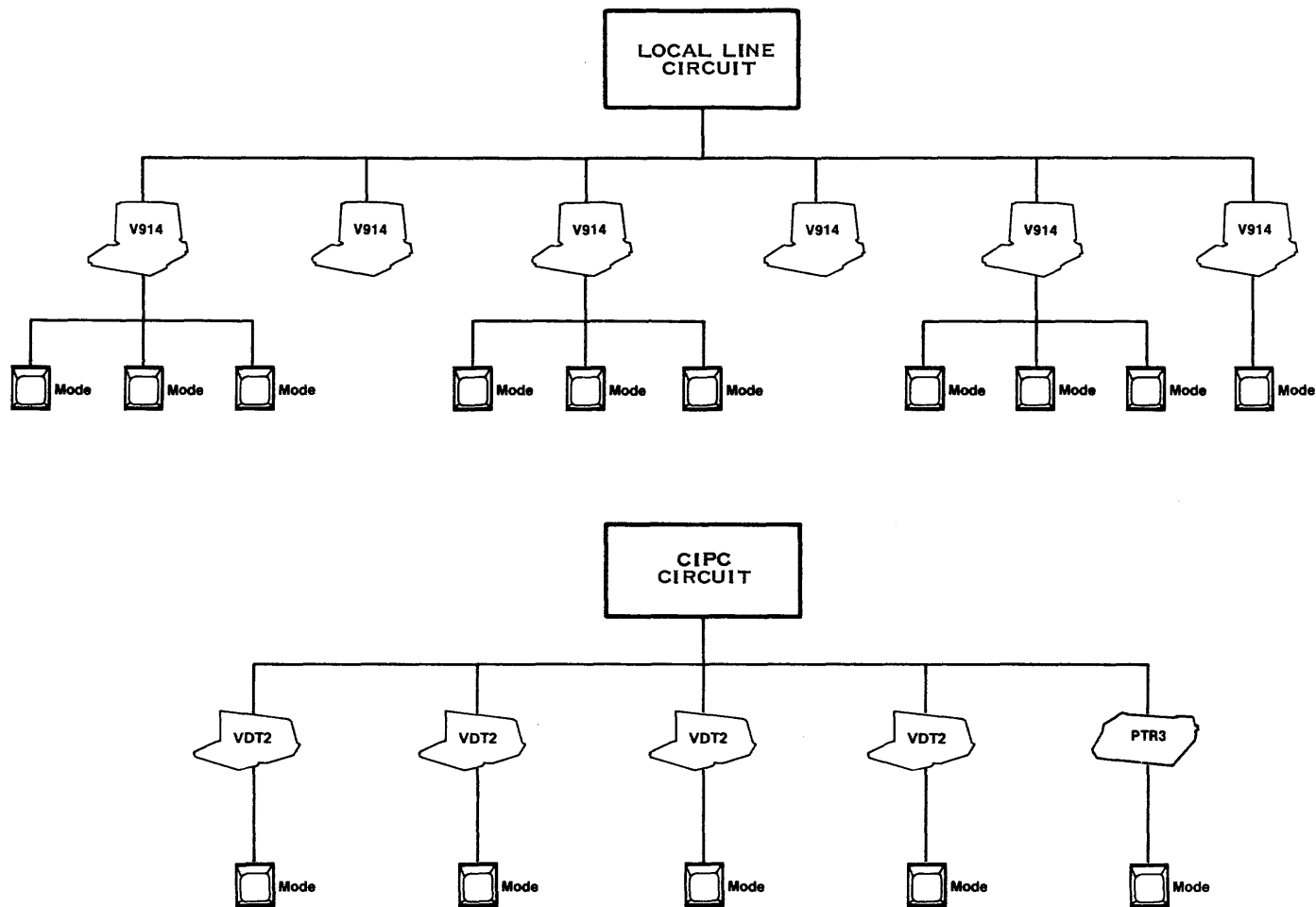
1.4.3.1 Defining the SNA User Access Hierarchy. The user access hierarchy consists of all the circuits, stations, and modes available to SNA. Except for the link line to the host, each circuit has one or more stations. Each station can have sessions with all applications for which it can obtain LUs, as discussed for the first stage. DNCS allows dedicating LUs to specific stations or placing them in a pool for all stations to share. The station can access the network at any time when using a dedicated LU, but the station must contend with other stations for the use of pooled LUs.

A mode definition allows automatic access to an application at a station. Unless the station has a dedicated LU, the attempted access does not necessarily succeed. However, including an application synonym in the mode definition causes DNCS to attempt the session whenever the station operator uses a mode key or its equivalent. Figure 1-6 depicts the user access hierarchy for a single circuit. Most systems have more than one circuit.

In the user access hierarchy, circuits are defined first, followed by stations and modes. In the natural order, the first circuit is defined after the last port. After the first circuit definition comes the definition of the first station on that circuit and then the first mode for that station. (V914 stations can have three modes.) Once all the station's modes are defined, the utility progresses to the next station under the first circuit and then to its mode or modes. When all stations on a circuit are completely defined down to the mode level, the DNCS generation utility displays prompts for the next circuit. Since the user access hierarchy completes the configuration, the DNCS generation utility displays the termination screen after the last circuit is defined.

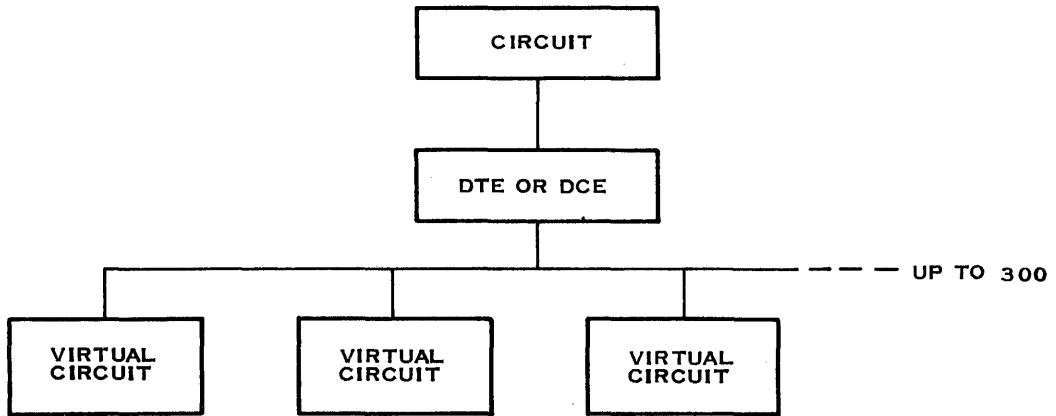
1.4.3.2 Defining the X.25 User Access Hierarchy. The user access hierarchy consists of all the circuits, DTEs, and virtual circuits on your system. The user access hierarchy defines the resources of your configuration to the network. Each link to a PSN or leased line uses an X.25 circuit, a DTE, and one or more virtual circuits that serve as logical channels to the PSN. For a private leased line network, you define one DCE to identify the link to the remote DTEs and one or more virtual circuits. DNCS provides several types of virtual circuits, including switched. However, a switched virtual circuit is not a dial up line, but is logically switched. Transactions to and from a switched virtual circuit contain the destination address. Permanent virtual circuits are logical channels dedicated to particular remote sites. Both types are connected via the same dedicated line.

Figure 1-7 shows the user access hierarchy for an X.25 circuit.



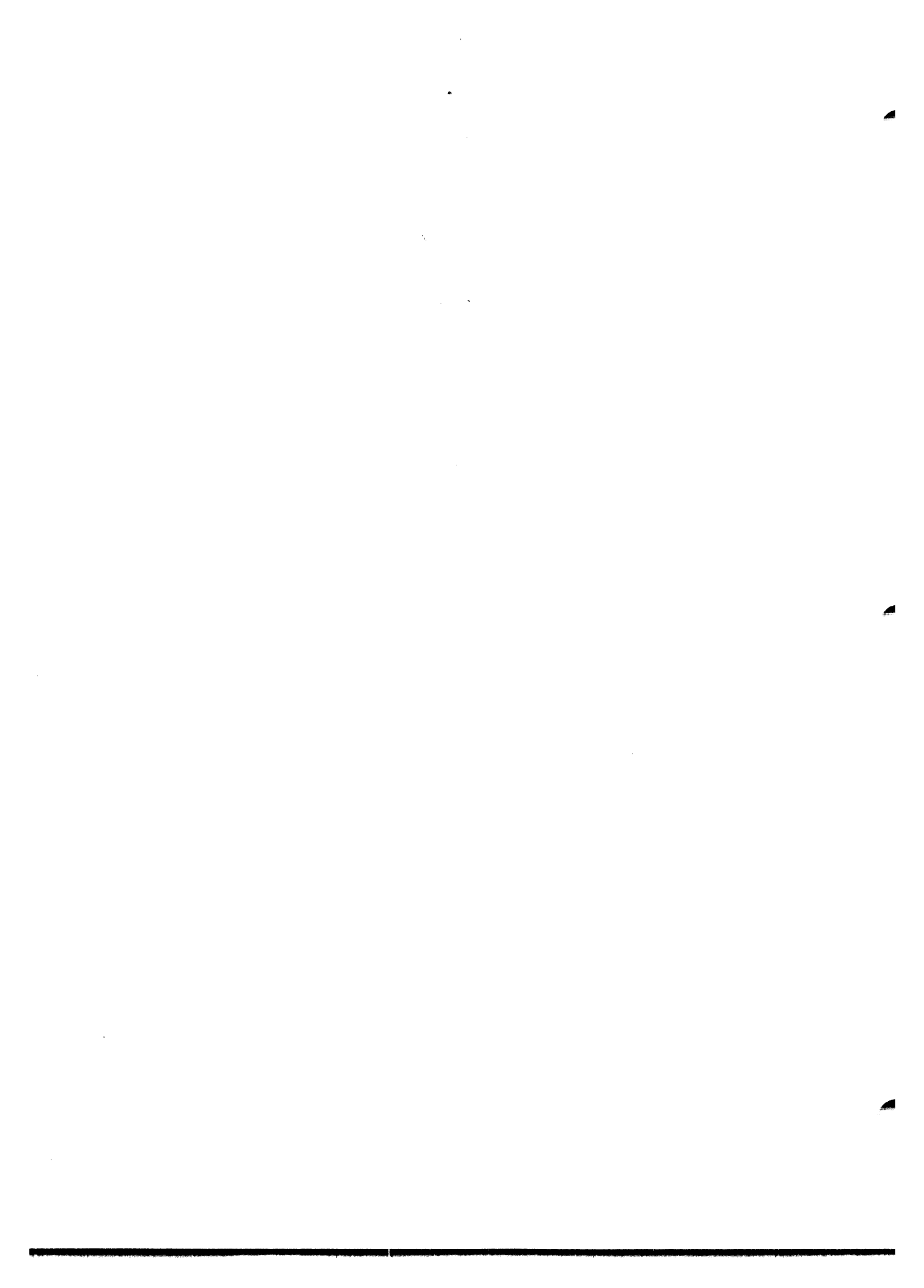
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Figure 1-6. SNA User Access Hierarchy



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Figure 1-7. X.25 User Access Hierarchy



Planning a DNCS Configuration

2.1 INTRODUCTION

Planning a DNCS configuration involves deciding which resources to make available to DNCS and recording their characteristics on DNCS planning forms. Appendix A provides one copy of each of the following forms:

- **SNA Circuit** — Provides a place to record information about one SNA circuit, up to eight stations, and up to three modes per station.
- **X.25 Circuit** — Provides a place to record information about one X.25 circuit, the data terminal equipment (DTE) or data communications equipment (DCE) unit assigned to the circuit, and virtual circuits.
- **Boards** — Provides a place to record information for up to seven boards and up to four ports per board.
- **Node** — Provides a place to record information for the node, one physical unit (PU), up to four virtual physical units (VPUs), and up to five applications per VPU.
- **RFT Software Subsystem** — Provides a place to record information about the Remote File Transfer (RFT) software subsystem and each site defined.

The following paragraphs deal with three stages of planning a DNCS configuration. The user access and network hierarchy stages contain separate discussions for SNA and X.25 since each use different types of resources. The first planning stage concerns the user access hierarchy of the configuration and the circuits that exchange data with DNCS. The second stage identifies the boards and ports that DNOS uses to move data through DNCS. The third stage defines the network environment for the DNCS system.

Section 4 explains how to generate a new SNA configuration and tailor an existing configuration to match the completed planning forms. Section 5 explains how to generate a new X.25 configuration and tailor an existing configuration to match the completed planning forms. These sections demonstrate the use of the DNCS generation utility with example configurations and planning forms. Section 6 provides additional examples of DNCS configurations, including some that contain both SNA and X.25 circuits. Reading these discussions (and experimenting with the DNCS generation utility) can provide a valuable perspective on the planning process.

2.2 PLANNING THE USER ACCESS HIERARCHY

The user access hierarchy includes circuits and the resources allocated to each circuit. The resources allocated depend on the type of circuit. The following paragraphs describe the components of the user access hierarchy and describe how to complete the circuit planning forms. They present the planning requirements for the user access hierarchy for SNA and X.25 circuits individually since each use different types of resources.

2.2.1 Components of the User Access Hierarchy

The user access hierarchy consists of circuits, resources (stations), modes, DTEs, and virtual circuits.

Circuits connect the DNCS nucleus to the SNA host or the packet switched network (PSN) and to the stations in the DNCS configuration. Circuits can be either physical or logical circuits.

- Physical circuits are attached to boards mounted in the chassis of the TI computer. They can be locally attached to configurations of 914A terminals or remotely attached (by modem) to remote 914As. Also, physical circuits provide the connection between the TI computer and an SNA host (IBM mainframe) or a PSN. One PSN physical circuit provides the connection to remote virtual circuits and the PSN.
- Logical circuits do not require physical lines or communications hardware, since they pass data among tasks running on the same TI computer. They are pairs of DNCS IPC channels to the SNA Emulators, RFT, or DNCS CI.

Each circuit has a protocol that determines the format of the data it transports. Table 2-1 lists the circuit protocols SNA uses, along with brief descriptions of the circuits that use them. Table 2-3 lists the circuit protocols X.25 RFT uses, along with brief descriptions of the circuits that use them. These tables also recommend maximum numbers of reads and retries for circuits using each protocol. The maximum number of reads is how many I/O requests the DNCS nucleus can have waiting for the circuit. This value should be the smallest number that provides acceptable terminal response time and efficient memory utilization. The maximum number of retries is how many times the DNCS nucleus attempts to get a response before placing the circuit in an error state.

Resources are the points on circuits where users access the system. Most SNA resources are stations. Display stations can transmit and receive data. Printer stations can only receive. In particular, DNCS supports the station types listed in Table 2-2. Types V914, V911, PSC2, KSR, and SVQ are display stations. Types P914, PTR1, PTR3, and PSC3 are printer stations. Type CIRES is a special station type for the operator interface. Each station receives a station ID (poll address) to identify it on its circuit. The assignment of station IDs depends on the type of circuit.

Mode definitions allow stations to access applications automatically and to obtain dedicated logical units (LUs). The automatic access capability depends on the station type.

DTEs define the DTE or DCE on an X.25 circuit. One and only one DTE or DCE represents the physical link to the PSN or remote computers for each X.25 circuit. Each DTE or DCE can have one or more virtual circuits.

Virtual circuits identify logical channels that share an X.25 circuit and DTE/DCE. Several virtual circuits can use a single physical communications link. DNCS supports several types of virtual circuits.

2.2.2 Planning the SNA User Access Hierarchy

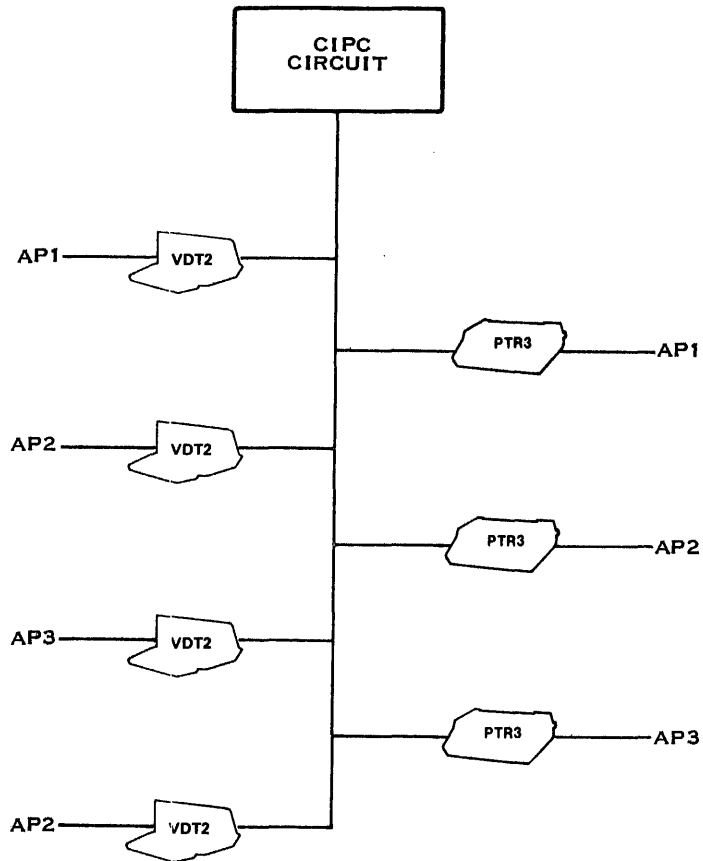
This stage identifies SNA circuits and the resources and modes available to each circuit. It results in a completed circuit planning form for each circuit in the configuration. Appendix A contains blank planning forms. Section 4 contains examples of completed planning forms for SNA circuits. The SNA circuit form describes the circuit protocol, the types of resources it serves, and the modes defined for the stations. You assign resources to a circuit to identify the stations your configuration supports. To enable automatic access to a host application from one of these stations, you assign mode definitions to each station.

2.2.2.1 Example Configurations of SNA Circuits, Resources, and Modes. Figure 2-1 shows a simple example of the configuration of SNA circuits, stations, and modes. The logical circuit shown has four VDT2 Emulators and three PTR3 Emulators. Each of three applications (AP1, AP2, and AP3) has its own printer and can be accessed at any of the terminals. Even though the VDT2 Emulators have only one mode each, their users can access any of the applications by using the appropriate log-on procedure.

Figure 2-2 provides a more complicated example, which shows a local line circuit with four 914A terminals and three attached printers. Each terminal has three modes defined, one for each of three applications; and each application has its own printer.

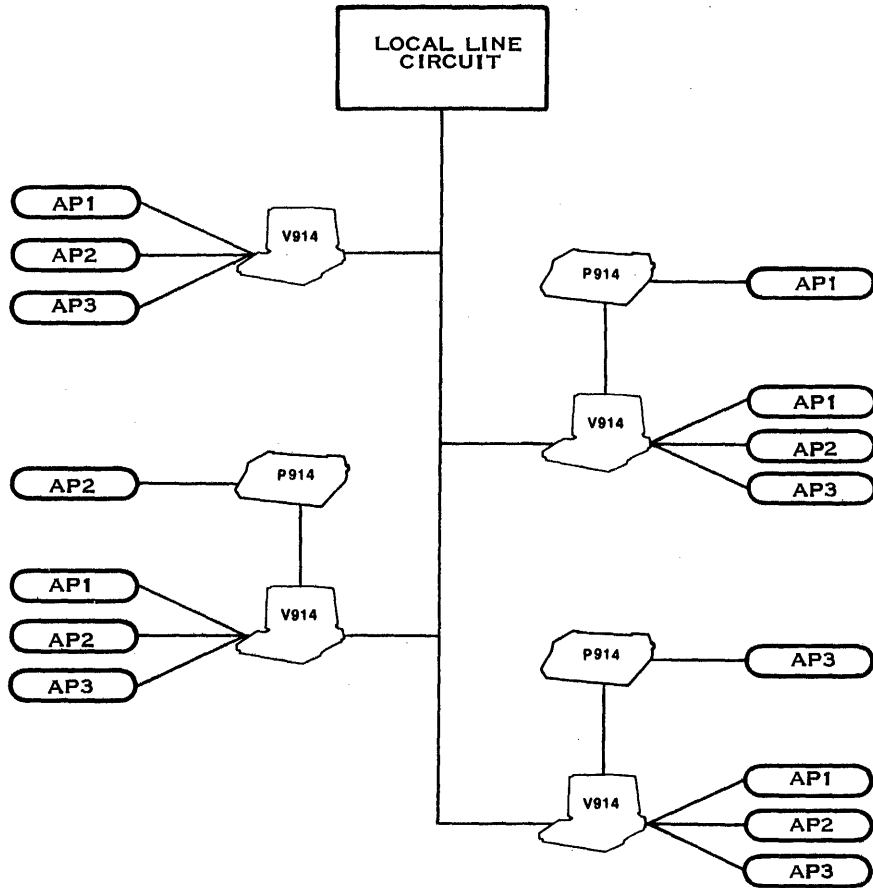
Table 2-1. SNA Circuit Protocols and Error Thresholds

Circuit Protocol	Recommended		Description
	Max Reads	Max Retries	
SDLC	10	0	Synchronous data link control. Used for the link to the host mainframe.
RDTC	7	5	Remote distributed terminal controller. Used for remotely attached (by modem) 914A terminals and their printers.
LL9600	7	5	Local line at 9600 bits per second (bps). Used for locally attached (9600-bps line) 914A terminals and their printers.
LL4800	7	5	Local line at 4800 bps. Used for locally attached (4800-bps line) 914A terminals and their printers.
CIPC	3	0	Communications IPC (DNCS IPC). Used for all SNA Emulators, including PSC programs.
CI	3	0	Command Interpreter. Used for DNCS CI access through the XCI command.



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Figure 2-1. Example One: CIPC Circuit with DNCS SNA Emulators



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Figure 2-2. Example Two: Local Line with 914A Terminals and 810 Printers

Table 2-2. SNA Resource Types

Type	Description
V911	911, 915, or 940 terminal controlled by the VDT2 Emulator and serving as an SLU.T2 display station
PTR1	Printer or DNOS disk file controlled by the PTR1 Emulator and serving as an SLU.T1 printer station
PTR3	Printer or DNOS disk file controlled by the PTR3 Emulator and serving as an SLU.T3 printer station
V914	914A terminal serving as an SLU.T2 display station
P914	Printer attached to a 914A terminal serving as an SLU.T1 printer station
PSC2	PSC program serving as an SLU.T2 display station
PSC3	PSC program serving as an SLU.T3 printer station
KSR	Hard copy or VDT device controlled by the KSR Emulator and serving as an SLU.T1 display station.
CIRES	Operator interface
SVQ	Utility serving as an SLU.T1 display station.

2.2.2.2 Planning Procedure for SNA Circuits, Resources, and Modes. To define your configuration of circuits, resources, and modes and to complete your SNA circuit planning forms, follow these steps:

1. Begin by choosing a unique name for the configuration you plan to build. The configuration name consists of up to eight characters (letters and numerals) beginning with a letter. Record the configuration name on the planning form for each circuit you define.
2. Determine the circuits needed for your configuration as follows:
 - One circuit for the link to each SNA host (to be further defined in a later step)
 - One circuit for each local (or RDTC) line supported, up to sixteen 914A terminals (type V914) and attached printers (type P914) per line (no more than 10 terminals for best response time)
 - One circuit for all DNCS SNA Emulators (types V911, PTR1, PTR3, PSC2, PSC3, KSR, and SVQ)
 - One optional circuit for the operator interface (type CIRES) to provide access to DNCS CI through the XCI command

3. Select a unique name for each circuit and record it on the SNA circuit planning form. Circuit names have up to eight characters, beginning with a letter.
4. Choose the appropriate line protocol for each circuit (Table 2-1) and record it on the planning form. If your configuration uses an X.25 circuit as the link to a SNA host through a PSN, you define the circuit as an X.25 circuit (see paragraph 2.2.3). Section 6 contains an example configuration that uses an X.25 circuit to communicate with a SNA host.
5. If troubleshooting procedures suggest changes to the maximum numbers of reads or retries for a circuit, assign the new number to the fault-prone circuit and record it on the form. Otherwise, use the values from Table 2-1. NRZI is an SDLC option that must match the configuration of the network control program (NCP) of the SNA host. Enter yes in response to the NRZI prompt to use this option. If your circuit is switched, you can request automatic answering of incoming calls by entering yes in response to the auto answer prompt.
6. Skip the blank for the primary port assignment. You provide this information in a later step.
7. Determine how many stations of each type you want on each circuit and record the number on the planning form. Use additional forms if necessary. Do not mix V914 and P914 stations with Emulator stations. Give separate circuits to the link line to the host and the operator interface.
 - SDLC circuit — No stations. The SDLC circuit serves as the link line to the SNA host.
 - X.25 circuit — No stations. An X.25 circuit can serve as the link line to a packet switched network (PSN) that connects to the SNA host. Use the X.25 circuit planning form to define a remote permanent virtual circuit specifying SNA as the user. Paragraph 2.2.3 describes the required specifications.
 - RDTC, LL9600, and LL4800 circuits — Up to 16 V914 display stations and attached P914 printer stations. However, for best performance, limit the number of stations to, at most, 10 of each type.
 - CIPC circuit — Up to 255 V911, PTR1, PTR3, PSC2, PSC3, KSR, and SVQ resources in any combination. The number of stations you assign to the CIPC circuit is also the number of sessions that you specify when creating the DNCS IPC channels for the SNA Emulators.
 - CI circuit — One CIRES resource, the operator interface station.

If you plan to add stations to the configuration, identify them now. By planning for future expansion, you can avoid having to regenerate DNCS when new equipment becomes available. Each extra resource you include uses additional memory. The *DNCS Nucleus Release Information* describes how much memory each resource type uses. The SNA circuit planning form lists all resources as stations. When defining stations with the DNCS generation utility, you use the Add Resource command.

8. Choose a name for each station, up to eight characters beginning with a letter, and record it on the planning form.
9. For each station, record its type on the planning form. Refer to Table 2-2, if necessary.
10. If the station has an associated printer or printer Emulator to service its PRINT key, enter the name of the printer station on the planning form under Assoc. Printer. (The CIRES station cannot have an associated printer.)
11. Assign a poll address to each station and record it on the planning form. The range of poll addresses depends on the circuit protocol, as follows:
 - CIPC circuits have poll addresses that range from 1 through 255. DNCS does not enforce any further restrictions on Emulator poll addresses, but this manual uses the following subranges:

Poll Address	Station Type
01-100	V911 (VDT2) display stations
101-200	PTR1 and PTR3 printer stations and KSR and SVQ stations
201-255	PSC2 and PSC3 stations

- RDTC, LL9600, and LL4800 circuits have poll addresses that range from 64 through 95. *The poll address for a P914 printer attached to a V914 display station must be 16 greater than the poll address for the display station.* For example, the printer attached to station 65 has 81 as its poll address. DNCS requires the following subranges:

Station ID	Station Type
64-79	V914 display stations (914A terminals)
80-95	P914 printer stations attached to the V914 display stations

- The CI circuit has only the CIRES station, the DNCS operator interface. *DNCS requires this station to have 01 as its poll address.*

12. Identify the modes for each station according to type, choose a unique name for each mode, and record it on the planning form. Each mode definition can provide automatic access to a host application and can dedicate an LU for use by the station. (If you do not define modes for their stations, users have to use the Log On command every time they wish to access applications. Also, without mode definitions, their stations must compete for pool LUs.) In later steps you record the DNCS application synonym and LU number.

Type	Automatic Access Method
V911	The mode key at a VDT2 Emulator station starts (or resumes) a session with the application specified in the mode definition. Without a mode defined, the mode key simply clears the screen.
PTR3	Activating DNCS starts a session between the PTR3 station and the application specified in its mode definition. However, the user must execute the XPTR3 command to associate an output device with the station before it can begin receiving data. Defining an application for automatic access allows the station to obtain a pool LU and allows DNCS to reestablish a lost session without operator intervention.
PTR1	See PTR3.
V914	A mode key on a 914A terminal starts (or resumes) a session with an application specified in the mode definition. The 914A terminal has three mode keys, allowing the user to select the application by pressing one of the keys.
P914	Activating DNCS automatically starts a session between each printer attached to a 914A terminal and the application specified in its mode definition.
PSC2	A flag set in the station address specified in the Open call indicates whether to establish a session with the application specified in the mode definition. If the program does not set this flag, it must transmit a Log On command to DNCS CI.
PSC3	See PSC2.
KSR	The start-of-message end-of-message sequence at an KSR Emulator station starts (or resumes) a session with the application specified in the mode definition. Without a mode defined, this sequence only clears the screen.
SVQ	SVQ allows you to queue transactions to the host for later transmission. To use SVQ with a SNA host, include SVQ as a resource under your SNA circuit and assign it a mode definition to access the desired application automatically. SVQ allows only one mode definition. <i>An SVQ resource must use a dedicated LU.</i>
CIRES	Does not have a mode key, but can have one mode definition.

13. Skip the blanks for application synonym, VPU, and LU. You record that information in a later step.

2.2.3 Planning the X.25 User Access Hierarchy

This stage identifies the X.25 circuit and the logical circuit required for RFT. It results in a completed circuit planning form for each circuit in the configuration. Appendix A contains blank planning forms. Section 5 contains examples of completed planning forms for X.25 RFT circuits. The X.25 circuit form describes the circuit protocol, the DTE/DCE, and the virtual circuits. For each X.25 circuit, you define one and only one DTE (or DCE) and the virtual circuits assigned to each DTE. Each DTE represents a physical link to a packet switched network (PSN). You must define each local subscription address for each circuit.

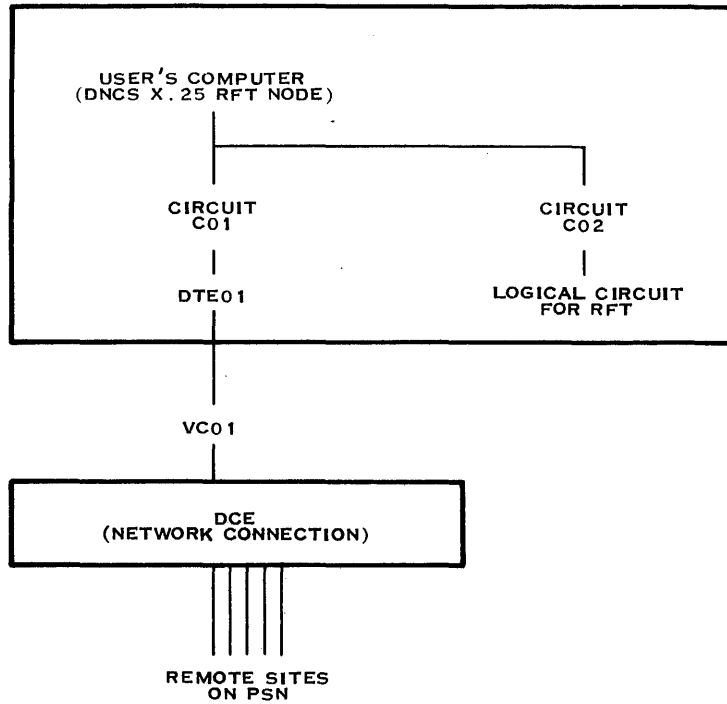
The X.25 user access hierarchy identifies the resources available on your configuration to the public PSN or remote computers on a private network. One of the required resources is the logical circuit for the RFT subsystem. This circuit uses the RFT protocol and has no stations. When you plan the X.25 network hierarchy, you define your RFT subsystem, which identifies the remote resources available to your configuration.

2.2.3.1 Example Configurations of X.25 and RFT Circuits. The simplest X.25 RFT configuration supports one physical link to a PSN that includes a DTE and virtual circuit. Figure 2-3 shows a DNCS configuration containing a logical circuit for the RFT subsystem and one X.25 circuit for the link to the PSN. The X.25 circuit (C01) uses DTE01 and one virtual circuit (VC01). The DTE definition includes the network name and local address, which the PSN uses to identify your DTE. To access your DTE through a PSN, a remote computer identifies your virtual circuit. If only one remote computer needs to access your DTE, you need only one virtual circuit for it. If several remote computers need to access your DTE, additional virtual circuits can provide concurrent transfers from different remote sites along the same link.

Figure 2-4 shows a more complicated X.25 RFT configuration containing an X.25 circuit with two virtual circuits. In this example configuration, the X.25 circuit C01 uses DTE01, which has the virtual circuits VC01 and VC02. Two remote computers can concurrently access DTE01.

Another way to provide greater access through a PSN is to use two DTEs, which requires the purchase of an additional physical line. Example four contains the X.25 circuit C02 (and DTE02), which connects to the same PSN as C01. Usually, only one remote computer uses a DTE with only one virtual circuit.

Example four contains four other circuits. The X.25 circuit C03 uses DTE03 and has one switched virtual circuit. C04 uses DCE04 to connect several permanent virtual circuits. C05 is the logical channel DNCS requires for the RFT subsystem. Finally, C06 is the logical channel to DNCS CI. If you wish to use DNCS CI to help identify problems and better control your resources, you must include this circuit.



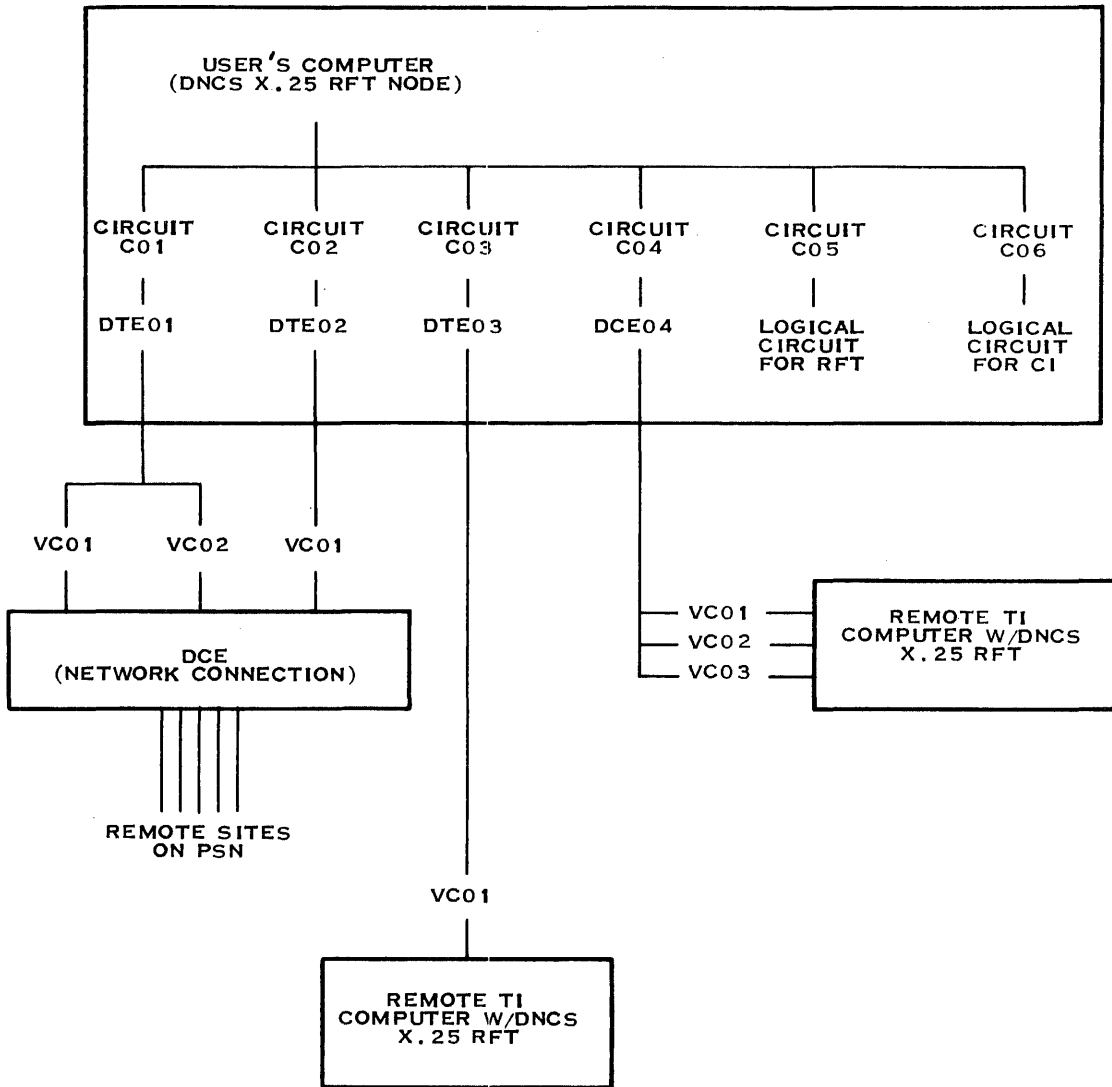
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Figure 2-3. Example Three: Minimum X.25 Configuration

Table 2-3 lists the circuits that a DNCS X.25 configuration uses. An X.25 circuit uses the LAP protocol and is a physical circuit. The RFT subsystem requires a logical circuit using the RFT protocol. The CI interface is not required, but in order to include it, you must define a logical circuit using the CI protocol.

Table 2-3. X.25 and RFT Circuit Protocols and Error Thresholds

Circuit Protocol	Recommended		Description
	Max Reads	Max Retries	
CI	3	0	Command Interpreter. Used for DNCS CI access through the XCI command.
LAP	7	0	Used to access packet switched networks (PSNs) through X.25.
RFT	3	0	Remote file transfer DNCS IPC circuit. Used to access the RFT process.



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Figure 2-4. Example Four: Multiple X.25 Circuits

2.2.3.2 Planning Procedure for Configurations of X.25 and RFT Circuits. To define your configuration of circuits, DTEs, and virtual circuits and to complete your planning forms, follow these steps:

1. Begin by choosing a unique name for the configuration you plan to build. The configuration name consists of up to eight characters (letters and numerals) beginning with a letter. Record the configuration name on the planning form for each circuit you define.
2. Determine the circuits needed for your configuration as follows:
 - One circuit for each link to the PSN or leased line (use the X.25 circuit planning form)
 - One circuit for RFT with no stations (use the RFT circuit portion of the RFT software subsystem planning form)
 - One circuit for the operator interface (type CIRES) to provide access to DNCS CI through the XCI command (use the SNA circuit planning form and the procedures in paragraph 2.2.2.2)
3. Select a unique name for each circuit and record it on the planning form. Circuit names have up to eight characters, beginning with a letter.
4. Choose the appropriate line protocol for each circuit (Table 2-3) and record it on the planning form.
5. If troubleshooting procedures suggest changes to the maximum numbers of reads or retries for a circuit, assign the new number to the fault-prone circuit and record it on the form. Otherwise, use the values from Table 2-3.
6. Skip the blank for the primary port assignment. You provide this information in a later step.
7. For each X.25 circuit, determine whether you need a DTE or DCE and the number of virtual circuits. If the circuit connects to a public PSN, use DTE. If the circuit connects to a leased line, one of the circuits on the network should be a DCE, and the other should be a DTE.
 - X.25 circuit — The X.25 circuit serves as the link to the packet switched network (PSN).
 - CI circuit — One CIRES station, a logical channel to the operator interface. The CI circuit has only the CIRES station, the DNCS operator interface. DNCS requires this station to have 01 as its poll address.
 - RFT circuit — The RFT circuit, a logical channel to DNCS. The RFT circuit does not support resources.
8. For each X.25 circuit, assign a DTE name. This is a character string of 1 to 8 characters beginning with a letter. For example, DTE01, DTE02. Only one DTE or DCE can be assigned to an X.25 circuit.

9. Tabulate the parameters of each DTE as follows. (Network subscription parameters are marked with a pair of asterisks (**). Your entry for these parameters must correspond with values allocated by the network authority.)

Network Name **

Is the network to which the DTE is connected. Valid responses are DATANET1, DATAPAC, DATEXP, PSS, TELENET, TRANSPAC, and TYMNET. Any other name appearing here will be assumed to represent a leased-line connection.

Local Address **

Is the DTE address, a character string of up to 15 decimal digits (subscription parameter). For a leased line, any arbitrary address can be specified.

Reception Packet Length **

Is the maximum length of received packets, in bytes (subscription parameter). DNCS X.25 RFT allows lengths up to 270 bytes (128 bytes default). However, most public networks support a maximum of 256 bytes.

Reception Window **

Is the reception anticipation factor (subscription parameter). DNCS X.25 RFT currently allows anticipation factors of up to 7. The default value is 2.

Transmission Packet Length **

Is the maximum length of transmitted packets, in bytes (subscription parameter). DNCS X.25 RFT allows lengths up to 270 bytes. The default value is 128. However, most public networks support a maximum of 256 bytes.

Transmission Window **

Is the transmission anticipation factor (subscription parameter). DNCS X.25 RFT currently allows anticipation factors of up to 7. The default value is 2.

Time-out on Calls

Is the time-out on call request packets, in seconds, up to 1000 (200 default).

Time-out on Packets

Is the time-out on other service packets, in seconds, up to 1000 (180 default).

Anticipation (K) **

Is the frame-level anticipation factor (subscription parameter). The default is 7.

Maximum Number of Retries (N2) **

Is the frame-level maximum number of retries value (subscription parameter). The default is 10.

Time-out (T1) **

Is the frame-level time-out, in seconds (subscription parameter). The default is 3.

DTE or DCE

Is entity type. For use on a PSN, enter DTE. For use on a leased line, the system at one end must be a DTE and the system at the other end must be a DCE. The default is 1 for DTE.

10. Determine how many virtual circuits this X.25 circuit requires. Record this number on the planning forms for future reference. The DNCS generation utility does not prompt you for this parameter. The planning form provides this blank as a quick reference.
11. Now define the virtual circuits for each DTE, as follows:

Virtual Circuit Name

Is the name of a virtual circuit, a character string of 1 to 8 characters starting with a letter. For example, VC01, VC02.

Virtual Circuit Number **

Is the virtual circuit number, 0 to 4095. Virtual circuit numbers need only be unique on any given X.25 circuit. For use on leased lines, both ends must assign the same virtual circuit numbers.

Virtual Circuit Type **

Is the type of virtual circuit. Valid responses are PE (permanent virtual circuit), RO (switched virtual circuit, receive only), SR (switched virtual circuit, send and receive), and SO (switched virtual circuit, send only). PE is the recommended virtual circuit type for use on leased lines. If you use type PE, you must also complete the following two steps.

12. If you are defining a PE virtual circuit, supply the following parameter:

Remote DTE Address **

Is the remote DTE address associated with a permanent virtual circuit (it has no meaning for switched virtual circuits).

13. Finally, if you are defining a PE virtual circuit, supply the following parameter:

Virtual Circuit User

Is the application name associated with a permanent virtual circuit (it has no meaning for switched virtual circuits). Valid responses are RFT and SNA. Where two X.25 RFT sites use a permanent virtual circuit between them, the application name is RFT. If you use the circuit for X.25 access to a SNA host, the application name is SNA.

2.3 PLANNING THE COMMUNICATIONS HIERARCHY

This stage identifies the boards and ports that DNOS uses to move data through the DNCS configuration. It results in a completed board planning form (see Appendix A) and provides the port definition on the circuit planning form for use with the DNCS generation utility. The form describes up to seven boards with four ports on each board.

2.3.1 Components of the Communications Hierarchy

The communications hierarchy consists of boards and ports. Each board provides line control discipline (LCD) for the circuits attached to its port. Each port can have a backup to handle its circuit in case of failure.

Boards provide the interface between DNCS and the circuits it controls. To DNOS, boards provide channels for I/O to devices on circuits. To DNCS, they provide ports where circuits can be attached. DNOS accesses the ports by communication device names of the form CMxx, assigned during DNOS generation. DNCS recognizes the following board types:

- Four channel communications controller (FCCC) — Installed in the chassis of the 990 computer, the FCCC board provides four channels for use by the 990 computer. Code downloaded from the 990 computer to the FCCC memory provides control, error detection, data formatting, and temporary data storage for up to four circuits. The total line speeds of circuits attached to the FCCC cannot exceed 19,200 bps, the bandwidth of the FCCC. (This might require adjustments to modems used for SDLC and RDTC protocols.) DNCS supports up to eight FCCC boards for a total of 32 circuits.
- Bit-oriented/character-oriented/asynchronous interface module (BCAIM) — Installed in the chassis of the 990 computer, the BCAIM board provides only one channel for use by the 990 computer. An individual BCAIM can handle line speeds up to 9,600 bps. Where two or more BCAIMs reside in a 990 computer, the line speed is limited by the interrupt handling capability of the computer. DNCS also supports the X.21 BCAIM and treats it the same as a BCAIM. DNCS supports up to eight BCAIM boards for a total of eight circuits. This release of DNCS does not support BCAIM boards for X.25 circuits. X.25 circuits must use FCCC ports.
- Virtual — A DNCS software construct used with the SNA Emulators, RFT, and the DNCS operator interface. The virtual boards use a special form of interprocess communication (IPC) called DNCS IPC. It allows DNOS to treat the logical circuits used for the Emulators, RFT, and operator interface the same as physical circuits. Each port on the virtual board uses a pair of DNCS IPC channels (defined during DNOS system generation).

Line control discipline (LCD) is the method used to pass data across a circuit. The host LCD supports the SDLC protocol used to exchange data with the SNA host or the LAP protocol to exchange data with the PSN. The local LCD supports all three 914A protocols—RDTC, LL9600, and LL4800. DNCS IPC serves as the LCD for all logical circuits and supports the CI, CIPC, and RFT protocols.

- **Local LCD** — Cannot support the LL9600 or LL4800 protocols on FCCC channel zero. It can, however, support RDTC on any of the four channels. This means that for maximum flexibility any RDTC should be configured on channel zero whenever possible, allowing any of the 914A protocols on the other channels. The 19,200 bps bandwidth of the FCCC further limits the possible combinations of local protocols. For example, one FCCC board could support one line at 9600 bps and two at 4800 bps but could not support a fourth line.
- **Host LCD** — Often leaves spare channels on the FCCC, since typical configurations include only one SDLC line to the host. If you require additional download LCDs, you may want to use the device service routine (DSR) version of SDLC to allow other channels to be downloaded.
- **DNCS IPC LCD** — Allows a logical circuit to serve either the operator interface, RFT, or up to 255 Emulators. The operator interface must be on a separate circuit from the Emulators and RFT. Since the virtual board supports only virtual circuits, no other stations can be attached. Although nothing prevents a configuration from having multiple Emulator circuits, no advantage results from having them.

DNCS supports download (COMA) and DSR (SDLC) versions of LCD for the FCCC. If you use a download LCD, you load the CPU less than when you use the DSR version. The download LCD does not require the CPU to handle communications functions such as polling or answering polls. If you use download LCD, the processor on the FCCC handles these functions. The DSR version of LCD requires the CPU to handle these functions because the DSR LCD resides in the main memory of the TI computer. You can use the DSR version of LCD for a BCAIM or FCCC board. The BCAIM costs less than the FCCC because the BCAIM board does not have the hardware needed to support a download LCD. You cannot use download LCD for a BCAIM board.

DNCS supports the download and DSR versions for the LCDs shown in Table 2-4.

Table 2-4. Supported LCD Versions

LCD	Downloaded (FCCC only)	DSR (BCAIM and FCCC)
SDLC	Yes	Yes
LAP	Yes	No
LLC	Yes	No

Notes:
SDLC — Synchronous Data Link Control
LAP — Link Access Protocol
LLC — Local Line Control

The FCCC is the only board that can support a download LCD. Due to memory restrictions and DNCS implementation, you can only download one LCD at a time on a single FCCC. When running the SDLC DSR with a download LCD, the first port named during DNCS generation must reference a CMxx of type COMA. Within these restrictions, it is possible to have the following LCDs operating through a single FCCC:

- SDLC — download only
- LLC download and SDLC DSR
- LAP download and SDLC DSR

Ports provide the interface between DNOS and the circuits in the configuration. Each board provides one or more ports where the appropriate type of circuit can be attached. (An FCCC board provides up to four ports; a BCAIM provides only one port; and virtual board provides any number.) No circuit can send or receive data unless attached to a port. DNCS makes a distinction between ports and circuits to allow circuits to be moved from board to board. DNOS treats each port as a separate communications device, passing data through the port without regard to the circuit attached. DNCS keeps track of port/circuit assignments and which stations each circuit serves. Each port configured for DNCS needs a name, a logical unit number (LUNO), and (optionally) a backup port.

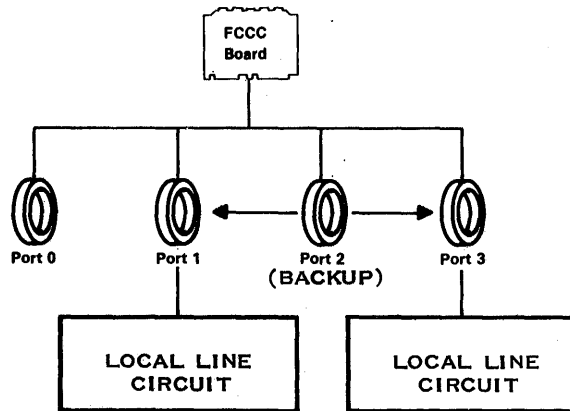
Backup ports provide standby capacity for port failure. When a board or port can no longer handle traffic on a circuit, the backup port can take over. DNCS allows each port to have one backup. You can use DNCS CI commands to perform the changeover to the backup port and allow reassignment of ports and backups while DNCS stays active. Thus, the backup assigned in DNCS generation is only the initial backup for the port. Not every port requires a backup, and the same backup can be assigned to more than one port.

If an active port fails for some reason, its circuit has to be deactivated until the port is repaired or a backup is found. The port you use as the backup port must use the same protocol as the port backed up. However, when a board fails, all of its ports become inactive. Thus, it is probably safer to have the primary and backup ports on separate boards. This arrangement requires special handling, since XDGU assumes that the port and its backup belong to the same board. Therefore, the backup assignment should not be included in the definition of the port. Instead, the backup assignment should be made using the Assign Port command each time DNCS is activated.

2.3.2 Example Configurations of Boards and Ports

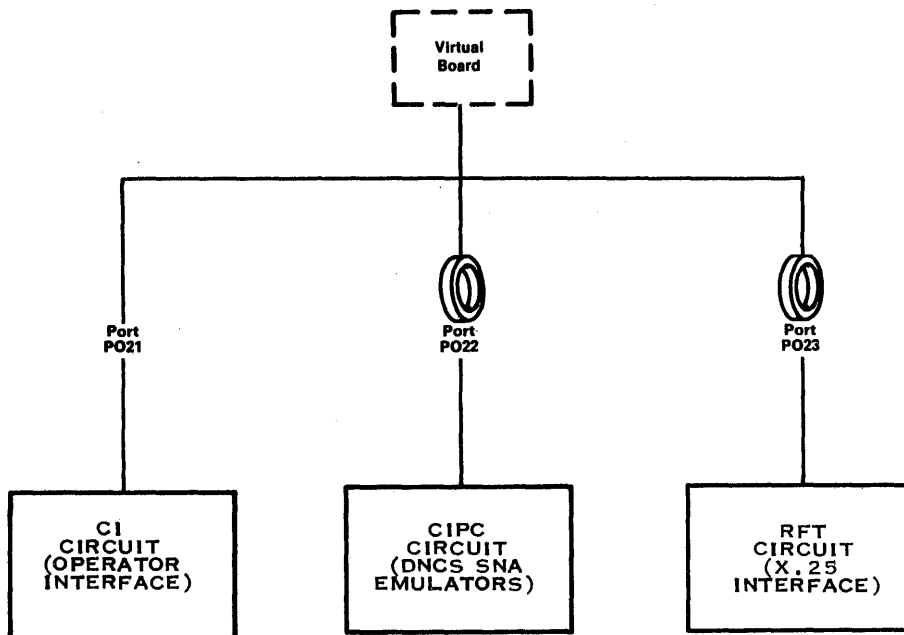
Figure 2-5 depicts a simple configuration with one FCCC board, two ports to run SNA local lines, one port to back up the other two, and one free port.

The configuration shown in Figure 2-6 includes three ports on a virtual board. One provides a port for the CI circuit used for the operator interface. The second provides a port for the CIPC circuit used for the SNA Emulators. The third provides a port for the RFT circuit used with X.25 circuits.



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Figure 2-5. Example Five: FCCC Board with Two SNA Local Lines and a Backup



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Figure 2-6. Example Six: Virtual Board with XCI Circuit, Emulator Circuit, and RFT Circuit

2.3.3 Planning Procedure for Boards and Ports

To define your communications configuration and complete your board planning forms, follow these steps, resuming the definition process from the first stage (paragraph 2.2):

14. Record the name of your configuration on a board planning form.
15. Determine the boards needed for the circuits in your configuration, and record the LCD and circuit protocol for each.

LCD	Circuit Protocols Supported
Host	SDLC and LAP
Local	RDTG, LL9600, and LL4800
DNCS IPC	CIPC, CI, and RFT

- 914A circuits use local LCD, even when they are remotely attached using RDTG. Each FCCC board can support up to four 914A circuits in any combination, provided that no LL9600 or LL4800 circuit is configured on port zero and that the total line speeds do not exceed the 19,200 bps bandwidth of the FCCC. For example, you can assign three circuits using LL4800 protocol and one circuit using RDTG protocol to the same board, provided the RDTG circuit occupies port zero and its line speed does not exceed 4800 bps (the remainder of the FCCC bandwidth).
 - Emulator circuits and the operator interface use DNCS IPC LCD. The virtual board for the Emulators uses CIPC protocol. The XCI circuit uses CI protocol. You can use the same virtual board for the Emulators, operator interface, and RFT.
 - The SDLC circuit to the SNA host uses host LCD. Because an FCCC board cannot provide both download SDLC and local line protocols, the host circuit may require a separate board. However, configurations with multiple SNA hosts (or multiple PUs from the same host) can have up to four host circuits on the same board.
 - The X.25 circuit to the PSN or remote virtual circuits uses LAP LCD. Because an FCCC board cannot provide both LAP and local line protocols, the X.25 circuit requires a separate board. However, configurations with multiple circuits can have up to four X.25 circuits on the same board.
16. Provide a name for each board to identify it in DNCS CI commands and displays. You might want to include the board type or LCD in the name, since DNCS does not make a formal distinction between board types. Record the board names and their types (FCCC, BCAIM, or virtual) on the planning form.
 17. Identify the ports on each board. Each FCCC board provides up to four ports. Each BCAIM has only one port. Each virtual board provides one or more ports. Choose a name for each port to identify it in DNCS CI commands and displays. Port names can have up to eight characters, beginning with a letter. Record the name of each port on the planning form.

NOTE

If you are using multiple protocols on an FCCC (DSR and download), the first port you identify on the board must reference the download protocol. Note that this does not mean that the first physical port (CMxx) must be a download protocol. It means that the first port entered during the DNCS generation process must be a download protocol, even though it can be the fourth physical port on the board.

18. Refer to the circuit planning forms and assign each circuit to a port.
19. Assign a LUNO to each port. The LUNO should be unshared, local to the DNCS job, and in the range > 31 through > FF. Record the LUNO as a hexadecimal number by preceding it with > . Also, record the port's CMxx device name from the DNOS configuration.
20. For each port, determine the need for a backup port. If you decide that a port needs a backup, add the backup port to the list for an FCCC that has spare capacity and runs the appropriate LCD. If no FCCC running the required LCD has the capacity you need, consider using another FCCC as a backup by leaving it available for downloading with any LCD needed. Ports on virtual boards do not require backups.

Record each backup port assignment on the planning form. The initial assignment is not critical, since you can alter the assignment with DNCS CI commands whenever DNCS is active. However, since any assignment you make through DNCS CI stays in effect only while DNCS remains active, you should record an initial backup assignment whenever possible.

NOTE

The current version of XDGU requires that a port and its backup reside on the same board. Although this arrangement protects against the failure of an individual port on a board, it does not offer any safeguard against board failure. If you desire a port to have its backup on a separate board, you should not define the backup as part of the DNCS configuration. Instead, after you activate DNCS, use the DNCS CI Assign Port command to make the backup assignment.

21. Count the primary ports and backup ports and record the numbers on the planning form. Make sure the number of primary ports matches the number of circuits defined.

2.4 PLANNING THE NETWORK HIERARCHY

This stage defines the network environment for the DNCS system, including both SNA and X.25 configurations. Since the requirements for SNA differ from the requirements for an X.25 network, the following paragraphs present each separately.

2.4.1 Planning the SNA Hierarchy

This stage defines the SNA environment for the DNCS system. It results in a completed node planning form (see Appendix A) for each PU and fills in the information skipped on the circuit planning forms.

2.4.1.1 Components of the SNA Hierarchy. The SNA hierarchy consists of a node, PUs, LUs, VPUs, and applications. Planning for these components also involves decisions on guaranteeing access to applications and requiring user identification before access.

Node is an SNA term for a point on a network with a set of predefined physical and logical characteristics. The physical view of your system concerns its data transportation resources and requirements such as line protocol and transmission speed. The logical view concerns user access to applications elsewhere in the network. To the SNA host, your node contains one or more PUs and many LUs.

*PU*s correspond to points in the network where the SNA host delivers and receives data. Though DNCS supports configurations with multiple PUs, most DNCS configurations have only one PU. For each PU, DNCS needs to know the access method used for communicating with the application host system and the name of the circuit initially employed. DNCS recognizes two SNA access methods: the virtual telecommunications access method (VTAM), and access from an X.25 packet switched network (PSN).

*LU*s allow sessions between stations and applications running on the SNA host computer. Before it can log on to an application, a station must obtain an LU. Furthermore, the LU must have an SLU type appropriate for that station. DNCS supports the following SLU types:

- Type 1 — Defines a station using SNA character string controls to format information transmitted by a Write command. DNCS station types P914, PTR1, KSR, CIRE5, and SVQ require LUs of this type.
- Type 2 — Defines a display station using 3270 orders to format data exchanged with the host using 3270 commands. DNCS station types V914, V911, and PSC2 require LUs of this type.
- Type 3 — Defines a printer station using 3270 orders to format data transmitted by 3270 commands. DNCS station types PTR3 and PSC3 require LUs of this type.

VPUs limit the number of sessions any station can have at once. A station can have a separate session with a host application through each VPU in the configuration. Before the station can establish a session it must obtain an LU from one of the VPUs. All of the LUs in the configuration must be distributed among the VPUs, and all of the LUs that belong to a VPU pool must have the same SLU type. Within each VPU, some LUs can be reserved for the use of certain stations and the rest pooled for sharing among all stations. Since there are typically fewer LUs in the pool than stations in the configuration, not all stations can have access to their applications at once. DNCS assigns pool LUs to stations on a first-come-first-served basis but reserves the dedicated LUs for the exclusive use of the stations that own them.

Applications are software systems running on the SNA host computer. DNCS users establish sessions with applications by logging on at their stations in one of three ways:

- By entering the name of the VPU, a period, and the name of the application
- By entering a DNCS application synonym that stands for the VPU.< application> combination
- By using a mode key

DNCS allows users to establish sessions with any applications available at the host, provided they can obtain the necessary LUs. It is not essential to define the host applications in the DNCS configuration. However, as a convenience, DNCS allows you to define synonyms for selected VPU/application combinations. Entering the synonym is equivalent to entering the name of the VPU and application.

Guaranteed access to an application results from including an LU in the mode definition for a station. A station cannot have a session with a host application unless it can obtain an LU. The LU can be dedicated to the station or belong to a pool:

- **Dedicated LUs** — If the station has a dedicated LU, that LU is always available for the exclusive use of that station. To dedicate an LU to a station, you must include the LU in the mode definition for the station. You must not include the same LU in any of the VPU pools or in the mode definition for any other station.
- **Pool LUs** — If the station does not have a dedicated LU, it competes with other stations for LUs in the pool. To allow a station to use a pool LU from one of the VPUs in the configuration, the station's mode definition must specify use of LU zero. (LU zero denotes the use of a pool LU.)

A station with a dedicated LU can still obtain pool LUs from VPUs other than the one providing the dedicated LU. DNCS uses the dedicated LU any time the station attempts to access an application through that VPU. It cannot use the dedicated LU to access applications through any other VPU.

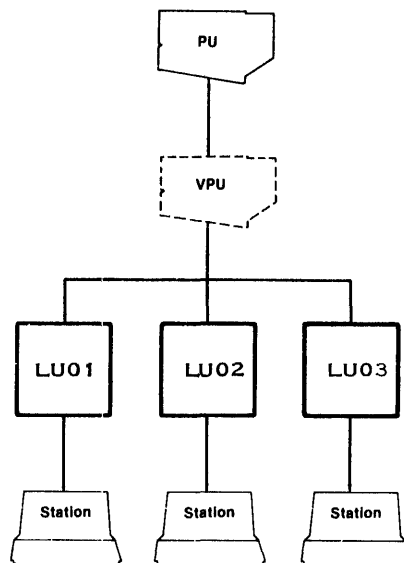
Automatic access to an application results from including an application synonym in the mode definition for a station. (The method of automatic access provided depends on the station type, as described in paragraph 2.2.1.1.) Mode definitions for printer stations and programmed station control (PSC) programs requiring automatic access should also include dedicated LUs. This ensures that DNCS can obtain an LU whenever it attempts to establish a session with the application specified in the mode definition. The DNCS CI Log On command can establish sessions with applications not included in mode definitions.

ID requirements restrict access to applications by obtaining user identification and passing it to the host application whenever the user attempts to establish a session. The handling of the user ID depends on the application. You can include the ID requirement in the definition of the application synonym, in the VPU used to access the application, or both:

- **Application synonym** — Specifying an ID requirement as part of the definition of an application synonym causes DNCS to issue a message asking for the user ID whenever a station issues a Log On command specifying the application name or synonym. Including the user ID in the Log On command suppresses the message.
- **VPU** — Specifying an ID requirement as part of the definition of a VPU causes DNCS to transmit the terminal ID to the host whenever a station issues a Log On command specifying that VPU or any of its application synonyms. Including the terminal ID in the user data field of the Log On command suppresses the message.

The ID requirement also pertains to stations using mode definitions to log on to applications. If an application or VPU specified in a mode definition has an ID requirement, the message requesting the ID results. This has special significance for printer stations, since they cannot reply to the request. Therefore, applications specified in the mode definitions for printer stations must not have ID requirements. (You can still log printers onto applications with ID requirements by using the DNCS CI Log On command.)

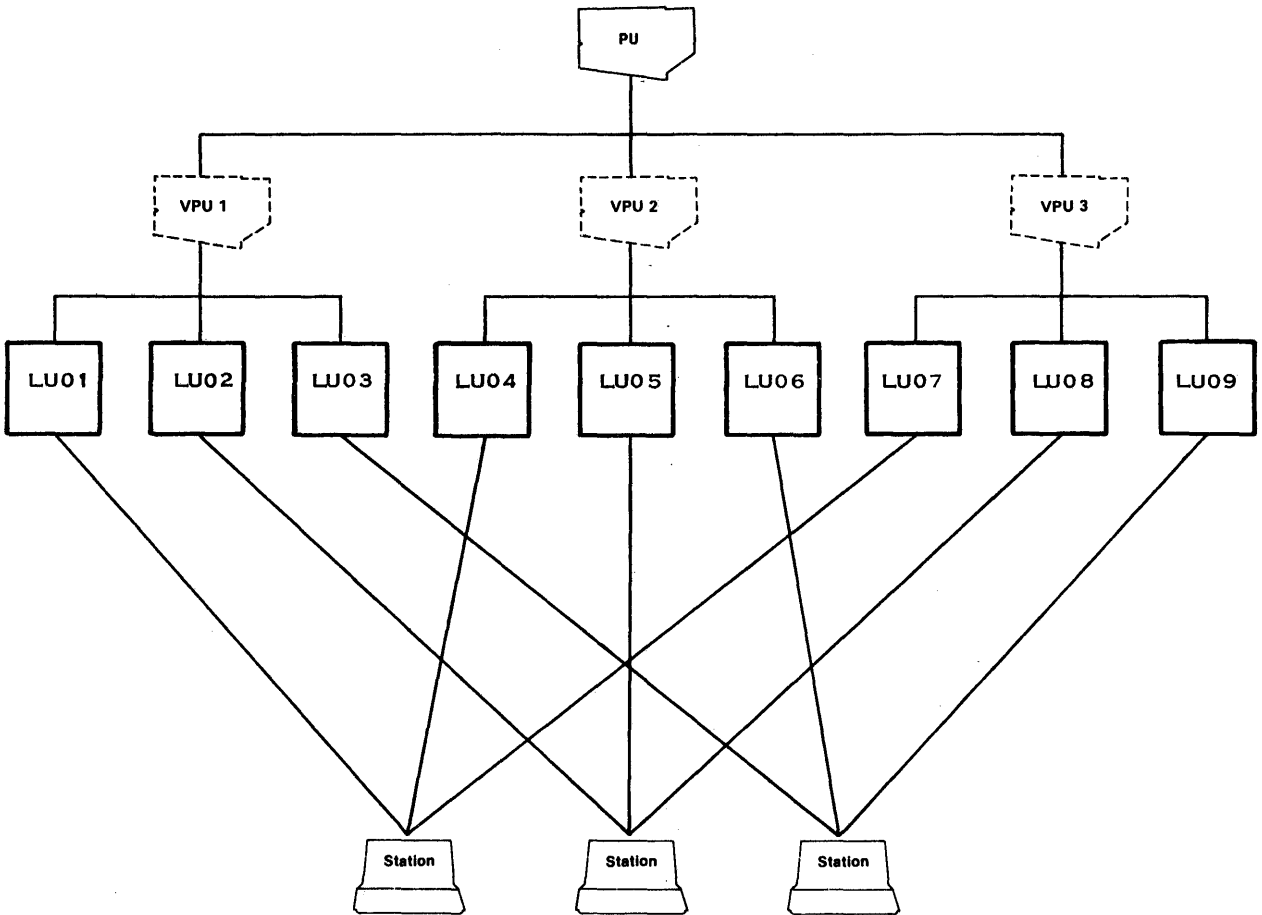
2.4.1.2 Example Configurations of PUs, VPUs, and Applications. As a simple example, consider the DNCS configuration needed to allow three stations to access an application. This requires one PU to represent DNCS as the cluster controller, one VPU to provide access to the application, and three LUs to establish the sessions between the stations and the application. Figure 2-7 illustrates this configuration.



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Figure 2-7. Example Seven: PU with One VPU and Three LUs

For a slightly more complicated example, suppose that the host provides three applications and the DNCS configuration needs to allow all three stations to access all three applications at the same time. Allowing concurrent access to all three applications requires three VPUs, one per session. It also requires a minimum of nine LUs, one per station per session. Figure 2-8 shows the PU, VPUs, and LUs needed to support this configuration.

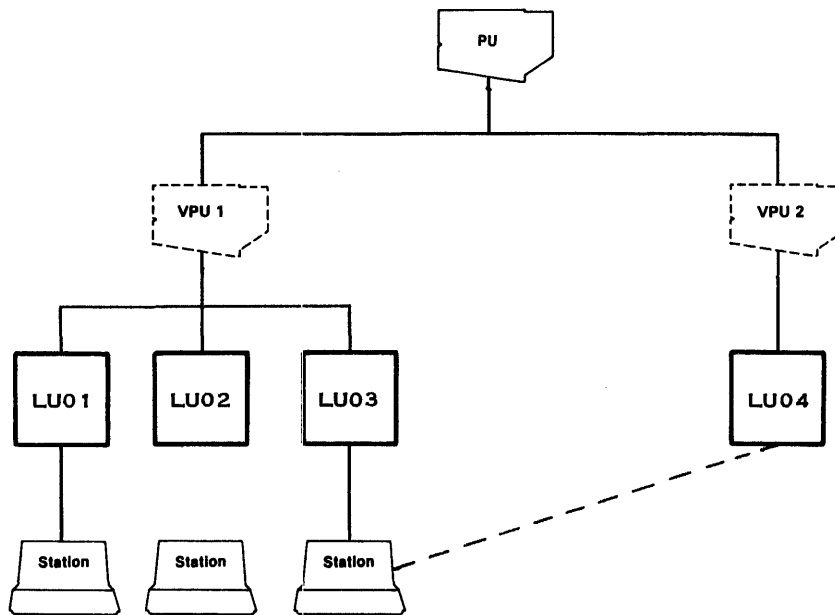


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Figure 2-8. Example Eight: PU with Three VPUs and Nine LUs

For an example that demonstrates pooling, consider a system with three stations — one station requiring concurrent sessions with two applications and two stations requiring access to only one application at a time. This configuration requires the definition of two VPUs and four LUs. VPU1 has a pool of three LUs, allowing each station to have one session through VPU1. VPU2 has the other LU, which is dedicated to station ST03 for its use in a second concurrent session. Figure 2-9 illustrates this approach, with station ST03 using LU3 from the VPU1 pool in addition to LU4 under VPU2. Station ST01 uses LU1 from the VPU1 pool, and station ST02 is not currently in session.

Actual configurations can involve more PUs, VPUs, and LUs than shown in the preceding examples, but the relationships among the elements are the same.



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Figure 2-9. Example Nine: PU with Two VPUs and Four LUs

2.4.1.3 Planning Procedure for PUs, VPU, and Applications. When you plan the SNA hierarchy for your configuration, follow these steps, resuming the definition process from the second stage (paragraph 2.3):

22. Record the name of your configuration on the top of a node planning form.
23. Define your system as a node in the SNA network by selecting a node name and recording it on the node planning form. Node names consist of up to eight characters, beginning with a letter.
24. Record the name of your PU, a string of up to six characters defined by the SNA host. You can obtain the PU name from your SNA host administrator.
25. Record the access method DNCS uses to exchange data with the SNA host. If your configuration uses a SNA circuit with the SDLC protocol, enter VTAM. If your configuration uses an X.25 circuit with the LAP protocol, enter PSN. Section 6 contains an example of a hybrid configuration using an X.25 circuit to access a SNA host through a PSN.
26. Record the name for the circuit DNCS uses to exchange data with the SNA host. This circuit is a data link using SDLC protocol for VTAM or LAP for PSN. You defined this circuit on a circuit planning form in a previous step.
27. Record the poll address assigned to your PU in the SNA network. You can obtain this information from your SNA host administrator.
28. If the access to the SNA host is through a switched line or if the host requires the ID for identification, enter the exchange ID. The SNA host administrator assigns the exchange ID during VTAM generation. Appendix B describes VTAM generation. If the SNA host requires no exchange ID, completely fill the field with zeros.
29. If the access to the SNA host is through an X.25 circuit (access method PSN), enter the remote DTE address provided by the network authority when subscribing to the PSN. If the access to the SNA host is VTAM, leave this field blank.
30. Enter the names used to define the MODEENT log mode entries for each of the station types (see Appendix B). If you want to use the default log mode name assigned at the host, enter a null value (blanks or spaces only).
31. List the LUs allocated to the PU on the planning form. The SNA host administrator can tell you how many LUs you have and the type of each LU. Number them sequentially. You must eventually distribute *all* of these LUs to VPU pools or individual stations.
32. Decide the maximum number of concurrent sessions to permit at any station. This determines the number of VPUs you need to define. Give each VPU a name to appear in DNCS CI commands and displays (up to eight characters, beginning with a letter). Record the name on the planning form.
33. For each VPU, decide whether a station must present an ID before logging on to an application through that VPU. Note this as YES or NO on the form.

34. Skip the blank for pool LUs for each VPU. You will provide that information in a later step.
35. List the most commonly accessed applications for each VPU, including applications accessed by printer stations and PSC programs. This is strictly a matter of user convenience, since all stations can access any application available on the SNA host.
36. For each application listed on the planning form, also record a DNCS synonym (up to eight characters, beginning with a letter). The synonym must be unique within the configuration.
37. Determine whether each application requires the presentation of a user ID before logging on. Record YES or NO on the planning form. If you record YES, DNCS requests identification whenever a user attempts to log on to the application.
38. Return to the modes listed on the SNA circuit planning forms. Wherever you decided that a station needed to access an application automatically, you recorded a mode name. Now you need to record the synonyms for those applications. Where you want a station to have concurrent access to two or more applications, make sure that the application synonyms come from different VPUs.
39. Determine which stations need guaranteed access to one or more applications. These stations will receive dedicated LUs. (Guaranteed access means that the station can always access the SNA network.) If a station needs guaranteed access but does not already have a mode name listed on the circuit planning form, record a mode name now. Mode names have up to eight characters, beginning with a letter. Make sure the station has a mode name for each concurrent session.
40. Distribute the LUs listed under the PU on the node planning form to individual stations and to VPU pools. Assigning an LU to a station limits its use to sessions between that station and the SNA host but guarantees that the station can access any of the applications provided by the host. Assigning LUs to a VPU pool makes them available to all stations but does not ensure that a station can always get an LU for a session with the host.

As you assign an LU to a station or VPU pool, remove it from the list under the PU until no LUs remain. How you assign an LU depends on the need for guaranteed access and automatic access to an application, as follows:

Guaranteed Access	Automatic Access	Mode Definition
NO	NO	None required.
NO	YES	Next to the mode name on the circuit planning form, list the synonym for each application that station will access automatically. (Since 914A terminals have mode keys to allow automatic access to more than one application, you should list the synonyms in the order that corresponds to the mode keys—left to right on the 914A keyboard). In the blank for LU, record a zero (for pool).

Guaranteed Access	Automatic Access	Mode Definition
YES	NO	Take an LU from the list under the PU. Record the LU in the LU blank for the mode definition. In the VPU blank, record the name of the VPU that will be used for the guaranteed access. Do not record an application synonym.
YES	YES	Take an LU from the list under the PU. Record the LU in the LU blank for the mode definition. In the application blank, record the synonym for the application that the station will access automatically. Do not record the VPU.

41. Distribute all remaining LUs to pools under the VPUs that belong to the PU. You can distribute the LUs by making a statistical decision about the relative needs of stations using pool LUs. In general, increasing the number of LUs in the pool allows more sessions through that VPU (though the VPU does not restrict its LUs to use with applications having synonyms defined under the VPU). All LUs in a pool must be of the same SLU type.
42. Verify the allocation of LUs to VPU pools and individual stations.
 - Make sure that all the LUs in each pool are of the same SLU type.
 - Make sure that every LU the PU provides belongs to either a VPU pool or an individual station. (If you have extras, you can define a dummy VPU to hold them.)

You have now completed the procedure for planning a DNCS configuration. Your planning forms are filled out and ready to use with XDGU. Before you execute XDGU, compare your configuration to the one shown on the forms for the example configuration in Section 4. Consider how well they match, and decide whether it would be feasible to begin with an existing configuration and tailor it using XDGU commands.

2.4.2 Planning the X.25 Hierarchy

The network hierarchy for a DNCS configuration supporting X.25 and RFT identifies the RFT subsystem and each site in the RFT subsystem. The X.25 network hierarchy identifies the remote sites that your configuration can access.

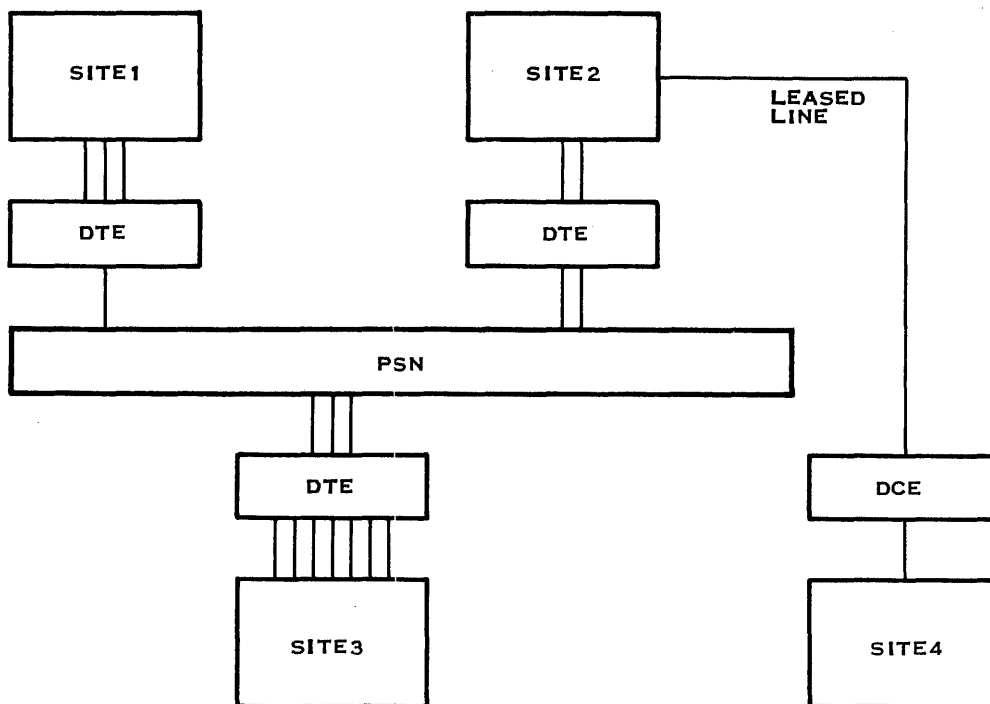
2.4.2.1 Components of the X.25 Hierarchy. The components of the X.25 hierarchy are the RFT subsystem and the sites defined to the subsystem.

The RFT Subsystem identifies your node and the remote systems that your system can access. You define the RFT subsystem by naming it and specifying the maximum number of sites and other parameters that apply to each site on the subsystem.

Sites identify individual X.25 RFT systems available to RFT. For a DNCS RFT to communicate with other TI computers using X.25 and RFT, you must identify each site in the configuration to your RFT. You must name each site, provide its address, and specify certain options. You must also identify your RFT site as the local site. The RFT configuration at each remote site on your RFT configuration must contain your site name and address. You can add, modify, or delete site entries while RFT is executing. The *DNCS X.25 RFT User's Guide* describes how to change site definitions on an active RFT subsystem.

2.4.2.2 Example Configurations of Sites. Figure 2-10 shows a simple RFT system containing four sites. In this example, site two is your local site. It can access any of the other three sites. However, site one and three cannot access site four (and vice versa). Only your site can access site four.

Your X.25 RFT system can only access the remote sites defined on your RFT subsystem. RFT provides SCI commands that allow you to add, modify, or delete site definitions on an active system. DNCS supports up to 1024 site definitions. For use with a public PSN, each remote site must have a subscription. The public PSN assigns each site a DTE address. You must provide these addresses when defining a site under RFT. For use with a private network, you assign each remote site a site address that is the same as the DTE address at the remote site.



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Figure 2-10. Example Ten: RFT Sites Configuration

2.4.2.3 Planning Procedure for the RFT Subsystem. The following steps used with the RFT software subsystem planning form shown in Appendix A allow you to define your DNCS X.25 RFT configuration. It is recommended that you plan your DNCS X.25 RFT configuration by using the planning forms shown in Appendix A prior to starting the XDGU session. Follow these steps, resuming the definition process from the second stage (paragraph 2.3):

22. Record the node name for your configuration on the RFT subsystem planning form. In DNCS terminology, the DNCS X.25 RFT configuration is a node.
23. Choose a name for the RFT subsystem. A name is a character string of 1 to 8 characters beginning with a letter (such as RFT01). Only one RFT subsystem can be supported at a node.
24. Choose a subsystem type. For RFT, the type of subsystem is RFT.
25. Tabulate the characteristics of your RFT subsystem, as follows:

Sites Table Size

Enter the maximum number of remote site names that can be included in the sites table (directory), up to 1024. (By using operator online commands, you can make, modify, or delete entries in the sites directory up to this maximum value.)

Multiplexing

Enter the transport level multiplexing factor for file transfers over one virtual circuit, up to 128. A common value is 3.

Concurrent Transfers

Enter the maximum number of concurrent file transfers that RFT is to handle, up to 128. This value should be the same value you entered for the maximum number of sessions when creating the DNCS IPC channel for RFT, and must be less than or equal to the number of virtual circuits times the multiplexing factor.

File Record Length

Enter the maximum logical record length of files to be transferred, in bytes, up to 32768. The value you enter here can affect the size of the system buffer table area that your RFT subsystem requires to execute. The values you enter for file record length and concurrent transfers must not exceed the limit shown in the following formula:

$$(\text{file record length} + 600) \times \text{concurrent transfers} \leq 44,000$$

Apply the values that you enter to this formula and make sure that your values do not exceed the limit (44,000 decimal).

26. Now, define the site entities to be associated with your RFT subsystem. You must define one (and only one) local site name. You should also define remote sites that are definable now (that is, for which you have PSN subscription parameters available). You can include additional remote sites later by using operator online commands (refer to the *DNCS X.25 RFT User's Guide*, Section 4). The two asterisks (**) following a parameter indicate that the parameter is a network subscription parameter. Define site entities as follows:

Site Name

Enter a symbolic name of a site. A name is a character string of 1 to 8 characters beginning with a letter. Although site names are local to a DNCS X.25 RFT installation, Texas Instruments recommends that, to avoid possible confusion, you should make all remote site names simple derivations from the remote site's local name. Thus, if your site's local name is PARIS, then other sites should use simple derivations of it — PARIS1, PARIS2, and so on — for remote site names referring to your subscription address(es).

Site Location

Enter either LOCAL or REMOTE. You must define one and only one local site name. The default is REMOTE.

Site Address **

Enter a subscriber (DTE) address connected at the site. The address is a character string of up to 15 decimal digits.

Reverse Charging Called

Enter either YES or NO to determine whether your RFT subsystem will call the site with reverse charging (YES) or not (NO). The default is NO.

Reverse Charging Calling **

Enter either YES or NO to determine whether your RFT subsystem will accept a reverse charge call from the site (YES) or not (NO). The default is NO.

Closed User Group **

Identify the closed user group number that your RFT subsystem will use in attempting to open a virtual call with the site. Closed user group numbers, which are subscription parameters, are of two decimal digits. If you do not use a closed user group when opening a virtual circuit, enter NO.

Network Name **

Identifies the name of a PSN. The following list identifies network names DNCS currently recognizes as public PSNs and network names reserved for future use. For a private network you can use any name other than the reserved names listed below:

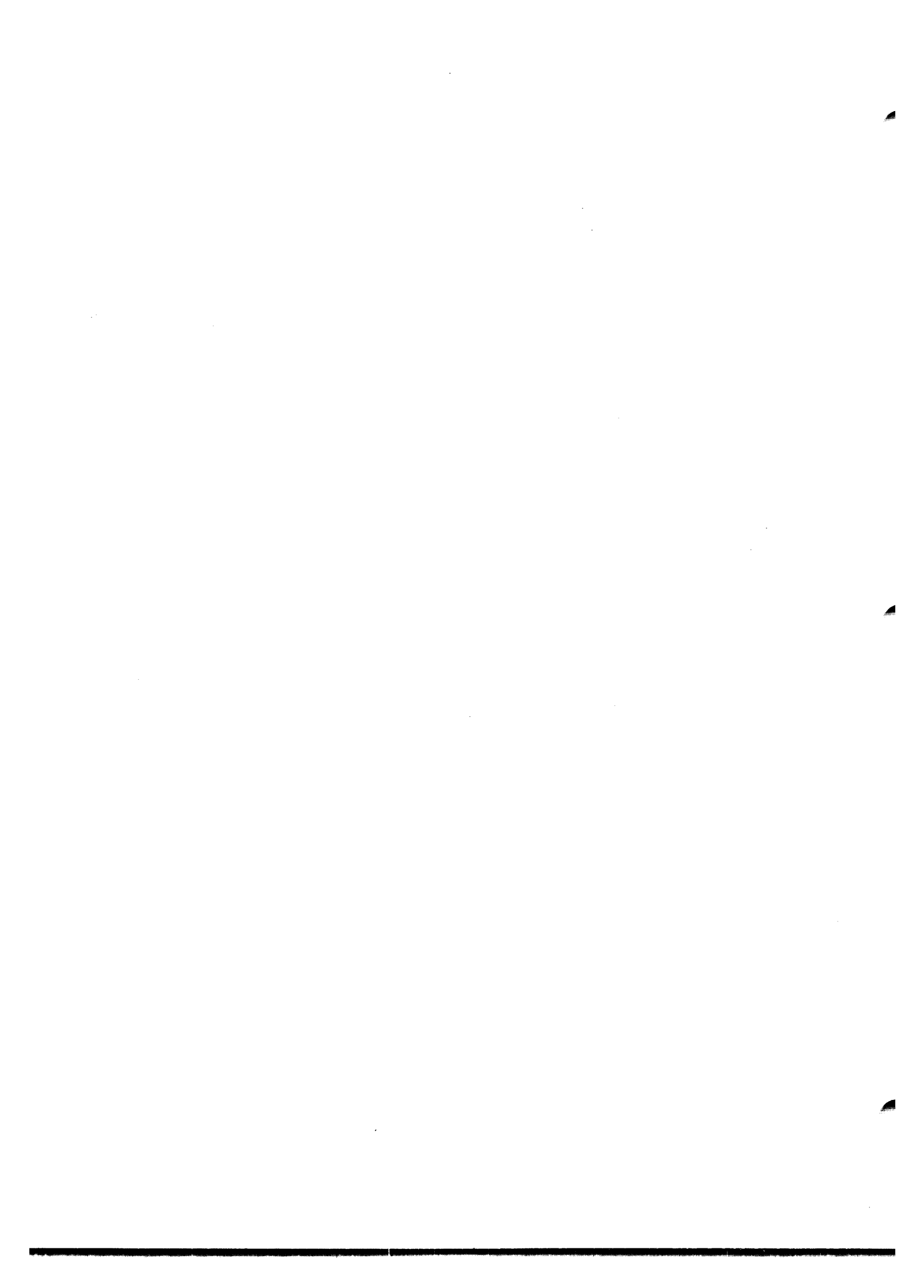
Network Names

DATANET1	(Netherlands)	DATAPAC	(Canada)
DATEXP	(Germany)	TELENET	(United States)
PSS	(United Kingdom)	TYMNET	(United States)
TRANSPAC	(France)		

Reserved Names

ACS	KDD
DDX	TELEPAC
EURONET	TICOG

You have now completed the procedure for planning a DNCS X.25 RFT configuration. Your planning forms are filled out and ready to use with the DNCS generation utility.



Using the DNCS Generation Utility

3.1 INTRODUCTION

The DNCS generation utility enables you to build, display, and change your DNCS configuration. You can operate the generation utility with or without DNCS active. Any changes you make to an active configuration do not take effect until you reinstall DNCS. The DNCS generation session begins when you issue the Execute DNCS Generation Utility (XDGU) command from SCI. During the session, you can add, modify, or delete any part of the DNCS configuration. At any point, you can display the details of the current configuration or information about a particular screen. When you end the session, you have the option of saving or discarding the new configuration.

3.2 DNCS GENERATION SCI COMMANDS

Two SCI commands provided with the DNCS nucleus allow you to define and verify your DNCS configuration:

- XDGU — Execute DNCS Generation Utility
- VDC — Verify DNCS Configuration

These commands reside on the DNCS nucleus object installation directory, which was assigned the synonym DCFWO during installation. Before you can use them, you must enter the following command (as described in the *DNCS Nucleus Object Installation*):

```
.USE DCFWO.RELEASE.PROC,.$CMDS
```

3.2.1 XDGU (Execute DNCS Generation Utility) Command

You use XDGU to create and modify DNCS configurations. When you enter the XDGU command, the following display appears on the screen:

Prompts

```
EXECUTE DNCS GENERATION UTILITY
  DNCS NUCLEUS DIRECTORY: < pathname>
  DNCS GENERATION DIRECTORY: < pathname>
    INPUT CONFIGURATION: < old configuration name>
    OUTPUT CONFIGURATION: < new configuration name>
```

Prompt Details

DNCS NUCLEUS DIRECTORY

Enter the pathname of an existing directory for the DNCS nucleus. DNCS nucleus object installation assigns the synonym DCFWO to this directory.

DNCS GENERATION DIRECTORY

Enter the pathname of an existing directory that contains or is to contain the DNCS configuration files.

INPUT CONFIGURATION

To modify an existing configuration, enter the name of the configuration you intend to modify. To build a new configuration, skip this prompt (no input configuration).

OUTPUT CONFIGURATION

To modify an existing configuration, enter the name of the configuration. If you want to keep a copy of the old version of the configuration, enter a new configuration name. To create a new configuration, enter a new configuration name (up to eight characters, beginning with a letter).

Usage

After you enter your responses, you receive a menu of XDGU commands. You can enter any of the commands listed on the menu. Refer to paragraph 3.3 for data entry procedures and individual command descriptions.

With XDGU, you can define components of the configuration in any order, provided you define each component after the components it belongs to in the hierarchy. The utility command language allows you to add, modify, or delete any component at any point in the configuration process.

To provide an orderly path through the hierarchies, when XDGU receives a response to the last prompt on a screen, it displays the screen for the component likely to be defined next. This automatic sequence of screens forms the *natural order* of the definition process.

Example

```
[ ] XDGU
```

```
EXECUTE DNCS GENERATION UTILITY
  DNCS NUCLEUS DIRECTORY: DCFWO
  DNCS GENERATION DIRECTORY: DCGEN
  INPUT CONFIGURATION: OLD$1
  OUTPUT CONFIGURATION: NEW$1
```


Messages

XDGU returns the following messages on the bottom of the screen to indicate errors in the prompt responses:

THE GENERATION DIRECTORY HAS NOT BEEN CREATED

Explanation:

Your response to the DNCS GENERATION DIRECTORY prompt indicated a generation directory that does not exist.

User Action:

Use the Create Directory File (CFDIR) SCI command to create the generation directory, entering 15 as your response to the MAX ENTRIES prompt. Then, reenter XDGU.

THE INPUT CONFIGURATION DOES NOT EXIST

Explanation

The configuration name you gave in response to the INPUT CONFIGURATION prompt cannot be found on the DNCS generation directory.

User Action:

Check your response to the INPUT CONFIGURATION prompt. If you did not specify the name of an existing configuration, reenter XDGU with a correct response. (The node name and PU name are not valid responses to this prompt.) If you enter a valid configuration name and still receive the message, check your response to the DNCS GENERATION DIRECTORY prompt to make sure the generation directory contains your input configuration.

QUIT HAS FAILED. RECOVER FROM TEMPORARY FILES.

Explanation:

The Quit command failed when XDGU attempted to save your configuration.

User Action:

Make sure that your DNCS generation directory and its \$\$DGU\$ subdirectory exist. If not, then someone deleted them (or unloaded their disk) while you were defining the configuration. If the subdirectory exists, check to see that it has room for another configuration (it holds 17). If not, you must specify another generation directory. Contact your customer representative for assistance in recovering by using the temporary files created by XDGU during the generation process.

XDGU FAILED. SEE FILE < pathname >

Explanation:

XDGU terminated abnormally. Inspect the file indicated in the message for further details.

User Action:

If the indicated file does not provide enough information for you to recover, contact your customer representative for assistance.

3.2.2 VDC (Verify DNCS Configuration) Command

The VDC command checks a configuration for possible errors or omissions. However, it does not identify all possible errors in the configuration. When you enter VDC, you receive the following prompts:

Prompts

```
VERIFY DNCS CONFIGURATION
  DNCS NUCLEUS DIRECTORY: < pathname>
  DNCS GENERATION DIRECTORY: < pathname>
  CONFIGURATION: < system name>
  LISTING: < pathname>
```

Prompt Details

DNCS NUCLEUS DIRECTORY

Enter the pathname of an existing directory for the DNCS nucleus. DNCS nucleus object installation assigns the synonym DCFWO to this directory.

DNCS GENERATION DIRECTORY

Enter the pathname of an existing directory that contains or is to contain the DNCS configuration files.

CONFIGURATION

Enter the name of the configuration being verified. VDC presents the previous reply to a CONFIGURATION prompt as its initial value.

LISTING

Enter the pathname, device name, or logical name of the destination for the VDC results. To produce a hard-copy record of your configuration, you can direct the VDC results to a printer not assigned to the spooler, or you can use the DNOS Print File capability to print the listing file. If a logical name is assigned to the spooler, you can use the logical name to direct the VDC listing to the spooler.

Usage

After you reply to the prompts, VDC verifies the specified configuration. If your configuration contains errors, VDC notifies you with a message at the bottom of your display screen. Each error is marked in the listings with a message of the following format:

```
**** ERROR < nnn> **** < message>
```

where:

< nnn> is the error message number.

< message> is a description of the error, explained in Appendix D.

Example

```
[ ] VDC  
  
VERIFY DNCS CONFIGURATION  
  DNCS NUCLEUS DIRECTORY: DCFWO  
  DNCS GENERATION DIRECTORY: DCGEN  
  CONFIGURATION: NEW$1  
  LISTING: .TEMP.VDCLIST
```

Messages

Other than the messages returned in the listing file, VDC returns the following messages on the bottom of the screen:

THAT CONFIGURATION HAS NOT BEEN DEFINED.

Explanation:

The specified generation directory does not include the specified configuration.

User Action:

Check the values you entered for the DNCS GENERATION DIRECTORY prompt and the CONFIGURATION prompt. Then, reenter the command.

ERROR DETECTED IN CONFIGURATION DEFINITION: SEE LISTING FILE < pathname> .

Explanation:

VDC found one or more errors in the specified configuration.

User Action:

Examine the error listing to identify the errors, and consult Appendix D for their explanations. Then, reexecute XDGU and make the necessary corrections.

NO ERRORS DETECTED IN CONFIGURATION DEFINITION.

Explanation:

VDC found no errors in your configuration. Although VDC checks for a number of error conditions, this message does not necessarily guarantee an error-free configuration. Be sure to check the result of the Build DNCS Configuration Tables (BDCT) step in the installation process.

User Action:

No action is required. However, if you find errors in your configuration after you receive this message, report the errors to your customer representative so that VDC can be enhanced.

3.3 XDGU COMMANDS

The following paragraphs describe how to enter XDGU commands, how to respond to XDGU prompts, and how to follow the natural order of XDGU. They also describe each of the XDGU commands and present a table of XDGU error messages. Finally, they present a table comparing the XDGU natural order to the Next command.

Entering XDGU commands. XDGU is a command-driven interface similar to DNOS SCI. To enter an XDGU command, press the CMD key. When XDGU responds by displaying a command prompt ([]) at the bottom of the screen, type the command keyword (or its abbreviation) and press RETURN.

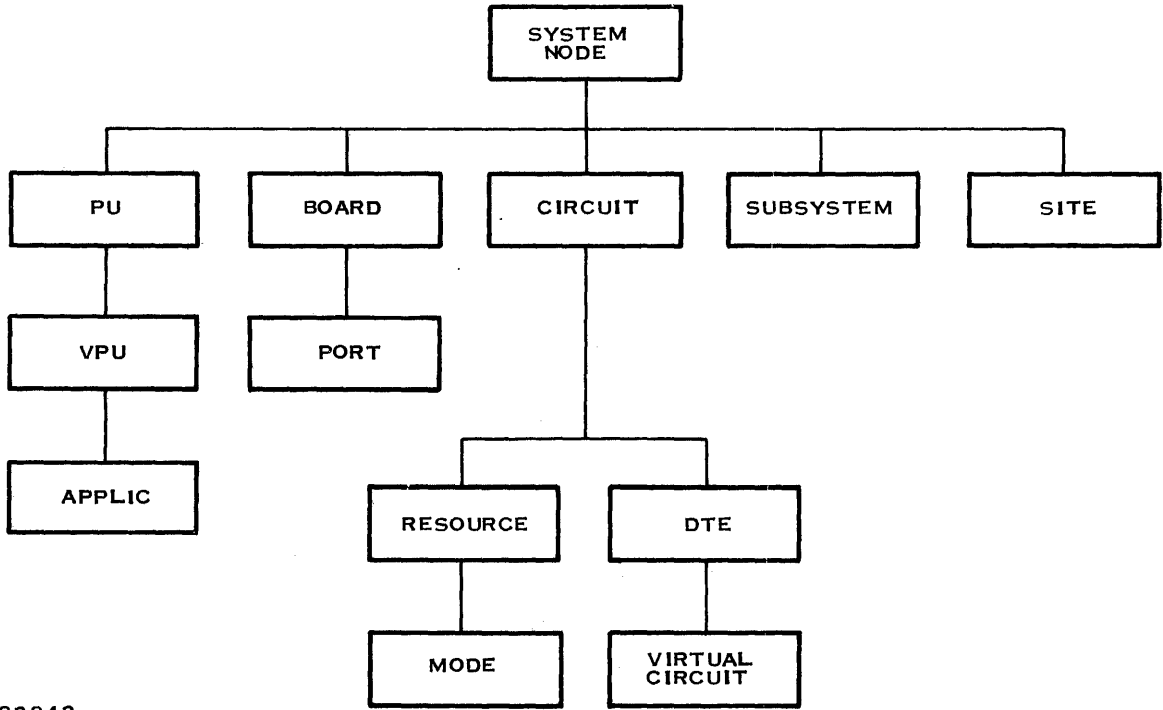
Table 3-1 provides a quick reference to the XDGU commands. For full descriptions of individual XDGU commands, see the following paragraphs.

Responding to XDGU prompts. Like SCI, XDGU obtains information by displaying a screen with prompts for the data it needs. The cursor begins in the first position of the field to the right of the first prompt. As in SCI, you enter your response by typing a value into the field from your keyboard and pressing the RETURN key. Unlike SCI, XDGU shows the fields as a sequence of underscores — one for each character in the longest valid response. When it receives a valid response, XDGU moves the cursor to the next response field. When it receives an invalid response, XDGU displays one of the error messages described in Table 3-2 on the bottom of the screen.

XDGU accepts partially completed screens, allowing you to skip certain response fields and return later to provide the missing information. (For example, you can skip the associated circuit field on the PU screen and supply the information later, after you have defined the circuit.) When you enter your response to the last prompt on the screen, XDGU displays another screen. The screen displayed depends on the screen just completed, according to the natural order of the configuration process.

Following the natural order of XDGU. In the natural order, XDGU begins at the top of the hierarchy (Figure 3-1) and works downward. When it reaches the lowest level of a hierarchy, it continues to display screens for that level. For example, when you complete an Add Board screen, you receive an Add Port screen. Completing the Add Port screen produces another Add Port screen, and completing that one produces another. To get another Add Board screen, you need to enter the Add Board command (by pressing the CMD key, typing AB, and pressing the ENTER key).

XDGU also provides the Next command, which produces the screen for the next higher level of the hierarchy. For example, issuing a Next command from a VPU display produces a PU display. At the top level, the Next command also moves between hierarchies — PU to board, board to circuit, circuit to subsystem, subsystem to site, and site to termination. Table 3-3 summarizes the two ways to move through the hierarchies.



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Figure 3-1. Entity Hierarchy

Table 3-1. XDGU Command Summary

Command	Description
ADD	Places XDGU in add mode, where completing the last response on a screen produces a screen for adding the next component to the configuration.
MODIFY	Places XDGU in modify mode, where completing the last response on a screen produces a screen for modifying the description of the next component in the configuration.
RENAME	Produces a screen for changing the name of the component currently displayed on the screen.
NEXT	Produces a screen for the next higher level of the hierarchy. N is the abbreviation for NEXT.
START	Produces the XDGU menu.
HELP	Provides detailed data entry instructions for the screen being displayed. H is the abbreviation for HELP.
SHOW	Displays the current configuration. S is the abbreviation for SHOW.
ABORT	Terminates the configuration utility, discarding changes made during the current XDGU session. A is the abbreviation for ABORT.
QUIT	Terminates the configuration utility, saving the current configuration. Q is the abbreviation for QUIT.
SYSTEM	Produces a screen for defining or modifying the node name.

Table 3-2. XDGU Error Messages

CANNOT RENAME UNNAMED ENTITY

Explanation:

You attempted to rename an entity that has not been defined, or you entered the RENAME command before pressing RETURN while entering the old name for the entity.

User Action:

Ensure that the entity you are attempting to rename has been defined and that you are entering the correct name, or ensure that you have pressed RETURN to define the old name.

ENTITY NOT FOUND

Explanation:

You attempted to delete a component that is not in the configuration under the name you entered.

User Action:

Reenter the command with the correct name.

ILLEGAL ANCESTOR

Explanation:

The configuration does not include at least one of the higher levels for the entity you tried to add. For example, when you try to add a port to a board that is not defined.

User Action:

Define the higher level entity and then reissue the command.

Invalid Character Entered*

Explanation:

A character you entered is not allowed in the field.

User Action:

Press RETURN, causing the cursor to move to the invalid character. Then, enter a valid character at that position. Most numeric fields except port LUNO require decimal numbers. Alphanumeric fields allow any characters except embedded blanks; these fields must begin with a letter.

Invalid Table Value*

Explanation:

Your last response did not belong to the predefined set of valid responses for that prompt. This includes entering an unsupported command.

User Action:

Choose a valid response from the list displayed on the screen.

Table 3-2. XDGU Error Messages (Continued)

Required Field*

Explanation:

You omitted the response to a prompt having no default.

User Action:

Enter a valid response.

Note:

* If the TIFORM software package is not installed on your system, the following message is returned:

INTERNAL CODE > 00xx

Where the value xx indicates one of the following:

- 47 — Invalid character
 - 49 — Required field
 - 4D — Invalid table entry
-

Table 3-3. Comparison of XDGU Natural Order and Next Command

Display	Next (N) Command	Natural Order
Node	PU	PU
PU	Board	VPU
VPU	PU	Application
Application	VPU	Application
Board	Circuit	Port
Port	Board	Port
Circuit	Subsystem	Resource or DTE
Resource	Circuit	Mode
Mode	Resource	Mode or resource
DTE	Circuit	Virtual circuit
Virtual circuit	Circuit	Virtual circuit
Subsystem	Site	Site
Site	Quit	Site

3.3.1 Abort (ABORT) Command

The ABORT (or A) command terminates an XDGU session, discarding any changes made during the session. It displays the following screen:

Prompts

```
ABORT DNCSGEN SESSION
Are you sure? (Y/N) NO__
```

Prompt Details

Are you sure?

Enter YES (or Y) to confirm that you wish to abort the XDGU session. Enter NO (or N) to continue the session with the previous screen. The initial value for this prompt is NO.

Results

When XDGU receives an ABORT command, it checks your response to determine whether to go ahead with the command. If you respond NO or N, XDGU disregards the command and restores the previous screen. If you respond YES or Y, XDGU deletes the temporary configuration files built during the session without copying them to the generation directory. The ABORT command terminates the XDGU session and returns control to SCI.

Example

This example shows the proper use of the ABORT command to terminate the XDGU session:

```
[ ] ABORT

ABORT DNCSGEN SESSION
Are you sure? (Y/N) YES
```

Related Commands

QUIT — Quit (paragraph 3.3.6)

3.3.2 Add (ADD) Command

The ADD command places XDGU into add mode, where completing a screen for one component produces a screen for adding the next to the configuration. XDGU begins execution in add mode and remains there unless you enter the MODIFY command to place XDGU into the modify mode.

In add mode, when XDGU receives a completed set of prompts, it displays the screen for the next resource likely to be defined. This automatic sequence of screens constitutes the natural order of the definition process.

Related Commands

MODIFY — Modify (paragraph 3.3.4)

3.3.3 Help (HELP) Command

The HELP command describes the screen displayed when you enter the command. The help message explains the purpose of the command that produced the screen and the information the prompts requested.

Related Commands

SHOW — Show (paragraph 3.3.8)

3.3.4 Modify (MODIFY) Command

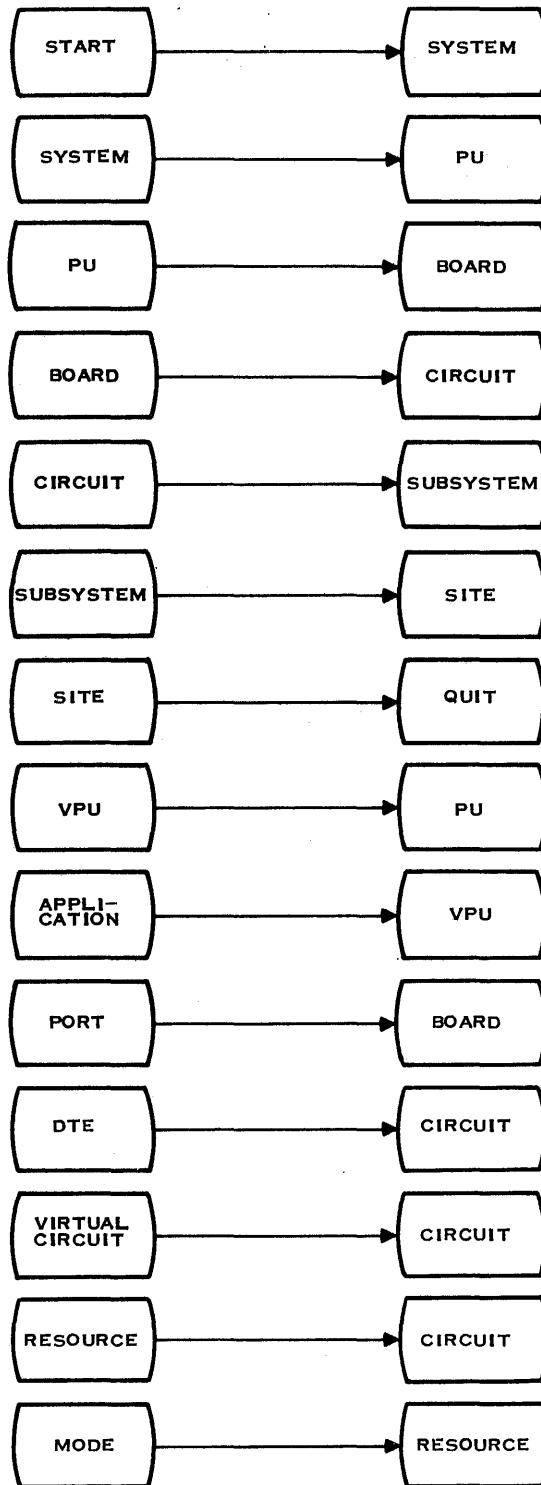
The MODIFY command places XDGU into the modify mode, where completing a screen for one component produces the screen for modifying the next in the configuration. Like add, the modify command uses the natural order to identify the next component in the configuration.

You can use modify mode to view the definitions of the components already defined in your configuration. To do so, use the RETURN key to move the cursor through each field. After the cursor leaves the last field, you receive the screen with information for the next component in the hierarchy.

XDGU begins in ADD mode. You must enter the MODIFY command to place XDGU in modify mode. XDGU remains in modify mode until you enter the ADD command or terminate the utility.

3.3.5 Next (NEXT) Command

The NEXT (or N) command produces a screen for adding another part of the configuration. The screen produced depends on the screen displayed when you enter the command. Figure 3-2 shows the screens that result from entering the NEXT command.



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Figure 3-2. Logic of the Next Command

3.3.6 Quit (QUIT) Command

The QUIT (or Q) command terminates the XDGU session normally. It saves the configuration in the directory designated when XDGU was activated. The Q command displays the following screen:

Prompts

```
TERMINATE DNCSGEN SESSION NORMALLY  
Are you sure? (Y/N) NO__
```

Prompt Details

Are you sure? (Y/N)

Enter YES (or Y) to terminate XDGU. Otherwise, enter NO (or N) to return to the previous screen or enter another command.

Results

The QUIT command displays a prompt asking for confirmation that termination is desired. It also displays an initial value of NO, requiring the deliberate entry of a YES (or Y) response before it terminates XDGU. When it receives a positive response, the Quit command validates and then creates the configuration defined.

The QUIT command saves the configuration in the directory indicated in your response to prompts issued during the activation of XDGU.

Related Command

ABORT — Abort (paragraph 3.3.1)

3.3.7 Rename (RENAME) Command

The RENAME command allows you to change the name of any component in the configuration. Unlike most other XDGU commands, RENAME does not produce a screen. Instead, it issues a prompt on the bottom line of the current screen so that you can rename the component on display.

To rename a component, perform these steps:

1. Obtain the screen for the component you wish to rename. In modify mode, you can use the RETURN key to pass through the configuration in natural order until you arrive at the component you wish to rename. In add mode, you must enter a MODIFY command (such as MA or MPU) and complete any preliminary screens required to locate the component being renamed.
2. Press RETURN. This moves the cursor out of the component name field (the first field on the screen), allowing XDGU to identify the component being renamed.
3. Enter the RENAME command by pressing the CMD key, typing RENAME, and pressing the RETURN key. XDGU responds with the NEW NAME prompt, followed by an eight-character field for the new component name.
4. Type the new name for the component into the NEW NAME field and press RETURN. XDGU renames the component and produces a new screen for the component, showing its new name.

Example

In the following example, you use RENAME to change the name of resource VPSC1 to PSC2A. First, you issue the MR command to locate the information for VPSC1. Screen 1 identifies the circuit and produces a resource screen that contains no data. You enter VPSC1 into the resource name field to cause XDGU to display the complete definition of VPSC1 shown in screen 2 and to position the cursor at the beginning of the resource type field. When you enter the RENAME command, it produces the NEW NAME prompt, shown in screen 3 along with the new name. When you enter the new name, XDGU displays screen 4, showing the definition of the resource under its new name.

[] MR

Screen 1:

```
ADD, MODIFY, OR DELETE RESOURCE
  UNDER Circuit C02_____
```

Screen 2:

```
ADD OR MODIFY RESOURCE UNDER CIRCUIT C02
  Resource name  VPSC1_____
  Resource type  PSC2__
  Poll address   201
  Associated printer LP02_____
```

Screen 3:

[] RENAME NEW NAME PSC2A_____

Screen 4:

ADD OR MODIFY RESOURCE UNDER CIRCUIT C02

Resource name PSC2A_____

Resource type PSC2__

Poll address 201

Associated printer LP02_____

3.3.8 Show (SHOW) Command

The SHOW (or S) command shows the configuration being built or modified. It initially displays the first portion of the configuration. The scroll forward and scroll backward functions permit you to page through the configuration display when it fills more than one screen.

Section 4 shows several examples of configuration displays. The configuration information fills more than one screen, requiring the use of the scroll forward function to view all of it. Table 3-4 explains each of the fields on the display.

Table 3-4. Configuration Display Fields

Field	Contents
DNCS SYSTEM =	Node name of the system being configured
PU =	Name of a PU
ACCESS METHOD =	Method used to access the host
CIRCUIT =	(PU line) circuit used to access the host
POLL ADDRESS =	(PU line) address of DNCS node in SNA network
XID =	Exchange ID flags for SNA host
REMOTE DTE ADDRESS =	Call address of the SNA host
SLU1 LOGMODE NAME =	LU type 1 log mode table name
SLU2 LOGMODE NAME =	LU type 2 log mode table name
SLU3 LOGMODE NAME =	LU type 3 log mode table name
VPU =	(VPU line) name of a VPU configured under the preceding PU
ID REQUIRED	(VPU line) ID requirement for obtaining LUs from the pool
NO ID REQUIRED	(VPU line) no ID requirement for obtaining LUs from the pool
LU LIST =	List of pool LUs available under preceding VPU
APPLICATION =	(Under VPU) application name as known to SNA host
SYN =	Synonym local to previous PU for an application
ID REQUIRED	(APPLICATION line) ID requirement for accessing the application under the preceding VPU
NO ID REQUIRED	(APPLICATION line) no ID requirement for accessing the application under the preceding VPU

Table 3-4. Configuration Display Fields (Continued)

Field	Contents
BOARD =	Name of a board
TYPE =	(BOARD line) board type—either FCCC, BCAIM, or VIRTUAL
PORT =	(PORT line) name of a port the preceding board provides
DNOS DEVICE NAME =	Name of the port as known to DNOS
LUNO =	LUNO assigned to the port
BACKUP =	Backup assigned to the port, if any
CIRCUIT =	(CIRCUIT line) name of a circuit
PROTOCOL =	Protocol used for the circuit
MAXREADS =	Maximum number of read operations allowed to queue for the circuit
MAXRETRIES =	Maximum number of retries allowed for the circuit
PORT =	(Below CIRCUIT) port that interfaces the circuit to DNOS
NRZI =	Determination of whether or not the circuit supports NRZI encoding
AUTO ANSWER =	Determination of whether or not the circuit will auto answer calls for a switched line
RESOURCE =	Name of a station configured on the preceding circuit
TYPE =	(RESOURCE line) type of resource (see Table 2-2)
POLL ADDRESS =	(RESOURCE line) station ID
ASSOCIATED PRINTER =	Printer that serves the PRINT key of the resource
MODE =	Name of mode defined for the preceding resource
APPLICATION =	(MODE line) synonym for the application accessed automatically by the mode
VPU =	(MODE line) VPU whose pool provides the LU for applications accessed via the mode
LU =	LU assigned to the preceding resource via the mode
DTE =	Name of a DTE

Table 3-4. Configuration Display Fields (Continued)

Field	Contents
NETWORK NAME =	Network name with which the DTE is associated
LOCAL ADDRESS =	DTE address
RECV PACKET LENGTH =	Maximum length of received packets
RECV WINDOW =	Reception anticipation factor
XMIT PACKET LENGTH =	Maximum length of transmitted packets
XMIT WINDOW =	Transmission anticipation factor
CALLS TIMEOUT =	Time-out value for call request packets
OTHER TIMEOUT =	Time-out value for other service packets
ANTICIPATION =	Frame level anticipation factor
MAXRETRIES =	(Below DTE line) maximum number of retries allowed for each frame
FRAME TIMEOUT =	Time-out value for each frame
POLL ADDRESS =	(DTE line) identifies entry as either DTE (1) or DCE (3)
VIRTUAL CIRCUIT =	Name of a virtual circuit
CIRCUIT NUMBER =	Virtual circuit number for this DTE
TYPE =	(Virtual Circuit line) type of the virtual circuit
REMOTE DTE ADDRESS =	Address of remote DTE to which this permanent virtual circuit is linked
VIRTUAL CIRCUIT USER =	Identifier of transport layer using this virtual circuit
SUBSYSTEM =	Name of a subsystem
TYPE =	(Subsystem line) type of software subsystem
TABLE SIZE =	Size of table for remote site entries
MULTIPLEXING =	Maximum number of concurrent file transfers on one virtual circuit
CONCURRENT XFERS =	Maximum number of concurrent file transfers for the RFT subsystem
RECORD LENGTH =	Maximum logical record length for RFT file transfers

Table 3-4. Configuration Display Fields (Continued)

Field	Contents
SITE =	Name of a site entry
LOCATION =	Site designation, LOCAL or REMOTE
ADDRESS =	The DTE address of the site
NAME =	The name of the network associated with this site entry
REV CHARGING CALLED =	Will the RFT subsystem call this site with reverse charging?
REV CHARGING CALLING =	Will the RFT subsystem accept calls from the site with reverse charging?
USER GROUP =	Closed user group associated with virtual calls to this site

3.3.9 Start (START) Command

The START command (no abbreviation) displays the XDGU command menu, as follows:

DNCS GENERATION COMMAND MENU

ABORT — Terminate DNCS generation without save
ADD — Enter ADD interactive mode
HELP — Display information for current screen
MODIFY — Enter MODIFY interactive mode
NEXT — Perform next logical operation
QUIT — Terminate DNCS generation normally
RENAME — Change an entity's name
SHOW — Display DNCS configuration
START — Return to this menu
SYSTEM — Define or modify node

Axx, Mxx, Dxx — Add, Modify, and Delete Entity (xx), respectively

3.3.10 System (SYSTEM) Command

The SYSTEM command (no abbreviation) displays the screen for naming the DNCS node.

Prompts

```
DEFINE DNCS NODE
      Name < node>
```

where:

< node> is the current node name, if any.

Prompt Details

Name
Enter the new node name for the system.

Results

The SYSTEM command assigns a new node name to the DNCS system. The name specified appears on XDGU screens and DNCS CI displays.

Example

In this example, you assign the node name DEX01 to the system being configured.

```
[ ] SYSTEM
DEFINE DNCS NODE
      Name DEX01_____
```


3.4 XDGU ENTITY COMMANDS

The following paragraphs describe the add, modify, and delete commands for each entity. The entities are as follows:

- Application
- Board
- Circuit
- DTE
- Mode
- Port
- PU
- Resource
- Site
- Software subsystem
- Virtual Circuit
- VPU

Application Commands

3.4.1 Application Commands

Three commands are available to add, modify, and delete applications:

- AA — Add Application
- MA — Modify Application
- DA — Delete Application

Application Commands

3.4.1.1 Add Application (AA) Command. The AA command adds an application synonym to the list available under a VPU. It displays screen 1 to locate the PU and VPU, then screen 2 to obtain information about the application.

Prompts

Screen 1:

```

ADD, MODIFY, OR DELETE APPLICATION
      UNDER PU _____
      UNDER VPU _____

```

Screen 2:

```

ADD OR MODIFY APPLICATION UNDER VPU <VPU name> UNDER PU <PU name>
      Application name _____
      Synonym         _____
      ID required (Y/N) NO__

```

where:

<VPU name> is the name of the VPU identified on screen 1.
 <PU name> is the name of the PU identified on screen 1.

Prompt Details

UNDER PU

Enter the name of the PU used to access the application.

UNDER VPU

Enter the name of the VPU used to access the application.

Application name

Enter the name for the application on the SNA host system, up to eight alphanumeric characters.

Synonym

Enter a unique name for the application under the specified VPU. The name can be up to eight characters and must begin with a letter.

ID required (Y/N)

Enter YES (or Y) if the application requires the presentation of a user ID before allowing access. Otherwise, enter NO (or N). The initial value, also the default, is NO.

Results

The AA command places the specified application on the list of applications available under the VPU indicated. Stations that access the application can use the specified synonym or else the VPU name followed by the application name (separated by a period).

Completing an AA command produces another application screen.

Application Commands

Example

In this example, you add an application named ALEIMA to the configuration for the VPU named V2 under the PU named CDAANR. The application has the synonym IMS2 and does not require the presentation of an ID.

[] AA

Screen 1:

```
ADD, MODIFY, OR DELETE APPLICATION
                UNDER PU  CDAANR____
                UNDER VPU  V2_____
```

Screen 2:

```
ADD OR MODIFY APPLICATION UNDER VPU V2 UNDER PU CDAANR
Application name  ALEIMA____
                Synonym  IMS2____
                ID required (Y/N)  NO__
```

Related Commands

AM — Add Mode (paragraph 3.4.5.1)

3.4.1.2 Modify Application (MA) Command. The MA command modifies an existing application synonym. First MA displays screen 1 to locate the VPU where the application synonym is defined.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE APPLICATION
                UNDER PU  _____
                UNDER VPU  _____
```

Next, MA displays screen 2 to locate the application and obtain the information being changed. Screen 2 contains the same prompts that the AA command displays on its screen 2. The initial values that MA displays for these prompts are the current values defined for the application.

Prompt Details

UNDER PU

Enter the name of the PU that provides access to the application being modified.

UNDER VPU

Enter the name of the VPU that provides access to the application being modified.

Refer to the AA command description for details on the prompts on screen 2.

Application Commands

Results

The MA command allows changes to the information about an application under a specified PU and VPU. It does not affect information about the same application under different VPUs.

Completing an MA command produces an Add Application screen.

Example

In this example, you change the ID requirement for the application called TSO under the VPU named V1 under the PU named CDAANR.

[] MA

Screen 1:

```
ADD, MODIFY OR DELETE APPLICATION
      UNDER PU  CDAANR____
      UNDER VPU  V1_____
```

Screen 2:

```
ADD OR MODIFY APPLICATION UNDER VPU V1 UNDER PU CDAANR
Application name  ADATSA____
      Synonym     TSO_____
ID required?(Y/N) YES
```

3.4.1.3 Delete Application (DA) Command. The DA command deletes an application synonym from the list of application synonyms under a specified VPU. First DA displays screen 1 to locate the VPU and PU that allow access to the application. Then it displays screen 2 to identify the application being deleted.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE APPLICATION
      UNDER PU  _____
      UNDER VPU  _____
```

Screen 2:

```
DELETE APPLICATION UNDER VPU < VPU name> UNDER PU < PU name>
Application name  _____
```

where:

< VPU name> is the name of the VPU identified on screen 1.
 < PU name> is the name of the PU identified on screen 1.

Application Commands

Prompt Details

UNDER PU

Enter the name of the PU that provides access to the application being deleted.

UNDER VPU

Enter the name of the VPU that provides access to the application being deleted.

Application name

Enter the name of the application being removed from the PU and VPU specified on screen 1. This is the host application name, not the DNCS synonym.

Results

The DA command removes the specified application from the list of those available under the specified PU and VPU. It does not affect access to the same application under different VPUs.

Completing a DA command produces another Delete Application screen.

Example

In this example, you delete the application called ADATSA from those applications accessed through the VPU named V1 under the PU named CDAANR.

```
[ ] DA
```

Screen 1:

```
ADD, MODIFY, OR DELETE APPLICATION
      UNDER PU  CDAANR____
      UNDER VPU  V1_____
```

Screen 2:

```
DELETE APPLICATION UNDER VPU V1 UNDER PU CDAANR
      Application name  ADATSA____
```

Related Commands

- DM — Delete Mode (paragraph 3.4.5.3)
- DV — Delete VPU (paragraph 3.4.11.3)

Board Commands**3.4.2 Board Commands**

Three commands are available to add, modify, and delete boards:

- AB — Add Board
- MB — Modify Board
- DB — Delete Board

3.4.2.1 Add Board (AB) Command. The AB command adds a board to the current DNCS configuration.

Prompts

```
ADD OR MODIFY BOARD UNDER SYSTEM < node>
      Board name _____
      Board type  _____
```

where:

< node> is the node name of the system being configured.

Prompt Details

Board name
Enter the name of the board being defined.

Board type
Enter the type of board being defined, either FCCC, BCAIM, or VIRTUAL.

Results

The AB command assigns the specified name to the board being defined.

Completing the AB command produces a port screen.

Example

In this example, you add board B01 to the configuration of system DEX02.

```
[ ] AB
ADD OR MODIFY BOARD UNDER SYSTEM DEX02
      Board name  B01_____
      Board type  FCCC_____
```

Related Commands

AP — Add Port (paragraph 3.4.6.1)

Board Commands

3.4.2.2 Modify Board (MB) Command. The MB command modifies a board in the current DNCS configuration.

Prompts

```
ADD OR MODIFY BOARD UNDER SYSTEM < node>
      Board name  _____
      Board type  _____
```

where:

< node> is the node name of the system being configured.

Prompt Details

Board name

Enter the name of the board being modified. This response causes XDGU to display the currently defined board type.

Board type

Enter the new type of board being defined, either FCCC, BCAIM, or VIRTUAL.

Results

The MB command allows changes to the information about a specified board. It updates the board information according to any changes made. Remember that a BCAIM can only have one port, and an FCCC can have no more than four.

Completing the MB command produces a port screen.

Example

In this example, you change the type of board B01 from FCCC to BCAIM.

```
[ ] MB
ADD OR MODIFY BOARD UNDER SYSTEM DEX02
      Board name  B01_____
      Board type  BCAIM_____
```


Board Commands

3.4.2.3 Delete Board (DB) Command. The DB command deletes a board plus all of the ports configured on the board from the DNCS configuration. DB displays the following screen:

Prompts

```
DELETE BOARD UNDER SYSTEM < node>
      Board name _____
```

where:

< node> is the node name of the DNCS system being configured.

Prompt Details

Board name
Enter the name of the board being deleted.

Results

The DB command removes the specified board from the current configuration. It also deletes any ports configured under the board.

Completing a DB command produces another Delete Board screen.

Example

In this example, you delete board B03 from the node named DEX03.

```
[ ] DB
DELETE BOARD UNDER SYSTEM DEX03
      Board name  B03_____
```

Circuit Commands

3.4.3 Circuit Commands

Three commands are available to add, modify, and delete circuits:

- AC — Add Circuit
- MC — Modify Circuit
- DC — Delete Circuit

3.4.3.1 Add Circuit (AC) Command. The AC command adds a circuit to the current DNCS configuration.

Prompts

Screen 1:

```
ADD OR MODIFY CIRCUIT UNDER SYSTEM < node>
      Circuit name _____
      Protocol   _____
```

where:

< node> is the node name of the DNCS system being configured.

Screen 2:

The prompts that appear on screen 2 depend on your response to the protocol prompt. If you specify protocols CI, CIPC, LL4800, LL9600, LAP, RFT, or RDTG, the following prompts appear:

```
Max # of outstanding reads _____
      Max # retries   _____
      Port           _____
```

If you specify protocol SDLC, the following prompts appear:

```
Max # of outstanding reads _____
      Max # retries   _____
      Port           _____
      NRZI?         NO__
      Auto answer?  NO__
```

Circuit Commands

Prompt Details

Circuit name

Enter a name for the circuit to identify it in DNCS commands and displays (up to eight characters, beginning with a letter).

Protocol

Enter the protocol type for the circuit. Table 2-3 lists the LAP and RFT protocols. For other protocols, refer to Table 2-1.

Max # of outstanding reads

Enter a decimal number specifying the number of message frames allowed to queue for the circuit. Unless troubleshooting procedures call for increasing or decreasing the number of outstanding reads, use the appropriate entry from either Table 2-1 or Table 2-3.

Max # retries

Enter a decimal number specifying the number of times for DNCS to repeat the transmission of a frame without confirmation before it places the circuit in an error state. Unless troubleshooting procedures call for increasing or decreasing the number of retries, use the appropriate entry from either Table 2-1 or Table 2-3.

Port

Enter the name of the port initially assigned to the circuit. DNCS CI commands can change this assignment while DNCS is active.

NRZI

Enter Yes or No. You must coordinate your response (Yes or No) with the data entered during the network control program (NCP) definition for the VTAM generation. (Refer to Appendix B.) NRZI is an option that specifies non-return to zero inverted. The default value is No. (SDLC only.)

Auto Answer

Enter Yes or No. If you want this circuit to automatically answer calls that remote users initiate, enter Yes. Otherwise, enter the default value No. If you intend to manually answer incoming calls, enter No. (SDLC only.)

Results

The AC command configures a new circuit for the node, assigning it the specified protocol and port. It also sets the maximum number of reads and retries allowed before the circuit assumes an error status.

Completing the AC command for CI, CIPC, RDTC, LL9600, and LL4800 protocols produces a resource (station) screen. Completing the AC command for LAP protocol produces a DTE screen. Completing the AC command for SDLC and RFT protocols produces a circuit screen.

Circuit Commands

Examples

In this example, you add circuit C03 to system DEX02. Since the circuit provides support for the SNA Emulators, you specify the CIPC protocol. You assign the circuit to port P022 with three reads and no retries allowed.

```
[ ] AC
```

```
ADD OR MODIFY CIRCUIT UNDER SYSTEM DEX02
```

```
      Circuit name  C03_____
           Protocol  CIPC_____
Max # of outstanding reads  3
           Max # retries  0
           Port        P022
```

Related Commands

AP — Add Port (paragraph 3.4.6.1)

3.4.3.2 Modify Circuit (MC) Command. The MC command modifies the information about a circuit. It displays the following screen to locate the circuit and obtain the changes.

Prompts

```
ADD OR MODIFY CIRCUIT UNDER SYSTEM < node>
      Circuit name  < circuit name>
           Protocol  < protocol>
```

All valid protocols require the following specifications:

```
Max # of outstanding reads  < max reads>
           Max # retries  < max retries>
           Port        < port>
```

Some protocols require additional definitions. If you are defining a SNA circuit using the SDLC protocol, the following additional prompts appear:

```
           NRZI?  < yes/no>
Auto answer?  < yes/no>
```

where:

< node>	is the node name of the DNCS system being configured.
< circuit name>	is the name of the circuit being modified.
< protocol>	is the current protocol.
< max reads>	is the current maximum number of reads outstanding.
< max retries>	is the current maximum number of retries.
< port>	is the current primary port for the circuit.
< yes/no>	is the current value for the NRZI and auto answer prompts.

Circuit Commands

Prompt Details

Circuit name

Enter the name of the circuit being modified. This response causes XDGU to display the definition of the circuit specified.

Protocol

Change the protocol for the circuit, if desired. Refer to Table 2-1 for a list of protocols available.

Refer to the AC command description for details on the prompts on the second part of the screen.

Results

The MC command allows changes to the information about a specified circuit. It updates the circuit information according to any changes made. The MC command does not affect any of the resources on the circuit. If you modify the protocol of a circuit, make sure that the new protocol supports any resources assigned to that circuit.

Completing an MC command produces an Add Resource screen.

Example

In this example, you change the protocol of circuit C04 in the configuration for the node named DEX02 to LL4800.

```
[ ] MC
ADD OR MODIFY CIRCUIT UNDER SYSTEM DEX02
      Circuit name  C04_____
      Protocol     LL4800____
Max # of outstanding reads  7
      Max # retries  5
      Port          P031
```

3.4.3.3 Delete Circuit (DC) Command. The DC command deletes a circuit from the current DNCS configuration. It also deletes all resources, modes, DTEs, and virtual circuits that belong to the circuit. It displays the following screen:

Prompts

```
DELETE CIRCUIT UNDER SYSTEM <node>
      Circuit name _____
```

where:

<node> is the node name of the DNCS system being configured.

Circuit Commands

Prompt Details

Circuit name

Enter the name of the circuit being deleted.

Results

The DC command removes the specified circuit from the current configuration. It also deletes any resources or DTEs configured on the circuit and any modes or virtual circuits assigned to those resources or DTEs.

Completing a DC command produces another Delete Circuit screen.

Example

In this example, you delete circuit C03 from the configuration of the node named DEX02.

```
[ ] DC
```

```
DELETE CIRCUIT UNDER SYSTEM DEX02
```

```
    Circuit name  C03_____
```

DTE Commands**3.4.4 DTE Commands**

Three commands are available to add, modify, and delete data terminal equipment (DTE) units:

- ADTE — Add DTE
- MDTE — Modify DTE
- DDTE — Delete DTE

3.4.4.1 Add DTE (ADTE) Command. The ADTE command defines a DTE for a LAP circuit. First, it displays screen 1 to locate the circuit, then it displays screen 2 to obtain the parameters for the DTE.

Prompts

Screen 1:

```
ADD, MODIFY OR DELETE DTE UNDER SYSTEM < node>
UNDER Circuit _____
```

where:

< node> is the node name of the DNCS system being configured.

Screen 2:

```
ADD OR MODIFY DTE UNDER CIRCUIT < circuit>
DTE Name _____
Network name _____
Local address _____
Packet length, recv _____
Window, recv _____
Packet length, xmit _____
Window, xmit _____
Time-out on calls _____
Time-out on packets _____
Anticipation (K) _____
Max # retries (N2) _____
Time-out (T1) _____
DTE (1) or DCE (3) _____
```

where:

< circuit> is the circuit identified on screen 1.

DTE Commands

Prompt Details

In the following prompt explanations, the symbol ** indicates that the entry requires the values specified by the network subscription parameters.

UNDER Circuit

Enter the name of the circuit that is to contain the DTE being added.

DTE Name

Enter a name to identify the DTE (up to eight characters, beginning with a letter).

Network name **

Enter the network to which the DTE is connected. Valid public network responses are DATANET1, DATAPAC, DATEXP, PSS, TELENET, TRANSPAC, and TYMNET. Any other name entered will be assumed to represent a leased-line connection (private network).

Local address **

Enter the DTE address, a character string of up to 15 decimal digits. For a private leased line, you can specify any arbitrary address.

Packet length, rcv **

Enter the maximum length of received packets, in bytes. DNCS X.25 RFT allows lengths up to 256 bytes, with a default of 128 bytes.

Window, rcv **

Enter the reception anticipation factor. DNCS allows anticipation factors of up to 7, with a default of 2.

Packet length, xmit **

Enter the maximum length of transmitted packets, in bytes. DNCS X.25 RFT allows lengths up to 270 bytes, with a default of 128 bytes.

Window, xmit **

Enter the transmission anticipation factor. DNCS X.25 RFT allows anticipation factors of up to 7, with a default of 2.

Time-out on calls

Enter the time-out, in seconds, for call request packets, up to 1000. The default is 200 seconds.

Time-out on packets

Enter the time-out, in seconds, for other service packets, up to 1000. The default is 180 seconds.

Anticipation (K) **

Enter the frame-level anticipation factor. DNCS X.25 RFT allows anticipation factors of up to 7, with a default of 7.

Max # retries (N2) **

Enter the frame-level maximum number of retries value, up to a maximum of 256. The default value is 10.

DTE Commands

Time-out (T1) **

Enter the frame-level time-out, in seconds, up to a maximum of 256. The default is 3.

DTE (1) or DCE (3)

Enter the entity type. For use on a packet switched network (PSN), enter 1 (DTE). For use on a private leased line, the system at one end must be a DTE and the system at the other end must be a DCE. The default is 1 (DTE).

Results

The ADTE command configures a DTE or DCE on the X.25 circuit specified.

Completing an ADTE screen produces an Add Virtual Circuit screen.

Example

In this example, you define the DTE entry DTE01 under circuit C05. You connect the DTE to the PSN TYMNET and supply the address of 310690724. You assign all network subscription parameters the values used by DNCS X.25 RFT as defaults with the exception of the Anticipation (K), which you specify to be 2. The default values are also used for the time-outs on calls and packets.

```
[ ] ADTE
```

```
ADD OR MODIFY DTE UNDER CIRCUIT C05
```

DTE Name	DTE01_____
Network name	TYMNET____
Local address	310690724_____
Packet length, rcv	128
Window, rcv	2
Packet length, xmit	128
Window, xmit	2
Time-out on calls	200__
Time-out on packets	180__
Anticipation (K)	2
Max # retries (N2)	10__
Time-out (T1)	3__
DTE (1) or DCE (3)	1

3.4.4.2 Modify DTE (MDTE) Command. The MDTE command modifies either a DTE or a DCE on a circuit. First, it displays screen 1 to locate the circuit.

Prompts

Screen 1:

```
ADD, MODIFY OR DELETE DTE UNDER SYSTEM < node>
UNDER Circuit _____
```

where:

< node> is the node name of the DNCS system being configured.

DTE Commands

Next, MDTE displays screen 2 to obtain information about the entity being modified. Screen 2 contains the same prompts that the ADTE command displays on its screen 2. The initial values that MDTE displays for these prompts are the current values defined for the DTE.

Prompt Details

UNDER Circuit

Enter the name of the circuit where the station is being configured.

Refer to the ADTE command description for details on the prompts on screen 2.

Results

The MDTE displays the information about a specified DTE or DCE on a LAP circuit. It updates the DTE or DCE definition with any changes made.

Completing an MDTE screen produces a Virtual Circuit screen.

Example

In this example, you modify the local address of the DTE named DTE01 under circuit C05 from 310690724 to 310690725.

[] MDTE

Screen 1:

```
ADD, MODIFY, OR DELETE DTE
  UNDER Circuit  C05_____
```

Screen 2:

[] ADTE

ADD OR MODIFY DTE UNDER CIRCUIT C05

```
      DTE Name  DTE01_____
      Network name  TYMNET____
      Local address 310690725_____
      Packet length, rcv 128
      Window, rcv 2
      Packet length, xmit 128
      Window, xmit 2
      Time-out on calls 200__
      Time-out on packets 180__
      Anticipation (K) 2
      Max # retries (N2) 10__
      Time-out (T1) 3____
      DTE (1) or DCE (3) 1
```

DTE Commands

3.4.4.3 Delete DTE (DDTE) Command. The DDTE command deletes a DTE or DCE resource from a LAP circuit. It also deletes all virtual circuits defined under the DTE or DCE.

Prompts

Screen 1:

```
ADD, MODIFY OR DELETE DTE
  UNDER Circuit _____
```

Screen 2:

```
DELETE DTE UNDER CIRCUIT < circuit>
  DTE name _____
```

where:

< circuit> is the circuit identified on screen 1.

Prompt Details

UNDER Circuit

Enter the name of the circuit that contains the DTE being deleted.

DTE name

Enter the name of the DTE being deleted.

Results

The DDTE command deletes the specified DTE or DCE from the LAP circuit. It also deletes all virtual circuits defined under the DTE or DCE.

Completing the DDTE command produces another Delete DTE screen.

Example

In this example, you delete the DTE named DTE01 from circuit C05.

```
[ ] DDTE
```

Screen 1:

```
ADD, MODIFY, OR DELETE DTE UNDER SYSTEM DEX02
  UNDER Circuit C05_____
```

Screen 2:

```
DELETE DTE UNDER CIRCUIT C05
  DTE name DTE01_____
```

Mode Commands

3.4.5 Mode Commands

Three commands are available to add, modify, and delete modes:

- AM — Add Mode
- MM — Modify Mode
- DM — Delete Mode

3.4.5.1 Add Mode (AM) Command. The AM command defines an additional mode for a specified resource. First, it displays screen 1 to locate the resource, and then it displays screen 2 to obtain the mode definition.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE MODE
  UNDER Circuit _____
  UNDER Resource _____
```

Screen 2:

```
ADD OR MODIFY MODE UNDER RESOURCE < resource> UNDER CIRCUIT < circuit>
  Mode name _____
  Application synonym _____
  Associated VPU _____
  LU _____
```

where:

< resource> is the resource identified on screen 1.
< circuit> is the circuit identified on screen 1.

Prompt Details

UNDER Circuit

Enter the name of the circuit that serves the resource where you are adding the mode.

UNDER Resource

Enter the name of the resource where you are adding the mode.

Mode name

Enter a name to identify the mode (up to eight characters, beginning with a letter).

Application synonym

Enter the name of the application as it is known under the VPU used to access it. Provide a response when you wish to associate an application with a mode key or a printer.

Mode Commands

Associated VPU

Enter the name of the VPU used to access the application. If you omit the response to the application synonym prompt, you must specify the associated VPU.

LU

If the session between the terminal and the application uses a dedicated LU, enter the decimal number of the LU. Otherwise, enter zero to allow DNCS to assign an LU to the session from the pool for the VPU used to access the application.

Results

The AM command has two main functions. First, it can provide automatic access to an application through use of a mode key. A 914A terminal has three mode keys on its keyboard, while the VDT2 Emulator allows the blank gray (clear) key on the 911 terminal to emulate a mode key when not already in session with an application. Even though it lacks a mode key, a printer station can have a mode defined to specify the application it accesses when the Emulator is activated. Though they can transmit their own Log On commands, PSC programs also lack mode keys. By user option, activating a PSC program can provide automatic access to the application specified in its mode definition. Each mode definition allows the station to have a session with an application. For printer stations this is automatic, but for display stations it requires you to use a mode key to choose the session. On 914A terminals, the mode keys correspond to modes in the order they are defined.

The second function of the mode definition is dedicating an LU to a station, guaranteeing it access to applications through that LU. When it receives an LU number other than zero (for a pooled LU), the AM command sets that LU aside for the station to use exclusively.

Completing the AM screen for a V914 resource type produces another mode screen. Completing the AM screen for any other resource type produces an Add Resource screen.

Example

In this example, you make the application IMS available via the blank gray (clear) key on station ST02 on circuit C01. For the session, station ST02 uses LU 02 from VPU V1.

[] AM

Screen 1:

```
ADD, MODIFY OR DELETE MODE
  UNDER Circuit  C01_____
  UNDER Resource ST02_____
```

Screen 2:

```
ADD OR MODIFY MODE UNDER RESOURCE ST02 UNDER CIRCUIT C01
  Mode name      MST02_____
  Application synonym  IMS_____
  Associated VPU   V1_____
                  LU  02_____
```

Mode Commands

Related Commands

- AA — Add Application (paragraph 3.4.1.1)
- AR — Add Resource (paragraph 3.4.8.1)

3.4.5.2 Modify Mode (MM) Command. The MM command modifies the information about a mode. First, it displays screen 1 to locate the resource for which the mode is defined.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE MODE
  UNDER Circuit _____
  UNDER Resource _____
```

Next, MM displays screen 2 to locate the mode definition and obtain the changes. Screen 2 contains the same prompts that the AM command displays on its screen 2. The initial values that MM displays for these prompts are the current values defined for the mode.

Prompt Details

UNDER Circuit

Enter the name of the circuit that serves the resource where the mode is being modified.

UNDER Resource

Enter the name of the resource where the mode is being modified.

Refer to the AM command description for details on the prompts on screen 2.

Results

The MM command displays the information about a specified mode. It updates the mode definition according to any changes made. It does not affect the definition of the resource to which the mode belongs.

Completing an MM command produces an Add Mode screen.

Mode Commands*Example*

In this example, you modify the mode named MST01 for station ST01 on circuit C02 to allow automatic access to the application with the synonym CICS instead of IMS.

[] MM

Screen 1:

```
ADD, MODIFY, OR DELETE MODE
  UNDER Circuit  C02_____
  UNDER Resource ST01_____
```

Screen 2:

```
ADD OR MODIFY MODE UNDER RESOURCE ST01 UNDER CIRCUIT C02
  Mode name      MST01
  Application synonym CICS_____
  Associated VPU  _____
  LU             01_____
```

3.4.5.3 Delete Mode (DM) Command. The DM command deletes a mode from a specified resource. First, it displays screen 1 to locate the resource, and then it displays screen 2 to identify the mode to delete.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE MODE
  UNDER Circuit  _____
  UNDER Resource _____
```

Screen 2:

```
DELETE MODE UNDER RESOURCE < resource> UNDER CIRCUIT < circuit>
  Mode name  _____
```

where:

```
< resource>  is the resource identified on screen 1.
< circuit>   is the circuit identified on screen 1.
```

Mode Commands

Prompt Details

UNDER Circuit

Enter the name of the circuit that serves the resource where the mode is to be deleted.

UNDER Resource

Enter the name of the resource where the mode is to be deleted.

Mode name

Enter the name of the mode being deleted.

Results

The DM command removes the specified mode from the DNCS configuration, releasing any assigned LU for other use. It does not affect the station or circuit.

Completing a DM command produces another Delete Mode screen.

Example

In this example, you delete the mode named MST01 from station ST01 on circuit C02.

[] DM

Screen 1:

```
ADD, MODIFY, OR DELETE MODE
  UNDER Circuit  C02_____
  UNDER Resource ST01_____
```

Screen 2:

```
DELETE MODE UNDER RESOURCE ST01 UNDER CIRCUIT C02
  Mode name  MST01_____
```


Port Commands

3.4.6 Port Commands

Three commands are available to add, modify, and delete ports:

- AP — Add Port
- MP — Modify Port
- DP — Delete Port

3.4.6.1 Add Port (AP) Command. The AP command adds a port to the current DNCS configuration. First, it displays screen 1 to locate the board that provides the port. Then, it displays screen 2 to obtain information about the port being added.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE PORT
UNDER Board _____
```

Screen 2:

```
ADD OR MODIFY PORT UNDER BOARD < board>
  Port name _____
  DNOS device name _____
  LUNO > _____
  Backup _____
```

where:

< board> is the name of the board identified on screen 1.

Prompt Details

UNDER Board

Enter the name of the board that provides the port being added.

Port name

Enter a name to identify the port in DNCS commands and displays (up to eight characters, beginning with a letter).

DNOS device name

Enter the DNOS device name for the port. Communication device names have the format CMxx, where xx is an integer. This device name must be the name assigned during DNOS system generation.

Port Commands

LUNO

Enter the LUNO to be assigned to the port in the DNCS job. Valid LUNOs range from >31 through >FF. The LUNO you select must be available, and no other application within the DNCS job can use it.

Backup

Optionally, enter the name of another port to back up the primary port being defined. If the primary port fails, the specified backup port can take over its circuit, provided the protocols on their boards match. This feature is only valid for FCCC, and the backup port must be on the same board.

Results

The AP command configures a new port under the board specified on the first screen. In DNCS commands and displays, the board is identified by the specified name. DNOS identifies it according to the device name and LUNO indicated. Assigning a backup to the port allows another port to serve its circuit when the port being defined becomes inactive. DNCS CI commands can change the backup assignment.

Completing the AP command produces another Add Port screen.

Example

In this example, you name a new port P022 and assign it to board B02. Under DNOS, the new port has the device name CM07 and uses LUNO >33. It has no backup.

[] AP

Screen 1:

```
ADD, MODIFY, OR DELETE PORT
UNDER Board  B02_____
```

Screen 2:

```
ADD OR MODIFY PORT UNDER BOARD B02
      Port name  P022_____
      DNOS device name  CM07_____
      LUNO      > 33
      Backup     _____
```

Related Commands

- AB — Add Board (paragraph 3.4.2.1)
- AC — Add Circuit (paragraph 3.4.3.1)
- DB — Delete Board (paragraph 3.4.2.3)

Port Commands

3.4.6.2 Modify Port (MP) Command. The MP command modifies the information about a port. First, it displays screen 1 to locate the board that provides the port.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE PORT
UNDER Board _____
```

Next, MP displays screen 2 to identify the port and obtain the changes. Screen 2 contains the same prompts that the AP command displays on its screen 2. The initial values that MP displays for these prompts are the current values defined for the port.

Prompt Details

UNDER board

Enter the name of the board that provides the port being modified.

Refer to the AP command description for details on the prompts on screen 2.

Results

The MP command displays information about the port specified and updates the definition according to any changes made. It does not affect the board or the circuit attached to the port.

Completing an MP command produces an Add Port screen.

Example

In this example, you change the LUNO of port P021 to > 45.

```
[ ] MP
```

Screen 1:

```
ADD, MODIFY, OR DELETE PORT
UNDER Board  B02_____
```

Screen 2:

```
ADD OR MODIFY PORT UNDER BOARD < board>
      Port name  P021_____
      DNOS device name  CM05_____
      LUNO      > 45____
      Backup    _____
```

Port Commands

3.4.6.3 Delete Port (DP) Command. The DP command deletes a port from the current DNCS configuration. First, it displays screen 1 to locate the board that provides the port. Then, it displays screen 2 to identify the port.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE PORT  
UNDER Board _____
```

Screen 2:

```
DELETE PORT UNDER < board >  
Port name _____
```

where:

< board > is the name of the board identified on screen 1.

Prompt Details

UNDER Board

Enter the name of the board that provides the port being deleted.

Port name

Enter the name of the port being deleted.

Results

The DP command removes the specified port from the DNCS configuration. It does not affect the board or any other port. You must reassign the circuit to another port. If the deleted port is specified as the backup for some other port, you need to modify the definition of that port to reflect the change.

Completing a DP command produces another Delete Port screen.

Port Commands

Example

In this example, you delete port P021 from board B02.

[] DP

Screen 1:

```
ADD, MODIFY, OR DELETE PORT
UNDER Board  B02_____
```

Screen 2:

```
DELETE PORT UNDER B02
Port name  P021_____
```

Related Commands

DB — Delete Board (paragraph 3.4.2.3)

PU Commands

3.4.7 PU Commands

Three commands are available to add, modify, and delete PUs:

- APU — Add PU
- MPU — Modify PU
- DPU — Delete PU

3.4.7.1 Add PU (APU) Command. The APU command adds a physical unit (PU) to the configuration of a node.

Prompts

```
ADD OR MODIFY PHYSICAL UNIT UNDER SYSTEM < system>
      PU name      _____
      Access method _____
      Circuit      _____
      Poll address  _____
      Exchange ID   0200_____
      Remote DTE Address _____
      SLU Type 1 Mode Name _____
      SLU Type 2 Mode Name _____
      SLU Type 3 Mode Name _____
```

where:

< system> is the node name of the system being configured.

Prompt Details

PU name

Enter the name of the PU being configured (up to six characters, beginning with a letter). LU names are derived from this PU name.

Access method

For SDLC SNA host application systems, enter VTAM. For access to the SNA host through a packet switched network (PSN), enter PSN.

Circuit

Enter the name of the SDLC or LAP circuit used for communications with the SNA host.

Poll address

Enter the poll address assigned to this PU in the SNA host. To the SNA host, the PU represents a drop on the line.

Exchange ID

Enter the exchange ID for this physical unit. Select the same ID that your host uses to identify this physical unit. Enter zeroes if not required.

PU Commands**Remote DTE Address**

If the access is via a switched virtual circuit and PSN, enter the address of the remote DTE. Otherwise, leave blank.

SLU Type 1 Mode Name

Enter the name defined in the VTAM generation on the SNA host to reference SLU type 1 devices in the log mode table.

SLU Type 2 Mode Name

Enter the name defined in the VTAM generation on the SNA host to reference SLU type 2 devices in the log mode table.

SLU Type 3 Mode Name

Enter the name defined in the VTAM generation on the SNA host to reference SLU type 3 devices in the log mode table.

Results

The APU command configures an additional PU for the node, enabling it to exchange data with another application host using the specified circuit and access method. The SNA host identifies the PU according to the poll address provided.

Completing an APU command produces an Add VPU screen.

Example

In this example, you add a PU named CDAANR to access a remote host through VTAM on circuit C01. You assign the poll address 1 to the PU in the configuration of the host system.

[] APU

ADD OR MODIFY PHYSICAL UNIT UNDER SYSTEM DEX02

PU name	CDAANR
Access method	VTAM_____
Circuit	C01_____
Poll address	1_____
Exchange ID	020000000000
Remote DTE Address	_____
SLU Type 1 Mode Name	DCPUPA
SLU Type 2 Mode Name	DCP3278
SLU Type 3 Mode Name	DCB3284

Related Commands

AV — Add VPU (paragraph 3.4.11.1)

PU Commands

3.4.7.2 Modify PU (MPU) Command. The MPU command modifies the information about a physical unit (PU). First it displays the following screen with blanks for the PU name, access method, circuit, and poll address. Then, when it receives a response to the PU name prompt, it displays the definition of the PU indicated.

Prompts

```
ADD OR MODIFY PHYSICAL UNIT UNDER SYSTEM < node>
      PU name _____
      Access method < access>
      Circuit < circuit>
      Poll address < address>
      Exchange ID < exchange ID>
      Remote DTE Address < remote DTE address>
      SLU Type 1 Mode Name < SLU type 1>
      SLU Type 2 Mode Name < SLU type 2>
      SLU Type 3 Mode Name < SLU type 3>
```

where:

< node>	is the node name of the system being configured.
< access>	is the current access method.
< circuit>	is the name of the circuit between DNCS and the SNA host.
< address>	is the current poll address of DNCS on the line connecting to the SNA network.
< exchange ID>	is the exchange ID for the PU.
< remote DTE address>	is the address of the remote DTE.
< SLU type 1>	is the type 1 mode name.
< SLU type 2>	is the type 2 mode name.
< SLU type 3>	is the type 3 mode name.

Prompt Details

Refer to the APU command description for details on the prompts.

Results

The MPU command displays the information about the PU indicated and updates the definition to reflect any changes. It does not affect any VPUs defined under the PU.

Completing an MPU command produces an Add VPU screen.

PU Commands*Example*

In this example, you change the SDLC circuit for the PU named CDAANR from C01 to C05.

[] MPU

ADD OR MODIFY PHYSICAL UNIT UNDER SYSTEM DEX01

```

      PU name   CDAANR
      Access method  VTAM_____
      Circuit    C05_____
      Poll address  01_____
      Exchange ID  020000000000
      Remote DTE Address _____
      SLU Type 1 Mode Name  DCPUPA
      SLU Type 2 Mode Name  DCP3278
      SLU Type 3 Mode Name  DCP3284
  
```

3.4.7.3 Delete PU (DPU) Command. The DPU command removes a PU (and all its VPUs and their applications) from the DNCS configuration. It displays the following screen to identify the PU:

Prompts

```

DELETE PHYSICAL UNIT UNDER SYSTEM < node>
      PU name  _____
  
```

where:

< node> is the node name of the system being configured.

Prompt Details

PU name

Enter the name of the PU being deleted.

Results

The DPU command removes the specified PU from the DNCS configuration. It also removes any VPUs configured for the PU and any application synonyms for those VPUs.

Completing a DPU command produces another Delete PU screen.

Example

In this example, you delete the PU named CDAANR from the configuration for the node named DEX01.

[] DPU

```

DELETE PHYSICAL UNIT UNDER SYSTEM DEX01
      PU name  CDAANR____
  
```

Resource Commands

3.4.8 Resource Commands

Three commands are available to add, modify, and delete resources:

- AR — Add Resource
- MR — Modify Resource
- DR — Delete Resource

3.4.8.1 Add Resource (AR) Command. The AR command adds a resource such as an Emulator, a terminal, or a printer to the list of resources on a circuit. First, it displays screen 1 to locate the circuit. Then, it displays screen 2 to obtain information about the resource being added.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE RESOURCE
UNDER Circuit _____
```

Screen 2:

```
ADD OR MODIFY RESOURCE UNDER CIRCUIT < circuit>
Resource name _____
Resource type _____
Poll address _____
Associated Printer _____
```

where:

< circuit> is the name of the circuit identified in screen 1.

Prompt Details

UNDER Circuit

Enter the name of the circuit where the station is being configured.

Resource name

Enter a name to identify the station in DNCS commands and displays (up to eight characters, beginning with a letter).

Resource type

Enter one of the resource types from Table 2-2.

Resource Commands

Poll address

Enter a station ID (poll address) to identify the station on its circuit. The assignment of station IDs depends on the type of circuit:

- Emulator circuits have station IDs that range from 1 through 255. The following subranges are conventional, but DNCS does not enforce them:

Station ID	Station Type
01–100	VDT2 display stations
101–200	PTR1 and PTR3 printer stations, KSR, and SVQ
201–255	PSC programs

The DNCS CI circuit has only one station, the DNCS operator interface, with a station ID of 01 required by DNCS.

- Local line circuits (including RDTC) have V914 station IDs that range from 64 through 79 (hexadecimal > 40 through > 4F) with P914 station IDs that range from 80 through 95 (hexadecimal > 50 through > 5F). *The station ID for a P914 station must be 16 (hexadecimal > 10) greater than the station ID of the V914 station to which it is attached.* The value you enter here must match the internal switch settings of the 914A terminal and the associated printer:

Station ID	Station Type
64–79	914A terminals
80–95	Printers attached to 914A terminals

Associated Printer

For display stations, enter the name of a printer station to receive the output of the PRINT key. Only V914 and V911 display stations can have printer assignments. The associated printer must be defined as a printer station in the DNCS configuration, but it does not have to be on the same circuit as the station it serves.

Results

The AR command configures an additional resource with the specified ID on the specified circuit. Display stations may also receive optional printer assignments.

Completing an AR command produces an Add Mode screen.

Resource Commands

Example

In this example, you add a V914 display station V914A1 with station ID 64 to circuit C04. You assign the printer P914P1 to receive the output of the PRINT key.

```
[ ] AR
```

Screen 1:

```
ADD, MODIFY, OR DELETE RESOURCE  
UNDER Circuit  C04_____
```

Screen 2:

```
ADD OR MODIFY RESOURCE UNDER CIRCUIT C04  
Resource name  V914A1____  
Resource type  V914_____  
Poll address   64_____  
Associated Printer P914P1____
```

Related Commands

AM — Add Mode (paragraph 3.4.5.1)

3.4.8.2 Modify Resource (MR) Command. The MR command modifies the definition of a station (resource). First, it displays screen 1 to identify the circuit that serves the resource. Then, it displays screen 2 to identify the specific resource.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE RESOURCE  
UNDER Circuit  _____
```

Next, MR displays screen 2 to identify the specific resource. Screen 2 contains the same prompts that the AR command displays on its screen 2. The initial values that MR displays for these prompts are the current values defined for the resource.

Prompt Details

UNDER Circuit

Enter the name of the circuit where the resource is configured.

Refer to the AR command description for details on the prompts on screen 2.

Resource Commands

Results

The MR command displays information about the specified resource and updates the resource definition with any changes made. It does not affect the circuit or mode definitions associated with the resource.

Completing an MR command produces an Add Mode screen.

Example

In this example, you change the printer associated with station VPSC1 on circuit C02 from LP02 to PPSC1.

```
[ ] MR
```

Screen 1:

```
ADD, MODIFY, OR DELETE RESOURCE
  UNDER Circuit  C02_____
```

Screen 2:

```
ADD OR MODIFY RESOURCE UNDER CIRCUIT C02
  Resource name  VPSC1_____
  Resource type  PSC2
  Poll address   201
  Associated Printer  PPSC1
```

3.4.8.3 Delete Resource (DR) Command. The DR command deletes a resource (station) and all of its modes from the configuration of resources on a specified circuit. First, it displays screen 1 to locate the circuit. Then, it displays screen 2 to identify the resource.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE RESOURCE
  UNDER Circuit  _____
```

Screen 2:

```
DELETE RESOURCE UNDER CIRCUIT < circuit>
  Resource name  _____
```

where:

< circuit> is the name of the circuit identified on screen 1.

Resource Commands

Prompt Details

UNDER Circuit

Enter the name of the circuit that serves the station (resource) being deleted.

Resource name

Enter the name of the resource being deleted.

Results

The DR command removes the specified resource from the DNCS configuration. It also removes any modes defined for that resource, freeing any dedicated LUs. It does not affect the circuit.

Completing a DR command produces another Delete Resource (station) screen.

Example

In this example, you delete resource ST01 from the configuration for circuit C01.

```
[ ] DR
```

Screen 1:

```
ADD, MODIFY, OR DELETE RESOURCE  
UNDER Circuit C01_____
```

Screen 2:

```
DELETE RESOURCE UNDER CIRCUIT C01  
Resource name ST01_____
```

Site Commands

3.4.9 Site Commands

Three commands are available to add, modify, and delete sites:

- ASI — Add Site
- MSI — Modify Site
- DSI — Delete Site

3.4.9.1 Add Site (ASI) Command. The ASI command adds an entry containing network subscription information about an X.25 RFT site to the DNCS configuration.

Prompts

```

ADD OR MODIFY SITE UNDER SYSTEM < node>
      Site Name _____
      Site Location _____
      Site Address _____
      Network Name _____
      Reverse Charging Called _____
      Reverse Charging Calling _____
      Closed User Group _____

```

where:

< node> is the node name of the system being configured.

Prompt Details

In the following prompt explanations, the symbol ** indicates that the entry requires the values specified by the network subscription parameters.

Site Name

Enter the symbolic name of the site (up to eight characters, beginning with a letter).

Site Location

Enter either LOCAL or REMOTE to specify the location of the site being defined. One (and only one) LOCAL site must be defined. The default is REMOTE.

Site Address **

Enter the site address, up to 15 decimal digits.

Network Name

Enter the name of the network to which this site is attached. The network may be either one of the packet switched networks (PSNs) or a leased-line network.

Reverse Charging Called

Enter either YES or NO (default) to define whether your RFT subsystem calls the site with reverse charging.

Site Commands

Reverse Charging Calling **

Enter YES or NO (default) to define whether your RFT subsystem accepts a reverse call from the site.

Closed User Group **

Enter the closed user group number that the RFT subsystem uses in attempting to open a virtual call with the site. You can define a closed user group as a decimal number from 0 to 99. Enter NO if you do not want to define a closed user group. The default value is NO.

Results

The ASI command adds an entry to the list of sites defined for use by DNCS X.25 RFT.

Completing an ASI screen produces another Add Site screen.

Example

In this example, you add the remote site AUSTIN1, which is attached to the PSN TYMNET. The address specified by the network subscription authority is 310690724. You do not allow either reverse charging called or reverse charging calling, and you do not have a closed user group.

[] ASI

ADD OR MODIFY SITE UNDER SYSTEM DEX03

Site Name	AUSTIN1____
Site Location	REMOTE____
Site Address	310690724_____
Network Name	TYMNET____
Reverse Charging Called	NO__
Reverse Charging Calling	NO__
Closed User Group	NO__

3.4.9.2 Modify Site (MSI) Command. The MSI command modifies the definition of an X.25 RFT site.

Prompts

ADD OR MODIFY SITE UNDER SYSTEM < node>

Site Name	< site name>
Site Location	< site location>
Site Address	< site address>
Network Name	< network name>
Reverse Charging Called	< remote charging called>
Reverse Charging Calling	< reverse charging calling>
Closed User Group	< closed user group>

Site Commands

where:

< node>	is the node name of the system being configured.
< site name>	is the symbolic name of the site being modified.
< site location>	specifies the location of the site being modified, either LOCAL or REMOTE.
< site address>	is the site address.
< network name>	is the name of the network to which this site is attached.
< remote charging called>	defines whether your RFT subsystem calls the site with reverse charging.
< remote charging calling>	defines whether your RFT subsystem accepts a reverse call from the site.
< closed user group>	is the closed user group number that the RFT subsystem uses in attempting to open a virtual call with the site.

Prompt Details

When you enter the name of the site you want to modify, the current values for the prompts appear. Refer to the ASI command description for details on the prompts.

Results

The MSI command displays information about the specified X.25 RFT site and updates the site information with any changes made.

Completing an MSI screen produces another Add Site screen.

Example

In this example, you modify the RFT subsystem definition to accept a reverse call from the site.

[] MSI

ADD OR MODIFY SITE UNDER SYSTEM DEX03

```

      Site Name   AUSTIN1____
      Site Location REMOTE____
      Site Address 310690724_____
      Network Name TYMNET____
Reverse Charging Called NO__
Reverse Charging Calling YES__
      Closed User Group NO__

```

Site Commands

3.4.9.3 Delete Site (DSI) Command. The DSI command deletes an X.25 RFT site from the DNCS configuration.

Prompts

```
DELETE SITE UNDER SYSTEM < node>
      Site name _____
```

where:

< node> is the node name of the system being configured.

Results

The DSI command deletes an X.25 RFT site from the DNCS configuration.

Completing a DSI screen produces another Delete Site screen.

Example

In this example, you delete the X.25 RFT site named AUSTIN1 from the DNCS configuration.

```
[ ] DSI
DELETE SITE UNDER SYSTEM DEX03
      Site name  AUSTIN1__
```

Software Subsystem Commands

3.4.10 Software Subsystem Commands

Three commands are available to add, modify, and delete software subsystems:

- ASUB — Add Software Subsystem
- MSUB — Modify Software Subsystem
- DSUB — Delete Software Subsystem

3.4.10.1 Add Software Subsystem (ASUB) Command. The ASUB command defines a software subsystem that exchanges data with DNCS through a DNCS-IPC interface. Software subsystems typically access data communications networks.

Prompts

```
ADD OR MODIFY SOFTWARE SUBSYSTEM UNDER SYSTEM < node>
Subsystem name _____
Subsystem type _____
```

where:

< node> is the node name of the DNCS system being configured.

If the type is RFT, then the following prompts appear:

```
Sites table size _____
Multiplexing _____
Concurrent transfers _____
File record length _____
```

Prompt Details

Name

Enter a name to identify the subsystem entry, up to eight characters beginning with a letter.

Type

Enter the type of the software subsystem. The only type currently supported is RFT.

Sites table size

Enter the maximum number of remote site names that can be included in the table of sites defined at any one time. Since you can add or delete site entries during system execution, this parameter needs to be large enough only to hold the maximum number of sites that your configuration will communicate with during a given period of time, up to a maximum of 1024.

Multiplexing

Enter the transport level multiplexing factor for file transfers over each virtual circuit, up to a maximum value of 128. A common value is 3.

Software Subsystem Commands

Concurrent transfers

Enter the maximum number of concurrent file transfers to be handled by RFT, up to a maximum of 128.

File record length

Enter the maximum logical record length of files to be transferred, in bytes, up to 32768 bytes.

Results

The ASUB command defines a software subsystem to be included with the DNCS system. The parameters define the maximum number of remote sites that you can connect to this system at any one time, and they define the limits for file and data transfers.

Completing the ASUB command produces an Add Site screen.

Example

In this example, you include the software subsystem RFT in the DNCS system, which may be connected to a maximum of 34 remote sites. Each virtual circuit can multiplex up to 3 file transfers, and RFT can have a maximum of 4 concurrent file transfers. The maximum logical record length allowed is 8192.

```
[ ] ASUB
```

```
ADD OR MODIFY SOFTWARE SUBSYSTEM UNDER DEX09
```

```
Subsystem name  RFTSYS____
Subsystem type   RFT____
Sites table size 34____
Multiplexing     3____
Concurrent Transfers 4____
File record length 8192__
```

3.4.10.2 Modify Software Subsystem (MSUB) Command. The MSUB command modifies the definition of a software subsystem.

Prompts

```
ADD OR MODIFY SOFTWARE SUBSYSTEM UNDER SYSTEM < node>
```

```
Subsystem name  _____
Subsystem type   _____
```

where:

< node> is the node name of the DNCS system being configured.

If the type is RFT, then MSUB displays additional prompts, which are the same prompts that the ASUB command displays. The initial values that MSUB displays for these prompts are the current values defined.

Software Subsystem Commands

Prompt Details

Subsystem name

Enter the name of the subsystem entry being modified. This response causes XDGU to display the currently defined subsystem type.

Subsystem type

Enter the type of the software subsystem. The only type currently supported is RFT.

Refer to the ASUB command description for details on the prompts on the second part of the screen.

Results

The MSUB command displays the information about the specified software subsystem and updates the definition with any changes made.

Completing the MSUB command produces a site screen.

Example

In this example, you modify the sites table size definition to allow the software subsystem RFT to be connected to a maximum of 36 remote sites.

[] MSUB

ADD OR MODIFY SOFTWARE SUBSYSTEM UNDER DEX09

Subsystem name	RFTSYS__
Subsystem type	RFT_____
Sites table size	36__
Multiplexing	3__
Concurrent Transfers	4__
File record length	8192__

Software Subsystem Commands

3.4.10.3 Delete Software Subsystem (DSUB) Command. The DSUB command deletes a software subsystem from the DNCS configuration.

Prompts

```
DELETE SUBSYSTEM UNDER SYSTEM < node>  
Subsystem name _____
```

where:

< node> is the node name of the DNCS system being configured.

Prompt Details

Subsystem name

Enter a name to identify the subsystem entry, up to eight characters beginning with a letter.

Results

The DSUB command deletes the specified software subsystem from the DNCS configuration.

Completing the DSUB command produces another Delete Subsystem screen.

Example

In this example, you delete the software subsystem named RFTSYS from the DNCS configuration.

```
[] DSUB  
DELETE SUBSYSTEM UNDER DEX09  
Subsystem name RFTSYS____
```

Virtual Circuit Commands

3.4.11 Virtual Circuit Commands

Three commands are available to add, modify, and delete virtual circuits:

- AVC — Add Virtual Circuit
- MVC — Modify Virtual Circuit
- DVC — Delete Virtual Circuit

3.4.11.1 Add Virtual Circuit (AVC) Command. The AVC command adds an entry defining a virtual circuit under a DTE on a LAP circuit.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE VIRTUAL CIRCUIT
Under Circuit _____
Under DTE   _____
```

Screen 2:

```
ADD OR MODIFY VIRTUAL CIRCUIT UNDER DTE < DTE name> UNDER CIRCUIT < cir>
Virtual Circuit name _____
Virtual Circuit number _____
Virtual Circuit type  _____
```

where:

< DTE name> is the name of the DTE specified on screen 1.
 < cir> is the name of the circuit specified on screen 1.

Additional prompts are displayed if you enter PE (permanent) for the type:

```
Remote DTE address _____
Virtual Circuit user  _____
```

Prompt Details

In the following prompt explanations, the symbol ** indicates that the entry requires the values specified by the network subscription parameters.

Under Circuit

Enter the name of the LAP circuit that contains the DTE where the virtual circuit is being added.

Virtual Circuit Commands

Under DTE

Enter the name of the DTE that is to contain the virtual circuit being added.

Virtual Circuit name

Enter a name to identify the virtual circuit (up to eight characters, beginning with a letter).

Virtual Circuit number **

Assign a number (from 0 to 4095) to identify this virtual circuit on this DTE. Virtual circuit numbers must be unique only for the DTE that contains it. *Leased line users must assign the same virtual circuit numbers to both ends.*

Virtual Circuit type **

Enter the type of the virtual circuit. Valid responses are:

- PE (permanent virtual circuit)
- RO (receive only, switched virtual circuit)
- SO (send only, switched virtual circuit)
- SR (send and receive, switched virtual circuit)

PE is the recommended virtual circuit type for leased lines.

Remote DTE address **

Enter the remote DTE address associated with a permanent virtual circuit. The address is 1 to 15 decimal digits.

Virtual Circuit user

Enter the application name associated with the permanent virtual circuit. Valid responses are RFT and SNA, with RFT being the application that connects two X.25 RFT sites via a permanent virtual circuit, and SNA being the application that connects to an SNA host via a permanent virtual circuit.

Results

The AVC command configures a logical channel between a subscriber's DTE/DCE connection in the network. You can define the virtual circuit to be either permanent or switched depending upon the needs of the circuit. A permanent VC is a reserved virtual path between two subscribers, and each subscriber must have a permanent VC dedicated to the other. A switched virtual circuit is a nonreserved logical channel assigned to a subscriber's DTE address, and you can use any available switched virtual circuit to establish a complete virtual call.

Completing an AVC command produces another Add Virtual Circuit screen.

Virtual Circuit Commands

Example

In this example, you add a virtual circuit named VC101 to the DTE named DTE01 under circuit CIR05. The permanent virtual circuit being added is circuit number 101, and it is to connect two X.25 RFT sites. The address of the remote DTE is 37092458.

[] AVC

Screen 1:

```
ADD, MODIFY, OR DELETE VIRTUAL CIRCUIT
Under Circuit  CIR05_____
Under DTE     DTE01_____
```

Screen 2:

```
ADD OR MODIFY VIRTUAL CIRCUIT UNDER DTE DTE01 UNDER CIRCUIT C05
Virtual Circuit name  VC101_____
Virtual Circuit number 101__
Virtual Circuit type   PE
```

(additional prompts)

```
Remote DTE address 37092458_____
Virtual Circuit user RFT_____
```

3.4.11.2 Modify Virtual Circuit (MVC) Command. The MVC command modifies the information about a virtual circuit. First, it displays screen 1 to locate the DTE and circuit that contain the virtual circuit being modified.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE VIRTUAL CIRCUIT
Under Circuit  _____
Under DTE     _____
```

Next, MVC displays screen 2 to identify the virtual circuit and obtain the changes. Screen 2 contains the same prompts that the AVC command displays on its screen 2. The initial values that MVC displays for these prompts are the current values defined for the virtual circuit.

Virtual Circuit Commands

Prompt Details

Under Circuit

Enter the name of the X.25 circuit that contains the DTE where the virtual circuit is being added.

Under DTE

Enter the name of the DTE that is to contain the virtual circuit being added.

Refer to the AVC command description for details on the prompts on screen 2.

Results

The MVC command displays the information about the specified virtual circuit and updates the definition with any changes made.

Completing the MVC command produces an Add Virtual Circuit screen.

Example

In this example, you modify the type of the virtual circuit named VC101 from PE to SO.

```
[ ] MVC
```

Screen 1:

```
ADD, MODIFY, OR DELETE VIRTUAL CIRCUIT
Under Circuit  CIR05_____
Under DTE     DTE01_____
```

Screen 2:

```
ADD OR MODIFY VIRTUAL CIRCUIT UNDER DTE DTE01 UNDER CIRCUIT C05
Virtual Circuit name  VC101_____
Virtual Circuit number 101__
Virtual Circuit type   SO
```

Virtual Circuit Commands

3.4.11.3 Delete Virtual Circuit (DVC) Command. The DVC command deletes a virtual circuit from the DNCS configuration.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE VIRTUAL CIRCUIT
Under Circuit _____
Under DTE   _____
```

Screen 2:

```
DELETE VIRTUAL CIRCUIT UNDER DTE < DTE name> UNDER CIRCUIT < circuit>
Virtual Circuit name _____
```

where:

```
< DTE name>  is the name of the DTE specified on screen 1.
< circuit>   is the name of the circuit specified on screen 1.
```

Results

The DVC command deletes the specified virtual circuit from the DNCS configuration.

Completing the DVC command produces another Delete Virtual Circuit screen.

Example

In this example, you delete the virtual circuit named VC101 from the DNCS configuration.

Screen 1:

```
ADD, MODIFY, OR DELETE VIRTUAL CIRCUIT
Under Circuit  CIR05_____
Under DTE     DTE01_____
```

Screen 2:

```
DELETE VIRTUAL CIRCUIT UNDER DTE < DTE name> UNDER CIRCUIT < circuit>
Virtual Circuit name  VC101_____
```

VPU Commands

3.4.12 VPU Commands

Three commands are available to add, modify, and delete VPUs:

- AV — Add VPU
- MV — Modify VPU
- DV — Delete VPU

3.4.12.1 Add VPU (AV) Command. The AV command adds a virtual physical unit (VPU) to the current configuration and assigns LUs to its pool. First, it displays screen 1 to identify the parent PU. Then, it displays screen 2 to obtain the VPU name, ID requirement, and LU pool.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE VIRTUAL PHYSICAL UNIT
UNDER Physical unit _____
```

Screen 2:

```
ADD OR MODIFY VIRTUAL PHYSICAL UNIT UNDER PU < PU name>
VPU name _____
ID required?(Y/N) _____
LU pool list _____
```

where:

< PU name> is the PU identified on screen 1.

Prompt Details

UNDER Physical unit

Enter the name of the parent PU of the VPU being added.

VPU name

Enter a name to identify the VPU in DNCS commands and displays (up to eight characters, beginning with a letter).

ID required?(Y/N)

Enter Y (or YES) if using one of the LUs from the pool requires the presentation of a user ID. Otherwise, accept the default (NO).

LU pool list

Enter the numbers of the LUs assigned to the pool for the VPU. Commas separate individual numbers on the list. To specify a range of contiguous LUs, enter the lower and upper bounds separated by a hyphen. For example, if an LU pool includes 1, 3, 4, and 5, enter 1,3-5. If the VPU does not have a pool of LUs, omit this response.

VPU Commands*Results*

The AV command configures an additional VPU for the PU indicated, enabling the PU to support an additional concurrent session at each station. The specified LUs in the pool become available for sessions with applications running on the SNA host.

Completing an AV command produces an Add Application screen.

Example

In this example, you add the VPU named V1 under the PU named CDAANR. You assign LUs 1, 2, 3, 4, 7, and 10 to the pool and specify no ID requirement.

[] AV

Screen 1:

```
ADD, MODIFY, OR DELETE VIRTUAL PHYSICAL UNIT
  UNDER Physical unit  CDAANR_____
```

Screen 2:

```
ADD OR MODIFY VIRTUAL PHYSICAL UNIT UNDER PU CDAANR
  VPU name  V1_____
  ID required?(Y/N)  NO__
  LU pool list  1-4,7,10_____
```

Related Commands

- AA — Add Application (paragraph 3.4.1.1)
- AM — Add Mode (paragraph 3.4.5.1)

3.4.12.2 Modify VPU (MV) Command. The MV command modifies the definition of a virtual physical unit (VPU). First, it displays screen 1 to locate the PU that owns the VPU being changed.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE VIRTUAL PHYSICAL UNIT
  UNDER Physical Unit  _____
```

Next, MV displays screen 2 to identify the VPU and obtain the changes. Screen 2 contains the same prompts that the AV command displays on its screen 2. The initial values that MV displays for these prompts are the current values defined for the VPU.

VPU Commands

Prompt Details

UNDER Physical Unit

Enter the name of the parent PU of the VPU being modified.

Refer to the AV command description for details on the prompts on screen 2.

Results

The MV command displays the information about the specified VPU and updates the definition with any changes made. It does not affect the PU or any application synonyms defined for the VPU.

Completing an MV command produces an application screen.

Example

In this example, you add another LU to the pool for the VPU named V1 under the PU named CDAANR.

```
[ ] MV
```

Screen 1:

```
ADD, MODIFY, OR DELETE VIRTUAL PHYSICAL UNIT  
UNDER Physical Unit CDAANR____
```

Screen 2:

```
ADD OR MODIFY VIRTUAL PHYSICAL UNIT UNDER PU CDAANR  
VPU name V1_____  
ID required?(Y/N) NO  
LU pool list 1-4,7,9-10
```

VPU Commands

3.4.12.3 Delete VPU (DV) Command. The DV command deletes a virtual physical unit (VPU) from the DNCS configuration. First, it displays screen 1 to locate the parent PU. Then, it displays screen 2 to identify the VPU.

Prompts

Screen 1:

```
ADD, MODIFY, OR DELETE VIRTUAL PHYSICAL UNIT
UNDER Physical Unit _____
```

Screen 2:

```
DELETE VIRTUAL PHYSICAL UNIT UNDER PU < PU >
VPU name _____
```

where:

< PU > is the name of the PU identified on screen 1.

Prompt Details

UNDER Physical Unit

Enter the name of the parent PU for the VPU being deleted.

VPU name

Enter the name of the VPU being deleted.

Results

The DV command removes the specified VPU from the DNCS configuration. It also deletes any application synonyms defined under the VPU and frees the pool LUs for other use.

Completing a DV command produces another Delete VPU screen.

Example

In this example, you delete the VPU named V2 from the configuration of the PU named CDAANR.

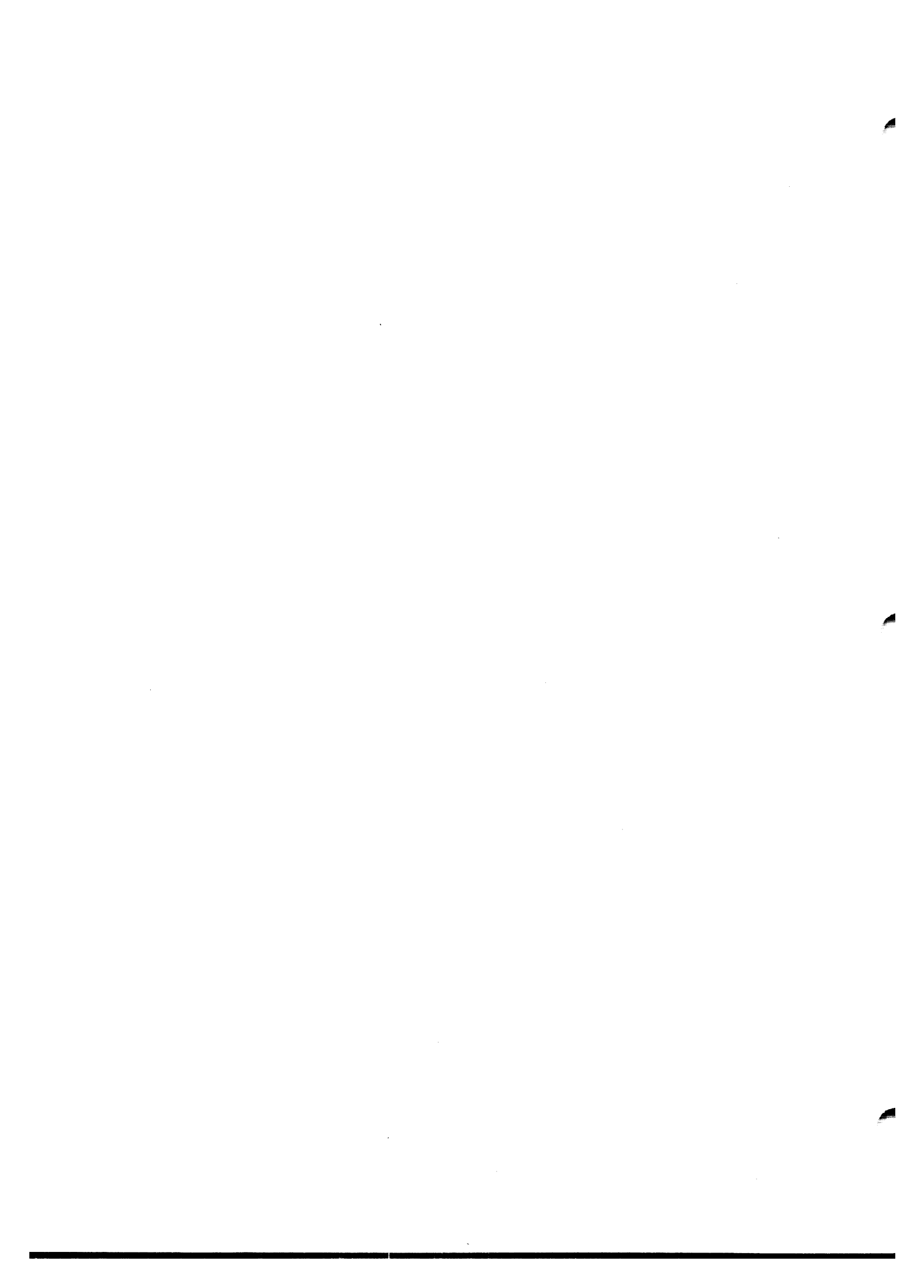
```
[ ] DV
```

Screen 1:

```
ADD, MODIFY, OR DELETE VIRTUAL PHYSICAL UNIT
UNDER Physical Unit CDAANR____
```

Screen 2:

```
DELETE VIRTUAL PHYSICAL UNIT UNDER PU CDAANR
VPU name V2_____
```



Generating Sample SNA Configurations

4.1 INTRODUCTION

This section provides detailed information to guide you in generating an SNA configuration and the required DNCS framework facilities. The section includes the following:

- Three example SNA configurations
- Suggestions for modifying the sample configurations
- An example of how to define these configurations using the DNCS System Generation utility
- An example of how to modify one of the sample configurations to create a new configuration

4.2 USING THE EXAMPLE CONFIGURATIONS

The following paragraphs present three DNCS configurations for you to compare with the configuration you defined through the planning process described in Section 2. These configurations provide simple examples of some common resource arrangements. They also provide possible shortcuts for DNCS generation where your planned configuration roughly matches one of the examples.

Before you can use the example configurations, you should copy them to the DNCS generation directory from the DNCS nucleus object disk, as follows:

```
CD IN = < DCFWO > .S$DGU$, OUT = < DCGEN > .S$DGU$
```

where:

< DCFWO > is the synonym assigned to the DNCS nucleus object disk.
< DCGEN > is the synonym assigned to the DNCS generation directory.

Tailoring one of the example configurations to match a planned configuration requires you to add, delete, or modify the resources defined in the example. The generation utility provides a full range of commands for adding, deleting, or modifying any entity in the configuration. For example, the Add Circuit (AC) command can configure an additional circuit for the system, the Delete Resource (DR) command can remove extraneous resources from an existing circuit, and the Modify Mode (MM) command can change the application accessed by mode key.

The decision on whether to define a new configuration or tailor an example configuration depends on how well the structure of the planned configuration matches the structure of the examples. For instance, all three example configurations include Emulator support. If the planned configuration does not include the DNCS SNA Emulators, none of the examples provides a good match. Similarly, only the second example uses the concurrent session capability, and only at one resource. If the planned configuration requires concurrent sessions at numerous terminals, it might be easier to define a new configuration.

4.2.1 Configuration One: Emulators with Dedicated LUs

The example configuration (Figure 4-1) has two circuits — a link (C01) to the host using SDLC, and a CIPC circuit (C02) for the DNCS SNA Emulators. The Emulator circuit supports the following resources:

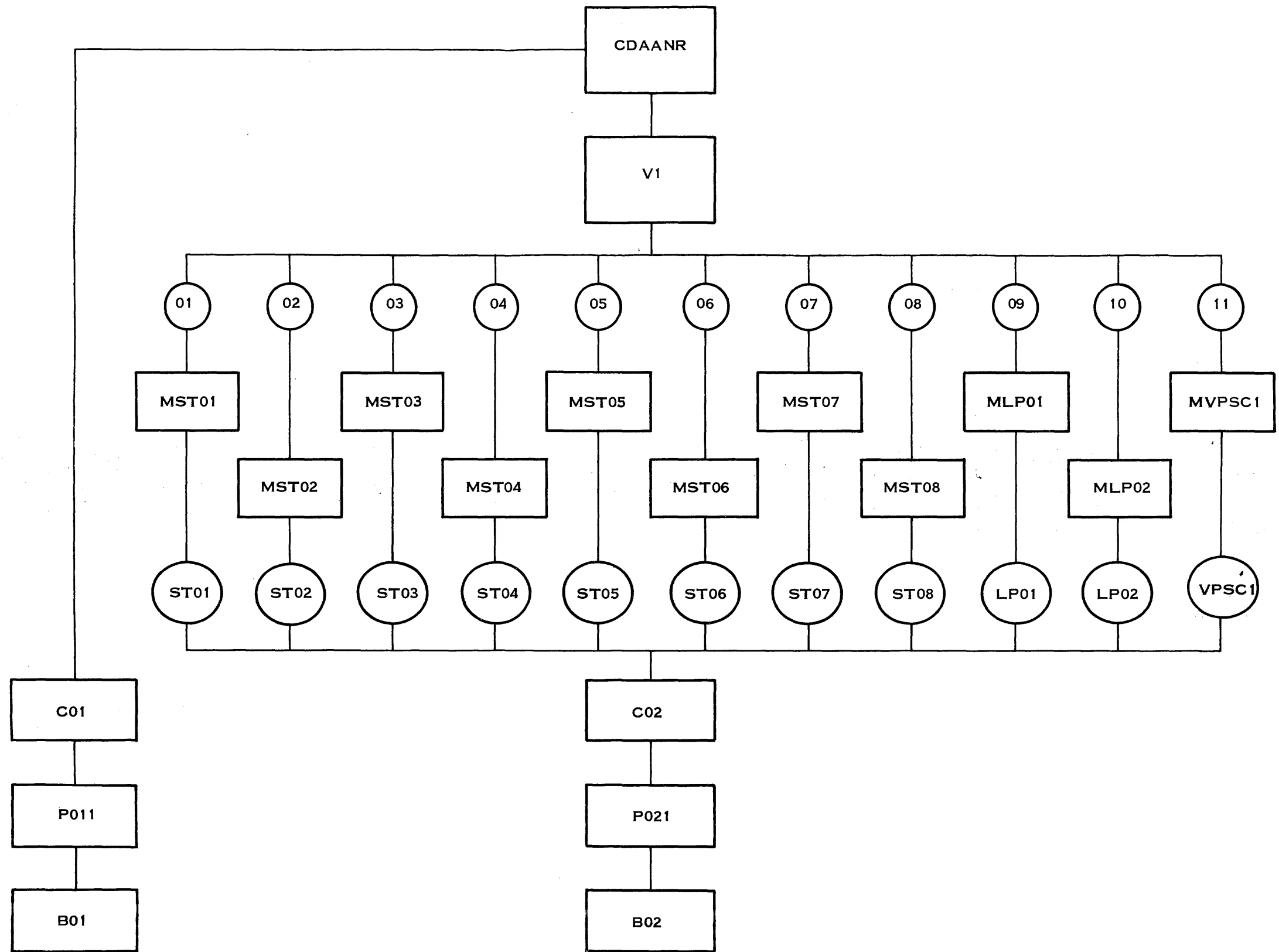
- Eight VDT2 Display Station Emulators (type V911)
- One PTR1 Emulator (type PTR1)
- One PTR3 Emulator (type PTR3)
- One PSC program serving as an SNA display station (type PSC2)

Each station has one mode that provides automatic access to either IMS or CICS, application synonyms for ALEIMA and ADACIA. Each station also has a dedicated LU, guaranteeing that it can establish a session with an application at any time. Since the configuration includes only one VPU (V1), the station can access only one application at a time.

Figure 4-2 through Figure 4-5 show the planning forms for this configuration.

Figure 4-6 is the Show command display for this example. Tailoring configuration one requires at least the following changes:

- Change the node name (shown as DNCS SYSTEM) from DEX01 to one chosen for the site.
- Rename the PU, using the name the SNA host system administrator provides.
- Change the poll address from 01 to the address the SNA host uses.



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Figure 4-1. Configuration One: SNA Emulators with Dedicated LUs



Depending on the planned configuration, the following changes might also be in order:

- Define the application synonyms to represent applications other than IMS, TSO, and CICS.
- Define another port on board B01 as a backup for port P011, or use a BCAIM board if you only want one port.
- Add or delete resources from circuit C02.
- Change the log mode names for the PU to be more meaningful to your installation.
- Change the LU assignments to match the LU assignments defined in the VTAM generation.
- Add service queue capability by defining an SVQ resource.
- Change the DNOS device names (CMxx) to match the DNOS system generation.

Configuration name CON\$1 [14]'

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DNCS CONFIGURATION PLANNING FORM — BOARDS

Number of primary ports 2 [21]
Number of backup ports 0 [21]

Board name [16]	Board Type [16]	Line Control Discipline [15]	Circuit Protocol [15]	Port name [17]	DNOS device name [19]	Port LUNO [19]	Backup Port [20]
<u>B01</u>	<u>FCCC</u>	<u>HOST</u>	<u>SDLC</u>	<u>P011</u>	<u>CM01</u>	<u>> 31</u>	
<u>B02</u>	<u>VIRTUAL</u>	<u>DNCS_IPC</u>	<u>CIPC</u>	<u>P021</u>	<u>CM05</u>	<u>> 32</u>	

*Numbers in brackets refer to steps in the planning process.

Figure 4-3. Configuration One: Completed Board Planning Form

Configuration name CON\$1 [1]¹

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DNCS CONFIGURATION PLANNING FORM — SNA CIRCUIT

Circuit name C02 [3]
 Protocol CIPC [4]
 Max # Reads 3 [5]
 Max # Retries 0 [5]
 NRZI _____ [5]
 Auto Answer _____ [5]
 # of Stations 11 [7]
 Primary Port P021 [18]

Resource name [8]	Resource type [9]	Poll Address [11]	Associated Printer [10]	Mode name [12/39]	Application synonym [38]	Associated VPU [40]	LU [40]
<u>ST01</u>	<u>V911</u>	<u>1</u>	<u>LP01</u>	<u>MST01</u>	<u>IMS</u>		<u>01</u>
.
.
<u>ST06²</u>	<u>V911</u>	<u>6</u>	<u>LP01</u>	<u>MST06</u>	<u>IMS</u>		<u>06</u>
<u>ST07</u>	<u>V911</u>	<u>7</u>	<u>LP02</u>	<u>MST07</u>	<u>IMS</u>		<u>07</u>
<u>ST08</u>	<u>V911</u>	<u>8</u>	<u>LP02</u>	<u>MST08</u>	<u>CICS</u>		<u>08</u>
<u>LP01</u>	<u>PTR1</u>	<u>101</u>		<u>MLP01</u>	<u>IMS</u>		<u>09</u>
<u>LP02</u>	<u>PTR3</u>	<u>102</u>		<u>MLP02</u>	<u>CICS</u>		<u>10</u>
<u>VPSCI</u>	<u>PSC2</u>	<u>201</u>	<u>LP02</u>	<u>MVPSCI</u>	<u>CICS</u>		<u>11</u>

¹Numbers in brackets refer to steps in the planning process.

²Listings for ST02 through ST05 do not appear. They are all V911 type resources using LP01 as the associated printer. The IMS application synonym is assigned to each. Poll addresses, mode names, and LUs are numbered sequentially.

Figure 4-5. Configuration One: Completed Circuit Planning Form for C02

```
DNCS SYSTEM = DEX01.
PU = CDAANR, ACCESS METHOD = VTAM, CIRCUIT = C01, POLL ADDRESS = 1,
  XID = 020000000000, REMOTE DTE = , SLU1 LOGMODE = DCPUPA,
  SLU2 LOGMODE = DCP3278, SLU3 LOGMODE = DCP3284.
VPU = V1, NO ID REQUIRED,
  LU LIST = "".
  APPLICATION = ALEIMA, SYN = IMS, NO ID REQUIRED.
  APPLICATION = ADATSA, SYN = TSO, ID REQUIRED.
  APPLICATION = ADACIA, SYN = CICS, NO ID REQUIRED.
BOARD = B01, TYPE = FCCC .
  PORT = P011, DNOS DEVICE NAME = CM01, LUNO = > 31,
  BACKUP = .
BOARD = B02, TYPE = VIRTUAL.
  PORT = P021, DNOS DEVICE NAME = CM05, LUNO = > 32,
  BACKUP = .
CIRCUIT = C01, PROTOCOL = SDLC, MAXREADS = 10,
  MAXRETRIES = 0, PORT = P011, NRZI = NO, AUTO ANSWER = NO.
CIRCUIT = C02, PROTOCOL = CIPC, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P021.
RESOURCE = ST01, TYPE = V911, POLL ADDRESS = 01,
  ASSOCIATED PRINTER = LP01.
  MODE = MST01, APPLICATION = IMS, VPU = , LU = 01.
RESOURCE = ST02, TYPE = V911, POLL ADDRESS = 02,
  ASSOCIATED PRINTER = LP01.
  MODE = MST02, APPLICATION = IMS, VPU = , LU = 02.
RESOURCE = ST03, TYPE = V911, POLL ADDRESS = 03,
  ASSOCIATED PRINTER = LP01.
  MODE = MST03, APPLICATION = IMS, VPU = , LU = 03.
RESOURCE = ST04, TYPE = V911, POLL ADDRESS = 04,
  ASSOCIATED PRINTER = LP01.
  MODE = MST04, APPLICATION = IMS, VPU = , LU = 04.
RESOURCE = ST05, TYPE = V911, POLL ADDRESS = 05,
  ASSOCIATED PRINTER = LP01.
  MODE = MST05, APPLICATION = IMS, VPU = , LU = 05.
RESOURCE = ST06, TYPE = V911, POLL ADDRESS = 06,
  ASSOCIATED PRINTER = LP01.
  MODE = MST06, APPLICATION = IMS, VPU = , LU = 06.
RESOURCE = ST07, TYPE = V911, POLL ADDRESS = 07,
  ASSOCIATED PRINTER = LP02.
  MODE = MST07, APPLICATION = CICS, VPU = , LU = 07.
RESOURCE = ST08, TYPE = V911, POLL ADDRESS = 08,
  ASSOCIATED PRINTER = LP02.
  MODE = MST08, APPLICATION = CICS, VPU = , LU = 08.
RESOURCE = LP01, TYPE = PTR1, POLL ADDRESS = 101,
  ASSOCIATED PRINTER = .
  MODE = MLP01, APPLICATION = IMS, VPU = , LU = 09.
RESOURCE = LP02, TYPE = PTR3, POLL ADDRESS = 102,
  ASSOCIATED PRINTER = .
  MODE = MLP02, APPLICATION = CICS, VPU = , LU = 10.
RESOURCE = VPSC1, TYPE = PSC2, POLL ADDRESS = 201,
  ASSOCIATED PRINTER = LP02.
  MODE = MVPSC1, APPLICATION = CICS, VPU = , LU = 11.
```

Figure 4-6. Configuration One: Configuration Display

4.2.2 Configuration Two: Emulators and XCI with Pooled LUs

The example configuration configuration two (Figure 4-7) has three circuits — a link (C01) to the SNA host, a CIPC circuit (C02) for the DNCS SNA Emulators, and a CI circuit (C03) for the Execute DNCS Command Interpreter (XCI) command. The Emulator circuit has the same stations as the first example except that the display stations use pooled LUs from the first VPU instead of dedicated LUs. The configuration includes the following stations:

- Eight VDT2 Display Station Emulators (type V911)
- One PTR1 Emulator (type PTR1)
- One PTR3 Emulator (type PTR3)
- One PSC program serving as an SNA display station (type PSC2)
- One network operator interface (type CIRES)

The configuration also includes an additional VPU (V2) that allows station ST07 to have two sessions concurrently. (Other stations can have only one session at a time since the only LU available under V2 belongs to ST07.) The first VPU (V1) has a pool of four LUs available for use by any of the eight VDT2 stations. This reduces the overall LU requirements for the configuration but limits the number of simultaneous sessions under V1 to four.

The third circuit supports the XCI command. It uses the second port (P022) on the same virtual board (B02) as the Emulator circuit. This circuit uses CI protocol to deliver DNCS CI commands from the resource (type CIRES) to DNCS.

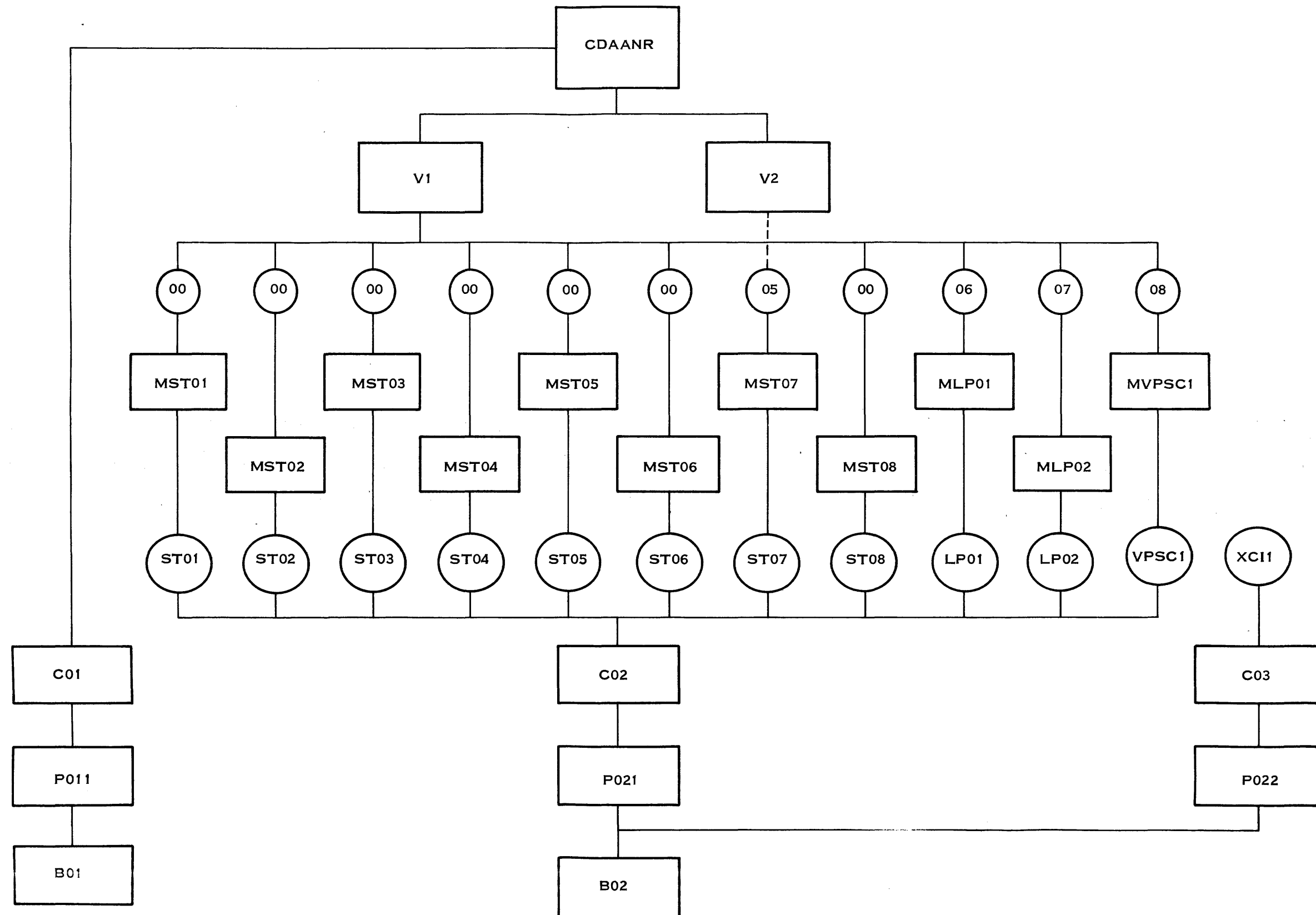
Figure 4-8 through Figure 4-12 show the planning forms for this configuration.

Figure 4-13 is the Show command display for this example. Tailoring configuration two requires at least the following changes:

- Change the node name (shown as DNCS SYSTEM) from DEX02 to one chosen for the site.
- Rename the PU, using the name the SNA host system administrator provides.
- Change the poll address from 01 to the address the SNA host uses.

Depending on the planned configuration, the following changes might also be in order:

- Change the application synonyms to represent applications other than IMS, TSO, and CICS.
- Define another port on board B01 as a backup for port P011, or use a BCAIM board if you only want one port.
- Change the log mode names for the PU to be more meaningful to your installation.
- Change the LU assignments to match the LU assignments defined in the VTAM generation.
- Add service queue capability by defining an SVQ resource.
- Change the DNOS device names (CMxx) to match the DNOS system generation.
- Add or delete stations from circuit C02.
- Delete V2 and modify MST07 to access a V1 application using a pool LU.



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Figure 4-7. Configuration Two: SNA Emulators and XCI with Pooled LUs

Configuration name CON\$2 [22]¹

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DNCS CONFIGURATION PLANNING FORM — NODE

Node name DEX02 [23]
 PU name CDAANR [24]
 Access method VTAM [25]
 Circuit name C01 [26]
 Poll address 1 [27]
 Exchange ID 020000000000 [28]
 Remote DTE address _____ [29]
 SLU Type 1 Mode Name DCPUPA [30]
 SLU Type 2 Mode Name DCP3278 [30]
 SLU Type 3 Mode Name DCP3284 [30]
 LUs available 1,2,3,4,5,6,7,8 [31]

VPU Name [32]	ID Required (Y/N) [33]	LU pool list [41]	Application name [35]	DNCS Synonym [36]	ID Required (Y/N) [37]
<u>V1</u>	<u>NO</u>	<u>1-4</u>	<u>ALEIMA</u> <u>ADATSA</u> <u>ADACIA</u>	<u>IMS</u> <u>TSO</u> <u>CICS</u>	<u>NO</u> <u>YES</u> <u>NO</u>
<u>V2</u>	<u>NO</u>		<u>ALEIMA</u>	<u>IMS2</u>	<u>NO</u>

¹Numbers in brackets refer to steps in the planning process.

Figure 4-8. Configuration Two: Completed Node Planning Form

Configuration name CON\$2 [14]¹

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DNCS CONFIGURATION PLANNING FORM — BOARDS

Number of primary ports 3 [21]
Number of backup ports 0 [21]

Board name [16]	Board Type [16]	Line Control Discipline [15]	Circuit Protocol [15]	Port name [17]	DNOS device name [19]	Port LUNO [19]	Backup Port [20]
<u>B01</u>	<u>FCCC</u>	<u>HOST</u>	<u>SDLC</u>	<u>P011</u>	<u>CM01</u>	<u>> 31</u>	
<u>B02</u>	<u>VIRTUAL</u>	<u>DNCS_IPC</u>	<u>CIPC</u>	<u>P021</u>	<u>CM05</u>	<u>> 32</u>	
			<u>CI</u>	<u>P022</u>	<u>CM07</u>	<u>> 33</u>	

¹Numbers in brackets refer to steps in the planning process.

Figure 4-9. Configuration Two: Completed Board Planning Form

Configuration name CON\$2 [1]¹

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DNCS CONFIGURATION PLANNING FORM — SNA CIRCUIT

Circuit name C02 [3]
 Protocol CIPC [4]
 Max # Reads 3 [5]
 Max # Retries 0 [5]
 NRZI _____ [5]
 Auto Answer _____ [5]
 # of Stations 11 [7]
 Primary Port P021 [18]

Resource name [8]	Resource type [9]	Poll Address [11]	Associated Printer [10]	Mode name [12/39]	Application synonym [38]	Associated VPU [40]	LU [40]
<u>ST01</u>	<u>V911</u>	<u>1</u>	<u>LP01</u>	<u>MST01</u>	<u>IMS</u>		<u>0</u>
.
.
<u>ST06²</u>	<u>V911</u>	<u>6</u>	<u>LP01</u>	<u>MST06</u>	<u>IMS</u>		<u>0</u>
<u>ST07</u>	<u>V911</u>	<u>7</u>	<u>LP02</u>	<u>MST07</u>	<u>IMS2</u>		<u>05</u>
<u>ST08</u>	<u>V911</u>	<u>8</u>	<u>LP02</u>	<u>MST08</u>	<u>CICS</u>		<u>0</u>
<u>LP01</u>	<u>PTR1</u>	<u>101</u>		<u>MLP01</u>	<u>IMS</u>		<u>06</u>
<u>LP02</u>	<u>PTR3</u>	<u>102</u>		<u>MLP02</u>	<u>CICS</u>		<u>07</u>
<u>VPSCI</u>	<u>PSC2</u>	<u>201</u>	<u>LP02</u>	<u>MVPSCI</u>	<u>CICS</u>		<u>08</u>

¹Numbers in brackets refer to steps in the planning process.
²Listings for ST02 through ST05 do not appear. They are all V911 type resources using LP01 as the associated printer. They all use pooled LUs and the IMS application synonym. Poll addresses and mode names are numbered sequentially.

Figure 4-11. Configuration Two: Completed Circuit Planning Form for C02

Configuration name CON\$2 [1]

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DNCS CONFIGURATION PLANNING FORM — SNA CIRCUIT

Circuit name C03 [3]
 Protocol CI [4]
 Max # Reads 3 [5]
 Max # Retries 0 [5]
 NRZI _____ [5]
 Auto Answer _____ [5]
 # of Stations 1 [7]
 Primary Port P022 [18]

Resource name [8]	Resource type [9]	Poll Address [11]	Associated Printer [10]	Mode name [12/39]	Application synonym [38]	Associated VPU [40]	LU [40]
<u>XCII</u>	<u>CIRES</u>	<u>1</u>	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

*Numbers in brackets refer to steps in the planning process.

Figure 4-12. Configuration Two: Completed Circuit Planning Form for C03

```
DNCS SYSTEM = DEX02.
PU = CDAANR, ACCESS METHOD = VTAM, CIRCUIT = C01, POLL ADDRESS = 1,
  XID = 020000000000, REMOTE DTE = , SLU1 LOGMODE = DCPUPA,
  SLU2 LOGMODE = DCP3278, SLU3 LOGMODE = DCP3284.
VPU = V1, NO ID REQUIRED,
  LU LIST = "1-4".
  APPLICATION = ALEIMA, SYN = IMS, NO ID REQUIRED.
  APPLICATION = ADATSA, SYN = TSO, ID REQUIRED.
  APPLICATION = ADACIA, SYN = CICS, NO ID REQUIRED.
VPU = V2, NO ID REQUIRED,
  LU LIST = "".
  APPLICATION = ALEIMA, SYN = IMS2, NO ID REQUIRED.
BOARD = B01, TYPE = FCCC.
  PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
  BACKUP = .
BOARD = B02, TYPE = VIRTUAL.
  PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >32,
  BACKUP = .
  PORT = P022, DNOS DEVICE NAME = CM07, LUNO = >33,
  BACKUP = .
CIRCUIT = C01, PROTOCOL = SDLC, MAXREADS = 10,
  MAXRETRIES = 0, PORT = P011, NRZI = NO, AUTO ANSWER = NO.
CIRCUIT = C02, PROTOCOL = CIPC, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P021.
RESOURCE = ST01, TYPE = V911, POLL ADDRESS = 01,
  ASSOCIATED PRINTER = LP01.
  MODE = MST01, APPLICATION = IMS, VPU = , LU = 0.
RESOURCE = ST02, TYPE = V911, POLL ADDRESS = 02,
  ASSOCIATED PRINTER = LP01.
  MODE = MST02, APPLICATION = IMS, VPU = , LU = 0.
RESOURCE = ST03, TYPE = V911, POLL ADDRESS = 03,
  ASSOCIATED PRINTER = LP01.
  MODE = MST03, APPLICATION = IMS, VPU = , LU = 0.
RESOURCE = ST04, TYPE = V911, POLL ADDRESS = 04,
  ASSOCIATED PRINTER = LP01.
  MODE = MST04, APPLICATION = IMS, VPU = , LU = 0.
RESOURCE = ST05, TYPE = V911, POLL ADDRESS = 05,
  ASSOCIATED PRINTER = LP01.
  MODE = MST05, APPLICATION = IMS, VPU = , LU = 0.
RESOURCE = ST06, TYPE = V911, POLL ADDRESS = 06,
  ASSOCIATED PRINTER = LP01.
  MODE = MST06, APPLICATION = IMS, VPU = , LU = 0.
RESOURCE = ST07, TYPE = V911, POLL ADDRESS = 07,
  ASSOCIATED PRINTER = LP02.
  MODE = MST07, APPLICATION = IMS2, VPU = , LU = 05.
RESOURCE = ST08, TYPE = V911, POLL ADDRESS = 08,
  ASSOCIATED PRINTER = LP02.
  MODE = MST08, APPLICATION = CICS, VPU = , LU = 0.
RESOURCE = LP01, TYPE = PTR1, POLL ADDRESS = 101,
  ASSOCIATED PRINTER = .
  MODE = MLP01, APPLICATION = IMS, VPU = , LU = 06.
RESOURCE = LP02, TYPE = PTR3, POLL ADDRESS = 102,
  ASSOCIATED PRINTER = .
  MODE = MLP02, APPLICATION = CICS, VPU = , LU = 07.
RESOURCE = VPSC1, TYPE = PSC2, POLL ADDRESS = 201,
  ASSOCIATED PRINTER = LP02.
  MODE = MVPSC1, APPLICATION = CICS, VPU = , LU = 08.
CIRCUIT = C03, PROTOCOL = CI, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P022.
RESOURCE = XCI1, TYPE = CIRES, POLL ADDRESS = 01,
  ASSOCIATED PRINTER = .
```

Figure 4-13. Configuration Two: Configuration Display

4.2.3 Configuration Three: Emulators, Local Line, and XCI with Dedicated LUs

The example configuration configuration three (Figure 4-14) has four circuits—a link (C01) to the SNA host, a CIPC circuit (C02) for the DNCS SNA Emulators, a CI circuit (C03) for the XCI command, and an RDTC circuit for a cluster of two 914A terminals and a printer. The Emulator circuit includes the same stations as the first example with the addition of the service queue (SVQ) capability. The CI circuit is the same as in the second example. However, configuration two adds the 914A terminals and printer so that the configuration includes the following stations:

- Eight VDT2 Display Station Emulators (type V911)
- One PTR1 Emulator (type PTR1)
- One PTR3 Emulator (type PTR3)
- One service queue processor (type SVQ)
- One PSC program serving as an SNA display station (type PSC2)
- One network operator interface (type CIRES)
- Two 914A terminals (type V914)
- One 810 printer attached to a 914A terminal (type P914)

The configuration also includes another board (B03) to provide the local line protocol for the RDTC circuit. This circuit serves the two 914A terminals (V914A1 and V914A2) and the 810 printer (P914P1). Both 914A terminals have two modes defined, one for IMS and the other for the time sharing option (TSO). Since the configuration has only one VPU (V1), the terminals cannot have concurrent sessions with both applications (or two concurrent sessions with the same application). Therefore, one LU for each terminal is sufficient. The 810 printer serves only the application with the synonym IMS and has an LU dedicated to it for this purpose.

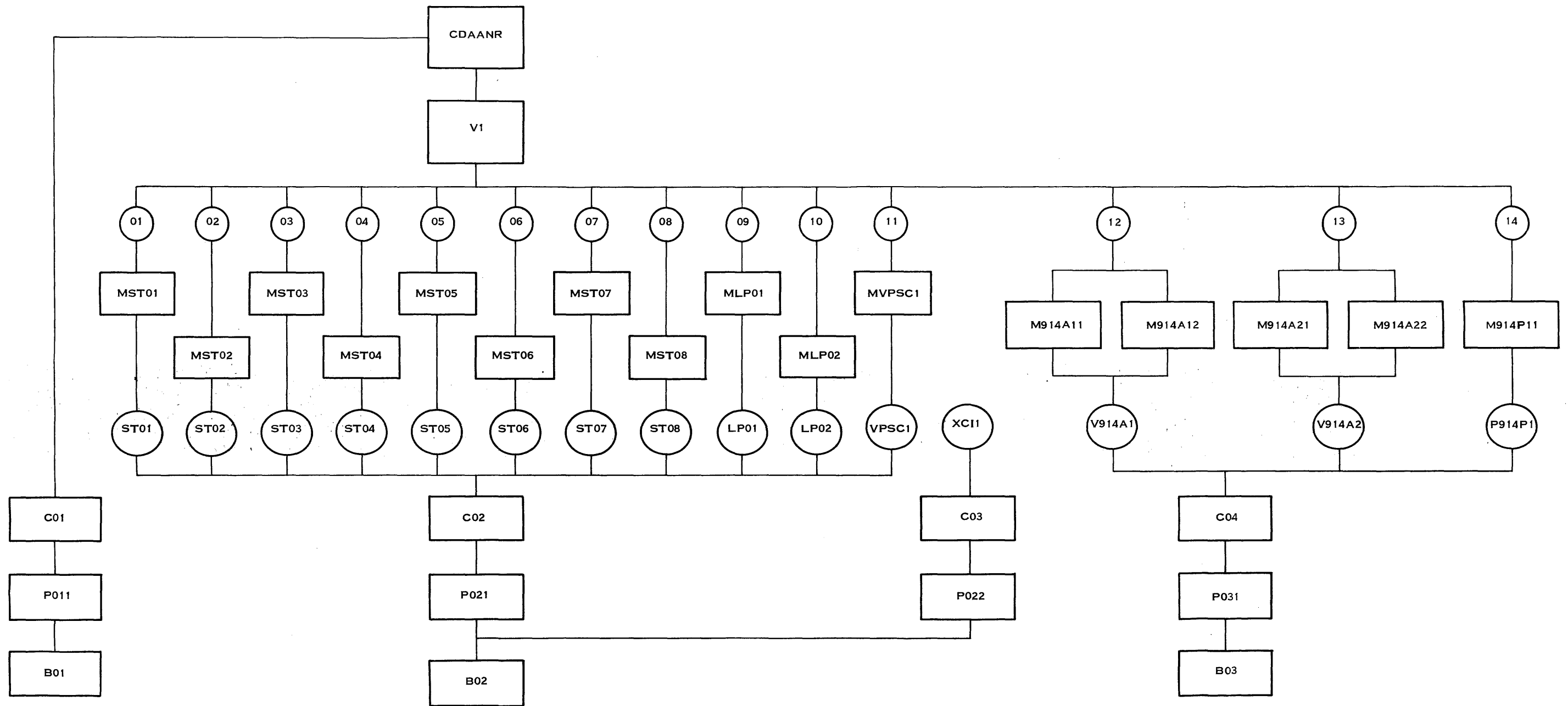
Figure 4-15 through Figure 4-20 show the planning forms for this configuration.

Figure 4-21 is the Show command display for this example. Tailoring configuration three requires at least the following changes:

- Change the node name (shown as DNCS SYSTEM) from DEX03 to one chosen for the site.
- Rename the PU, using the name the SNA network operator provides.
- Change the poll address from 01 to the address the SNA host uses.
- Change the application names to those the SNA host provides.

Depending on the planned configuration, the following changes might also be in order:

- Change the application synonyms to represent applications other than IMS, TSO, and CICS.
- Define another port on board E01 as a backup for port P011.
- Define another port on board E03 as a backup for port P031.
- Add or delete stations from circuit C02.
- If the planned configuration does not include the Emulators, delete port P021 and circuit C02.
- Define another VPU to provide LUs for concurrent sessions at the 914A terminals.
- Define modes for the 914A terminals to enable their third mode keys to provide automatic access to a third application.



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Figure 4-14. Configuration Three: SNA Emulators, Local Line, and XCI with Dedicated LUs



Configuration name CON\$3 [22]'

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DNCS CONFIGURATION PLANNING FORM — NODE

Node name DEX02 [23]
 PU name CDAANR [24]
 Access method VTAM [25]
 Circuit name C01 [26]
 Poll address 1 [27]
 Exchange ID 0200 00000000 [28]
 Remote DTE address _____ [29]
 SLU Type 1 Mode Name DCPUPA [30]
 SLU Type 2 Mode Name DCP3278 [30]
 SLU Type 3 Mode Name DCP3284 [30]
 LUs available 1,2,3,4,5,6,7,8,9,10 [31]
11,12,13,14,15,

VPU Name [32]	ID Required (Y/N) [33]	LU pool list [41]	Application name [35]	DNCS Synonym [36]	ID Required (Y/N) [37]
<u>VI</u>	<u>NO</u>	_____	<u>ALEIMA</u>	<u>IMS</u>	<u>NO</u>
			<u>ADATSA</u>	<u>TSO</u>	<u>YES</u>
			<u>ADACIA</u>	<u>CICS</u>	<u>NO</u>
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____

*Numbers in brackets refer to steps in the planning process.

Figure 4-15. Configuration Three: Completed Node Planning Form

Configuration name CON\$3 [14]¹

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DNCS CONFIGURATION PLANNING FORM — BOARDS

Number of primary ports 4 [21]
 Number of backup ports 0 [21]

Board name [16]	Board type [16]	Line Control Discipline [15]	Circuit Protocol [15]	Port Name [17]	DNOS Device Name [19]	Port LUNO [19]	Backup Port [20]
<u>B01</u>	<u>FCCC</u>	<u>HOST</u>	<u>SDLC</u>	<u>P011</u>	<u>CM01</u>	<u>> 31</u>	
<u>B02</u>	<u>VIRTUAL</u>	<u>DNCS_IPC</u>	<u>CIPC</u>	<u>P021</u>	<u>CM05</u>	<u>> 32</u>	
			<u>CI</u>	<u>P022</u>	<u>CM07</u>	<u>> 33</u>	
<u>B03</u>	<u>FCCC</u>	<u>LOCAL</u>	<u>RDTC</u>	<u>P031</u>	<u>CM12</u>	<u>> 34</u>	

¹Numbers in brackets refer to steps in the planning process.

Figure 4-16. Configuration Three: Completed Board Planning Form

DNCS CONFIGURATION PLANNING FORM — SNA CIRCUIT

Circuit name C02 [3]
 Protocol CIPC [4]
 Max # Reads 3 [5]
 Max # Retries 0 [5]
 NRZI _____ [5]
 Auto Answer _____ [5]
 # of Stations 12 [7]
 Primary Port P021 [18]

Resource Name [8]	Resource Type [9]	Poll Address [11]	Associated Printer [10]	Mode Name [12/39]	Application Synonym [38]	Associated VPU [40]	LU [40]
<u>ST01</u>	<u>V911</u>	<u>1</u>	<u>LP01</u>	<u>MST01</u>	<u>IMS</u>		<u>1</u>
.
.
<u>ST06²</u>	<u>V911</u>	<u>6</u>	<u>LP01</u>	<u>MST06</u>	<u>IMS</u>		<u>6</u>
<u>ST07</u>	<u>V911</u>	<u>7</u>	<u>LP02</u>	<u>MST07</u>	<u>IMS2</u>		<u>07</u>
<u>ST08</u>	<u>V911</u>	<u>8</u>	<u>LP02</u>	<u>MST08</u>	<u>CICS</u>		<u>08</u>
<u>LP01</u>	<u>PTR1</u>	<u>101</u>		<u>MLP01</u>	<u>IMS</u>		<u>09</u>
<u>LP02</u>	<u>PTR3</u>	<u>102</u>		<u>MLP02</u>	<u>CICS</u>		<u>10</u>
<u>VPSC1</u>	<u>PSC2</u>	<u>201</u>	<u>LP02</u>	<u>MVPSC1</u>	<u>CICS</u>		<u>11</u>
<u>RSVQ</u>	<u>SVQ</u>	<u>103</u>		<u>MRSVQ</u>	<u>IMS</u>		<u>12</u>

¹Numbers in brackets refer to steps in the planning process.

²Listings for ST02 through ST05 do not appear. They are all V911 type resources using LP01 as the associated printer. The IMS application synonym is assigned to each. Poll addresses, mode names, and LUs are numbered sequentially.

Figure 4-18. Configuration Three: Completed Circuit Planning Form for C02

Configuration name CON\$3 [1]

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DNCS CONFIGURATION PLANNING FORM — SNA CIRCUIT

Circuit name C04 [3]
 Protocol RDTC [4]
 Max # Reads 7 [5]
 Max # Retries 5 [5]
 NRZI [5]
 Auto Answer [5]
 # of Stations 3 [7]
 Primary Port P031 [18]

Resource name [8]	Resource type [9]	Poll Address [11]	Associated Printer [10]	Mode name [12/39]	Application synonym [38]	Associated VPU [40]	LU [40]
<u>V914A1</u>	<u>V914</u>	<u>64</u>	<u>P914P1</u>	<u>M914A11</u>	<u>IMS</u>	<u> </u>	<u>13</u>
				<u>M914A12</u>	<u>TSO</u>	<u> </u>	<u>13</u>
<u>V914A2</u>	<u>V914</u>	<u>65</u>	<u>P914P1</u>	<u>M914A21</u>	<u>IMS</u>	<u> </u>	<u>14</u>
				<u>M914A22</u>	<u>TSO</u>	<u> </u>	<u>14</u>
<u>P914P1</u>	<u>P914</u>	<u>80</u>	<u> </u>	<u>M914P11</u>	<u>IMS</u>	<u> </u>	<u>15</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

*Numbers in brackets refer to steps in the planning process.

Figure 4-20. Configuration Three: Completed Circuit Planning Form for C04

DNCS SYSTEM = DEX03.
 PU = CDAANR, ACCESS METHOD = VTAM, CIRCUIT = C01, POLL ADDRESS = 1,
 XID = 020000000000, REMOTE DTE = , SLU1 LOGMODE = DCPUPA,
 SLU2 LOGMODE = DCP3278, SLU3 LOGMODE = DCP3284.
 VPU = V1, NO ID REQUIRED,
 LU LIST = "".
 APPLICATION = ALEIMA, SYN = IMS, NO ID REQUIRED.
 APPLICATION = ADATSA, SYN = TSO, ID REQUIRED.
 APPLICATION = ADACIA, SYN = CICS, NO ID REQUIRED.
 BOARD = B01, TYPE = FCCC.
 PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
 BACKUP = .
 BOARD = B02, TYPE = VIRTUAL.
 PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >32,
 BACKUP = .
 PORT = P022, DNOS DEVICE NAME = CM07, LUNO = >33,
 BACKUP = .
 BOARD = B03, TYPE = FCCC.
 PORT = P031, DNOS DEVICE NAME = CM12, LUNO = >34,
 BACKUP = .
 CIRCUIT = C01, PROTOCOL = SDLC, MAXREADS = 10,
 MAXRETRIES = 0, PORT = P011, NRZI = NO, AUTO ANSWER = NO.
 CIRCUIT = C02, PROTOCOL = CIPC, MAXREADS = 3,
 MAXRETRIES = 0, PORT = P021.
 RESOURCE = ST01, TYPE = V911, POLL ADDRESS = 01,
 ASSOCIATED PRINTER = LP01.
 MODE = MST01, APPLICATION = IMS, VPU = , LU = 01.
 RESOURCE = ST02, TYPE = V911, POLL ADDRESS = 02,
 ASSOCIATED PRINTER = LP01.
 MODE = MST02, APPLICATION = IMS, VPU = , LU = 02.
 RESOURCE = ST03, TYPE V911, POLL ADDRESS = 03,
 ASSOCIATED PRINTER = LP01.
 MODE = MST03, APPLICATION = IMS, VPU = , LU = 03.
 RESOURCE = ST04, TYPE = V911, POLL ADDRESS = 04,
 ASSOCIATED PRINTER = LP01
 MODE = MST04, APPLICATION = IMS, VPU = , LU = 04.
 RESOURCE = ST05, TYPE = V911, POLL ADDRESS = 05,
 ASSOCIATED PRINTER = LP01.
 MODE = MST05, APPLICATION = IMS, VPU = , LU = 05.
 RESOURCE = ST06, TYPE = V911, POLL ADDRESS = 06,
 ASSOCIATED PRINTER = LP01.
 MODE = MST06, APPLICATION = IMS, VPU = , LU = 06.

Figure 4-21. Configuration Three: Configuration Display (Sheet 1 of 2)

RESOURCE = ST07, TYPE = V911, POLL ADDRESS = 07,
ASSOCIATED PRINTER = LP02.
MODE = MST07, APPLICATION = CICS, VPU = , LU = 07.
RESOURCE = ST08, TYPE = V911, POLL ADDRESS = 08,
ASSOCIATED PRINTER = LP02.
MODE = MST08, APPLICATION = CICS, VPU = , LU = 08.
RESOURCE = LP01, TYPE = PTR1, POLL ADDRESS = 101,
ASSOCIATED PRINTER = .
MODE = MLP01, APPLICATION = IMS, VPU = , LU = 09.
RESOURCE = LP02, TYPE = PTR3, POLL ADDRESS = 102,
ASSOCIATED PRINTER = .
MODE = MLP02, APPLICATION = CICS, VPU = , LU = 10.
RESOURCE = VPSC1, TYPE = PSC2, POLL ADDRESS = 201,
ASSOCIATED PRINTER = LP02.
MODE = MVPSC1, APPLICATION = CICS, VPU = , LU = 11.
RESOURCE = RSVQ, TYPE = SVQ, POLL ADDRESS = 103,
ASSOCIATED PRINTER = .
MODE = MRSVQ, APPLICATION = IMS, VPU = , LU = 15.
CIRCUIT = C03, PROTOCOL = CI, MAXREADS = 3,
MAXRETRIES = 0, PORT = P022.
RESOURCE = XCI1, TYPE = CIRES, POLL ADDRESS = 01,
ASSOCIATED PRINTER = .
CIRCUIT = C04, PROTOCOL = RDTG, MAXREADS = 7,
MAXRETRIES = 10, PORT = P031.
RESOURCE = V914A1, TYPE = V914, POLL ADDRESS = 64,
ASSOCIATED PRINTER = P914P1.
MODE = M914A11, APPLICATION = IMS, VPU = , LU = 12.
MODE = M914A12, APPLICATION = TSO, VPU = , LU = 12.
RESOURCE = V914A2, TYPE = V914, POLL ADDRESS = 65,
ASSOCIATED PRINTER = P914P1.
MODE = M914A21, APPLICATION = IMS, VPU = , LU = 13.
MODE = M914A22, APPLICATION = TSO, VPU = , LU = 13.
RESOURCE = P914P1, TYPE = P914, POLL ADDRESS = 80,
ASSOCIATED PRINTER = .
MODE = M914P11, APPLICATION = IMS, VPU = , LU = 14.

Figure 4-21. Configuration Three: Configuration Display (Sheet 2 of 2)

4.3 SNA GENERATION EXAMPLE

The following paragraphs demonstrate the use of the DNCS generation utility by showing you how to create the example configuration one described in paragraph 4.2.1. When you create your own configuration, you should begin with a set of completed configuration planning forms (see Appendix A). For these examples, however, you can use the completed forms shown in Figure 4-2 through Figure 4-5.

4.3.1 Creating a New Configuration

In this example, you create the configuration defined on the planning forms shown in Figure 4-2 through Figure 4-5. The following discussion lists each of the actions required to create the configuration, focusing on the decisions made by a hypothetical host system administrator. Variations of Figure 4-6 show the structure of the configuration as it is being built. Paragraph 4.2.1 presents the final configuration as configuration one.

1. Execute the DNCS generation utility, indicating < DCFWO> as the DNCS nucleus object disk and < DCGEN> as the generation directory:

```
[ ] XDGU
```

```
EXECUTE DNCS GENERATION UTILITY
  DNCS NUCLEUS DIRECTORY: < DCFWO>
  DNCS GENERATION DIRECTORY: < DCGEN>
  INPUT CONFIGURATION:
  OUTPUT CONFIGURATION: NEW$1
```

When you activate the generation utility by using the Execute DNCS Generation Utility (XDGU) command, the utility automatically issues a Start command and displays the following menu of configuration commands:

DNCS GENERATION COMMAND MENU

```
ABORT - Terminate DNCS generation without save
ADD - Enter ADD interactive mode
HELP - Display information for current screen
MODIFY - Enter MODIFY interactive mode
NEXT - Perform next logical operation
QUIT - Terminate DNCS generation normally
RENAME - Change an entity's name
SHOW - Display DNCS configuration
START - Return to this menu
SYSTEM - Define or modify node
```

Axx, Mxx, Dxx - Add, Modify, and Delete Entity (xx), respectively

2. Enter the Next command to define the node:

```
[ ] N
```

```
DEFINE DNCS NODE
  Name DEX01_____
```


3. Completing the node (system) definition produces a screen for defining a PU:

ADD OR MODIFY PHYSICAL UNIT UNDER SYSTEM DEX01

PU name CDAANR
Access method VTAM_____
Circuit C01_____
Poll address 1_____
Exchange ID 020000000000
Remote DTE address _____
SLU Type 1 Mode Name DCPUPA__
SLU Type 2 Mode Name DCP3278__
SLU Type 3 Mode Name DCP3284__

4. Completing the PU definition produces a screen for defining a VPU under that PU:

ADD OR MODIFY VIRTUAL PHYSICAL UNIT UNDER PU CDAANR

VPU name V1_____
ID required?(Y/N) NO
LU pool list _____

5. Completing the PU definition produces a screen for defining an application synonym:

ADD OR MODIFY APPLICATION UNDER VPU V1 UNDER PU CDAANR

Application name ALEIMA____
Synonym IMS_____
ID required?(Y/N) NO

6. Completing the application definition produces a screen for defining another application:

ADD OR MODIFY APPLICATION UNDER VPU V1 UNDER PU CDAANR

Application name ADATSA____
Synonym TSO_____
ID required?(Y/N) NO

7. Completing the application definition produces a screen for defining another application:

ADD OR MODIFY APPLICATION UNDER VPU V1 UNDER PU CDAANR

Application name ADACIA____
Synonym CICS_____
ID required?(Y/N) NO

8. Since this completes the definition of the SNA hierarchy, press the CMD key and enter the Show command to check the configuration defined so far:

[] S

```
DNCS SYSTEM = DEX01.
PU = CDAANR, ACCESS METHOD = VTAM, CIRCUIT = C01, POLL ADDRESS = 1,
  XID = 020000000000, REMOTE DTE = , SLU1 LOGMODE = DCPUPA,
  SLU2 LOGMODE = DCP3278, SLU3 LOGMODE = DCP3284.
VPU = V1, NO ID REQUIRED,
  LU LIST = "".
APPLICATION = ALEIMA, SYN = IMS, NO ID REQUIRED.
APPLICATION = ADATSA, SYN = TSO , NO ID REQUIRED.
APPLICATION = ADACIA, SYN = CICS, NO ID REQUIRED.
```

9. The planning forms reveal that the ADATSA application requires the presentation of an ID. Since pressing the CMD key displays a screen to add another application, you need to enter the Modify Application (MA) command to locate the application definition with the error:

[] MA

```
ADD, MODIFY, OR DELETE APPLICATION
      UNDER PU  CDAANR
      UNDER VPU V1_____
```

10. Indicating CDAANR and V1 locates the VPU for ADATSA and produces an MA display. Now enter ADATSA as the response to the application name prompt and receive the current definition of ADATSA:

```
ADD OR MODIFY APPLICATION UNDER VPU V1 UNDER PU CDAANR
Application name  ADATSA____
      Synonym    TSO_____
      ID required?(Y/N)  NO
```

11. Change the response to the ID required prompt to YES:

```
ADD OR MODIFY APPLICATION UNDER VPU V1 UNDER PU CDAANR
Application name  ADATSA____
      Synonym    TSO_____
      ID required?(Y/N)  YES
```

12. Enter the Add Board (AB) command to define the first board:

[] AB

```
ADD BOARD UNDER SYSTEM DEX01
      Board name  B01_____
      Board type  FCCC_____
```

13. Completing the board definition produces a screen for defining a port on that board:

```
ADD OR MODIFY PORT UNDER BOARD B01
      Port name  P011_____
      DNOS device name CM01_____
      LUNO      >31__
      Backup    _____
```

14. Completing the port definition produces a screen for defining another port. Since board B01 does not have any more ports to define, enter the Next command to obtain a screen for defining the next board:

```
[ ] N

ADD BOARD UNDER SYSTEM DEX01
      Board name  B02_____
      Board type  VIRTUAL
```

15. Completing the board definition produces a screen for defining a port on that board:

```
ADD OR MODIFY PORT UNDER BOARD B02
      Port name  P021_____
      DNOS device name CM05_____
      LUNO      >32__
      Backup    _____
```

16. Since this completes the definition of the communications hierarchy, enter the Show command to check the configuration defined so far:

```
[ ] S

DNCS SYSTEM = DEX01.
PU = CDAANR, ACCESS METHOD = VTAM, CIRCUIT = C01, POLL ADDRESS = 1,
  XID = 020000000000, REMOTE DTE = , SLU1 LOGMODE = DCPUPA,
  SLU2 LOGMODE = DCP3278, SLU3 LOGMODE = DCP3284.
VPU = V1, NO ID REQUIRED,
  LU LIST = "".
APPLICATION = ALEIMA, SYN = IMS, NO ID REQUIRED.
APPLICATION = ADATSA, SYN = TSO, ID REQUIRED.
APPLICATION = ADACIA, SYN = CICS, NO ID REQUIRED.
BOARD = B01, TYPE = FCCC.
PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
  BACKUP = .
BOARD = B02, TYPE = VIRTUAL.
PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >32,
  BACKUP = .
```

17. Comparing the results of the Show command with the completed planning forms reveals no errors. Therefore, press CMD to leave the Show screen, then enter the AC command to define the first circuit that connects DNCS to the SNA host:

[] AC

ADD OR MODIFY CIRCUIT UNDER SYSTEM DEX01

```

Circuit name  C01_____
Protocol      SDLC____
Max # of outstanding reads  10
Max # retries  0
Port         P011
NRZI?       NO
Auto Answer  NO
    
```

18. Since C01 uses SDLC protocol, XDGU knows it is the link line to the host and has no resources. Therefore, XDGU displays a screen for defining the next circuit:

ADD OR MODIFY CIRCUIT UNDER SYSTEM DEX01

```

Circuit name  C02_____
Protocol      CIPC____
Max # of outstanding reads  3
Max # retries  0
Port         P021
    
```

19. Completing the circuit definition produces a screen for defining the first resource on the circuit:

ADD OR MODIFY RESOURCE UNDER CIRCUIT C02

```

Resource name  ST01_____
Resource type  V911_____
Poll address   01____
Associated printer  LP01_____
    
```

20. Completing the resource definition produces a screen for defining its first mode:

ADD OR MODIFY MODE UNDER RESOURCE ST01 UNDER CIRCUIT C02

```

Mode name      MST01_____
Application synonym  IMS_____
Associated VPU  _____
LU            01____
    
```

21. Completing the mode definition for any resource type other than V914 produces a screen for defining another resource.

ADD OR MODIFY RESOURCE UNDER CIRCUIT C02

```

Resource name  ST02_____
Resource type  V911_____
Poll address   02____
Associated printer  LP01_____
    
```

22. Completing the resource definition produces a screen for defining the first mode for the resource:

ADD OR MODIFY MODE UNDER RESOURCE ST02 UNDER CIRCUIT C02

Mode name MST02_____
Application synonym IMS_____
Associated VPU _____
LU 02____

23. Repeat the previous two steps four times to define resources ST03, ST04, ST05, and ST06, incrementing the poll address and LU number each time.

24. Define the resource ST07:

ADD OR MODIFY RESOURCE UNDER CIRCUIT C02

Resource name ST07_____
Resource type V911_____
Poll address 07_____
Associated printer LP02_____

25. Completing the resource definition produces a screen for defining the first mode for the resource:

ADD OR MODIFY MODE UNDER RESOURCE ST07 UNDER CIRCUIT C02

Mode name MST07_____
Application synonym CICS_____
Associated VPU _____
LU 07____

26. Completing the mode definition produces a screen for defining the next resource:

ADD OR MODIFY RESOURCE UNDER CIRCUIT C02

Resource name ST08_____
Resource type V911_____
Poll address 08_____
Associated printer LP02_____

27. Completing the resource definition produces a screen for defining the first mode for the resource:

ADD OR MODIFY MODE UNDER RESOURCE ST08 UNDER CIRCUIT C02

Mode name MST08_____
Application synonym CICS_____
Associated VPU _____
LU 08____

28. Completing the mode definition produces a screen for defining the next resource:

```

ADD OR MODIFY RESOURCE UNDER CIRCUIT C02
      Resource name  LP01_____
      Resource type  PTR1_____
      Poll address   101__
      Associated printer _____
    
```

29. Completing the resource definition produces a screen for defining the first mode for the resource:

```

ADD OR MODIFY MODE UNDER RESOURCE LP01 UNDER CIRCUIT C02
      Mode name      MLP01_____
      Application synonym IMS_____
      Associated VPU  _____
      LU             09__
    
```

30. Completing the mode definition produces a screen for defining the next resource:

```

ADD OR MODIFY RESOURCE UNDER CIRCUIT C02
      Resource name  LP02_____
      Resource type  PTR3_____
      Poll address   102__
      Associated printer _____
    
```

31. Completing the resource definition produces a screen for defining the first mode for the resource:

```

ADD OR MODIFY MODE UNDER RESOURCE LP02 UNDER CIRCUIT C02
      Mode name      MLP02_____
      Application synonym CICS_____
      Associated VPU  _____
      LU             10__
    
```

32. Completing the mode definition produces a screen for defining the next resource:

```

ADD OR MODIFY RESOURCE UNDER CIRCUIT C02
      Resource name  VPSC1_____
      Resource type  PSC2_____
      Poll address   201__
      Associated printer LP02_____
    
```

33. Completing the resource definition produces a screen for defining the first mode for the resource:

```

ADD OR MODIFY MODE UNDER RESOURCE VPSC1 UNDER CIRCUIT C02
      Mode name      MVPSC1_____
      Application synonym CICS_____
      Associated VPU  _____
      LU             11__
    
```

34. This completes the definitions for all circuits, resources, and modes in the configuration. Enter the Show command to verify the user access hierarchy. Comparing the display with the configuration planning forms reveals no errors in this phase of the definition process.

35. Terminate XDGU by entering the Quit command:

```
[ ] Q
TERMINATE DNCS CONFIGURATION NORMALLY
Are you sure? (Y/N) YES
```

36. Use the Verify DNCS Configuration (VDC) command to verify the configuration:

```
[ ] VDC
VERIFY DNCS CONFIGURATION
DNCS NUCLEUS DIRECTORY: <DCFWO>
DNCS GENERATION DIRECTORY: <DCGEN>
CONFIGURATION: NEW$1
LISTING: <list file>
```

where:

```
<DCFWO> is the synonym assigned to the DNCS nucleus object disk.
<DCGEN> is the synonym assigned to the DNCS generation directory.
<list file> is the file to which you want the verify process to list the configuration and error messages (if any).
```

4.3.2 Tailoring an Example Configuration

This example demonstrates how you can tailor an example configuration to meet the requirements of a planned configuration. This example results in the same configuration as sample configuration three. Figure 4-15 through Figure 4-20 show the planning forms for the resulting configuration, the example configuration with the node name DEX03. However, where the previous paragraph showed how to create configuration one as a new configuration, this paragraph shows how to tailor the example configuration one to become configuration three.

1. Execute the DNCS generation utility, specifying <DCFWO> as the DNCS nucleus object disk and <DCGEN> as the DNCS configuration directory:

```
[ ] XDGU
EXECUTE DNCS GENERATION UTILITY
DNCS NUCLEUS DIRECTORY: <DCFWO>
DNCS GENERATION DIRECTORY: <DCGEN>
INPUT CONFIGURATION: NEW$1
OUTPUT CONFIGURATION: MOD$3
```

When you activate the generation utility by using the XDGU command, it automatically issues a Start command and displays the following menu of configuration commands:

DNCS GENERATION COMMAND MENU

- ABORT - Terminate DNCS generation without save
- ADD - Enter ADD interactive mode
- HELP - Display information for current screen
- MODIFY - Enter MODIFY interactive mode
- NEXT - Perform next logical operation
- QUIT - Terminate DNCS generation normally
- RENAME - Change an entity's name
- SHOW - Display DNCS configuration
- START - Return to this menu
- SYSTEM - Define or modify node

Axx, Mxx, Dxx - Add, Modify, and Delete Entity (xx), respectively

2. Enter the Show command to display the starting configuration (Figure 4-7) and note the following changes required:
 - Rename the node DEX03.
 - Add the port P022 to board B02.
 - Add the new board B03 with port P031.
 - Add the resource SVQ to circuit C02.
 - Add the circuit C03 and resource XCI1.
 - Add the circuit C04.
 - Add two V914 terminals with two modes each.
 - Add the P914 printer with one mode.

3. Enter the System command to rename the node, replacing DEX01 with DEX03:

```
[ ] SYSTEM
DEFINE DNCS NODE
      Name  DEX03_____
```


4. Enter the Add Port (AP) command to add port P022 to board B02:

[] AP

ADD, MODIFY, OR DELETE PORT
UNDER board B02_____

Complete the definition for P022:

ADD OR MODIFY PORT UNDER BOARD B02
Port name P022_____
DNOS device name CM07_____
LUNO > 33__
Backup _____

5. Enter the AB command to define board B03:

[] AB

ADD BOARD UNDER SYSTEM DEX03
Board name B03_____
Board type FCCC_____

6. Completing the board definition produces a screen for defining the first port on the board:

ADD OR MODIFY PORT UNDER BOARD B03
PORT name P031_____
DNOS device name CM12_____
LUNO > 34__
Backup _____

7. Enter the Add Resource (AR) command to add the resource SVQ to circuit C02:

[] AR

ADD, MODIFY OR DELETE RESOURCE
UNDER Circuit C02_____

Complete the definition for SVQ:

ADD OR MODIFY RESOURCE UNDER CIRCUIT C02
Resource name RSVQ_____
Resource type SVQ_____
Poll address 103__
Associated printer _____

8. Completing the resource definition produces a screen for defining the mode for the resource:

ADD OR MODIFY MODE UNDER RESOURCE SVQ UNDER CIRCUIT C02

Mode name MRSVQ_____
 Application synonym IMS_____
 Associated VPU _____
 LU 12____

9. Enter the AC command to define the XCI circuit C03;

[] AC

ADD OR MODIFY CIRCUIT UNDER SYSTEM DEX03

Circuit name C03_____
 Protocol CI_____
 Max # of outstanding reads 3
 Max # retries 0
 Port P022

10. Completing the circuit definition produces a screen for defining the first (and only) resource on the circuit:

ADD OR MODIFY RESOURCE UNDER CIRCUIT C03

Resource name XCI1_____
 Resource type CIRES_____
 Poll address 01
 Associated printer _____

11. Completing the resource definition results in a screen for defining the first mode for the resource. Since the CIRES resource does not have a mode definition, enter the AC command to define the RDTC circuit:

[] AC

ADD OR MODIFY CIRCUIT UNDER SYSTEM DEX03

Circuit name C04_____
 Protocol RDTC_____
 Max # of outstanding reads 7
 Max # retries 10
 Port P031

12. Completing the circuit definition produces a screen for defining the first resource on the circuit:

ADD OR MODIFY RESOURCE UNDER CIRCUIT C04

Resource name V914A1_____
 Resource type V914_____
 Poll address 64_____
 Associated printer P914P1____

- 13. Completing the resource definition produces a screen for defining the first mode for the resource.

ADD OR MODIFY MODE UNDER RESOURCE V914A1 UNDER CIRCUIT C04

Mode name M914A11__
Application synonym IMS_____
Associated VPU _____
LU 13__

- 14. Completing the mode definition produces a screen for defining the next mode for the resource:

ADD OR MODIFY MODE UNDER RESOURCE V914A1 UNDER CIRCUIT C04

Mode name M914A12__
Application synonym TSO_____
Associated VPU _____
LU 13__

- 15. Completing the mode definition produces a screen for defining the next mode for the resource. Since the resource has only two modes, enter the Next command to obtain a screen for defining the next resource:

[] N

ADD OR MODIFY RESOURCE UNDER CIRCUIT C04

Resource name V914A2____
Resource type V914_____
Poll address 65____
Associated printer P914P1____

- 16. Completing the resource definition produces a screen for defining the first mode for the resource:

ADD OR MODIFY MODE UNDER RESOURCE V914A2 UNDER CIRCUIT C04

Mode name M914A21__
Application synonym IMS_____
Associated VPU _____
LU 14__

- 17. Completing the mode definition produces a screen for defining the next mode for the resource:

ADD OR MODIFY MODE UNDER RESOURCE V914A2 UNDER CIRCUIT C04

Mode name M914A22__
Application synonym TSO_____
Associated VPU _____
LU 14__

18. Completing the mode definition produces a screen for defining the next mode for the resource. Since the resource has only two modes, enter the Next command to obtain a screen for defining the next resource:

[] N

ADD OR MODIFY RESOURCE UNDER CIRCUIT C04

Resource name P914P1____
 Resource type P914_____
 Poll address 80____
 Associated printer _____

19. Completing the resource definition produces a screen for defining the first mode for the resource:

ADD OR MODIFY MODE UNDER RESOURCE P914P1 UNDER CIRCUIT C04

Mode name M914P11__
 Application synonym IMS_____
 Associated VPU _____
 LU 15____

20. This completes the additions needed to tailor configuration one into configuration three. Enter the Show command to verify the new configuration. Comparing the display to the configuration planning forms reveals no errors in the definition. The display matches the configuration shown in Figure 4-21.

21. Terminate XDGU by entering the Quit command:

[] Q

TERMINATE DNCS CONFIGURATION NORMALLY

Are you sure? (Y/N) YES

22. Use the VDC command to verify the configuration:

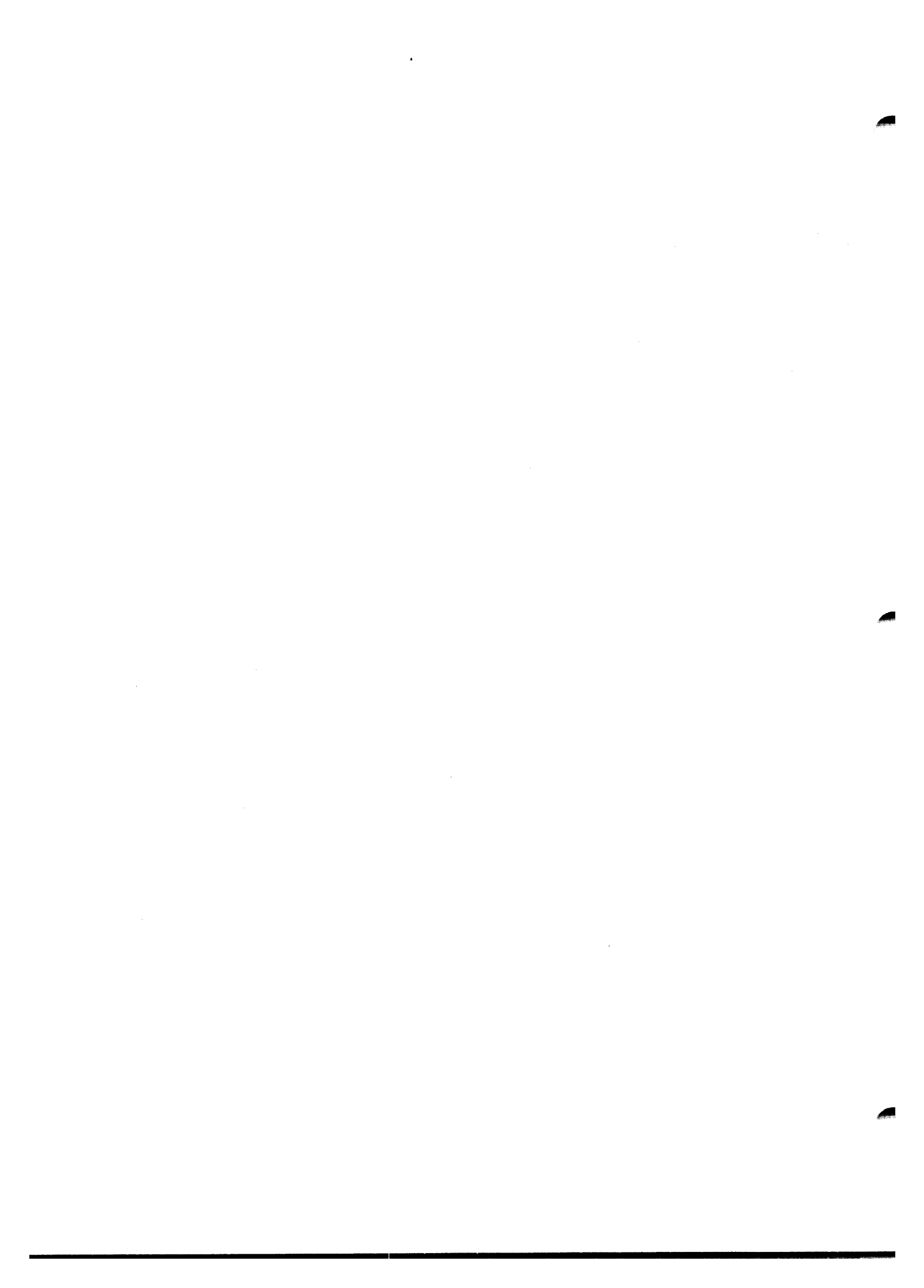
[] VDC

VERIFY DNCS CONFIGURATION

DNCS NUCLEUS DIRECTORY: < DCFWO>
 DNCS GENERATION DIRECTORY: < DCGEN>
 CONFIGURATION: MOD\$3
 LISTING: < list file>

NOTE

The verification for this configuration will list two error messages since the mode entries for IMS and TSO on each of the V914 resources specify the same dedicated LU. This assignment does not cause an error condition as long as you log the resource off from one application before you attempt to log on to the other application.



Generating Sample X.25 RFT Configurations

5.1 INTRODUCTION

This section provides four example DNCS X.25 RFT user network configurations on a number of different public packet switched networks (PSNs). Each example configuration shows how your requirements are translated into DNCS X.25 RFT configuration details. You can use these examples as an aid in the first stage in defining your network of DNCS X.25 RFT sites.

This section is organized into the following paragraphs:

- Example 1 — Shows the simplest network possible: two sites connected by leased line.
- Example 2 — Shows a symmetrical network of three sites, with all sites subscribing to TRANSPAC.
- Example 3 — Shows a radial network involving a central site subscribing to PSS and three subsidiary sites connected to TRANSPAC, DATANET1, and DATEX-P.
- Example 4 — Shows a hierarchical network of user's sites for regional data collection using TRANSPAC.

For tutorial and demonstration purposes, you can use the example configurations given as shown or tailor them to suit more specific requirements. The example configurations seek to show how you can solve a number of different networking problems by using DNCS X.25 RFT. This section provides a step by step procedure for entering the first example. The other examples do not provide this step by step procedure, but do include illustrations of the configurations and completed planning forms. Section 2 contains the complete planning procedure for X.25 RFT configurations.

DNCS X.25 RFT is a composite product that offers wide-ranging configuration possibilities, including coresidency with other DNCS communications products and user application software running under the DNOS operating system. Each layer of the composite—DNOS, DNCS, and DNCS X.25 RFT—depends on the previous layer for the overall system to function as you require. You must satisfy this dependency by using standard configuration and generation procedures for each layer, such that the DNOS configuration, for example, supplies the necessary support the next layer, DNCS, requires.

The purpose of this section is to give you an overview understanding of the steps necessary for DNCS X.25 RFT generation.

5.2 LEASED-LINE CONFIGURATION EXAMPLE

The following example illustrates a simple leased-line configuration with two sites. This configuration constitutes a private network and does not use a public PSN. The following paragraphs show the configuration, the completed planning forms, and the step by step procedure for defining the configuration using the DNCS system generation utility.

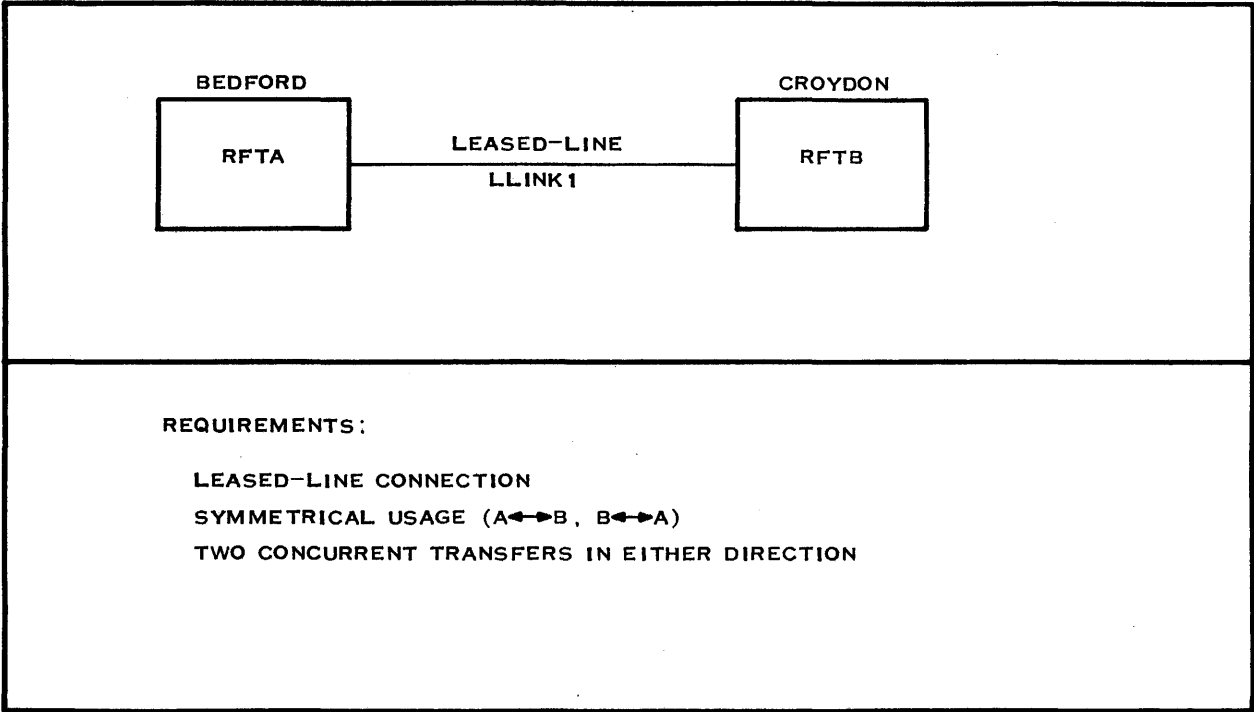
5.2.1 User Network Requirements

A consultancy company operates a number of national and international branch offices each specializing in one or more high-technology areas. It produces a large number of small-circulation reports directly on its TI 990 systems installed in all branches. To minimize publication and transport costs and times, the company desires to link all branches via national public packet switched networks (PSNs) to form its own corporate closed network. However, in order to meet an immediate requirement for regular transfers between two sites in the United Kingdom, and to obtain experience with DNCS X.25 RFT before embarking on the full scale project, the company decides to link the two sites via leased-line as an interim measure.

The immediate requirements are for either site to be able to send reports to the other via the standard DNOS spooler mechanism. No other remote file access is required initially. The ability to transmit and receive two reports concurrently in either direction should be adequate.

Figure 5-1 illustrates the company's requirements, and Figure 5-2 through Figure 5-5 show those requirements as entered on DNCS configuration planning forms. Figure 5-6 is the show command display for this example. Since both configurations are very similar to each other, completed forms are shown only for one site. (The most important difference is that one of the DTEs must have a poll address of 01 and the other a poll address of 03; it does not matter which DTE has which poll address.)

The creation of the example configuration using XDGU commands then follows.



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Figure 5-1. Networking Requirements for a Leased Line Configuration

Configuration name *RFTLL* _____ [22]¹

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DNCS CONFIGURATION PLANNING FORM — RFT SOFTWARE SUBSYSTEM

RFT Circuit:

Circuit name *CO1* _____ [5]
 Protocol *RFT* _____ [5]
 Max # Reads *3* _____ [5]
 Max # Retries *0* _____ [5]
 Primary Port *P011* _____ [18]

RFT Subsystem:

Subsystem name *RFT01* _____ [23]
 Subsystem type *RFT* _____ [24]
 Sites Table Size *2* _____ [25]
 Multiplexing *4* _____ [25]
 Concurrent transfers *4* _____ [25]
 File record length *256* _____ [25]

Site Name [26]	Site Location [26]	Site Address [26] ²	Network Name [26] ²	Reverse Charging Called [26]	Reverse Charging Calling [26] ²	Closed User Group [26] ²
<i>BEDFORD</i>	<i>LOCAL</i>	___ <i>1000</i> _____	<i>LLINK1</i> _____	___ <i>NO</i> ___	___ <i>NO</i> ___	___ <i>NO</i> ___
<i>CROYDON</i>	<i>REMOTE</i>	___ <i>1001</i> _____	<i>LLINK1</i> _____	___ <i>NO</i> ___	___ <i>NO</i> ___	___ <i>NO</i> ___
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-2. Leased Line — Completed RFT Subsystem Form

Configuration name *RFTLL* _____ [14]'

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DNCS CONFIGURATION PLANNING FORM — BOARDS

Number of primary ports 3 [21]
 Number of backup ports 1 [21]

Board name [16]	Board Type [16]	Line Control Discipline [15]	Circuit Protocol [15]	Port name [17]	DNOS device name [19]	Port LUNO [19]	Backup Port [20]
<u>B01</u>	<i>VIRTUAL</i>	<u>DNCS_IPC</u>	<u>RFT</u> <u>CI</u>	<u>P011</u> <u>P012</u>	<u>CMnn</u> <u>CMnn</u>	<u>> 31</u> <u>> 32</u>	
<u>B02</u>	<u>FCCC</u>	<u>X.25</u>	<u>LAP</u>	<u>P021</u> <u>P022</u>	<u>CMnn</u> <u>CMnn</u>	<u>> 40</u> <u>> 50</u>	<u>P022</u>
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process.

Figure 5-3. Leased Line — Completed Board Form

Configuration name *RFTLL* _____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C02* _____ [3]
 Protocol *LAP* _____* [4]
 Max # reads *7* _____ [5]
 Max # retries *0* _____ [5]
 Number of virtual circuits *1* _____ [10]
 Primary Port *P021* _____ [18]

 DTE Name *DTE01* _____ [8]²
 Network name *LLINK1* _____ [9]²
 Local address *1000* _____ [9]²
 Receiving Packet Length *128* _____ [9]²
 Receiving Window *7* _____ [9]²
 Transmit Packet Length *128* _____ [9]²
 Transmit Window *7* _____ [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *3* _____ [9]²
 DTE (1) or DCE (3) *3* _____ [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>PE</i> _____	<i>1001</i> _____	<i>RFT</i> _____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-4. Leased Line — Completed X.25 Circuit Form


```
DNCS SYSTEM = RFTLL.
BOARD = B01, TYPE = VIRTUAL.
  PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
    BACKUP = .
  PORT = P012, DNOS DEVICE NAME = CM03, LUNO = >32,
    BACKUP = .
BOARD = B02, TYPE = FCCC.
  PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >40,
    BACKUP = P022.
  PORT = P022, DNOS DEVICE NAME = CM06, LUNO = >50,
    BACKUP = .
CIRCUIT = C01, PROTOCOL = RFT, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P011.
CIRCUIT = C02, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P021.
DTE = DTE01, NETWORK NAME = LLINK1, LOCAL ADDRESS = 1000,
  RECV PACKET LENGTH = 128, RECV WINDOW = 2, XMIT PACKET LENGTH = 128,
  XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
  ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
  POLL ADDRESS = 3.
  VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = PE,
  REMOTE DTE ADDRESS = 876543210, VIRTUAL CIRCUIT USER = RFT.
CIRCUIT = C03, PROTOCOL = CI, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P012 .
RESOURCE = XCI01, TYPE = CIRES, POLL ADDRESS = 1,
  ASSOCIATED PRINTER = .
SUBSYSTEM = RFT01, TYPE = RFT, TABLE SIZE = 2,
  MULTIPLEXING = 4, CONCURRENT XFERS = 4, RECORD LENGTH = 256.
SITE = BEDFORD, LOCATION = LOCAL, ADDRESS = 1000, NAME = LLINK1,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = NO.
SITE = CROYDON, LOCATION = REMOTE, ADDRESS = 1001, NAME = LLINK1,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = NO.
```

Figure 5-6. Leased Line — Configuration Display

5.2.2 Entering a New Configuration. In this example, you create the configuration defined by the planning forms filled out for DNCS X.25 RFT example 1 (Figure 5-2 through Figure 5-6). Note that the order of XDGU command entered is not important. The commands shown here are not in XDGU “natural order,” but instead follow the sequence used on the planning forms.

1. Execute the DNCS generation utility, indicating < DCFWO> as the DNCS nucleus object disk and < DCGEN> as the generation directory.

```
[ ] XDGU
```

```
EXECUTE DNCS GENERATION UTILITY
  DNCS NUCLEUS DIRECTORY: < DCFWO>
  DNCS GENERATION DIRECTORY: < DCGEN>
  INPUT CONFIGURATION:
  OUTPUT CONFIGURATION: RFT$1
```

When you activate XDGU, it automatically issues a Start command and displays the menu of DNCS configuration commands:

DNCS GENERATION COMMAND MENU

```
ABORT - Terminate DNCS generation without save
ADD - Enter ADD interactive mode
HELP - Display information for current screen
MODIFY - Enter MODIFY interactive mode
NEXT - Perform next logical operation
QUIT - Terminate DNCS generation normally
RENAME - Change an entity's name
SHOW - Display DNCS configuration
START - Return to this menu
SYSTEM - Define or modify node
```

Axx, Mxx, Dxx - Add, Modify, and Delete Entity (xx), respectively

2. Enter the NEXT (or N) command to define the node:

```
[ ] N
DEFINE DNCS NODE
      Name RFTLL_____
```

3. Completing the node (system) definition produces a screen for defining a PU. Since this configuration does not require any SNA access, you can bypass the process that defines the SNA hierarchy. You can do this by entering the AC command to define the RFT software subsystem:

[] AC

ADD OR MODIFY CIRCUIT UNDER SYSTEM RFTLL

Circuit name C01_____
 Protocol RFT_____
 Max # of outstanding reads 3_____
 Max # retries 0_____
 Port P011_____

4. Completing the circuit definition for the RFT circuit produces a screen for defining another circuit. However, since the next item to be defined from the configuration forms is the RFT subsystem, enter the ASUB command to define the subsystem:

[] ASUB

ADD OR MODIFY SOFTWARE SUBSYSTEM UNDER SYSTEM RFTLL

Subsystem name RFT01_____
 Subsystem type RFT_____
 Sites table size 2_____
 Multiplexing 4_____
 Concurrent transfers 4_____
 File record length 256_____

5. Completing the subsystem definition produces a screen for defining a site entry:

ADD OR MODIFY SITE UNDER SYSTEM RFTLL

Site Name BEDFORD_____
 Site Location LOCAL_____
 Site Address 1000_____
 Network Name LLINK1_____
 Reverse Charging Called NO_____
 Reverse Charging Calling NO_____
 Closed User Group NO

6. Completing the site definition produces a screen for defining another site:

ADD OR MODIFY SITE UNDER SYSTEM RFTLL

Site Name CROYDON_____
 Site Location REMOTE
 Site Address 1001_____
 Network Name LLINK1_____
 Reverse Charging Called NO_____
 Reverse Charging Calling NO_____
 Closed User Group NO

7. Completing the site definition produces a screen for defining another site. Since you have defined all the sites, this completes the definition of the RFT software subsystem. Enter the SHOW command to check the configuration defined so far:

[] S

```
DNCS SYSTEM = RFTLL.
CIRCUIT = C01, PROTOCOL = RFT, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P011.
SUBSYSTEM = RFT01, TYPE = RFT, TABLE SIZE = 2,
  MULTIPLEXING = 4, CONCURRENT XFERS = 4, RECORD LENGTH = 256.
SITE = BEDFORD, LOCATION = LOCAL, ADDRESS = 1000, NAME = LLINK1,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = NO.
SITE = CROYDON, LOCATION = REMOTE, ADDRESS = 1001, NAME = LLINK1,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = NO.
```

8. Comparing the results of the SHOW command with the completed planning forms should reveal no errors. Therefore, press CMD to leave the SHOW screen, then press CMD again to enter the AB command and define the first board:

[] AB

```
ADD BOARD UNDER SYSTEM RFTLL
  Board name  B01_____
  Board type  VIRTUAL
```

9. Completing the board definition produces a screen for defining a port on that board:

```
ADD OR MODIFY PORT UNDER BOARD B01
  Port name   P011_____
  DNOS device name CM01
  LUNO       > 31
  Backup     _____
```

10. Completing the port definition produces a screen for defining the next port on the board:

```
ADD OR MODIFY PORT UNDER BOARD B01
  Port name   P012
  DNOS device name CM03
  LUNO       > 32
  Backup     _____
```


11. Since this completes the definition of all entries for the first board, press CMD and enter the AB command to define the second board:

[] AB

ADD BOARD UNDER SYSTEM RFTLL

Board name B02_____
Board type FCCC____

12. Completing the board screen produces a screen for defining the first port on the board:

ADD OR MODIFY PORT UNDER BOARD B02

Port name P021_____
DNOS device name CM05
LUNO > 40
Backup P022____

13. Completing the port definition produces a screen for defining the next port on the board:

ADD OR MODIFY PORT UNDER BOARD B02

Port name P022
DNOS device name CM06
LUNO > 50
Backup _____

14. Completing the port definition produces a screen for defining the next port entry. However, since you have defined all the ports and boards, enter the SHOW command to check the configuration entered thus far:

[] S

```
DNCS SYSTEM = RFTLL.
BOARD = B01, TYPE = VIRTUAL.
  PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
  BACKUP = .
  PORT = P012, DNOS DEVICE NAME = CM03, LUNO = >32,
  BACKUP = .
BOARD = B02, TYPE = FCCC.
  PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >40,
  BACKUP = P022.
  PORT = P022, DNOS DEVICE NAME = CM06, LUNO = >50,
  BACKUP = .
CIRCUIT = C01, PROTOCOL = RFT, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P011.
SUBSYSTEM = RFT01, TYPE = RFT, TABLE SIZE = 2,
  MULTIPLEXING = 4, CONCURRENT XFERS = 4, RECORD LENGTH = 256.
SITE = BEDFORD, LOCATION = LOCAL, ADDRESS = 1000, NAME = LLINK1,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = NO.
SITE = CROYDON, LOCATION = REMOTE, ADDRESS = 1001, NAME = LLINK1,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = NO.
```

- Checking the configuration entered so far should reveal no errors. If you detect an error, use the appropriate Modify command (refer to the command descriptions in Section 3) to correct the error. Pressing the CMD key restores the screen for defining a port entry. Press the CMD key again and enter the AC command to define the X.25 circuit:

[] AC

ADD OR MODIFY CIRCUIT UNDER SYSTEM RFTLL

```

Circuit name  C02_____
Protocol      LAP_____
Max # of outstanding reads  7____
Max # retries  0____
Port          P021
    
```

- Completing the circuit screen produces a screen for defining the DTE (or DCE) entry on the circuit:

ADD OR MODIFY DTE UNDER CIRCUIT C02

```

DTE Name      DTE01_____
Network name   LLINK1____
Local address  1000_____
Packet length, rcv  128__
Window, rcv    2
Packet length, xmit  128__
Window, xmit   2
Time-out on calls  200__
Time out on packets  180__
Anticipation (K)  7____
Max # retries (N2)  10__
Time-out (T1)   3
DTE(1) or DCE (3)  3
    
```

- Completing the DTE screen produces a screen for defining the first virtual circuit for the circuit:

ADD OR MODIFY VIRTUAL CIRCUIT UNDER DTE DTE01 UNDER CIRCUIT C02

```

Virtual Circuit name  VC01_____
Virtual Circuit number  1____
Virtual Circuit type   PE
Remote DTE address    1001_____
Virtual Circuit User   RFT
    
```

18. Completing the AVC screen produces a screen for defining the next virtual circuit on this circuit. Since you are defining only one virtual circuit, press CMD and enter the AC command to define the next circuit:

```
ADD OR MODIFY CIRCUIT UNDER SYSTEM RFTLL
      Circuit name  C03_____
          Protocol  CI_____
Max # of outstanding reads  3
          max # retries  0
          Port       P012
```

19. Completing the circuit definition produces a screen for defining the first resource on the circuit:

```
ADD OR MODIFY RESOURCE UNDER CIRCUIT C03
      Resource name  XCI01
          Resource type  CIRES
          Poll address  1____
Associated Printer  _____
```

20. Completing the resource definition produces a screen for defining a mode for the resource. Since there is not a mode to define, and since you have entered all data for the configuration, press CMD and enter the SHOW command to check the configuration. If no errors are evident in the configuration, press CMD to exit the SHOW display, then CMD again to enter the QUIT command and terminate XDGU:

```
[ ] Q
      TERMINATE DNCS CONFIGURATION NORMALLY
          Are you sure (Y/N)  YES
```

21. Use the VDC command to verify the configuration:

```
[ ] VDC
      VERIFY DNCS CONFIGURATION
          DNCS NUCLEUS DIRECTORY: < DCFWO>
          DNCS GENERATION DIRECTORY: < DCGEN>
          CONFIGURATION: RFT$1
          LISTING: < list file>
```

where:

- < DCFWO> is the synonym assigned to the DNCS nucleus object disk.
- < DCGEN> is the synonym assigned to the DNCS generation directory.
- < list file> is the file where the verify process is to list the configuration and error messages (if any).

5.3 SYMMETRICAL NETWORK EXAMPLE CONFIGURATION

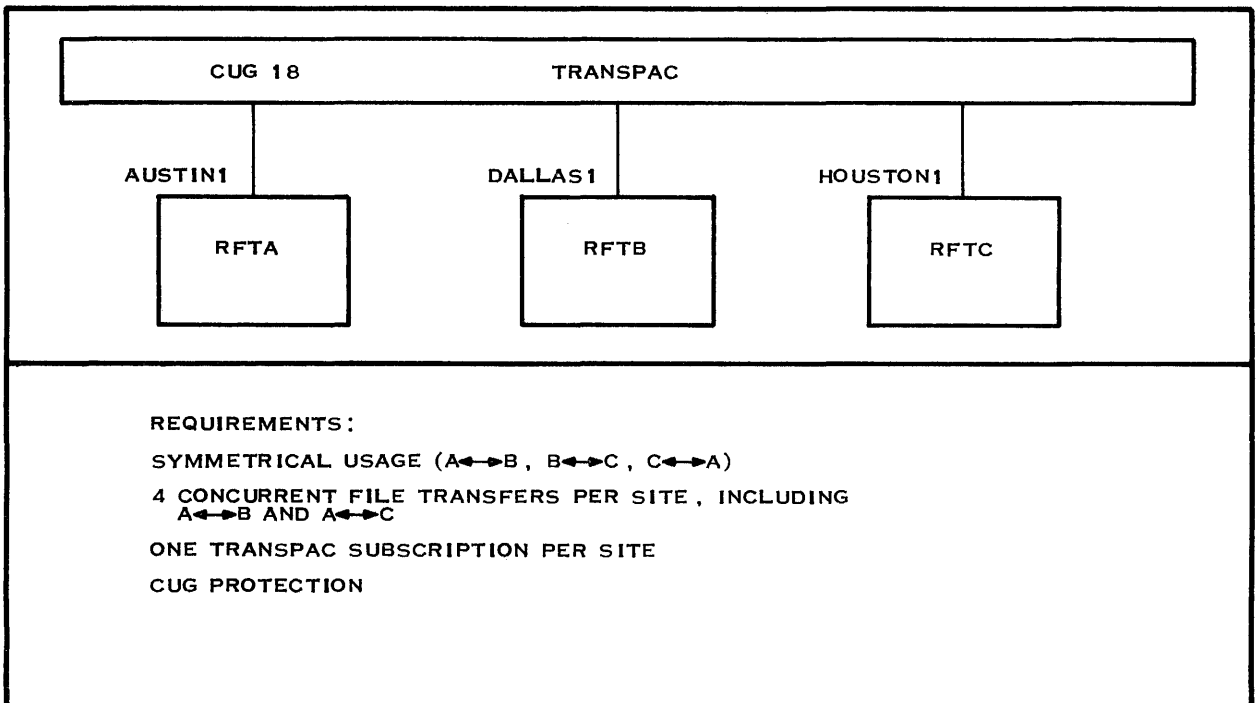
The following example illustrates a simple symmetrical configuration with three sites that use the TRANSPAC public PSN. This example shows the configuration and the completed planning forms for the configuration. Section 2 contains the step by step procedure for defining X.25 RFT configurations using the DNCS system generation utility.

A basic DNCS X.25 RFT system is required to handle the routine exchange of program material between three software factories. Operationally, the system is to meet the needs of experienced data processing staff, so the system needs to be flexible, simple to use, and have only minimal restrictions. Any one of the three sites must be able to send or request program material from any other site using common procedures. The symmetrical network of three sites is to be implemented using TRANSPAC, and it will use the closed user group facility to ensure security.

Figure 5-7 illustrates the company's requirements, and Figure 5-8 through Figure 5-11 show those requirements as entered on DNCS configuration planning forms. Figure 5-1 is the Show command display for this example.

Since all configurations are identical (apart from the actual subscription addresses and site names), completed forms are shown only for one site.

The filled-out forms shown are copies of the DNCS configuration planning forms in Appendix A.



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Figure 5-7. Networking Requirements for a Symmetrical Configuration

Configuration name *RFTSYM*_____ [22]¹

Page 1 of 4

DNCS CONFIGURATION PLANNING FORM — RFT SOFTWARE SUBSYSTEM

RFT Circuit:

Circuit name *C01*_____ [5]
 Protocol *RFT*_____ [5]
 Max # Reads *3*_____ [5]
 Max # Retries *0*_____ [5]
 Primary Port *P011*_____ [18]

RFT Subsystem:

Subsystem name *RFT01*_____ [23]
 Subsystem type *RFT*_____ [24]
 Sites Table Size *10*_____ [25]
 Multiplexing *4*_____ [25]
 Concurrent transfers *4*_____ [25]
 File record length *2048*_____ [25]

Site Name [26]	Site Location [26]	Site Address [26] ²	Network Name [26] ²	Reverse Charging Called [26]	Reverse Charging Calling [26] ²	Closed User Group [26] ²
<i>AUSTINI</i>	<i>LOCAL</i>	<i>106000022</i> _____	<i>TRANSPAC</i>	<i>NO</i>	<i>NO</i>	<i>18</i>
<i>DALLASI</i>	<i>REMOTE</i>	<i>175003521</i> _____	<i>TRANSPAC</i>	<i>NO</i>	<i>NO</i>	<i>18</i>
<i>HOUSTONI</i>	<i>REMOTE</i>	<i>169000157</i> _____	<i>TRANSPAC</i>	<i>NO</i>	<i>NO</i>	<i>18</i>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process

²Network Subscription Parameters

Figure 5-8. Symmetrical Network — Completed RFT Subsystem Form

Configuration name *RFTSYM* _____ [14]¹

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DNCS CONFIGURATION PLANNING FORM — BOARDS

Number of primary ports 3____ [21]
 Number of backup ports 1____ [21]

Board name [16]	Board Type [16]	Line Control Discipline [15]	Circuit Protocol [15]	Port name [17]	DNOS device name [19]	Port LUNO [19]	Backup Port [20]
<i>B01</i> _____	<i>VIRTUAL</i>	<i>DNCS_IPC</i> _____	<i>RFT</i> _____ <i>CI</i> _____	<i>P011</i> _____ <i>P012</i> _____	<i>CMnn</i> _____ <i>CMnn</i> _____	> <i>31</i> _____ > <i>32</i> _____	_____
<i>B02</i> _____	<i>FCCC</i> _____	<i>X.25</i> _____	<i>LAP</i> _____	<i>P021</i> _____ <i>P022</i> _____	<i>CMnn</i> _____ <i>CMnn</i> _____	> <i>40</i> _____ > <i>41</i> _____	<i>P022</i> _____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process.

Figure 5-9. Symmetrical Network — Completed Board Form

Configuration name *RFTSYM*_____ [1]'

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C02*_____ [3]
 Protocol *LAP*_____ [4]
 Max # Reads *7*_____ [5]
 Max # Retries *0*_____ [5]
 Number of virtual circuits *2*_____ [10]
 Primary Port *P021*_____ [18]

DTE Name *DTE01*_____ [8]²
 Network name *TRANSPAC*_____ [9]²
 Local address *106000022*_____ [9]²
 Receiving Packet Length *128*_____ [9]²
 Receiving Window *2*_____ [9]²
 Transmit Packet Length *128*_____ [9]²
 Transmit Window *2*_____ [9]²
 Time-out on Calls *200*_____ [9]
 Time-out on Packets *180*_____ [9]
 Anticipation (K) *7*_____ [9]²
 Max # retries (N2) *10*_____ [9]²
 Time-out (T1) *3*_____ [9]²
 DTE (1) or DCE (3) *1*_____ [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>SR</i> _____	_____	_____
<i>VC02</i> _____	<i>2</i> _____	<i>SR</i> _____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-10. Symmetrical Network — Completed X.25 Circuit Form


```
DNCS SYSTEM = RFTSYM.
BOARD = B01, TYPE = VIRTUAL.
  PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
    BACKUP = .
  PORT = P012, DNOS DEVICE NAME = CM03, LUNO = >32,
    BACKUP = .
BOARD = B02, TYPE = FCCC.
  PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >40,
    BACKUP = P022.
  PORT = P022, DNOS DEVICE NAME = CM06, LUNO = >41,
    BACKUP = .
CIRCUIT = C01, PROTOCOL = RFT, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P011.
CIRCUIT = C02, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P021.
  DTE = DTE01, NETWORK NAME = TRANSPAC, LOCAL ADDRESS = 106000022,
    RECV PACKET LENGTH = 128, RECV WINDOW = 2, XMIT PACKET LENGTH = 128,
    XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
    ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
    POLL ADDRESS = 1.
  VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = SR.
  VIRTUAL CIRCUIT = VC02, CIRCUIT NUMBER = 2, TYPE = SR.
CIRCUIT = C03, PROTOCOL = CI, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P012.
  RESOURCE = XCI01, TYPE = CIRES, POLL ADDRESS = 1,
    ASSOCIATED PRINTER = .
SUBSYSTEM = RFT01, TYPE = RFT, TABLE SIZE = 10,
  MULTIPLEXING = 4, CONCURRENT XFERS = 4, RECORD LENGTH = 2048.
SITE = AUSTIN1, LOCATION = LOCAL, ADDRESS = 106000022, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 18.
SITE = DALLAS1, LOCATION = REMOTE, ADDRESS = 175003521, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 18.
SITE = HOUSTON1, LOCATION = REMOTE, ADDRESS = 169000157, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 18.
```

Figure 5-12. Symmetrical Network — Configuration Display

5.4 RADIAL NETWORK EXAMPLE CONFIGURATION

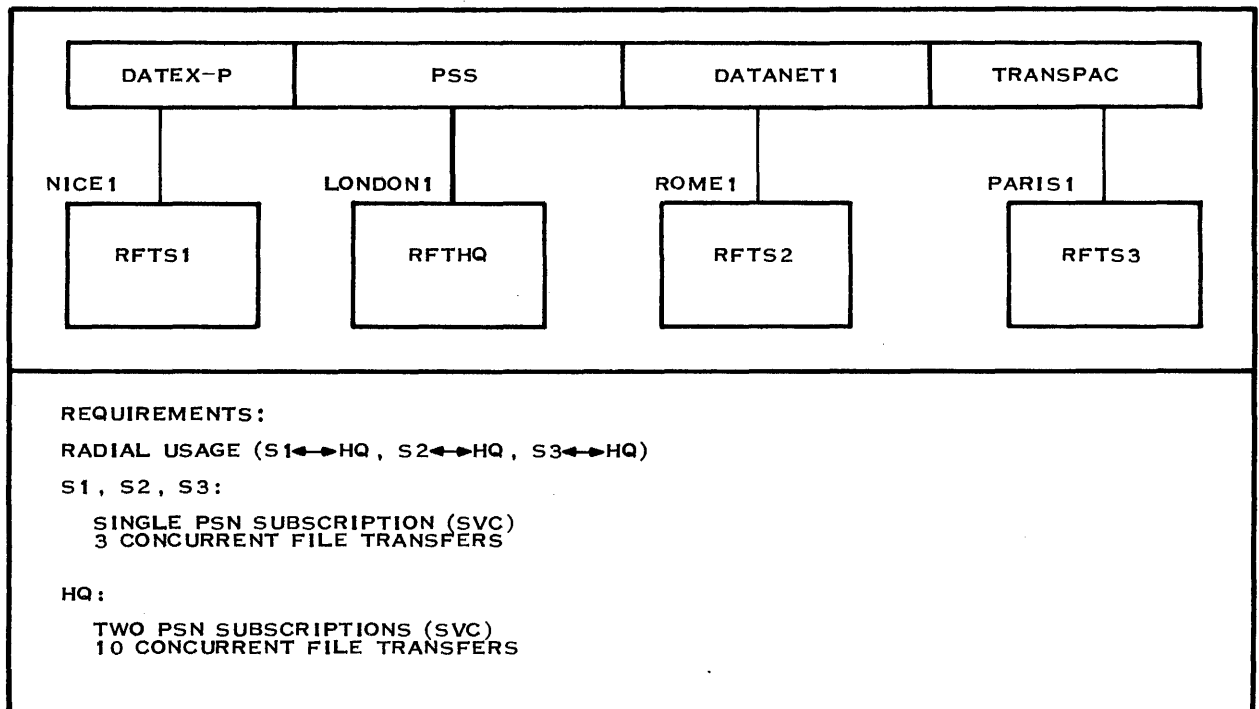
The following example illustrates a radial configuration with four sites that use four public PSNs. It shows the configuration and the completed planning forms that reflect the configuration as defined by using the DNCS system generation utility.

A multinational company has all its sales and support offices computerized with TI 990 computers. It wishes to link each subsidiary sales and support office into a radial network with the United Kingdom headquarters at the center. The PSS network will be used for network connection in the United Kingdom, with the subsidiaries connecting to TRANSPAC, DATEX-P, and DATANET1 as appropriate. Each subsidiary is to communicate only with the center, and each uses the PSN reverse charging facility to obtain tariff reductions for network use.

Figure 5-13 illustrates the company's requirements, and Figure 5-14 through Figure 5-18 show the requirements for the central site as entered on DNCS planning forms. Figure 5-19 is the configuration display of the generated system. The completed planning forms and configuration display for one of the subsidiary sites are shown in Figure 5-20 through Figure 5-23. Figure 5-24 is the Show command display for this example.

Since all subsidiary sites are very similar to each other, completed forms are shown only for the central site (HQ) and one subsidiary site (S1).

The filled-out forms shown are copies of the DNCS configuration planning forms in Appendix A.



2283845

Figure 5-13. Networking Requirements for a Radial Configuration

Configuration name *RFTHQ* _____ [22]¹

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DNCS CONFIGURATION PLANNING FORM — RFT SOFTWARE SYSTEM

RFT Circuit:

Circuit name *C01* _____ [5]
 Protocol *RFT* _____ [5]
 Max # Reads *3* _____ [5]
 Max # Retries *0* _____ [5]
 Primary Port *P011* _____ [18]

RFT Subsystem:

Subsystem name *RFT01* _____ [23]
 Subsystem type *RFT* _____ [24]
 Sites Table Size *10* _____ [25]
 Multiplexing *3* _____ [25]
 Concurrent transfers *10* _____ [25]
 File record length *256* _____ [25]

Site Name [26]	Site Location [26]	Site Address [26] ²	Network Name [26] ²	Reverse Charging Called [26]	Reverse Charging Calling [26] ²	Closed User Group [26] ²
<i>LONDON1</i>	<i>LOCAL</i>	<i>11111111</i> _____	<i>PSS</i> _____	<i>NO</i> _____	<i>NO</i> _____	<i>NO</i> _____
<i>NICE1</i> _____	<i>REMOTE</i>	<i>22222222</i> _____	<i>DATEXP</i> _____	<i>NO</i> _____	<i>YES</i> _____	<i>NO</i> _____
<i>ROME1</i> _____	<i>REMOTE</i>	<i>33333333</i> _____	<i>DATANET1</i>	<i>NO</i> _____	<i>YES</i> _____	<i>NO</i> _____
<i>PARIS1</i> _____	<i>REMOTE</i>	<i>44444444</i> _____	<i>TRANSPAC</i>	<i>NO</i> _____	<i>YES</i> _____	<i>NO</i> _____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-14. Radial Network — Completed RFT Subsystem Form

Configuration name *RFTHQ* _____ [14]*

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DNCS CONFIGURATION PLANNING FORM — BOARDS

Number of primary ports 4 [21]
 Number of backup ports 2 [21]

Board name [16]	Board Type [16]	Line Control Discipline [15]	Circuit Protocol [15]	Port name [17]	DNOS device name [19]	Port LUNO [19]	Backup Port [20]
<i>B01</i> _____	<i>VIRTUAL</i>	<i>DNCS_IPC</i> _____	<i>RFT</i> _____	<i>P011</i> _____	<i>CMnn</i> _____	<i>> 31</i> _____	_____
			<i>CI</i> _____	<i>P012</i> _____	<i>CMnn</i> _____	<i>> 32</i> _____	_____
<i>B02</i> _____	<i>FCCC</i> _____	<i>X.25</i> _____	<i>LAP</i> _____	<i>P021</i> _____	<i>CMnn</i> _____	<i>> 40</i> _____	<i>P022</i> _____
			_____	<i>P022</i> _____	<i>CMnn</i> _____	<i>> 41</i> _____	_____
			<i>LAP</i> _____	<i>P023</i> _____	<i>CMnn</i> _____	<i>> 42</i> _____	<i>P024</i> _____
			_____	<i>P024</i> _____	<i>CMnn</i> _____	<i>> 43</i> _____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

*Numbers in brackets refer to steps in the planning process.

Figure 5-15. Radial Network — Completed Board Form

Configuration name *RFTHQ*_____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C02*_____ [3]
 Protocol *LAP*_____ [4]
 Max # Reads *7*_____ [5]
 Max # Retries *0*_____ [5]
 Number of virtual circuits *2*_____ [10]
 Primary Port *P021*_____ [18]

 DTE Name *DTE01*_____ [8]²
 Network name *PSS*_____ [9]²
 Local address *1111111*_____ [9]²
 Receiving Packet Length *128*_____ [9]²
 Receiving Window *2*_____ [9]²
 Transmit Packet Length *128*_____ [9]²
 Transmit Window *2*_____ [9]²
 Time-out on Calls *200*_____ [9]
 Time-out on Packets *180*_____ [9]
 Anticipation (K) *7*_____ [9]²
 Max # retries (N2) *10*_____ [9]²
 Time-out (T1) *3*_____ [9]²
 DTE (1) or DCE (3) *1*_____ [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>SR</i> _____	_____	_____
<i>VC02</i> _____	<i>2</i> _____	<i>SR</i> _____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-16. Radial Network — Completed X.25 Circuit Form

Configuration name *RFTHC* _____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C03* _____ [3]
 Protocol *LAP* _____ [4]
 Max # Reads *7* _____ [5]
 Max # Retries *0* _____ [5]
 Number of virtual circuits *1* _____ [10]
 Primary Port *P023* _____ [18]

DTE Name *DTE02* _____ [8]²
 Network name *PSS* _____ [9]²
 Local address *55555555* _____ [9]²
 Receiving Packet Length *128* _____ [9]²
 Receiving Window *2* _____ [9]²
 Transmit Packet Length *128* _____ [9]²
 Transmit Window *2* _____ [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *3* _____ [9]²
 DTE (1) or DCE (3) *1* _____ [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>SR</i> _____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-17. Radial Network — Completed X.25 Circuit Form


```

DNCS SYSTEM = RFTHQ.
BOARD = B01, TYPE = VIRTUAL.
  PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
    BACKUP = .
  PORT = P012, DNOS DEVICE NAME = CM03, LUNO = >32,
    BACKUP = .
BOARD = B02, TYPE = FCCC.
  PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >40,
    BACKUP = P022.
  PORT = P022, DNOS DEVICE NAME = CM06, LUNO = >41,
    BACKUP = .
  PORT = P023, DNOS DEVICE NAME = CM07, LUNO = >42,
    BACKUP = P024.
  PORT = P024, DNOS DEVICE NAME = CM08, LUNO = >43,
    BACKUP = .
CIRCUIT = C01, PROTOCOL = RFT, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P011.
CIRCUIT = C02, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P021.
  DTE = DTE01, NETWORK NAME = PSS, LOCAL ADDRESS = 11111111,
    RECV PACKET LENGTH = 128, RECV WINDOW = 2, XMIT PACKET LENGTH = 128,
    XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
    ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
    POLL ADDRESS = 1.
    VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = SR.
    VIRTUAL CIRCUIT = VC02, CIRCUIT NUMBER = 2, TYPE = SR.
CIRCUIT = C03, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P023.
  DTE = DTE02, NETWORK NAME = PSS, LOCAL ADDRESS = 55555555,
    RECV PACKET LENGTH = 128, RECV WINDOW = 2, XMIT PACKET LENGTH = 128,
    XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
    ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
    POLL ADDRESS = 1.
    VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = SR.
CIRCUIT = C04, PROTOCOL = CI, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P012.
SUBSYSTEM = RFT01, TYPE = RFT, TABLE SIZE = 10,
  MULTIPLEXING = 3, CONCURRENT XFERS = 10, RECORD LENGTH = 256.
SITE = LONDON1, LOCATION = LOCAL, ADDRESS = 11111111, NAME = PSS,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = NO.
SITE = NICE1, LOCATION = REMOTE, ADDRESS = 22222222, NAME = DATEXP,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = YES, USER GROUP = NO.
SITE = ROME1, LOCATION = REMOTE, ADDRESS = 33333333, NAME = DATANET1,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = YES, USER GROUP = NO.
SITE = PARIS1, LOCATION = REMOTE, ADDRESS = 44444444, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = YES, USER GROUP = NO.

```

Figure 5-19. Radial Network — Configuration Display

Configuration name *RFTS1* _____ [22]¹

Page *1* of *4*

DNCS CONFIGURATION PLANNING FORM — RFT SOFTWARE SUBSYSTEM

RFT Circuit:

Circuit name *C01* _____ [5]
 Protocol *RFT* _____ [5]
 Max # Reads *3* _____ [5]
 Max # Retries *0* _____ [5]
 Primary Port *P011* _____ [18]

RFT Subsystem:

Subsystem name *RFT01* _____ [23]
 Subsystem type *RFT* _____ [24]
 Sites Table Size *3* _____ [25]
 Multiplexing *3* _____ [25]
 Concurrent transfers *3* _____ [25]
 File record length *256* _____ [25]

Site Name [26]	Site Location [26]	Site Address [26] ²	Network Name [26] ²	Reverse Charging Called [26]	Reverse Charging Calling [26] ²	Closed User Group [26] ²
<i>NICE1</i> _____	<i>LOCAL</i>	<i>22222222</i> _____	<i>DATEXP</i>	<i>NO</i> _____	<i>NO</i> _____	<i>NO</i> _____
<i>LONDON1</i>	<i>REMOTE</i>	<i>11111111</i> _____	<i>PSS</i> _____	<i>YES</i> _____	<i>NO</i> _____	<i>NO</i> _____
<i>LONDON2</i>	<i>REMOTE</i>	<i>55555555</i> _____	<i>PSS</i> _____	<i>YES</i> _____	<i>NO</i> _____	<i>NO</i> _____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-20. Radial Network (Subsidiary) — Completed RFT Subsystem Form

Configuration name *RFTSI* _____ [14]'

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DNCS CONFIGURATION PLANNING FORM — BOARDS

Number of primary ports 3 [21]
 Number of backup ports 1 [21]

Board Name [16]	Board Type [16]	Line Control Discipline [15]	Circuit Protocol [15]	Port Name [17]	DNOS Device Name [19]	Port LUNO [19]	Backup Port [20]
<i>B01</i> _____	<i>VIRTUAL</i>	<i>DNCS_IPC</i> _____	<i>RFT</i> _____	<i>P011</i> _____	<i>CMnn</i> _____	> <i>31</i> _____	_____
				<i>CI</i> _____	<i>P012</i> _____	<i>CMnn</i> _____	> <i>32</i> _____
<i>B02</i> _____	<i>FCCC</i> _____	<i>X.25</i> _____	<i>LAP</i> _____	<i>P021</i> _____	<i>CMnn</i> _____	> <i>40</i> _____	<i>P022</i> _____
				_____	<i>P022</i> _____	<i>CMnn</i> _____	> <i>50</i> _____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

*Numbers in brackets refer to steps in the planning process.

Figure 5-21. Radial Network (Subsidiary) — Completed Board Form

Configuration name *RFTSI* _____ [1]¹

Page 3 of 4

DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name	<i>C02</i> _____	[3]
Protocol	<i>LAP</i> _____	[4]
Max # Reads	<i>7</i> _____	[5]
Max # Retries	<i>0</i> _____	[5]
Number of virtual circuits	<i>P021</i> _____	[10]
Primary Port	<i>1</i> _____	[18]
DTE Name	<i>DTE01</i> _____	[8] ²
Network name	<i>DATEXP</i> _____	[9] ²
Local address	<i>22222222</i> _____	[9] ²
Receiving Packet Length	<i>128</i> _____	[9] ²
Receiving Window	<i>2</i> _____	[9] ²
Transmit Packet Length	<i>128</i> _____	[9] ²
Transmit Window	<i>2</i> _____	[9] ²
Time-out on Calls	<i>200</i> _____	[9]
Time-out on Packets	<i>180</i> _____	[9]
Anticipation (K)	<i>7</i> _____	[9] ²
Max # retries (N2)	<i>10</i> _____	[9] ²
Time-out (T1)	<i>3</i> _____	[9] ²
DTE (1) or DCE (3)	<i>1</i> _____	[9] ²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>SR</i> _____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-22. Radial Network (Subsidiary) — Completed X.25 Circuit Form


```
DNCS SYSTEM = RFTS1.
BOARD = B01, TYPE = VIRTUAL.
  PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
    BACKUP = .
  PORT = P012, DNOS DEVICE NAME = CM03, LUNO = >32,
    BACKUP = .
BOARD = B02, TYPE = FCCC.
  PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >40,
    BACKUP = P022.
  PORT = P022, DNOS DEVICE NAME = CM06, LUNO = >50,
    BACKUP = .
CIRCUIT = C01, PROTOCOL = RFT, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P011.
CIRCUIT = C02, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P021.
DTE = DTE01, NETWORK NAME = DATEXP, LOCAL ADDRESS = 22222222,
  RECV PACKET LENGTH = 128, RECV WINDOW = 2, XMIT PACKET LENGTH = 128,
  XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
  ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
  POLL ADDRESS = 1.
  VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = SR.
CIRCUIT = C03, PROTOCOL = CI, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P012.
RESOURCE = XCI01, TYPE = CIRES, POLL ADDRESS = 1,
  ASSOCIATED PRINTER = .
SUBSYSTEM = RFT01, TYPE = RFT, TABLE SIZE = 3,
  MULTIPLEXING = 3, CONCURRENT XFERS = 3, RECORD LENGTH = 256.
SITE = NICE1, LOCATION = LOCAL, ADDRESS = 22222222, NAME = DATEXP,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = NO.
SITE = LONDON1, LOCATION = REMOTE, ADDRESS = 11111111, NAME = PSS,
  REV CHARGING CALLED = YES, REV CHARGING CALLING = NO, USER GROUP = NO.
SITE = LONDON2, LOCATION = REMOTE, ADDRESS = 55555555, NAME = PSS,
  REV CHARGING CALLED = YES, REV CHARGING CALLING = NO, USER GROUP = NO.
```

Figure 5-24. Radial Network (Subsidiary) — Configuration Display

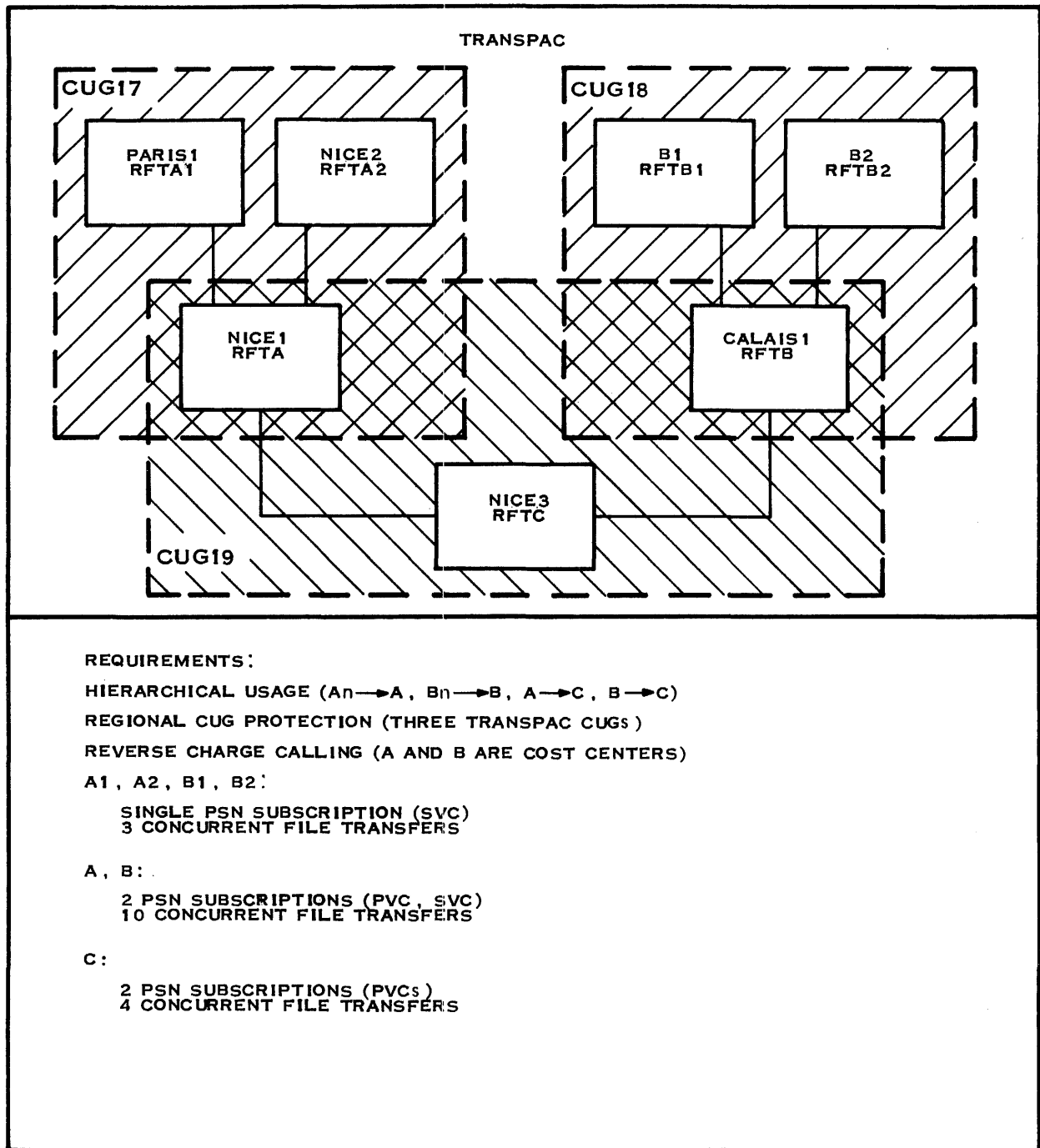
5.5 HIERARCHICAL NETWORK EXAMPLE CONFIGURATION

The following example illustrates a more complicated hierarchical configuration with four sites that use the TRANSPAC public PSN and three closed user groups (CUGs). It shows the configuration and the completed planning forms that reflect the configuration as defined by using the DNCS system generation utility.

An insurance company desires to set up a hierarchical network of DNCS X.25 RFT sites for collecting and processing data from a number of regional offices. For security reasons, file transfers are only possible between regional offices and the data collection node in their regions, and between regional data collection nodes and the central site. Also, only the regional offices are able to send data to the collection node. Regional offices may exchange messages with other offices in their region but not with offices in other regions. Reverse charging is required; the data collection nodes are the cost centers for TRANSPAC charges.

Figure 5-25 illustrates the user's requirements, and Figure 5-26 through Figure 5-29 show those requirements for the regional office as entered on DNCS configuration planning forms. Figure 5-30 is the configuration display for the regional office configuration. Figures 5-31 through Figure 5-35 show the completed planning forms for the collection center, and Figure 5-36 is the configuration display for that site. Figure 5-37 through Figure 5-41 show the completed planning forms for the headquarters site, and Figure 5-42 is the configuration display for that system.

The filled-out forms shown are copies of the DNCS configuration planning forms in Appendix A.



2283846

Figure 5-25. Networking Requirements for a Hierarchical Configuration

Configuration name *RFTAI* _____ [22]¹

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DNCS CONFIGURATION PLANNING FORM — RFT SOFTWARE SUBSYSTEM

RFT Circuit:

Circuit name *C01* _____ [5]
 Protocol *RFT* _____ [5]
 Max # Reads *3* _____ [5]
 Max # Retries *0* _____ [5]
 Primary Port *P011* _____ [18]

RFT Subsystem:

Subsystem name *RFT01* _____ [23]
 Subsystem type *RFT* _____ [24]
 Sites Table Size *20* _____ [25]
 Multiplexing *3* _____ [25]
 Concurrent transfers *3* _____ [25]
 File record length *256* _____ [25]

Site Name [26]	Site Location [26]	Site Address [26] ²	Network Name [26] ²	Reverse Charging Called [26]	Reverse Charging Calling [26] ²	Closed User Group [26] ²
<i>PARIS1</i> _____	<i>LOCAL</i>	<i>11111111</i> _____	<i>TRANSPAC</i>	<i>NO</i> _____	<i>NO</i> _____	<i>17</i> _____
<i>NICE1</i> _____	<i>REMOTE</i>	<i>22222222</i> _____	<i>TRANSPAC</i>	<i>YES</i> _____	<i>NO</i> _____	<i>17</i> _____
<i>NICE2</i> _____	<i>REMOTE</i>	<i>33333333</i> _____	<i>TRANSPAC</i>	<i>NO</i> _____	<i>NO</i> _____	<i>17</i> _____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-26. Hierarchical Network — Completed Regional Office Planning Form


```

DNCS SYSTEM = RFTA1.
BOARD = B01, TYPE = VIRTUAL.
  PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
    BACKUP = .
  PORT = P012, DNOS DEVICE NAME = CM03, LUNO = >32,
    BACKUP = .
BOARD = B02, TYPE = FCCC.
  PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >40,
    BACKUP = P022.
  PORT = P022, DNOS DEVICE NAME = CM06, LUNO = >41,
    BACKUP = .
CIRCUIT = C01, PROTOCOL = RFT, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P011.
CIRCUIT = C02, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P021.
  DTE = DTE01, NETWORK NAME = TRANSPAC, LOCAL ADDRESS = 11111111,
    REC V PACKET LENGTH = 128, REC V WINDOW = 2, XMIT PACKET LENGTH = 128,
    XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
    ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
    POLL ADDRESS = 1.
  VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = SR.
CIRCUIT = C03, PROTOCOL = CI, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P012.
SUBSYSTEM = RFT01, TYPE = RFT, TABLE SIZE = 20,
  MULTIPLEXING = 3, CONCURRENT XFERS = 3, RECORD LENGTH = 256.
SITE = PARIS1, LOCATION = LOCAL, ADDRESS = 11111111, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 17.
SITE = NICE1, LOCATION = REMOTE, ADDRESS = 22222222, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 17.
SITE = NICE2, LOCATION = REMOTE, ADDRESS = 33333333, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 17.

```

Figure 5-30. Hierarchical Network (Regional Office) Configuration Display

Configuration name *RFTA*_____ [22]¹

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DNCS CONFIGURATION PLANNING FORM — RFT SOFTWARE SUBSYSTEM

RFT Circuit:

Circuit name *C01*_____ [5]
 Protocol *RFT*_____ [5]
 Max # Reads *3*_____ [5]
 Max # Retries *0*_____ [5]
 Primary Port *P011*_____ [18]

RFT Subsystem:

Subsystem name *RFT01*_____ [23]
 Subsystem type *RFT*_____ [24]
 Sites Table Size *20*_____ [25]
 Multiplexing *6*_____ [25]
 Concurrent transfers *10*_____ [25]
 File record length *256*_____ [25]

Site Name [26]	Site Location [26]	Site Address [26] ²	Network Name [26] ²	Reverse Charging Called [26]	Reverse Charging Calling [26] ²	Closed User Group [26] ²
<i>NICE1</i> _____	<i>LOCAL</i>	<i>22222222</i> _____	<i>TRANSPAC</i>	<i>NO</i> _____	<i>NO</i> _____	<i>17</i> _____
<i>PARIS1</i> _____	<i>REMOTE</i>	<i>11111111</i> _____	<i>TRANSPAC</i>	<i>NO</i> _____	<i>YES</i> _____	<i>17</i> _____
<i>NICE2</i> _____	<i>REMOTE</i>	<i>33333333</i> _____	<i>TRANSPAC</i>	<i>NO</i> _____	<i>YES</i> _____	<i>17</i> _____
<i>NICE3</i> _____	<i>REMOTE</i>	<i>44444444</i> _____	<i>TRANSPAC</i>	<i>NO</i> _____	<i>NO</i> _____	<i>19</i> _____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-31. Hierarchical Network — Completed Collection Center Planning Form

Configuration name *RFTA* _____ [14]¹

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DNCS CONFIGURATION PLANNING FORM — BOARDS

Number of primary ports 4 [21]
 Number of backup ports 2 [21]

Board name [16]	Board Type [16]	Line Control Discipline [15]	Circuit Protocol [15]	Port name [17]	DNOS device name [19]	Port LUNO [19]	Backup Port [20]	
<i>B01</i> _____	<i>VIRTUAL</i> _____	<i>DNCS_IPC</i> _____	<i>RFT</i> _____	<i>P011</i> _____	<i>CMnn</i> _____	> <i>31</i> _____	_____	
				<i>CI</i> _____	<i>P012</i> _____	<i>CMnn</i> _____	> <i>32</i> _____	_____
<i>B02</i> _____	<i>FCCC</i> _____	<i>X.25</i> _____	<i>LAP</i> _____	<i>P021</i> _____	<i>CMnn</i> _____	> <i>40</i> _____	<i>P022</i> _____	
				_____	<i>P022</i> _____	<i>CMnn</i> _____	> <i>41</i> _____	_____
				<i>LAP</i> _____	<i>P023</i> _____	<i>CMnn</i> _____	> <i>42</i> _____	<i>P024</i> _____
				_____	<i>P024</i> _____	<i>CMnn</i> _____	> <i>43</i> _____	_____
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	

¹Numbers in brackets refer to steps in the planning process.

Figure 5-32. Hierarchical Network — Completed Collection Center Planning Form

Configuration name *RFTA* _____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C02* _____ [3]
 Protocol *LAP* _____ [4]
 Max # Reads *7* _____ [5]
 Max # Retries *0* _____ [5]
 Number of virtual circuits *1* _____ [10]
 Primary Port *P021* _____ [18]

 DTE Name *DTE01* _____ [8]²
 Network name *TRANSPAC* _____ [9]²
 Local address *22222222* _____ [9]²
 Receiving Packet Length *128* _____ [9]²
 Receiving Window *2* _____ [9]²
 Transmit Packet Length *128* _____ [9]²
 Transmit Window *2* _____ [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *3* _____ [9]²
 DTE (1) or DCE (3) *1* _____ [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>PE</i> _____	<i>44444444</i> _____	<i>RFT</i> _____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-33. Hierarchical Network — Completed Collection Center Planning Form

Configuration name *RFTA* _____ [1]'

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C03* _____ [3]
 Protocol *LAP* _____ [4]
 Max # Reads *7* _____ [5]
 Max # Retries *0* _____ [5]
 Number of virtual circuits *1* _____ [10]
 Primary Port *P023* _____ [18]

DTE Name *DTE02* _____ [8]²
 Network name *TRANSPAC* _____ [9]²
 Local address *55555555* _____ [9]²
 Receiving Packet Length *128* _____ [9]²
 Receiving Window *2* _____ [9]²
 Transmit Packet Length *128* _____ [9]²
 Transmit Window *2* _____ [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *3* _____ [9]²
 DTE (1) or DCE (3) *1* _____ [9]²

Virtual Circuit Name [11]	Virtual Circuit Number [11]	Virtual Circuit Type [11] ²	Remote DTE Address [12] ²	Virtual Circuit User [13]
<i>VC01</i> _____	<i>1</i> _____	<i>SR</i> _____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-34. Hierarchical Network — Completed Collection Center Planning Form


```

DNCS SYSTEM = RFT1.
BOARD = B01, TYPE = VIRTUAL.
  PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
    BACKUP = .
  PORT = P012, DNOS DEVICE NAME = CM03, LUNO = >32,
    BACKUP = .
BOARD = B02, TYPE = FCCC.
  PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >40,
    BACKUP = P022.
  PORT = P022, DNOS DEVICE NAME = CM06, LUNO = >41,
    BACKUP = .
  PORT = P023, DNOS DEVICE NAME = CM07, LUNO = >42,
    BACKUP = P024.
  PORT = P024, DNOS DEVICE NAME = CM08, LUNO = >43,
    BACKUP = .
CIRCUIT = C01, PROTOCOL = RFT, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P011.
CIRCUIT = C02, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P021.
  DTE = DTE01, NETWORK NAME = TRANSPAC, LOCAL ADDRESS = 22222222,
    RECV PACKET LENGTH = 128, RECV WINDOW = 2, XMIT PACKET LENGTH = 128,
    XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
    ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
    POLL ADDRESS = 1.
    VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = PE,
      REMOTE DTE ADDRESS = 44444444, VIRTUAL CIRCUIT USER = RFT.
CIRCUIT = C03, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P023.
  DTE = DTE02, NETWORK NAME = TRANSPAC, LOCAL ADDRESS = 55555555,
    RECV PACKET LENGTH = 128, RECV WINDOW = 2, XMIT PACKET LENGTH = 128,
    XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
    ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
    POLL ADDRESS = 1.
    VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = SR.
CIRCUIT = C04, PROTOCOL = CI, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P012.
  RESOURCE = XCI01, TYPE = CIRES, POLL ADDRESS = 1,
    ASSOCIATED PRINTER = .
SUBSYSTEM = RFT01, TYPE = RFT, TABLE SIZE = 20,
  MULTIPLEXING = 6, CONCURRENT XFERS = 10, RECORD LENGTH = 256.
SITE = NICE1, LOCATION = LOCAL, ADDRESS = 22222222, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 17.
SITE = PARIS1, LOCATION = REMOTE, ADDRESS = 11111111, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = YES, USER GROUP = 17.
SITE = NICE2, LOCATION = REMOTE, ADDRESS = 33333333, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = YES, USER GROUP = 17.
SITE = NICE3, LOCATION = REMOTE, ADDRESS = 44444444, NAME TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 19.

```

Figure 5-36. Hierarchical Network — Collection Center Configuration Display

Configuration name *RFTC* _____ [22]¹

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DNCS CONFIGURATION PLANNING FORM — RFT SOFTWARE SUBSYSTEM

RFT Circuit:

Circuit name *CO1* _____ [5]
 Protocol *RFT* _____ [5]
 Max # Reads *3* _____ [5]
 Max # Retries *0* _____ [5]
 Primary Port *P011* _____ [18]

RFT Subsystem:

Subsystem name *RFT01* _____ [23]
 Subsystem type *RFT* _____ [24]
 Sites Table Size *3* _____ [25]
 Multiplexing *4* _____ [25]
 Concurrent transfers *4* _____ [25]
 File record length *256* _____ [25]

Site Name [26]	Site Location [26]	Site Address [26] ²	Network Name [26] ²	Reverse Charging Called [26]	Reverse Charging Calling [26] ²	Closed User Group [26] ²
<i>NICE3</i> _____	<i>LOCAL</i>	<i>44444444</i> _____	<i>TRANSPAC</i>	<i>NO</i> _____	<i>NO</i> _____	<i>19</i> _____
<i>NICE1</i> _____	<i>REMOTE</i>	<i>22222222</i> _____	<i>TRANSPAC</i>	<i>NO</i> _____	<i>NO</i> _____	<i>19</i> _____
<i>CALAISI</i>	<i>REMOTE</i>	<i>66666666</i> _____	<i>TRANSPAC</i>	<i>NO</i> _____	<i>NO</i> _____	<i>19</i> _____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-37. Hierarchical Network — Completed Headquarters Planning Form

Configuration name *RFTC* _____ [14]'

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DNCS CONFIGURATION PLANNING FORM — BOARDS

Number of primary ports 4 [21]
 Number of backup ports 2 [21]

Board name [16]	Board Type [16]	Line Control Discipline [15]	Circuit Protocol [15]	Port name [17]	DNOS device name [19]	Port LUNO [19]	Backup Port [20]
<i>B01</i> _____	<i>VIRTUAL</i>	<i>DNCS_IPC</i> _____	<i>RFT</i> _____	<i>P011</i> _____	<i>CMnn</i> _____	> <i>31</i> _____	_____
			<i>CI</i> _____	<i>P012</i> _____	<i>CMnn</i> _____	> <i>32</i> _____	_____
<i>B02</i> _____	<i>FCCC</i> _____	<i>X.25</i> _____	<i>LAP</i> _____	<i>P021</i> _____	<i>CMnn</i> _____	> <i>40</i> _____	<i>P022</i> _____
			_____	<i>P022</i> _____	<i>CMnn</i> _____	> <i>41</i> _____	_____
			<i>LAP</i> _____	<i>P023</i> _____	<i>CMnn</i> _____	> <i>42</i> _____	<i>P024</i> _____
			_____	<i>P024</i> _____	<i>CMnn</i> _____	> <i>43</i> _____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

'Numbers in brackets refer to steps in the planning process

Figure 5-38. Hierarchical Network — Completed Headquarters Planning Form

Configuration name *RFTC* _____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C02* _____ [3]
 Protocol *LAP* _____ [4]
 Max # Reads *7* _____ [5]
 Max # Retries *0* _____ [5]
 Number of virtual circuits *1* _____ [10]
 Primary Port *P021* _____ [18]

DTE Name *DTE01* _____ [8]²
 Network name *TRANSPAC* _____ [9]²
 Local address *44444444* _____ [9]²
 Receiving Packet Length *128* _____ [9]²
 Receiving Window *2* _____ [9]²
 Transmit Packet Length *128* _____ [9]²
 Transmit Window *2* _____ [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *3* _____ [9]²
 DTE (1) or DCE (3) *1* _____ [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>PE</i> _____	<i>55555555</i> _____	<i>RFT</i> _____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-39. Hierarchical Network — Completed Headquarters Planning Form

Configuration name *RFTC* _____ [1]'

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C03* _____ [3]
 Protocol *LAP* _____ [4]
 Max # Reads *7* _____ [5]
 Max # Retries *0* _____ [5]
 Number of virtual circuits *1* _____ [10]
 Primary Port *P023* _____ [18]

 DTE Name *DTE02* _____ [8]²
 Network name *TRANSPAC* _____ [9]²
 Local address *7777777* _____ [9]²
 Receiving Packet Length *128* _____ [9]²
 Receiving Window *7* _____ [9]²
 Transmit Packet Length *128* _____ [9]²
 Transmit Window *7* _____ [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *3* _____ [9]²
 DTE (1) or DCE (3) *1* _____ [9]²

Virtual Circuit Name [11]	Virtual Circuit Number [11]	Virtual Circuit Type [11] ²	Remote DTE Address [12] ²	Virtual Circuit User [13]
<i>VC01</i> _____	<i>1</i> _____	<i>PE</i> _____	<i>66666666</i> _____	<i>RFT</i> _____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-40. Hierarchical Network — Completed Headquarters Planning Form


```

DNCS SYSTEM = RFT1.
BOARD = B01, TYPE = VIRTUAL.
  PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
    BACKUP = .
  PORT = P012, DNOS DEVICE NAME = CM03, LUNO = >32,
    BACKUP = .
BOARD = B02, TYPE = FCCC.
  PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >40,
    BACKUP = P022.
  PORT = P022, DNOS DEVICE NAME = CM06, LUNO = >41,
    BACKUP = .
  PORT = P023, DNOS DEVICE NAME = CM07, LUNO = >42,
    BACKUP = P024.
  PORT = P024, DNOS DEVICE NAME = CM08, LUNO = >43,
    BACKUP = .
CIRCUIT = C01, PROTOCOL = RFT, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P011.
CIRCUIT = C02, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P021.
  DTE = DTE01, NETWORK NAME = TRANSPAC, LOCAL ADDRESS = 44444444,
    RECV PACKET LENGTH = 128, RECV WINDOW = 2, XMIT PACKET LENGTH = 128,
    XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
    ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
    POLL ADDRESS = 1.
    VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = PE,
      REMOTE DTE ADDRESS = 55555555, VIRTUAL CIRCUIT USER = RFT.
CIRCUIT = C03, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P023.
  DTE = DTE02, NETWORK NAME = TRANSPAC, LOCAL ADDRESS = 66666666,
    RECV PACKET LENGTH = 128, RECV WINDOW = 2, XMIT PACKET LENGTH = 128,
    XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
    ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
    POLL ADDRESS = 1.
    VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = PE,
      REMOTE DTE ADDRESS = 55555555, VIRTUAL CIRCUIT USER = RFT.
CIRCUIT = C04, PROTOCOL = CI, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P012.
  RESOURCE = XCI01, TYPE = CIRES, POLL ADDRESS = 1,
    ASSOCIATED PRINTER = .
SUBSYSTEM = RFT01, TYPE = RFT, TABLE SIZE = 3,
  MULTIPLEXING = 4, CONCURRENT XFERS = 4, RECORD LENGTH = 256.
SITE = NICE3, LOCATION = LOCAL, ADDRESS = 44444444, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 19.
SITE = NICE1, LOCATION = REMOTE, ADDRESS = 55555555, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 19.
SITE = CALAIS1, LOCATION = REMOTE, ADDRESS = 66666666, NAME = TRANSPAC,
  REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 19.

```

Figure 5-42. Hierarchical Network — Headquarters Configuration Display



X.25 SNA Multi-Product Examples

6.1 INTRODUCTION

This section provides two examples of configurations that use both SNA and X.25 access methods. The first example shows an X.25 circuit that communicates with an SNA host through the TELENET packet switched network (PSN). The first example configuration emulates an IBM network interface adaptor (NIA), where the X.25 circuit serves in place of an SDLC circuit. The configuration is a hybrid that contains elements of both X.25 and SNA. The second example configuration contains both an X.25 circuit and an SDLC circuit. It is a combination system that contains both X.25 RFT and SNA.

6.2 NETWORK INTERFACE ADAPTOR EXAMPLE

This example is a hybrid configuration that uses an X.25 circuit in place of an SDLC circuit to communicate with a SNA host. It contains elements of both SNA and X.25.

Figure 6-1 illustrates the user's requirements. Figure 6-2 shows the SNA node planning form with an access method of PSN. Figure 6-3 shows the RFT subsystem planning form with only the local site definition. Figure 6-4 shows the completed board planning form, including:

- An FCCC with the HOST LCD and the LAP protocol—the link to the SNA host through the TELENET PSN
- A virtual board for the DNCS-IPC channels for:
 - A CI circuit that is the interface between DNCS and CI
 - A CIPC circuit that is the interface between DNCS and the SNA Emulators
- An FCCC with the LOCAL LINE LCD and RDTC protocol—the link to the two V914 stations and the P914A station

Figure 6-5 through Figure 6-8 show the completed circuit planning forms, including:

- X.25 circuit — Link to the SNA host through the TELENET PSN
- CIPC — Logical circuit for the SNA Emulators
- CI — Logical circuit for access to DNCS CI
- RDTC — Local circuit for 914A video and printer stations

Finally, Figure 6-9 contains the output listing that the Verify DNCS Configuration (VDC) generates for this completed configuration.

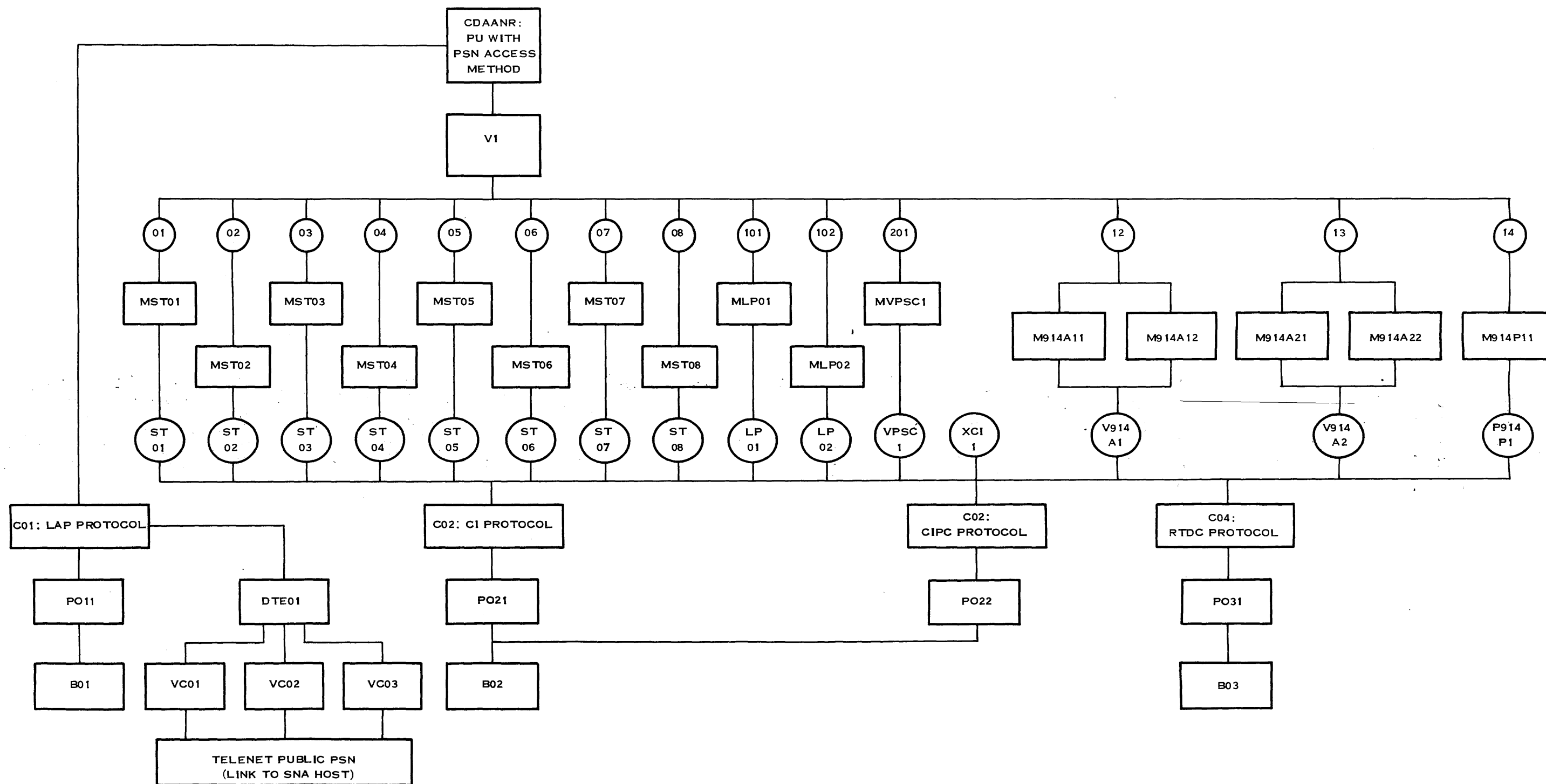


Figure 6-1. Network Interface Adaptor Configuration

Configuration name DEXPSN [22]¹

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DNCS CONFIGURATION PLANNING FORM — NODE

Node name DEX04 [23]
 PU name CDAANR [24]
 Access method PSN [25]
 Circuit name C01 [26]
 Poll address 1 [27]
 Exchange ID 0200 01790102 [28]
 Remote DTE address _____ [29]
 SLU Type 1 Mode Name DCPUPA [30]
 SLU Type 2 Mode Name DCP3278 [30]
 SLU Type 3 Mode Name DCP3284 [30]
 LUs available 1,2,3,4,5,6,7,8,9 [31]
10,11,12,13,14

VPU Name [32]	ID Required (Y/N) [33]	LU pool list [41]	Application name [35]	DNCS Synonym [36]	ID Required (Y/N) [37]
<u>VI</u>	<u>NO</u>		<u>ALEIMA</u> <u>ADATSA</u> <u>ADACIA</u>	<u>IMS</u> <u>TSO</u> <u>CICS</u>	<u>NO</u> <u>YES</u> <u>NO</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process

Figure 6-2. Completed NIA Planning Form — SNA Node

Configuration name DEXPSN [22]¹

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DNCS CONFIGURATION PLANNING FORM — RFT SOFTWARE SUBSYSTEM

RFT Circuit:

Circuit name _____ [5]
 Protocol _____ [5]
 Max # Reads _____ [5]
 Max # Retries _____ [5]
 Primary Port _____ [18]

RFT Subsystem:

Subsystem name _____ [23]
 Subsystem type _____ [24]
 Sites Table Size _____ [25]
 Multiplexing _____ [25]
 Concurrent transfers _____ [25]
 File record length _____ [25]

Site Name [26]	Site Location [26]	Site Address [26] ²	Network Name [26] ²	Reverse Charging Called [26]	Reverse Charging Calling [26] ²	Closed User Group [26] ²
AUSTII	LOCAL	311054101026	TELENET	NO	NO	NO
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 6-3. Completed NIA Planning Form — RFT Subsystem

Configuration name DEXPSN [14]'

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DNCS CONFIGURATION PLANNING FORM — BOARDS

Number of primary ports 4 [21]
 Number of backup ports 0 [21]

Board Name [16]	Board Type [16]	Line Control Discipline [15]	Circuit Protocol [15]	Port Name [17]	DNOS Device Name [19]	Port LUNO [19]	Backup Port [20]
<u>B01</u>	<u>FCCC</u>	<u>X.25</u>	<u>LAP</u>	<u>P011</u>	<u>CM01</u>	<u>> 31</u>	
<u>B02</u>	<u>VIRTUAL</u>	<u>DNCS_IPC</u>	<u>CIPC</u> <u>CI</u>	<u>P021</u> <u>P022</u>	<u>CM05</u> <u>CM07</u>	<u>> 32</u> <u>> 33</u>	
<u>B03</u>	<u>FCCC</u>	<u>LOCAL_LINE</u>	<u>RDTC</u>	<u>P031</u>	<u>CM12</u>	<u>> 34</u>	

¹Numbers in brackets refer to steps in the planning process

Figure 6-4. Completed NIA Planning Form — Boards

Configuration name *DEXPSN* _____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C01* _____ [3]
 Protocol *LAP* _____ [4]
 Max # Reads *7* _____ [5]
 Max # Retries *0* _____ [5]
 Number of virtual circuits *3* _____ [10]
 Primary Port *P011* _____ [18]

 DTE Name *DTE01* _____ [8]²
 Network name *TELENET* _____ [9]²
 Local address *311054101026* _____ [9]²
 Receiving Packet Length *128* _____ [9]²
 Receiving Window *2* _____ [9]²
 Transmit Packet Length *128* _____ [9]²
 Transmit Window *2* _____ [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *3* _____ [9]²
 DTE (1) or DCE (3) *1* _____ [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>SR</i> _____	_____	_____
<i>VC02</i> _____	<i>2</i> _____	<i>SR</i> _____	_____	_____
<i>VC03</i> _____	<i>3</i> _____	<i>SR</i> _____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 6-5. Completed NIA Planning Form — X.25 Circuit

Configuration name DEXPSN [1]'

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DNCS CONFIGURATION PLANNING FORM — SNA CIRCUIT

Circuit name C02 [3]
 Protocol CIPC [4]
 Max # Reads 3 [5]
 Max # Retries 0 [5]
 NRZI [5]
 Auto Answer [5]
 # of Stations 11 [7]
 Primary Port P021 [18]

Resource name [8]	Resource type [9]	Poll Address [11]	Associated Printer [10]	Mode name [12/39]	Application synonym [38]	Associated VPU [40]	LU [40]
<u>ST01</u>	<u>V911</u>	<u>1</u>	<u>LP01</u>	<u>MST01</u>	<u>IMS</u>		<u>01</u>
.
.
<u>ST06²</u>	<u>V911</u>	<u>6</u>	<u>LP01</u>	<u>MST06</u>	<u>IMS</u>		<u>06</u>
<u>ST07</u>	<u>V911</u>	<u>7</u>	<u>LP02</u>	<u>MST07</u>	<u>IMS</u>		<u>07</u>
<u>ST08</u>	<u>V911</u>	<u>8</u>	<u>LP02</u>	<u>MST08</u>	<u>CICS</u>		<u>08</u>
<u>LP01</u>	<u>PTR1</u>	<u>101</u>		<u>MLP01</u>	<u>IMS</u>		<u>09</u>
<u>LP02</u>	<u>PTR3</u>	<u>102</u>		<u>MLP02</u>	<u>CICS</u>		<u>10</u>
<u>VPSCI</u>	<u>PSC2</u>	<u>201</u>	<u>LP02</u>	<u>MVPSCI</u>	<u>CICS</u>		<u>11</u>

¹Numbers in brackets refer to steps in the planning process.

²Listings for ST02 through ST05 do not appear. They are all V911 type resources using LP01 as the associated printer. The IMS application synonym is assigned to each. Poll addresses, mode names, and LUs are numbered sequentially.

Figure 6-6. Completed NIA Planning Form — SNA Circuit

Configuration name DEXPSN [1]

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DNCS CONFIGURATION PLANNING FORM — SNA CIRCUIT

Circuit name C04 [3]
 Protocol RDTC [4]
 Max # Reads 7 [5]
 Max # Retries 5 [5]
 NRZI [5]
 Auto Answer [5]
 # of Stations 3 [7]
 Primary Port P031 [18]

Resource name [8]	Resource type [9]	Poll Address [11]	Associated Printer [10]	Mode name [12/39]	Application synonym [38]	Associated VPU [40]	LU [40]
<u>V914A1</u>	<u>V914</u>	<u>64</u>	<u>P914P1</u>	<u>M914A11</u>	<u>IMS</u>	<u> </u>	<u>12</u>
				<u>M914A12</u>	<u>TSO</u>	<u> </u>	<u>12</u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>V914A2</u>	<u>V914</u>	<u>65</u>	<u>P914P1</u>	<u>M914A21</u>	<u>IMS</u>	<u> </u>	<u>13</u>
				<u>M914A22</u>	<u>TSO</u>	<u> </u>	<u>13</u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>P914P1</u>	<u>P914</u>	<u>80</u>	<u> </u>	<u>M914P11</u>	<u>IMS</u>	<u> </u>	<u>14</u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>
				<u> </u>	<u> </u>	<u> </u>	<u> </u>

¹Numbers in brackets refer to steps in the planning process

Figure 6-8. Completed NIA Planning Form — SNA Circuit


```
DNCS SYSTEM = DEX04.
PU = CDAANR, ACCESS METHOD = PSN, CIRCUIT = C01, POLL ADDRESS = 1,
  XID = 020001790102, REMOTE DTE = , SLU1 LOGMODE = DCPUPA,
  SLU2 LOGMODE = DCP3278, SLU3 LOGMODE = DCP3284.
VPU = V1, NO ID REQUIRED,
  LU LIST = "".
  APPLICATION = ALEIMA, SYN = IMS, NO ID REQUIRED.
  APPLICATION = ADATSA, SYN = TSO, ID REQUIRED.
  APPLICATION = ADACIA, SYN = CICS, NO ID REQUIRED.
BOARD = B01, TYPE = FCCC.
  PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
  BACKUP = .
BOARD = B02, TYPE = VIRTUAL.
  PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >32,
  BACKUP = .
  PORT = P022, DNOS DEVICE NAME = CM07, LUNO = >33,
  BACKUP = .
BOARD = B03, TYPE = FCCC.
  PORT = P031, DNOS DEVICE NAME = CM12, LUNO = >34,
  BACKUP = .
CIRCUIT = C01, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P011.
  DTE = DTE01, NETWORK NAME = TELENET, LOCAL ADDRESS = 311054101026,
  RECV PACKET LENGTH = 128, RECV WINDOW = 2, XMIT PACKET LENGTH = 128,
  XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
  ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
  POLL ADDRESS = 1.
  VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = SR.
  VIRTUAL CIRCUIT = VC02, CIRCUIT NUMBER = 2, TYPE = SR.
  VIRTUAL CIRCUIT = VC03, CIRCUIT NUMBER = 3, TYPE = SR.
CIRCUIT = C02, PROTOCOL = CIPC, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P021.
RESOURCE = ST01, TYPE = V911, POLL ADDRESS = 01,
  ASSOCIATED PRINTER = LP01.
  MODE = MST01, APPLICATION = IMS, VPU = , LU = 01.
RESOURCE = ST02, TYPE = V911, POLL ADDRESS = 02,
  ASSOCIATED PRINTER = LP01.
  MODE = MST02, APPLICATION = IMS, VPU = , LU = 02.
RESOURCE = ST03, TYPE = V911, POLL ADDRESS = 03,
  ASSOCIATED PRINTER = LP01.
  MODE = MST03, APPLICATION = IMS, VPU = , LU = 03.
RESOURCE = ST04, TYPE = V911, POLL ADDRESS = 04,
  ASSOCIATED PRINTER = LP01.
  MODE = MST04, APPLICATION = IMS, VPU = , LU = 04.
```

Figure 6-9. NIA Configuration Display (Sheet 1 of 2)

RESOURCE = ST05, TYPE = V911, POLL ADDRESS = 05,
 ASSOCIATED PRINTER = LP01.
 MODE = MST05, APPLICATION = IMS, VPU = , LU = 05.
 RESOURCE = ST06, TYPE = V911, POLL ADDRESS = 06,
 ASSOCIATED PRINTER = LP01.
 MODE = MST06, APPLICATION = IMS, VPU = , LU = 06.
 RESOURCE = ST07, TYPE = V911, POLL ADDRESS = 07,
 ASSOCIATED PRINTER = LP02.
 MODE = MST07, APPLICATION = IMS, VPU = , LU = 07.
 RESOURCE = ST08, TYPE = V911, POLL ADDRESS = 08,
 ASSOCIATED PRINTER = LP02.
 MODE = MST08, APPLICATION = CICS, VPU = , LU = 08.
 RESOURCE = LP01, TYPE = PTR1, POLL ADDRESS = 101,
 ASSOCIATED PRINTER = .
 MODE = MLP01, APPLICATION = IMS, VPU = , LU = 09.
 RESOURCE = LP02, TYPE = PTR3, POLL ADDRESS = 102,
 ASSOCIATED PRINTER = .
 MODE = MLP02, APPLICATION = CICS, VPU = , LU = 10.
 RESOURCE = VPSC1, TYPE = PSC2, POLL ADDRESS = 201,
 ASSOCIATED PRINTER = LP02.
 MODE = MVPSC1 APPLICATION = CICS, VPU = , LU = 11.
 CIRCUIT = C03, PROTOCOL = CI, MAXREADS = 3,
 MAXRETRIES = 0, PORT = P022.
 RESOURCE = XCI1, TYPE = CIRES, POLL ADDRESS = 01,
 ASSOCIATED PRINTER = .
 CIRCUIT = C04, PROTOCOL = RDTG, MAXREADS = 7,
 MAXRETRIES = 5, PORT = P031.
 RESOURCE = V914A1, TYPE = V914, POLL ADDRESS = 64,
 ASSOCIATED PRINTER = P914P1.
 MODE = M914A11, APPLICATION = IMS, VPU = , LU = 12.
 MODE = M914A12, APPLICATION = TSO, VPU = , LU = 12.
 RESOURCE = V914A2, TYPE = V914, POLL ADDRESS = 65,
 ASSOCIATED PRINTER = P914P1.
 MODE = M914A21, APPLICATION = IMS, VPU = , LU = 13.
 MODE = M914A22, APPLICATION = TSO, VPU = , LU = 13.
 RESOURCE = P914P1, TYPE = P914, POLL ADDRESS = 80,
 ASSOCIATED PRINTER = .
 MODE = M914P11, APPLICATION = IMS, VPU = , LU = 14.
 SITE = AUSTI1, LOCATION = LOCAL, ADDRESS = 311054101026, NAME = TELENET,
 REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = NO.

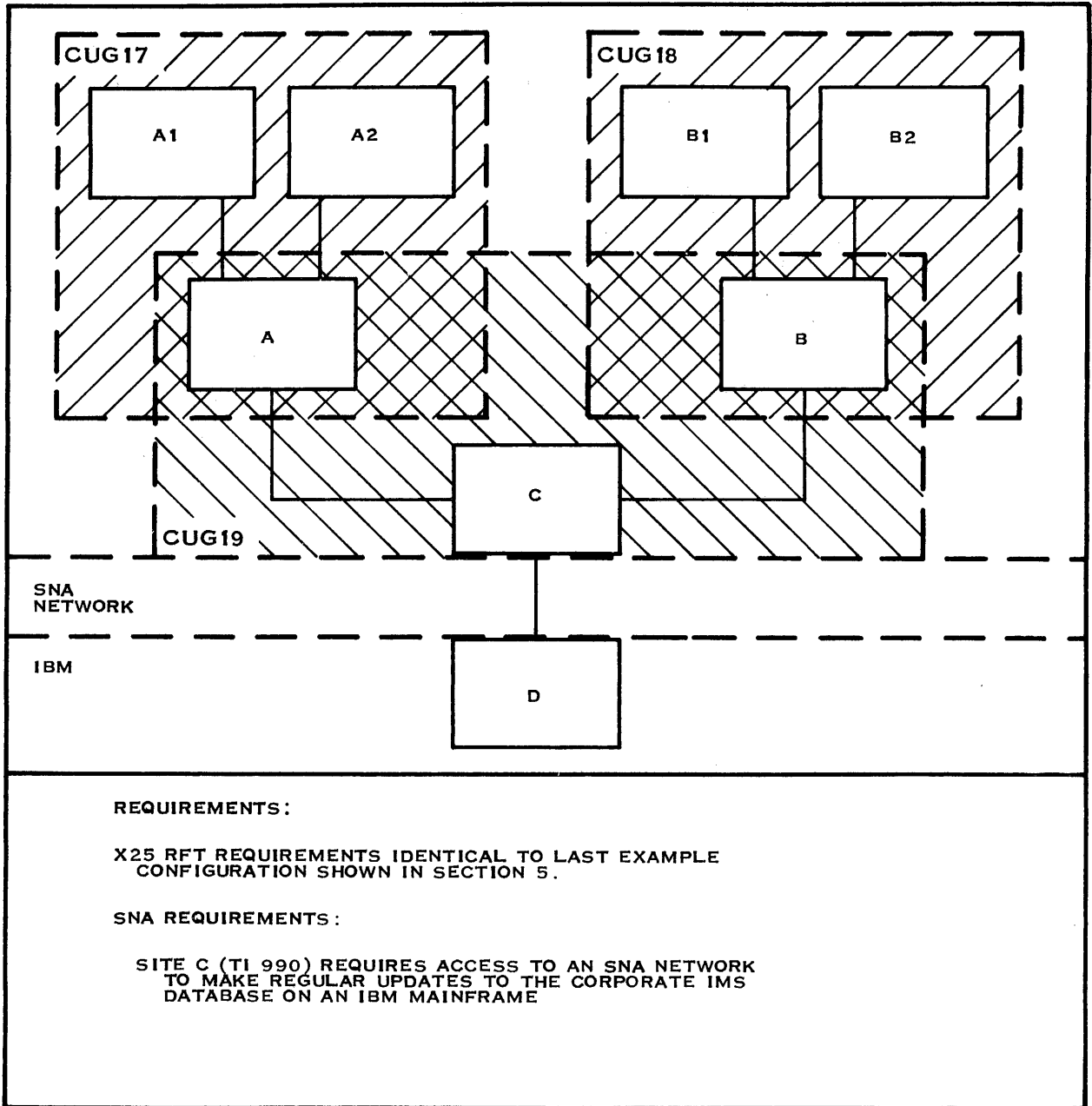
Figure 6-9. NIA Configuration Display (Sheet 2 of 2)

6.3 MULTI-PRODUCT EXAMPLE

The user discussed in the last example in Section 5 has an additional requirement that DNCS X.25 RFT cannot fulfill, namely communication with an SNA host. The TI 990 installation at C requires regular access to the corporate data base at D. This support is to be provided by another DNCS-based product, DNCS SNA. This product enables TI equipment at site C to participate in sessions with the SNA host, and may be coresident with DNCS X.25 RFT.

Figure 6-10 illustrates the user's requirements, and Figure 6-11 through Figure 6-18 show the requirements as entered on DNCS configuration planning forms. Figure 6-19 is the Show command display for this example.

In this example, a dedicated SDLC link provides access to the SNA host. However, depending on the facilities available, you might also accomplish this by using an NIA access via a packet switched network as shown in the previous example.



2283848

Figure 6-10. Networking Requirements for a Multi-Product Configuration

Configuration name SNAX25C [22]'

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DNCS CONFIGURATION PLANNING FORM — NODE

Node name SNAX25 [23]
 PU name CDAANR [24]
 Access method VTAM [25]
 Circuit name C05 [26]
 Poll address 1 [27]
 Exchange ID 0200 00000000 [28]
 Remote DTE address _____ [29]
 SLU Type 1 Mode Name DCPUPA [30]
 SLU Type 2 Mode Name DCP3278 [30]
 SLU Type 3 Mode Name DCP3284 [30]
 LUs available 1,2,3,4,5,6,7,8,9,10,11 [31]

VPU Name [32]	ID Required (Y/N) [33]	LU Pool List [41]	Application Name [35]	DNCS Synonym [36]	ID Required (Y/N) [37]
<u>VI</u>	<u>NO</u>		<u>ALEIMA</u>	<u>IMS</u>	<u>NO</u>
			<u>ADATSA</u>	<u>TSO</u>	<u>YES</u>
			<u>ADACIA</u>	<u>CICS</u>	<u>NO</u>

'Numbers in brackets refer to steps in the planning process

Figure 6-11. Completed Multi-Product Form — SNA Node

Configuration name SNAX25C [22]¹

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DNCS CONFIGURATION PLANNING FORM — RFT SOFTWARE SUBSYSTEM

RFT Circuit:

Circuit name C01 [5]
 Protocol RFT [5]
 Max # Reads 7 [5]
 Max # Retries 0 [5]
 Primary Port P011 [18]

RFT Subsystem:

Subsystem name RFT01 [23]
 Subsystem type RFT [24]
 Sites Table Size 3 [25]
 Multiplexing 4 [25]
 Concurrent transfers 4 [25]
 File record length 256 [25]

Site Name [26]	Site Location [26]	Site Address [26] ²	Network Name [26] ²	Reverse Charging Called [26]	Reverse Charging Calling [26] ²	Closed User Group [26] ²
<u>NICE3</u>	<u>LOCAL</u>	<u>44444444</u>	<u>TRANSPAC</u>	<u>NO</u>	<u>NO</u>	<u>19</u>
<u>NICE1</u>	<u>REMOTE</u>	<u>55555555</u>	<u>TRANSPAC</u>	<u>NO</u>	<u>NO</u>	<u>19</u>
<u>CALAISI</u>	<u>REMOTE</u>	<u>66666666</u>	<u>TRANSPAC</u>	<u>NO</u>	<u>NO</u>	<u>19</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process

²Network Subscription Parameters

Figure 6-12. Completed Multi-Product Planning Form — RFT Subsystem

Configuration name SNAX25C [14]¹

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DNCS CONFIGURATION PLANNING FORM — BOARDS

Number of primary ports 5 [21]
 Number of backup ports 2 [21]

Board name [16]	Board Type [16]	Line Control Discipline [15]	Circuit Protocol [15]	Port name [17]	DNOS device name [19]	Port LUNO [19]	Backup Port [20]
<u>B01</u>	<u>VIRTUAL</u>	<u>DNCS_IPC</u>	<u>RFT</u>	<u>P011</u>	<u>CM01</u>	<u>> 31</u>	
			<u>CI</u>	<u>P012</u>	<u>CM03</u>	<u>> 32</u>	
			<u>CIPC</u>	<u>P013</u>	<u>CM09</u>	<u>> 33</u>	
<u>B02</u>	<u>FCCC</u>	<u>X.25</u>	<u>LAP</u>	<u>P021</u>	<u>CM05</u>	<u>> 40</u>	<u>P022</u>
				<u>P022</u>	<u>CM06</u>	<u>> 41</u>	
			<u>LAP</u>	<u>P023</u>	<u>CM07</u>	<u>> 42</u>	<u>P024</u>
				<u>P024</u>	<u>CM08</u>	<u>> 43</u>	

¹Numbers in brackets refer to steps in the planning process

Figure 6-13. Completed Multi-Product Planning Form — Boards

Configuration name SNAX25C [1]'

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name C02 [3]
 Protocol LAP [4]
 Max # Reads 7 [5]
 Max # Retries 0 [5]
 Number of virtual circuits 1 [10]
 Primary Port P021 [18]

DTE Name DTE01 [8]²
 Network name TRANSPAC [9]²
 Local address 44444444 [9]²
 Receiving Packet Length 128 [9]²
 Receiving Window 2 [9]²
 Transmit Packet Length 128 [9]²
 Transmit Window 2 [9]²
 Time-out on Calls 200 [9]
 Time-out on Packets 180 [9]
 Anticipation (K) 7 [9]²
 Max # retries (N2) 10 [9]²
 Time-out (T1) 3 [9]²
 DTE (1) or DCE (3) 1 [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<u>VC01</u>	<u>1</u>	<u>PE</u>	<u>55555555</u>	<u>RFT</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 6-14. Completed Multi-Product Planning Form — X.25 Circuit

Configuration name SNAX25C [1]'

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name C03 [3]
 Protocol LAP [4]
 Max # Reads 7 [5]
 Max # Retries 0 [5]
 Number of virtual circuits 1 [10]
 Primary Port P023 [18]

DTE Name DTE02 [8]²
 Network name TRANSPAC [9]²
 Local address 66666666 [9]²
 Receiving Packet Length 128 [9]²
 Receiving Window 2 [9]²
 Transmit Packet Length 128 [9]²
 Transmit Window 2 [9]²
 Time-out on Calls 200 [9]
 Time-out on Packets 180 [9]
 Anticipation (K) 7 [9]²
 Max # retries (N2) 10 [9]²
 Time-out (T1) 3 [9]²
 DTE (1) or DCE (3) 1 [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<u>VC01</u>	<u>1</u>	<u>PE</u>	<u>55555555</u>	<u>RFT</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 6-15. Completed Multi-Product Planning Form — X.25 Circuit

Configuration name SNAX25C [1]'

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DNCS CONFIGURATION PLANNING FORM — SNA CIRCUIT

Circuit name C06 [3]
 Protocol CIPC [4]
 Max # Reads 3 [5]
 Max # Retries 0 [5]
 NRZI _____ [5]
 Auto Answer _____ [5]
 # of Stations 11 [7]
 Primary Port P013 [18]

Resource name [8]	Resource type [9]	Poll Address [11]	Associated Printer [10]	Mode name [12/39]	Application synonym [38]	Associated VPU [40]	LU [40]
<u>ST01</u>	<u>V911</u>	<u>1</u>	<u>LP01</u>	<u>MST01</u>	<u>IMS</u>		<u>1</u>
.
<u>ST04²</u>	<u>V911</u>	<u>4</u>	<u>LP01</u>	<u>MST04</u>	<u>IMS</u>		<u>4</u>
<u>ST05</u>	<u>V911</u>	<u>5</u>	<u>LP02</u>	<u>MST05</u>	<u>CICS</u>		<u>5</u>
.
<u>ST08</u>	<u>V911</u>	<u>8</u>	<u>LP02</u>	<u>MST08</u>	<u>CICS</u>		<u>8</u>
<u>LP01</u>	<u>PTR1</u>	<u>101</u>		<u>MLP01</u>	<u>IMS</u>		<u>9</u>
<u>LP02</u>	<u>PTR3</u>	<u>102</u>		<u>MLP02</u>	<u>CICS</u>		<u>10</u>
<u>VPSCI</u>	<u>PSC2</u>	<u>201</u>	<u>LP02</u>	<u>MVPSCI</u>	<u>CICS</u>		<u>11</u>

¹Numbers in brackets refer to steps in the planning process.

²Listings for ST02, ST03, ST06, and ST07 do not appear. They are all V911 type resources and use LP01 or LP02 as the associated printer. ST02 and ST03 use the IMS application synonym, and ST06 and ST07 use the CICS application synonym. Poll addresses, mode names, and LUs are numbered sequentially.

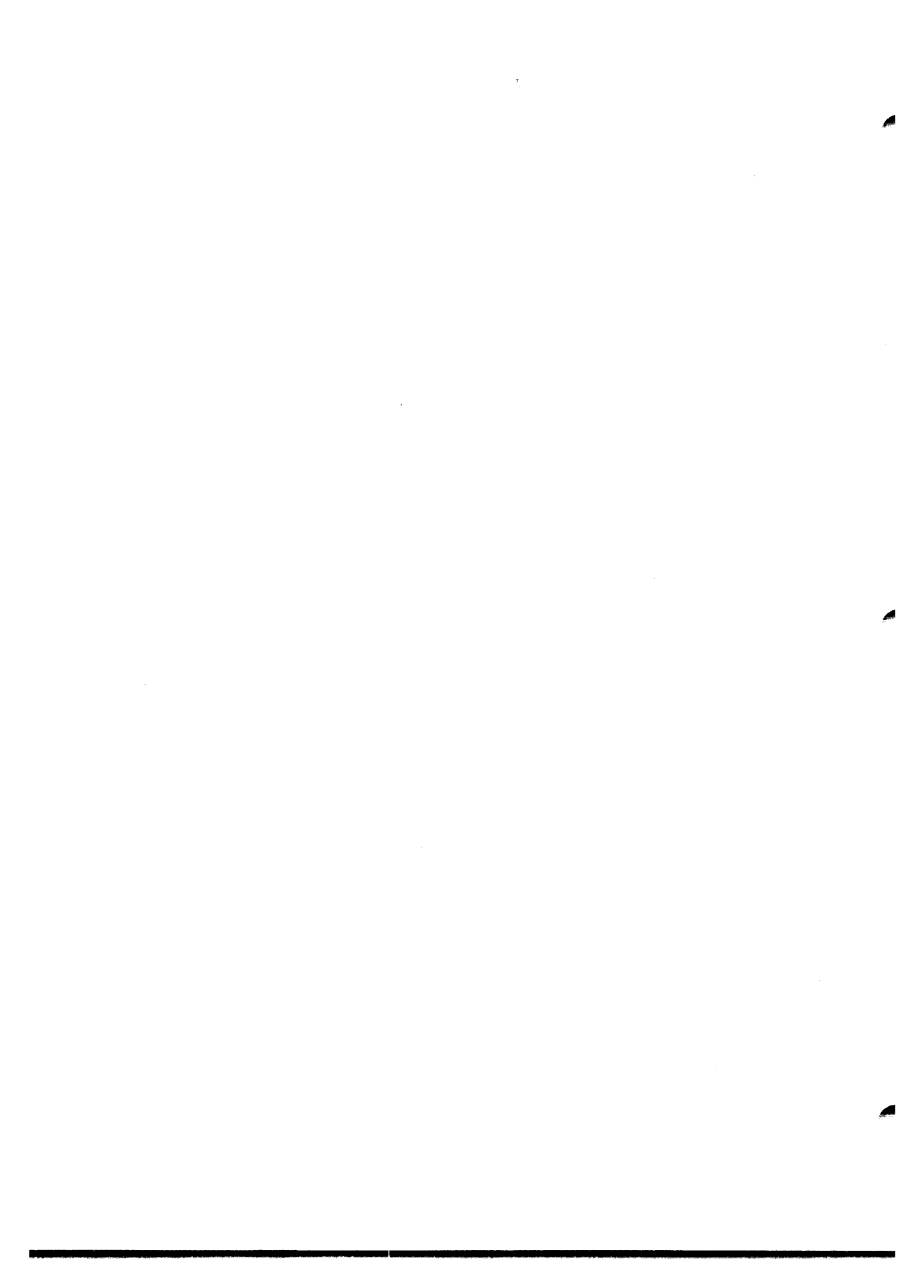
Figure 6-18. Completed Multi-Product Planning Form — SNA Circuit

```
DNCS SYSTEM = SNAX25C.
PU = CDAANR, ACCESS METHOD = VTAM, CIRCUIT = C05, POLL ADDRESS = 1,
  XID = 020000000000, REMOTE DTE = , SLU1 LOGMODE = DCPUPA,
  SLU2 LOGMODE = DCP3278, SLU3 LOGMODE = DCP3284.
VPU = V1, NO ID REQUIRED,
  LU LIST = "".
  APPLICATION = ALEIMA, SYN = IMS, NO ID REQUIRED.
  APPLICATION = ADATSA, SYN = TSO, ID REQUIRED.
  APPLICATION = ADACIA, SYN = CICS, NO ID REQUIRED.
BOARD = B01, TYPE = VIRTUAL.
  PORT = P011, DNOS DEVICE NAME = CM01, LUNO = >31,
    BACKUP = .
  PORT = P012, DNOS DEVICE NAME = CM03, LUNO = >32,
    BACKUP = .
  PORT = P013, DNOS DEVICE NAME = CM09, LUNO = >33,
    BACKUP = .
BOARD = B02, TYPE = FCCC.
  PORT = P021, DNOS DEVICE NAME = CM05, LUNO = >40,
    BACKUP = P022.
  PORT = P022, DNOS DEVICE NAME = CM06, LUNO = >41,
    BACKUP = .
  PORT = P023, DNOS DEVICE NAME = CM07, LUNO = >42,
    BACKUP = P024.
  PORT = P024, DNOS DEVICE NAME = CM08, LUNO = >43,
    BACKUP = .
CIRCUIT = C01, PROTOCOL = RFT, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P011.
CIRCUIT = C02, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P021.
  DTE = DTE01, NETWORK NAME = TRANSPAC, LOCAL ADDRESS = 44444444,
  RECV PACKET LENGTH = 128, RECV WINDOW = 2, XMIT PACKET LENGTH = 128,
  XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
  ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
  POLL ADDRESS = 1.
  VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = PE,
  REMOTE DTE ADDRESS = 55555555, VIRTUAL CIRCUIT USER = RFT.
CIRCUIT = C03, PROTOCOL = LAP, MAXREADS = 7,
  MAXRETRIES = 0, PORT = P023.
  DTE = DTE02, NETWORK NAME = TRANSPAC, LOCAL ADDRESS = 66666666,
  RECV PACKET LENGTH = 128, RECV WINDOW = 2, XMIT PACKET LENGTH = 128,
  XMIT WINDOW = 2, CALLS TIMEOUT = 200, OTHER TIMEOUT = 180,
  ANTICIPATION = 7, MAXRETRIES = 10, FRAME TIMEOUT = 3,
  POLL ADDRESS = 1.
  VIRTUAL CIRCUIT = VC01, CIRCUIT NUMBER = 1, TYPE = PE,
  REMOTE DTE ADDRESS = 55555555, VIRTUAL CIRCUIT USER = RFT.
CIRCUIT = C04, PROTOCOL = CI, MAXREADS = 3,
  MAXRETRIES = 0, PORT = P012.
RESOURCE = XCI01, TYPE = CIRES, POLL ADDRESS = 1,
  ASSOCIATED PRINTER = .
```

Figure 6-19. Multi-Product Configuration Display (Sheet 1 of 2)

CIRCUIT = C05, PROTOCOL = SDLC, MAXREADS = 10,
 MAXRETRIES = 0, PORT = P031, NRZI = NO, AUTO ANSWER = NO.
 CIRCUIT = C06, PROTOCOL = CIPC, MAXREADS = 3,
 MAXRETRIES = 0, PORT = P013.
 RESOURCE = ST01, TYPE = V911, POLL ADDRESS = 1,
 ASSOCIATED PRINTER = LP01.
 MODE = MST01, APPLICATION = IMS, VPU = , LU = 1.
 RESOURCE = ST02, TYPE = V911, POLL ADDRESS = 2,
 ASSOCIATED PRINTER = LP01.
 MODE = MST02, APPLICATION = IMS, VPU = , LU = 2.
 RESOURCE = ST03, TYPE = V911, POLL ADDRESS = 3,
 ASSOCIATED PRINTER = LP01.
 MODE = MST03, APPLICATION = IMS, VPU = , LU = 3.
 RESOURCE = ST04, TYPE = V911, POLL ADDRESS = 4,
 ASSOCIATED PRINTER = LP01.
 MODE = MST04, APPLICATION = IMS, VPU = , LU = 4.
 RESOURCE = ST05, TYPE = V911, POLL ADDRESS = 5,
 ASSOCIATED PRINTER = LP02.
 MODE = MST05, APPLICATION = CICS, VPU = , LU = 5.
 RESOURCE = ST06, TYPE = V911, POLL ADDRESS = 6,
 ASSOCIATED PRINTER = LP02.
 MODE = MST06, APPLICATION = CICS, VPU = , LU = 6.
 RESOURCE = MST07, TYPE = V911, POLL ADDRESS = 7,
 ASSOCIATED PRINTER = LP02.
 MODE = MST07, APPLICATION = CICS, VPU = , LU = 7.
 RESOURCE = ST08, TYPE = V911, POLL ADDRESS = 8,
 ASSOCIATED PRINTER = LP02.
 MODE = MST08, APPLICATION = CICS, VPU = , LU = 8.
 RESOURCE = LP01, TYPE = PTR1, POLL ADDRESS = 101,
 ASSOCIATED PRINTER = .
 MODE = MLP01, APPLICATION = IMS, VPU = , LU = 9.
 RESOURCE = LP02, TYPE = PTR3, POLL ADDRESS = 102,
 ASSOCIATED PRINTER = .
 MODE = MLP02, APPLICATION = CICS, VPU = , LU = 10.
 RESOURCE = VPSC1, TYPE = PSC2, POLL ADDRESS = 201,
 ASSOCIATED PRINTER = LP02.
 MODE = MVPSC1, APPLICATION = CICS, VPU = , LU = 11.
 SUBSYSTEM = RFT01, TYPE = RFT, TABLE SIZE = 3,
 MULTIPLEXING = 4, CONCURRENT XFERS = 4, RECORD LENGTH = 256 .
 SITE = NICE3, LOCATION = LOCAL, ADDRESS = 44444444, NAME = TRANSPAC,
 REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 19.
 SITE = NICE1, LOCATION = REMOTE, ADDRESS = 55555555, NAME = TRANSPAC,
 REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 19.
 SITE = CALAIS1, LOCATION = REMOTE, ADDRESS = 66666666, NAME = TRANSPAC,
 REV CHARGING CALLED = NO, REV CHARGING CALLING = NO, USER GROUP = 19.

Figure 6-19. Multi-Product Configuration Display (Sheet 2 of 2)



Appendix A

DNCS Configuration Planning Forms

The following pages provide master copies of the planning forms used in defining a DNCS configuration. Reproduce these masters for use with the configuration planning process presented in Section 2. Fill in the parameters for your configuration on the copies you make and save these masters for later use. Numbers in brackets refer to steps in the planning process.

Typical configurations require one node or subsystem form, one form for boards, and several circuit forms (one per circuit). You can keep the completed forms in the same binder as this manual for later reference.

Configuration name _____ [1]'

Page _____ of _____

DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name _____ [3]
 Protocol _____ [4]
 Max # Reads _____ [5]
 Max # Retries _____ [5]
 Number of virtual circuits _____ [10]
 Primary Port _____ [18]

DTE Name _____ [8]
 Network name _____ [9]²
 Local address _____ [9]²
 Receiving Packet Length _____ [9]²
 Receiving Window _____ [9]²
 Transmit Packet Length _____ [9]²
 Transmit Window _____ [9]²
 Time-out on Calls _____ [9]
 Time-out on Packets _____ [9]
 Anticipation (K) _____ [9]²
 Max # retries (N2) _____ [9]²
 Time-out (T1) _____ [9]²
 DTE (1) or DCE (3) _____ [9]

Virtual Circuit name [11]	Virtual Circuit number [11] ²	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process

²Network Subscription Parameters

Configuration name _____ [22]'

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DNCS CONFIGURATION PLANNING FORM — NODE

Node name _____ [23]
 PU name _____ [24]
 Access method _____ [25]
 Circuit name _____ [26]
 Poll address _____ [27]
 Exchange ID 0200 _____ [28]
 Remote DTE address _____ [29]
 SLU Type 1 Mode Name _____ [30]
 SLU Type 2 Mode Name _____ [30]
 SLU Type 3 Mode Name _____ [30]
 LUs available _____ [31]

VPU Name [32]	ID Required (Y/N) [33]	LU pool list [41]	Application name [35]	DNCS Synonym [36]	ID Required (Y/N) [37]
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Appendix B

Coordination of SNA Host and DNCS System Generation

This appendix describes information that must be coordinated between the SNA host generation and the DNCS generation. The configuration of the SNA host requires generation of the virtual telecommunications access method (VTAM) and the network control program (NCP).

This appendix presents this information in terms of the VTAM application and VTAM NCP macro operation codes and operands. It does not attempt to define the complete VTAM NCP generation.

B.1 DNCS NODE DEFINITION FOR SNA NETWORK

Figure B-1 through Figure B-3 show example definitions of PUs, VPUs, and applications using the DNCS generation utility. These example definitions for DNCS generation correlate to the VTAM NCP example definitions in the following paragraph.

ADD OR MODIFY PHYSICAL UNIT UNDER SYSTEM CONFG1

PU name	CDAANR	
Access Method	VTAM	
Circuit	C01	
Poll Address	05	
Exchange ID	020001712345	
Remote DTE address	311021400118	
Type 1 LOGMODE	DCPUPA	(PTR1, P914, SVQ, KSR)
Type 2 LOGMODE	DCP3278	(V911, V914, PSC2)
Type 3 LOGMODE	DCP3284	(PTR3, PSC3)

Figure B-1. Example DNCS Physical Unit Definition

ADD OR MODIFY VIRTUAL PHYSICAL UNIT UNDER PU CDAANR

VPU Name	CDAANRV1	
Requestor ID? (Y/N)	NO	
LU Pool list	1-10	_____

Figure B-2. Example DNCS VPU Definition

ADD OR MODIFY APPLICATION UNDER VPU CDAANRV1 UNDER PU CDAANR

Application Name	TEST08
Synonym	TEST
ID Required (Y/N)	NO

Figure B-3. Example DNCS Application Definition

B.2 VTAM APPLICATION GENERATION

DNCS uses Formatted Session Services (FSS) to log on and log off sessions with the application programs in the host computer. DNCS requests the host for log on by issuing a SNA INIT-SELF request. The INIT-SELF request contains fields called LOGMODE name, Application name, Requestor ID, Password, and User Data. The values that DNCS uses for these fields depend on how you access the host application and how you generate your DNCS configuration.

If you use a DNCS application synonym to log on, DNCS replaces the synonym with the application name you assigned during DNCS generation. To use a DNCS application synonym to log on, enter the synonym in response to the DNCS Command Interpreter (CI), as follows:

!< synonym>

where:

< synonym> represents the DNCS application synonym

DNCS uses the application name you assigned to the synonym during DNCS system generation for the INIT-SELF request to the host. If you use the automatic log on (the mode key function), DNCS uses the application name you specified for the mode during DNCS generation for the INIT-SELF request. Figure B-4 shows the VTAM application declaration that matches the DNCS application definition shown in Figure B-3. To use the long form to log on, enter the following in response to CI:

!< VPU name>.< application name>

where:

< VPU name>	represents the VPU name you assign during DNCS generation
< application name>	represents the VTAM application name

When you use the long form to log on, DNCS uses the application name that you supply in the command. In this case, the DNCS configuration does not need to include the application definition. In either case, the application name provided in the INIT-SELF command must match an ACBNAME in an application (APPL) macro in order for the host to process the log on command.

```

                                VBUILD      TYPE = APPL
< application name>          APPL          ACBNAME = TEST08
                                ...
                                ,MODETAB = MODETABL      *
                                ...
    
```

Figure B-4. VTAM Application Statement

If you respond yes to the ID Required prompt when defining the VPU (see Figure B-2), DNCS puts the resource name of the station where the INIT-SELF is issued in the Requestor ID field. If you respond YES to the ID Required prompt when defining the application (see Figure B-3), DNCS prompts the user to provide an identifier that DNCS stores in the User Data field of the INIT-SELF command.

For a DNCS Emulator to access a host application, the host administrator must declare the appropriate MODEENT in the MODETAB for the application. The LOGMODE fields that you specify when defining the PU (see Figure B-1) determine the LOGMODE names DNCS uses for each station type. DNCS selects the mode name according to the type of the station for which the log on is being issued. The host administrator must declare a mode entry (MODEENT) for each of the mode names that DNCS use. The LOGMODE name in the MODEENT definition must match the LOGMODE name in the PU definition (see Figure B-5). Figure B-5 provides the recommended session profile information for each LOGMODE. DNCS uses the default MODEENT of the host only when you enter a null value (only blanks or spaces) in response to the LOGMODE prompt when you define the PU.

VTAM Declarations		DNCS Log Modes Types
MODETABL	MODETAB	
	.	
	.	
DCPLUT2	MODEENT	LOGMODE = DCP3278 ,FMPROF = X'03' ,TSPROF = X'03' ,PRIPROT = X'B1' ,SECPROT = X'90' ,COMPROT = X'3080' ,RUSIZES = X'85F8' ,PSERVIC = X'02000000000000000000200'
		* Session type 2: * V911, V914, PSC2
DCPLUT1	MODEENT	LOGMODE = DCPUPA ,FMPROF = X'03' ,TSPROF = X'03' ,PRIPROT = X'B1' ,SECPROT = X'B1' ,COMPROT = X'3040' ,PSNDPAC = X'02' ,SRCVPAC = X'02' ,RUSIZES = X'8585' ,PSERVIC = X'010000000000000000000000'
		* Session type 1: * KSR, SVQ, PTR1, P914
DCPLUT3	MODEENT	LOGMODE = DCP3284, ,FMPROF = X'03' ,TSPROF = X'03' ,PRIPROT = X'B1' ,SECPROT = X'90' ,COMPROT = X'3080' ,RUSIZES = X'8787' ,PSERVIC = X'03000000000018502B507F00'
	MODEEND	* Session type 3: * PTR3, PSC3

Figure B-5. VTAM Log Mode Specification

B.3 VTAM NCP NODE DEFINITION

The following figures show examples of node declarations for the VTAM NCP system generation. These figures list parameters of the VTAM/NCP system generation and include the relevant DNCS generation parameters as comments. Figure B-6 shows the local node definition for a leased line, and Figure B-7 shows the local node definition for a switched line.

VTAM Declarations		DNCS Declarations
GROUP	LNCTL = SDLC ,DIAL = NO ...	* Access Method = VTAM
LINE	... ,NRZI = NO ...	* Response to NRZI prompt * when defining an SDLC * circuit
PUNAME	PU ADDR = 05 ... ,SSCPFM = FSS ...	* Poll Address used in * Figure B-1 * Only FSS supported.
LUNAME	LU LOCADDR = ddd	* LOCADDRs match the * addresses for LU pool * or in MODE declarations

Figure B-6. Local Node Definition — Dedicated Line

You can use the PU name you specify in the VTAM NCP system generation (shown in Figure B-6) as the PU name in the DNCS system generation for documentation purposes. DNCS does not require that the VTAM PU name and the DNCS PU name be identical.

If you follow the DNCS naming conventions, you can use the same LU and PU names in both the VTAM NCP system generation and the DNCS system generation. For the Display Node command to function properly, the PU name must consist of six characters and begin with C. Also, the Display Node command requires a special LU name derived from the PU name. To obtain this special LU name, change the initial C of the PU name to an L and append the hexadecimal equivalent of the LU number to the end of the PU name. If the PU and LU names do not follow this convention, only the Display Node command is affected. Nothing in the PU or LU naming conventions can interfere with normal operation.

VTAM Declarations		DNCS Declarations	
	GROUP	LNCTL = SDLC ,DIAL = YES ...	
	LINE	... ,NRZI = NO ...	
PUNAME	PU	... ,IDBLK = 017 ,IDNUM = 12345 ...	* Exchange ID = 020001712345 * 0200 — required * 017 — block number to identify 3274 control unit * 12345 — ID number
LUNAME	LU	LOCADDR = ddd	* LOCADDRs match the * addresses for LU pool * or in MODE declarations

Figure B-7. Local Node Definition — Switched Line

Figure B-8 shows the node definition for a DNCS SNA PU that uses an X.25 circuit instead of an SDLC circuit. IBM configurations that use X.25 circuits to link to a SNA host also require a network interface adaptor (NIA). DNCS emulates this configuration with software and requires no special hardware adaptor.

VTAM Declarations		DNCS Declarations	
	X25OUFT	... ,USRFILD = C1000000	* Required for SVC call out.
< symbol >	X25LINE	... ,LLC = PSH	* DNCS: NIA 5973-L02 ONLY
< symbol >	X25PU	... ,IDBLK = aaa ,IDNUM = nnnnn ,SSCPFM = FSS	* PU Exchange ID = 0200aaannnnn * 0200 — required * aaa = block number * nnn = ID number

Figure B-8. NCP X.25 PRPQ Definition

Appendix C

Network Authority Forms

C.1 INTRODUCTION

This appendix provides example DNCS X.25 RFT configurations and completed network authority forms to match the configurations. The following examples illustrate how the network configuration and your DNCS configuration are related. The examples identify the elements common to both the network and DNCS configuration, but they only serve as illustrations. This appendix provides three different network authority forms to illustrate the differences in format and specific information these forms require. When you subscribe to a public packet switched network (PSN), the PSN requires the same information about your configuration as that shown on the public PSN subscription forms in this appendix. Studying these examples can help you identify the parameters on your PSN subscription form that your DNCS configuration must match.

Each example in this appendix provides a DNCS X.25 circuit planning form for each X.25 circuit to identify the DNCS configuration that subscribes to each network. This appendix shows PSN subscription forms for the following networks:

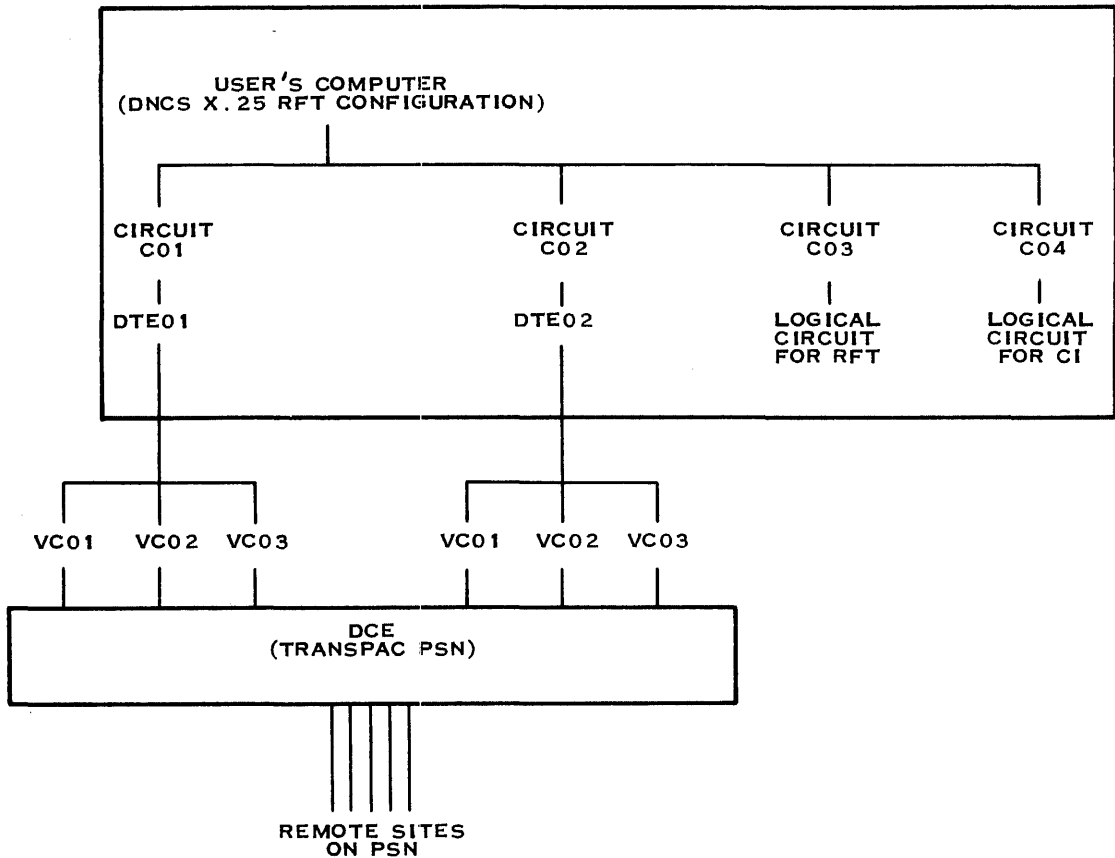
- TRANSPAC — France
- DATEX-P — Germany
- PSS — United Kingdom

C.2 TRANSPAC NETWORK EXAMPLE

This example provides completed DNCS X.25 circuit planning forms and completed network subscription forms for the DNCS configuration shown in Figure C-1.

This configuration contains two lines that use the French public packet switched network TRANSPAC. Figure C-2 and Figure C-3 show the completed DNCS X.25 circuit planning forms for circuits C01 and C02. An uppercase letter in boldface appears to the right of some entries to indicate that they correspond to entries on the TRANSPAC subscription form. Figure C-4 and Figure C-5 show TRANSPAC subscription forms for C01 and C02, respectively. The uppercase letters in boldface on these forms correspond to the letters on the DNCS X.25 circuit planning forms.

C01 uses local subscriber address 106000022. The network administration provides this number when the line is installed. The subscription form does not contain a blank for the local subscriber address, but the address appears at the top of the form for identification. C01 has three virtual circuits: one permanent, and two switched. The permanent virtual circuit uses remote subscriber address 106000048.



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Figure C-1. DNCS Configuration for the TRANSPAC Example

C02 uses local subscriber address 106000023. The network administration provides this number when the line is installed. C02 has three virtual circuits: one permanent and two switched. The permanent virtual circuit uses remote subscriber address 106000049.

Configuration name *TRANSPAC* _____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C01* _____ [3]
 Protocol *LAP* _____ [4]
 Max # reads *2* _____ [5]
 Max # retries *10* _____ [5]
 Number of virtual circuits *3* _____ [10]
 Primary Port *CM03* _____ [18]

DTE Name *DTE01* _____ [8]²
 Network name *TRANSPAC* _____ [9]²
 Local address *10600022* _____ [9]²
 Receiving Packet Length *128* _____ C [9]²
 Receiving Window *3* _____ D [9]²
 Transmit Packet Length *128* _____ C [9]²
 Transmit Window *3* _____ D [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ A [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *1* _____ B [9]²
 DTE (1) or DCE (3) *1* _____ [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>PE</i> _____ E	<i>175000148</i> _____	G <i>RFT</i> _____
<i>VC02</i> _____	<i>2</i> _____	<i>SR</i> _____ F	_____	_____
<i>VC03</i> _____	<i>3</i> _____	<i>SR</i> _____ F	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹ Numbers in brackets refer to steps in the planning process
² Network Subscription Parameters

Figure C-2. X.25 Circuit Planning Form for TRANSPAC — C01

Configuration name *TRANSPAC*_____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name	<i>C02</i> _____	[3]
Protocol	<i>LAP</i> _____	[4]
Max # reads	<i>2</i> _____	[5]
Max # retries	<i>10</i> _____	[5]
Number of virtual circuits	<i>3</i> _____	[10]
Primary Port	<i>CM04</i> _____	[18]
DTE Name	<i>DTE02</i> _____	[8] ²
Network name	<i>TRANSPAC</i> _____	[9] ²
Local address	<i>106000023</i> _____	[9] ²
Receiving Packet Length	<i>128</i> _____	C [9] ²
Receiving Window	<i>3</i> _____	D [9] ²
Transmit Packet Length	<i>128</i> _____	C [9] ²
Transmit Window	<i>3</i> _____	D [9] ²
Time-out on Calls	<i>200</i> _____	[9]
Time-out on Packets	<i>180</i> _____	[9]
Anticipation (K)	<i>7</i> _____	A [9] ²
Max # retries (N2)	<i>10</i> _____	[9] ²
Time-out (T1)	<i>1</i> _____	B [9] ²
DTE (1) or DCE (3)	<i>1</i> _____	[9] ²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>PE</i> _____ E	<i>169000349</i> _____	G <i>RFT</i> _____
<i>VC02</i> _____	<i>2</i> _____	<i>SR</i> _____ F	_____	_____
<i>VC03</i> _____	<i>3</i> _____	<i>SR</i> _____ F	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹ Numbers in brackets refer to steps in the planning process

² Network Subscription Parameters

Figure C-3. X.25 Circuit Planning Form for TRANSPAC — C02

RACCORDEMENT DIRECT MODE PAQUET

C01 (106 0000 22)

CLIENT _____ N° D'Abonné _____ Numéro de feuillet P **001**
 N° de xxxx _____ / _____
 Nom ou Raison sociale _____ Création
 Modification _____ / _____
 Correspondant Technique _____ Suppression _____ N° de contrat _____
 Transfert _____
 Annuaire _____ Ancien N° d'Abonné _____

EQUIPEMENT A CONNECTER

Correspondant technique local _____ Modification _____
 Raison sociale _____ N° Tél _____
 Adresse Complète _____ Poste _____
 Bat _____ Escaller _____ Etage _____ Pièce _____
 Code postal _____ Commune _____
 Identification de ORDINATEUR 990-10, X25 INTEGRE _____
 l'équipement _____

Unilligne
 Multilligne _____
 Nombre de lignes _____
 Débit par ligne **9600**

MODEM ABONNE FOURNI PAR TRANSPAC INSTALLATION

Coffret _____
 Encastrable _____

PARAMETRES DE RACCORDEMENT

REPARTITION DES VOIES LOGIQUES
 • Nombre de voies CVP 1 **E**
 • Nombre de arrivées mixte 2 **F**
 voies CVC départ _____

AUTRES FACILITES
 Acceptation taxation au demande _____
 Groupe ferme d'Abonnés (GFA) _____

PARAMETRES DE CONTROLE DE FLUX
 1 - Longueur de paquet **C 128**
 2 - Taille de fenêtre niveau paquet **D 3**
 3 - Choix des classes de débit par défaut liaison pour l'ensemble des CV
 • à l'émission N° **10**
 • à la réception N° **10**
 4 - Sélection par l'appelant des classes de débit par communication _____
 5 - Indication des classes de débit _____
 6 - Sel tailles de paquet, fenêtres par CV _____
 fonctions choisies LP _____ W _____
 7 - Choix des classes de débit pas CVP (pour chaque CVP dont l'abonné est responsable) _____

CM _____ MOD _____ N LIA _____
 NO LI _____
 L CRC _____ L. TR _____
 N° PTT _____
 FACT Code _____ Qté _____

LISTE DES GFA Modification _____

N° Absolu de GFA	N° local de GFA	Accès demande d'appel	avec appel entrant

DELAI CONVENU POUR L'OPERATION 24 DATE CONVENUE _____ (Sem) DATE DE MISE EN SERVICE REELLE _____

CIRCUITS VIRTUELS PERMANENTS

C M S	ABONNE		IDENTIFICATION ABONNE DISTANT				CLASSE de DEBIT du CVP		S N° ABSOLU GFA	DATE DDE (Sem)	DATE DE MISE EN SERVICE
	N° VL du CVP	R	G N° ABONNE	ou N° CONTRAT	Feuillet	N° VL du CVP	E	R			
C	000	X	175000748			000			000000		

CADRE RESERVE A TRANSPAC DATE ET PARAPHE CLIENT DATE ET PARAPHE TRANSPAC

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Figure C-4. TRANSPAC Form 1 — C01

RACCORDEMENT DIRECT MODE PAQUET

C02 (106 000 23)

CLIENT _____	N° D'Abonné _____	Numéro de feuillet P 002
Nom ou Raison sociale _____	Création <input checked="" type="checkbox"/>	N° de xxxx _____ / _____
Correspondant Technique _____	Modification _____	N° de contrat _____
	Suppression _____	
	Transfert _____	
	Annuaire _____	Ancien N° d'Abonné _____

EQUIPEMENT A CONNECTER		Modification _____	MODEM
Correspondant technique local _____	N° Tél _____		ABONNE
Raison sociale _____	Poste _____		FOURNI PAR
Adresse Complète _____			TRANSPAC
Bat _____ Escalier _____ Etage _____ Pièce _____		Unilligne <input checked="" type="checkbox"/>	INSTALLATION
Code postal _____ Commune _____		Multilligne _____	Coffret
Identification de ORDINATEUR 990-10, X25 INTEGRE _____		Nombre de lignes _____	
l'équipement _____		Débit par ligne 9600	Encastrable

PARAMETRES DE RACCORDEMENT		Modification _____	CM _____ MOD _____ N LIA _____
REPARTITION DES VOIES LOGIQUES	AUTRES FACILITES	Option rejet _____	NO LI _____
• Nombre de voies CVP 1 E	Acceptation taxation au demande _____		L CRC _____ L. TR _____
• Nombre de arrivées _____	Groupe ferme d'Abonnés (GFA) _____		N° PTT _____
voies CVC mixte 2 F			
départ _____			
PARAMETRES DU NIVEAU TRAME	PARAMETRES DE CONTROLE DE FLUX		FACT Code _____ Qté _____
• ENVELOPPE	1 - Longueur de paquet C 128		
- mode HDLC <input checked="" type="checkbox"/>	2 - Taille de fenêtre niveau paquet D 3		
- mode CARACTERE _____	3 - Choix des classes de débit par défaut		
type CRC 1 _____ 2 _____	liaison pour l'ensemble des CV		
• PROCEDURE	• à l'émission N° 10		
- LAP (unilligne)	• à la réception N° 10		
Taille de fenêtre (K) A 7	4 - Sélection par l'appelant des classes		
Temporisateur (T) B 400	de débit par communication _____		
	5 - Indication des classes de débit _____		
- Multilligne	6 - Sel tailles de paquet, fenêtres par CV _____		
taille de fenêtre (F) _____	fonctions choisies LP _____ W _____		
Numéro de Profil _____	7 - Choix des classes de débit pas CVP (pour		
	chaque CVP dont l'abonné est responsable) _____		

LISTE DES GFA			
N° Absolu de GFA	N° local de GFA	Accès demande d'appel	avec appel entrant

DELAI CONVENU POUR L'OPERATION **24** DATE CONVENUE _____ (Sem) DATE DE MISE EN SERVICE REELLE _____

CIRCUITS VIRTUELS PERMANENTS

C M S	ABONNE		IDENTIFICATION ABONNE DISTANT				CLASSE de DEBIT du CVP		S N° ABSOLU GFA	DATE DDE (Sem)	DATE DE MISE EN SERVICE
	N° VL du CVP	R	G N° ABONNE	ou N° CONTRAT	Feuillet	N° VL du CVP	E	R			
C	000	X	169000349			000			000000		

CADRE RESERVE A TRANSPAC _____ DATE ET PARAPHE CLIENT _____ DATE ET PARAPHE TRANSPAC _____

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Figure C-5. TRANSPAC Form 2 — C02

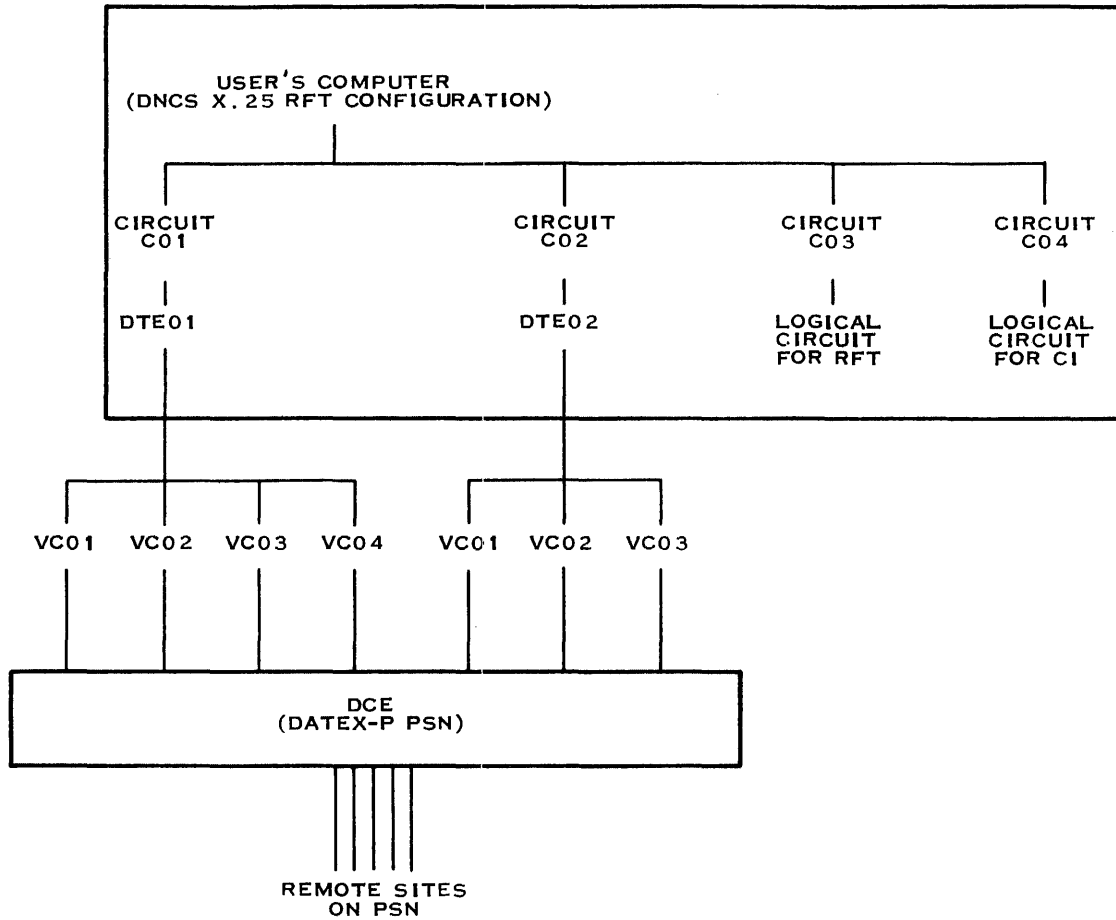
C.3 DATEX-P NETWORK EXAMPLE

This example provides completed DNCS X.25 circuit planning forms and completed network subscription forms for the DNCS configuration shown in Figure C-6.

This configuration contains two lines that use the German public packed switched network DATEX-P. Figure C-7 and Figure C-8 show the completed DNCS X.25 circuit planning forms for circuits C01 and C02. An uppercase letter in boldface appears to the right of some entries to indicate that they correspond to entries on the DATEX-P subscription form. Figure C-9 and Figure C-10 show DATEX-P subscription forms for C01 and C02, respectively. The uppercase letters in boldface on these forms correspond to the letters on the DNCS X.25 circuit planning forms.

C01 uses local subscriber address 45816140111. This number is provided by the network administration when the line is installed. The subscription for does not contain a blank for the local subscriber address, but the address appears at the top of the form for identification. C01 has four virtual circuits: one permanent (Kanal number 3) and three switched (Kanal numbers 1, 2, and 3). The permanent virtual circuit is assigned to remote subscriber address 45816140001.

C02 uses local subscriber address 45816140112 (provided by the network administration when the line is installed). It has three virtual circuits: one permanent (Kanal number 6) and two switched (Kanal numbers 1 and 2). The permanent virtual circuit uses remote subscriber address 45816140002.



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Figure C-6. DNCS Configuration for the DATEX-P Example

Configuration name *DATEXP* _____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C01* _____ [3]
 Protocol *LAP* _____ [4]
 Max # reads *2* _____ [5]
 Max # retries *10* _____ [5]
 Number of virtual circuits *4* _____ **C** [10]
 Primary Port *CM03* _____ [18]

 DTE Name *DTE01* _____ [8]²
 Network name *DATEXP* _____ [9]²
 Local address *45816140111* _____ [9]²
 Receiving Packet Length *128* _____ [9]²
 Receiving Window *7* _____ **D** [9]²
 Transmit Packet Length *128* _____ [9]²
 Transmit Window *7* _____ **D** [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *2* _____ [9]²
 DTE (1) or DCE (3) *1* _____ [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>SR</i> _____ F	_____	_____
<i>VC02</i> _____	<i>2</i> _____	<i>SR</i> _____ F	_____	_____
<i>VC03</i> _____	<i>3</i> _____	<i>SO</i> _____ H	_____	_____
<i>VC04</i> _____	<i>4</i> _____	<i>PE</i> _____ G	<i>45816140002</i> _____	<i>RFT</i> _____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹ Numbers in brackets refer to steps in the planning process

² Network Subscription Parameters

Figure C-7. X.25 Circuit Planning Form for DATEX-P — C01

Configuration name *DATEXP* _____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C02* _____ [3]
 Protocol *LAP* _____ [4]
 Max # reads *2* _____ [5]
 Max # retries *10* _____ [5]
 Number of virtual circuits *3* _____ **C** [10]
 Primary Port *CM04* _____ [18]

DTE Name *DTE02* _____ [8]²
 Network name *DATEXP* _____ [9]²
 Local address *45816140112* _____ [9]²
 Receiving Packet Length *128* _____ [9]²
 Receiving Window *7* _____ **D** [9]²
 Transmit Packet Length *128* _____ [9]²
 Transmit Window *7* _____ **D** [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *2* _____ [9]²
 DTE (1) or DCE (3) *1* _____ [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>SR</i> _____ F	_____	_____
<i>VC02</i> _____	<i>2</i> _____	<i>SR</i> _____ F	_____	_____
<i>VC03</i> _____	<i>3</i> _____	<i>PE</i> _____ G	<i>45816140002</i> _____	<i>RFT</i> _____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹ Numbers in brackets refer to steps in the planning process
² Network Subscription Parameters

Figure C-8. X.25 Circuit Planning Form for DATEX-P — C02

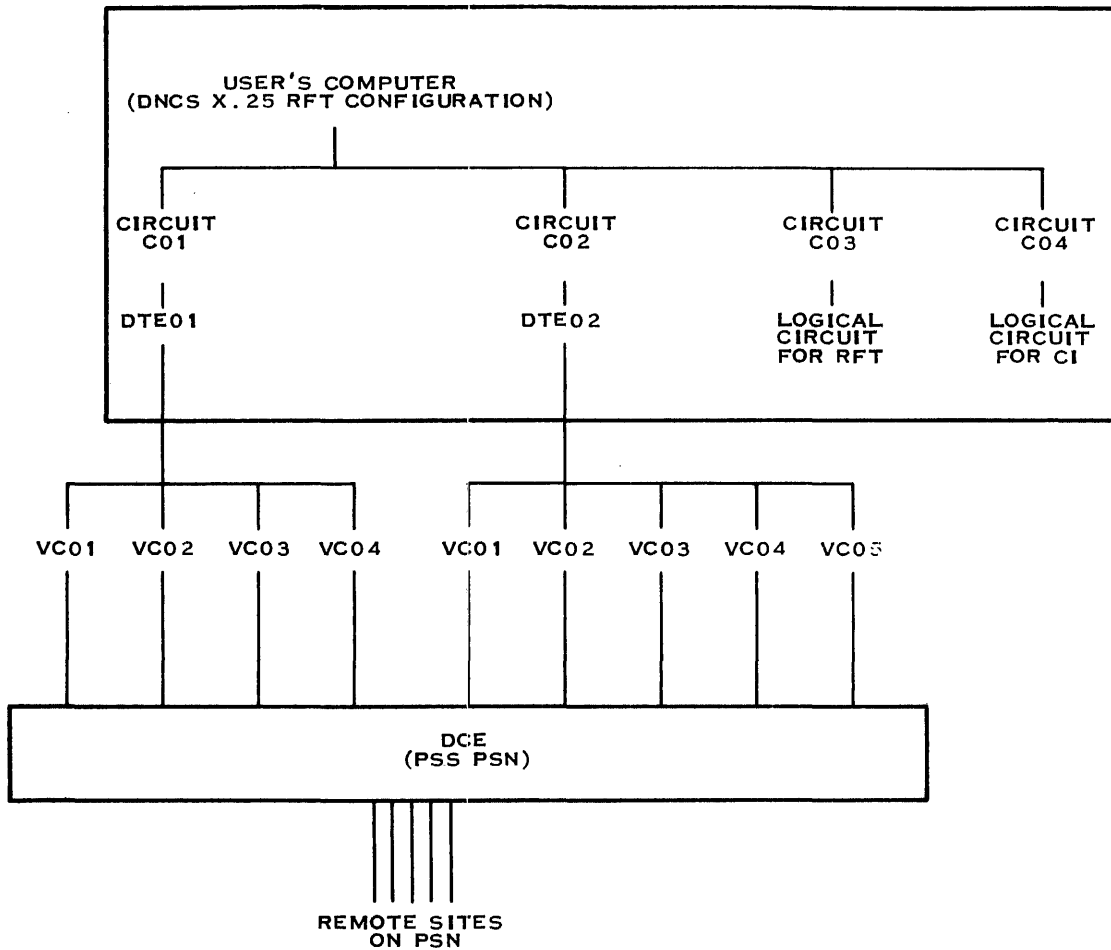
C.4 PSS NETWORK EXAMPLE

This example provides completed DNCS X.25 circuit planning forms and completed network subscription forms for the DNCS configuration shown in Figure C-11.

This configuration contains two lines that use the British public packet switched network PSS. Figure C-12 and Figure C-13 show the completed DNCS X.25 circuit planning forms for circuits C01 and C02. An uppercase letter in boldface appears to the right of some entries to indicate that they correspond to entries on the TRANSPAC subscription form. Figure C-14 and Figure C-15 show PSS subscription forms for C01 and C02, respectively. The uppercase letters in boldface on these forms correspond to the letters on the DNCS X.25 circuit planning forms.

C01 uses local subscriber address 234223440344. The network administration provides this number when the line is installed. The subscription form does not contain a blank for the local subscriber address, but the address appears to the right of PSS SERVICE PROFILE for identification. C01 has four virtual circuits: one permanent and three switched. The permanent virtual circuit uses remote subscriber address 45816140001. This does not appear on the PSS subscription form. It appears on a separate form, PSS 400a REQUEST FOR PERMANENT DATACALLS.

C02 uses local subscriber address 234223440345 (provided by the network administration when the line is installed). C02 has five virtual circuits: one permanent and four switched. The permanent virtual circuit uses remote subscriber address 45816140002, which only appears on the PSS 400a form.



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Figure C-11. DNCS Configuration for the PSS Example

Configuration name *PSS* _____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C01* _____ [3]
 Protocol *LAP* _____ [4]
 Max # reads *2* _____ [5]
 Max # retries *10* _____ [5]
 Number of virtual circuits *4* _____ **B** [10]
 Primary Port *CM03* _____ [18]

DTE Name *DTE01* _____ [8]²
 Network name *PSS* _____ [9]²
 Local address *234223440344* _____ [9]²
 Receiving Packet Length *128* _____ **C** [9]²
 Receiving Window *2* _____ **D** [9]²
 Transmit Packet Length *128* _____ **C** [9]²
 Transmit Window *2* _____ **D** [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *3* _____ [9]²
 DTE (1) or DCE (3) *1* _____ [9]²

Virtual Circuit Name [11]	Virtual Circuit Number [11] ²	Virtual Circuit Type [11] ²	Remote DTE Address [12] ²	Virtual Circuit User [13]
<i>VC01</i> _____	<i>1</i> _____	<i>PE</i> _____ E	<i>45816140001</i> _____	<i>RFT</i> _____
<i>VC02</i> _____	<i>1024</i> _____	<i>SR</i> _____ F	_____	_____
<i>VC03</i> _____	<i>1025</i> _____	<i>SR</i> _____ F	_____	_____
<i>VC04</i> _____	<i>1536</i> _____	<i>SO</i> _____ H	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹ Numbers in brackets refer to steps in the planning process
² Network Subscription Parameters

Figure C-12. X.25 Circuit Planning Form for PSS — C01

Configuration name *PSS* _____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C02* _____ [3]
 Protocol *LAP* _____ [4]
 Max # reads *2* _____ [5]
 Max # retries *10* _____ [5]
 Number of virtual circuits *5* _____ **B** [10]
 Primary Port *CM04* _____ [18]

DTE Name *DTE01* _____ [8]²
 Network name *PSS* _____ [9]²
 Local address *234223440345* _____ [9]²
 Receiving Packet Length *128* _____ **C** [9]²
 Receiving Window *2* _____ **D** [9]²
 Transmit Packet Length *128* _____ **C** [9]²
 Transmit Window *2* _____ **D** [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *3* _____ [9]²
 DTE (1) or DCE (3) *1* _____ [9]²

Virtual Circuit name [11]	Virtual Circuit Number [11] ²	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>PE</i> _____ E	<i>54816140002</i> _____	<i>RFT</i> _____
<i>VC02</i> _____	<i>1024</i> _____	<i>SR</i> _____ F	_____	_____
<i>VC03</i> _____	<i>1025</i> _____	<i>SR</i> _____ F	_____	_____
<i>VC04</i> _____	<i>512</i> _____	<i>RO</i> _____ I	_____	_____
<i>VC05</i> _____	<i>1536</i> _____	<i>SO</i> _____ H	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹ Numbers in brackets refer to steps in the planning process

² Network Subscription Parameters

Figure C-13. X.25 Circuit Planning Form for PSS — C02

Appendix D

DNCS Verification Error Messages

The Verify DNCS Configuration (VDC) command examines a specified DNCS configuration and returns diagnostic messages embedded in the configuration listing. These messages have the following format:

```
**** ERROR < nnn> **** < message>
```

where:

< nnn> is a three-digit decimal number identifying the error message
< message> is a description of the error.

Table D-1 lists these messages sequentially by number. Below each message is an explanation of its cause and suggestions on how to remedy the problem.

Table D-1. VDC Error Messages

000 OPEN ERROR DURING INITIALIZATION OF "ERRFILE".

Explanation:

The VDC utility detected an error while trying to open the file containing the error messages.

User Action:

Retry the operation. If the error persists, contact your customer representative.

001 OPEN ERROR DURING INITIALIZATION OF "CONFIG" FILE.

Explanation:

An internal error occurred during an attempt to open the DNCS configuration control file.

User Action:

Retry the operation. If the error persists, contact your customer representative.

002 OPEN ERROR DURING INITIALIZATION OF "TEXTCONF" FILE.

Explanation:

An internal error occurred during an attempt to open the DNCS configuration text file.

User Action:

Retry the operation. If the error persists, examine the directory
<dcgen>.\$SDGU\$.<configuration> to ensure that a TEXTCONF file exists.

where:

<dcgen> is the value you enter for the DNCS generation directory.
<configuration> is the name of the DNCS configuration you are verifying.

Reenter the configuration using the DNCS System Generation utility if necessary.

005 NO NODE HAS BEEN DEFINED

Explanation:

You did not include a node name in the configuration.

User Action:

Use the SYSTEM command to define a node name. If your configuration does not include SNA, you can ignore this message. Only SNA configurations require a node name.

006 NUMERIC DIGIT NOT ALLOWED AS FIRST CHARACTER.

Explanation:

When defining a DNCS entity name, you did not begin it with a letter.

User Action:

Choose a valid name. Section 1 describes DNCS naming conventions.

Table D-1. VDC Error Messages (Continued)

010 EACH PU MUST HAVE A POLL ADDRESS.**Explanation:**

When defining a PU, you did not include a poll address, a required field.

User Action:

Obtain the poll address for your PU from the host network operator. Then, modify the PU definition to include the poll address.

011 EACH PU MUST HAVE AN ACCESS METHOD.**Explanation:**

When defining a PU, you did not include an access method, a required field.

User Action:

Modify the PU definition to include the access method. Refer to the PU entity command descriptions in Section 3 for information about how to define a PU.

012 BLANK FIELD NOT ALLOWED IN PU ENTRY.**Explanation:**

When defining a PU, you entered a null value (blanks or spaces only) for a required field.

User Action:

If you entered the blank field for one or more of the SLU type mode names and you want to use the default log mode names as defined by the host, no action is necessary. Otherwise, modify the PU definition to include the missing parameter.

013 EXCHANGE ID MUST NOT CONTAIN BLANKS.**Explanation:**

When defining a PU, you entered one or more blanks (spaces) in the exchange ID.

User Action:

Modify the PU definition, eliminating the embedded blanks in the exchange ID field. If the PU definition requires no exchange ID, use the initial value of 020000000000.

014 THE CIRCUIT SPECIFIED HAS NOT BEEN DEFINED.**Explanation:**

When defining a PU, you specified a circuit that you did not define as part of the configuration.

User Action:

Either add the specified circuit to the configuration, or modify the PU definition to include a circuit already defined.

Table D-1. VDC Error Messages (Continued)

015 A PU WITH ACCESS METHOD OF LOCAL MUST BE ATTACHED TO AN NCP CIRCUIT.

Explanation:

When defining a PU with a LOCAL access method, you did not reference a circuit with a network control program (NCP) protocol. DNCS requires that you use the LOCAL access method to attach a PU to an NCP circuit.

User Action:

Ensure that the circuit referenced by the PU definition is an NCP circuit. If this involves modifying the protocol of the circuit, be sure that the circuit does not contain resources. An NCP circuit does not support resources.

017 A PU WITH ACCESS METHOD OF PSN MUST BE ATTACHED TO AN LAP CIRCUIT.

Explanation:

When defining a PU with an access method of PSN, you did not reference a circuit with link access protocol (LAP). DNCS requires that a PU using PSN must be attached to an X.25 circuit. An X.25 circuit must use the LAP protocol.

User Action:

Ensure that the circuit the PU definition references is an X.25 circuit. If this involves modifying the protocol of the circuit, be sure that the circuit does not contain resources, since an X.25 circuit does not support resources.

019 A PU WITH ACCESS METHOD OF VTAM MUST BE ATTACHED TO AN SDLC CIRCUIT.

Explanation:

When defining a PU with an access method of VTAM, you did not reference a circuit with a protocol of SDLC. DNCS requires that you attach a PU using VTAM to an SDLC circuit.

User Action:

Ensure that the circuit referenced by the PU definition is an SDLC circuit. If this involves modifying the protocol of the circuit, be sure that the circuit does not contain resources. An SDLC circuit does not support resources.

021 EACH PU MUST HAVE A CIRCUIT

Explanation:

When defining a PU, you did not specify a circuit.

User Action:

Modify the PU definition to specify a circuit of the correct type for the PU access method. Refer to the PU entity command descriptions in Section 3 for information about how to define a PU.

022 AN LU GREATER THAN 255 WAS SPECIFIED.

Explanation:

When defining an LU pool list under a VPU, you entered an LU number that is outside the allowable range of 1 through 255.

User Action:

Correct the LU number. Be sure to correct any mode definitions affected by the change to refer to the correct LU.

Table D-1. VDC Error Messages (Continued)**023 AN LU LESS THAN 1 WAS SPECIFIED.****Explanation:**

When defining an LU pool list under a VPU, you entered an LU number that is outside the allowable range of 1 through 255.

User Action:

Correct the LU number. Remember that LU number zero represents the use of a pooled LU and may appear only in mode definitions.

024 INVALID LU LIST.**Explanation:**

You incorrectly formatted the pool list you defined. A correctly formatted list consists of any combination of one or more decimal LU numbers separated by commas, or ranges of LUs, which are two decimal LU numbers separated by a hyphen. When you specify ranges of LUs, the first value must be less than the second value. For instance, 5-15 is a correct LU range, but 15-5 is incorrect.

User Action:

Modify the VPU definition to include a correctly formatted list of individual LUs and ranges of LUs. Refer to the VPU entity command descriptions in Section 3 for information about how to define a LU pool list.

025 INVALID ENTRY FOR RANGE OF POOLED LUS.**Explanation:**

You entered an invalid range of LUs in the LU list you defined. A correctly formatted range consists of two decimal LU numbers separated by a hyphen; the first value must be less than the second. For instance, 5-15 is a correct LU range, but 15-5 is incorrect.

User Action:

Modify the VPU definition to include a correctly formatted list. If the VPU has no LUs in its pool, no list is required. Refer to the VPU entity command descriptions in Section 3 for information about how to define a LU pool list.

026 LU SPECIFIED WAS PREVIOUSLY DEFINED IN THIS PU'S POOL.**Explanation:**

You already defined an LU referenced in this VPU pool list as a pooled LU within the PU. Under a particular PU, you can define an LU only once in only one of the VPU pool lists.

User Action:

Check the VPU pool lists for all VPUs under this PU, and correct the duplicate definition(s).

027 THE LU SPECIFIED WAS DEFINED AS A POOLED LU FOR THIS PU.**Explanation:**

Under a particular PU, you defined an LU to be dedicated to a mode and to be a pooled LU.

User Action:

Refer to your planning forms to determine whether the LU should be included as a pooled LU or as a dedicated LU. Correct either the list of LUs in the pool or the LU referenced for this mode.

Table D-1. VDC Error Messages (Continued)

028 DEDICATED LU PREVIOUSLY REFERENCED FOR THIS PU.

Explanation:

When defining a mode, you specified an LU that you previously specified as a dedicated LU. Only one resource can use a dedicated LU under a PU. If the resource supports multiple mode keys, more than one mode definition under that resource can use the same LU. Under Release 1.1 of DNCS, only the V914 resource supports multiple mode keys.

User Action:

No action is required if you are using multiple modes with the same LU for a V914. For all other resources, examine the configuration to find the previous use of the LU, then determine the correct allocation. You can change the incorrect reference by using the MM command.

029 NO POOLED LUS WERE DEFINED FOR THE VPU REFERENCED.

Explanation:

The LU field of the mode record specifies LU 0, which indicates that it is to come from the pool of LUs defined for the VPU. However, you defined no LUs for this VPU pool.

User Action:

Determine whether the LU should belong to a pool or be a dedicated LU. If it should belong to a pool, use the MV command to add the list of pooled LUs to the VPU. Otherwise, use the MM command to specify a dedicated LU.

030 LIST OF LUS FOR A PU IS NOT CONTIGUOUS.

Explanation:

The list of LUs you define for use under a PU must include all LUs in the range from the lowest number used to the highest. The definition of LUs under a PU does not include all LUs within that range.

User Action:

Examine the list of LUs you defined for each PU. Be sure that each LU is referenced once and only once, either as a dedicated LU, or as an LU contained in some VPU's pool. If there are LUs that are not to be used by any resource, define a dummy VPU to contain those LUs in its pool.

032 LOGMODE TABLE NAMES MUST BE UNIQUE WITHIN THIS PU.

Explanation:

You entered two or more identical log mode names for this PU. Under a particular PU, each log mode name must be unique.

User Action:

Obtain the log mode table names that you entered and the log mode table names that the host administrator entered during your VTAM generation. Verify that all names are unique in both the VTAM generation and the DNCS configuration. If your DNCS configuration is incorrect, use the MPU command (described in Section 3) to modify the entry.

Table D-1. VDC Error Messages (Continued)**033 NO BOARDS ARE DEFINED.****Explanation:**

You did not include a board definition in the configuration. Without a BCAIM or an FCCC board, DNCS cannot exchange data.

User Action:

Refer to the DNCS planning process (Section 2) for information about how to define the communications access for the configuration.

034 THIS BOARD HAS NO PORTS.**Explanation:**

You did not define any ports for the indicated board.

User Action:

Add port definitions for the board, or delete the board definition.

035 EACH PORT MUST HAVE A DNOS DEVICE NAME.**Explanation:**

When defining a port, you did not include a DNOS device name.

User Action:

Modify the port definition to include a DNOS device name of the form CMxx, where xx is the number assigned to the device during DNOS generation.

036 INVALID DNOS DEVICE NAME.**Explanation:**

When defining a port, you did not include a valid DNOS communications device name.

User Action:

Modify the port definition to include a DNOS device name of the form CMxx, where xx is the number assigned to the device during DNOS generation.

037 DNOS DEVICE NAME PREVIOUSLY REFERENCED.**Explanation:**

When defining a port, you included a DNOS device name that you already used for another port.

User Action:

Modify the port definition to include a DNOS device name that is not assigned to any other port. Valid DNOS device names for DNCS ports are of the general form CMxx, where xx is the number assigned to the device during DNOS generation.

038 EACH PORT MUST HAVE A LUNO.**Explanation:**

When defining a port, you did not include a logical unit number (LUNO).

User Action:

Modify the port definition to include a unique LUNO in the range of > 31 through > FF.

Table D-1. VDC Error Messages (Continued)

039 LUNO PREVIOUSLY REFERENCED.

Explanation:

When defining a port, you included a LUNO that you already used for another port.

User Action:

Modify the port definition to include a LUNO that is not assigned to any other port.

040 BOARD TYPE MUST BE SPECIFIED.

Explanation:

When defining a board, you must include the type of DNOS communications device that you are using.

User Action:

Modify the board definition specifying one of the following valid DNCS board types:

- FCCC
- BCAIM (for X.21 BCAIM also)
- VIRTUAL

041 BACKUP PORT MUST BE DEFINED ON THE SAME BOARD.

Explanation:

When defining a port, you included a backup port that is not on the same FCCC. A backup port must be on the same FCCC as the port that it backs up.

User Action:

Modify the port definition to include a port on the same FCCC as its primary port, or delete the backup port.

042 TOO MANY PORTS DEFINED FOR THIS BOARD TYPE.

Explanation:

When defining a board, you included more ports than the board type allows. The FCCC board allows four ports. The BCAIM board allows only one port. The VIRTUAL board does not have a limit.

User Action:

Modify the board definition by deleting the extra ports. If your configuration requires these extra ports, include an additional board (or boards) in both the DNCS configuration and the DNOS system. These boards must also reside physically in the chassis of your TI computer.

043 BACKUP PORT MUST NOT POINT TO ITSELF.

Explanation:

When defining a port, you specified the backup port to be the same as the port that you are defining.

User Action:

For a backup port, specify a port on the same board other than the port that you are defining.

Table D-1. VDC Error Messages (Continued)

044 NO CIRCUITS HAVE BEEN DEFINED TO SUPPORT RESOURCES.**Explanation:**

When defining the configuration, you did not include any resources that provide access to any host or network.

User Action:

Define one or more circuits for user access. Section 2 describes the planning process for user access.

045 THE PORT NAME MUST BE SPECIFIED FOR THE CIRCUIT.**Explanation:**

When defining a circuit, you must specify the port name that DNCS uses to transfer data for the circuit. The port name must not already be allocated to another circuit.

User Action:

Enter the port name to be used for access by this circuit.

046 THE MAXIMUM NUMBER OF OUTSTANDING READS MUST BE DEFINED**Explanation:**

When defining a circuit, you did not include the maximum number of outstanding reads.

User Action:

Refer to Table 2-1 or Table 2-3 for recommended values by circuit type. Then, modify the circuit definition to include an appropriate number of outstanding reads.

047 THE MAXIMUM NUMBER OF RETRIES MUST BE DEFINED.**Explanation:**

When defining a circuit, you did not include the maximum number of retries.

User Action:

Refer to Table 2-1 or Table 2-3 for recommended values by circuit type. Then, modify the circuit definition to include an appropriate number of retries.

048 THE PORT SPECIFIED HAS NOT BEEN DEFINED.**Explanation:**

When defining a circuit, you specified a port not in the configuration.

User Action:

Either add the specified port to the configuration or modify the circuit definition to include a valid port specification. You can omit the port specification, provided you use the DNCS CI Assign Port command to associate a valid port with the circuit each time you activate DNCS.

Table D-1. VDC Error Messages (Continued)

049 AN NCP CIRCUIT HAS ALREADY BEEN DEFINED.

Explanation:

When defining the configuration, you included more than one circuit with protocol of NCP.

User Action:

Delete the extra NCP circuit.

050 NUMBER OF APPLICATION I/F REQUIRED FOR APPL PROTOCOL.

Explanation:

When defining an APPL circuit, you did not include the number of application interface resources, a required field.

User Action:

Modify the definition of the APPL circuit to include an appropriate number of application resources.

051 NRZI RESPONSE REQUIRED FOR SDLC PROTOCOL.

Explanation:

You entered a blank response for the NRZI prompt when defining an SDLC circuit. A blank response is not valid.

User Action:

Modify the circuit definition to include either a YES or NO answer.

052 AUTO ANSWER RESPONSE REQUIRED FOR SDLC PROTOCOL.

Explanation:

When defining a circuit using the SDLC protocol, you must respond with either YES or NO to the auto answer prompt.

User Action:

Determine whether or not this circuit uses auto answer. If it does, respond with YES. If it does not, respond with NO.

053 RFT SOFTWARE SUBSYSTEM MUST BE DEFINED IF RFT CIRCUIT IS DEFINED.

Explanation:

You defined an RFT circuit in your DNCS configuration, but you did not include the RFT software subsystem.

User Action:

If your DNCS configuration requires an RFT circuit, use the ASUB command to add the RFT subsystem. If it does not require an RFT circuit, either redefine the circuit with the correct protocol (one other than RFT), or delete the RFT circuit.

Table D-1. VDC Error Messages (Continued)

055 EACH RESOURCE MUST HAVE A TYPE.**Explanation:**

When defining a resource (station), you did not include the resource type.

User Action:

Modify the resource definition to include a resource type. See Table 2-2 for a list of valid resource types.

056 THIS RESOURCE TYPE IS NOT SUPPORTED ON THIS CIRCUIT PROTOCOL.**Explanation:**

When defining a resource (station), you specified an incompatible station type for the circuit. For example, a V914 station cannot be configured on a CIPC circuit.

User Action:

Refer to Table 2-2 for a list of station types that each circuit protocol supports. Either modify the resource type or delete the resource from the current circuit and define it under the proper circuit.

058 EACH RESOURCE MUST HAVE A POLL ADDRESS.**Explanation:**

When defining a resource (station), you did not include a poll address (station ID).

User Action:

Modify the definition to include the appropriate poll address.

059 EITHER AN APPLICATION OR A VPU MUST BE SPECIFIED.**Explanation:**

When defining a mode, you did not include an application synonym or a VPU name.

User Action:

If you want to provide automatic access to the application that the synonym represents, modify the mode definition to include an application synonym. If you want to allow the station to access the SNA host through that VPU, modify the mode definition to include a VPU name. Otherwise, delete the mode definition.

060 AN LU NUMBER MUST BE SPECIFIED.**Explanation:**

When defining a mode, you did not include an LU number.

User Action:

Modify the mode definition to include an LU number. LUs in the range of 1 through 255 are dedicated to the station. Zero indicates the use of a pooled LU.

Table D-1. VDC Error Messages (Continued)

061 THE APPLICATION SYNONYM SPECIFIED HAS NOT BEEN DEFINED.

Explanation:

When defining a mode, you included an application synonym that is not included in the definition of any of the applications in the configuration.

User Action:

Either change the mode definition to include a valid application synonym, or add an application definition for the synonym under the appropriate VPU.

062 THE VPU SPECIFIED HAS NOT BEEN DEFINED.

Explanation:

When defining a mode, you specified a VPU that you did not define under a PU.

User Action:

Determine whether you entered the correct VPU name, or if you failed to define the VPU under a PU. If you entered the VPU name incorrectly, use the MM command to correct the entry. If you did not define the VPU, use the AV command to define the VPU under the proper PU.

063 MORE MODES DEFINED THAN MODES AVAILABLE ON RESOURCE.

Explanation:

You defined too many modes for a particular resource. A type V914 resource supports up to three mode definitions. All other resource types support only one mode definition.

User Action:

Determine the type of the resource you defined and the number of modes available for that resource type. Section 2 describes the mode definitions available for each resource type. Use the DM command to delete the erroneous mode entries.

064 RESOURCES DEFINED ON CIRCUIT WHICH DOES NOT SUPPORT RESOURCES.

Explanation:

You defined a resource under a circuit that does not support resources (SDLC or LAP for example). This occurs if you modify a circuit containing resources by changing the protocol to a protocol used for host access.

User Action:

Determine whether you should redefine the circuit with some other protocol (using the MC command) or whether you should define the resource under another circuit. Consult your planning forms.

066 PRINTER REFERENCED IS NOT DEFINED AS A RESOURCE.

Explanation:

Your response to the ASSOCIATED PRINTER prompt contains a name that you did not define as a resource in this configuration.

User Action:

Either change the name you entered to be that of a defined printer resource or add the name as a resource.

Table D-1. VDC Error Messages (Continued)**067 ONLY ONE DTE MAY BE DEFINED PER LAP CIRCUIT.****Explanation:**

You defined an X.25 circuit with a protocol type of LAP and defined more than one DTE under that circuit.

User Action:

For each DNCS link to a PSN, you must define a circuit and one DTE to identify that link. Determine whether the second DTE belongs to another circuit or is extraneous. Consult your planning forms.

068 NO DTE DEFINED FOR THIS LAP CIRCUIT.**Explanation:**

You defined an X.25 circuit with the LAP protocol but did not define any DTE to identify the DNCS link to the PSN. You must define one and only one DTE for each X.25 circuit.

User Action:

For each DNCS link to a PSN, you must define a circuit and one DTE to identify that link. Determine whether this X.25 circuit is required or is extraneous. Consult your planning forms.

069 VIRTUAL CIRCUIT NUMBER PREVIOUSLY DEFINED IN THIS DTE.**Explanation:**

When defining a virtual circuit, you entered a virtual circuit number that you used previously when defining another virtual circuit under the same DTE. Virtual circuit numbers identify a particular virtual circuit among many under the same DTE.

User Action:

Identify which virtual circuit number is incorrect and use the MVC command to correct it. If the virtual circuit is extraneous, use the DVC command to delete it.

070 BLANK FIELD NOT ALLOWED IN DTE ENTRY.**Explanation:**

You provided a null response (blanks or spaces only) to a prompt when adding or modifying a DTE. All fields in the DTE record must contain a valid response.

User Action:

Execute the MDTE command to provide a valid response. Section 3 lists the valid response to each of the DTE parameters. Consult your planning forms to determine the correct response for each DTE prompt.

071 NETWORK NAME NOT DEFINED IN DTE ENTRY.**Explanation:**

You entered a null value (blanks or spaces only) in response to the network name prompt when defining a DTE.

User Action:

Enter the name of the network with which the DTE is to communicate. The network can be either a PSN or a leased-line. Consult your planning forms.

Table D-1. VDC Error Messages (Continued)

072 POLL ADDRESS PREVIOUSLY REFERENCED FOR THIS CIRCUIT.

Explanation:

You specified a poll address for this resource that you previously specified for another resource on the same circuit.

User Action:

Determine the correct poll address for each resource and use the MR command (described in Section 3) to modify the incorrect entry.

073 VIRTUAL CIRCUIT NUMBER NOT DEFINED.

Explanation:

You did not provide a virtual circuit number when defining a virtual circuit. You must specify this number for each virtual circuit to identify it among all of the other virtual circuits under a particular DTE.

User Action:

Determine the correct virtual circuit number and use the MVC command to add it.

074 REMOTE DTE ADDRESS MUST BE SPECIFIED FOR PERMANENT VIRTUAL CIRCUITS.

Explanation:

You did not provide a remote DTE address when defining a permanent virtual circuit (type PE). You must specify the call address of the remote DTE to establish a session with the specified remote DTE.

User Action:

Determine the correct remote DTE address and use the MVC command to add it. Consult your planning forms.

076 VIRTUAL CIRCUIT USER MUST BE SPECIFIED FOR PERMANENT VIRTUAL CIRCUITS.

Explanation:

You did not specify the virtual circuit user when defining a permanent virtual circuit (type PE).

User Action:

Determine the correct user of the virtual circuit (either RFT or SNA) and add it using the MVC command.

082 NETWORK NAME NOT DEFINED BY ANY SITE ENTRY.

Explanation:

The network name you referenced in a DTE is not defined by any site entry. The site definition is required to obtain parameters that DNCS needs to properly link a site to a DTE.

User Action:

Determine whether the network name you entered for the DTE is correct. If it is, add the required site entry using the ASI command.

Table D-1. VDC Error Messages (Continued)

083 NUMBER OF SITES DEFINED EXCEEDS TABLE SIZE ENTRY**Explanation:**

The table size field specifies the maximum number of site entries that the configuration can contain. However, you defined more sites than the current value of this field.

User Action:

Determine whether your configuration requires all of the sites that you defined. If not, use the DSI command to delete the unnecessary sites. If your configuration requires all of these sites, use the MSUB command to modify the sites table size for your RFT subsystem.

084 BLANK FIELD NOT ALLOWED IN SUBSYSTEM ENTRY**Explanation:**

You responded with a null value (blanks or spaces only) to a prompt in the subsystem entry. Each of these prompts requires valid responses.

User Action:

Determine the correct response for all undefined fields. Enter them using the MSUB command. Section 3 describes the use of the MSUB command.

085 MAXIMUM OF 127 LEASED LINE SITE ENTRIES ALLOWED.**Explanation:**

You defined more than 127 sites entries for leased line networks, which is more than the DNCS system can support.

User Action:

Determine how many sites your DNCS configuration requires. If it requires more than 127 sites, contact your customer representative. If not, use the DSI command to delete the unnecessary sites.

086 NO LOCAL SITE DEFINED.**Explanation:**

You defined an RFT subsystem and remote sites, but you did not define a local site that contains the address of your node. You must define one and only one site as local.

User Action:

Include a local site in the configuration.

087 ONLY ONE LOCAL SITE MAY BE DEFINED.**Explanation:**

You defined an RFT subsystem and two or more local sites. You must define one and only one site as local.

User Action:

Either delete the unnecessary local site(s) or modify them to be remote.

Table D-1. VDC Error Messages (Continued)

088 RFT CIRCUIT MUST BE DEFINED FOR RFT SOFTWARE SUBSYSTEM.

Explanation:

You defined the RFT software subsystem in your configuration, but you did not define a circuit with a protocol type RFT.

User Action:

Add a circuit with the protocol type RFT. Ensure that you defined a board and port for this circuit and that your DNOS system includes this communications channel (port).

089 MORE THAN ONE SUBSYSTEM OF THE SAME TYPE NOT ALLOWED.

Explanation:

You defined two subsystems of the same type. DNCS allows only one software subsystem of each type.

User Action:

Use the DSUB command to delete the unnecessary subsystem(s). Consult your planning forms.

090 BLANK FIELD NOT ALLOWED IN SITE ENTRY.

Explanation:

You entered a null value (blanks or spaces only) in response to a prompt when adding or modifying a site. Each of these prompts requires a valid response.

User Action:

Determine the correct values for each blank field in the site entry, and enter the data using the MSI command as described in Section 3.

091 NUMBER OF CONCURRENT FILE TRANSFERS TIMES MAXIMUM REC LENGTH EXCEEDS BUFFER SPACE AVAILABLE.

Explanation:

DNCS allocates buffer space for the RFT subsystem based upon the number of concurrent transfers your configuration requires and the maximum logical record length of each transfer. The values you entered require more space for buffers than is available within the address space of RFT.

User Action:

Refer to the *DNOS DNCS X.25 RFT User's Guide* for the formula to use in determining the buffer space required and for the maximum amount of buffer space available.

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HOW TO USE INDEX

The index, table of contents, list of illustrations, and list of tables are used in conjunction to obtain the location of the desired subject. Once the subject or topic has been located in the index, use the appropriate paragraph number, figure number, or table number to obtain the corresponding page number from the table of contents, list of illustrations, or list of tables.

INDEX ENTRIES

The following index lists key words and concepts from the subject material of the manual together with the area(s) in the manual that supply major coverage of the listed concept. The numbers along the right side of the listing reference the following manual areas:

- Sections — Reference to Sections of the manual appear as “Sections x” with the symbol x representing any numeric quantity.
- Appendixes — Reference to Appendixes of the manual appear as “Appendix y” with the symbol y representing any capital letter.
- Paragraphs — Reference to paragraphs of the manual appear as a series of alphanumeric or numeric characters punctuated with decimal points. Only the first character of the string may be a letter; all subsequent characters are numbers. The first character refers to the section or appendix of the manual in which the paragraph may be found.
- Tables — References to tables in the manual are represented by the capital letter T followed immediately by another alphanumeric character (representing the section or appendix of the manual containing the table). The second character is followed by a dash (-) and a number.

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- Figures — References to figures in the manual are represented by the capital letter F followed immediately by another alphanumeric character (representing the section or appendix of the manual containing the figure). The second character is followed by a dash (-) and a number.

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- Other entries in the Index — References to other entries in the index preceded by the word “See” followed by the referenced entry.

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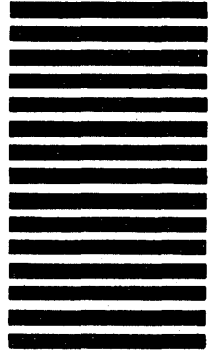


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Configuration name *RFTAI* _____ [1]¹

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DNCS CONFIGURATION PLANNING FORM — X.25 CIRCUIT

Circuit name *C02* _____ [3]
 Protocol *LAP* _____ [4]
 Max # Reads *7* _____ [5]
 Max # Retries *0* _____ [5]
 Number of virtual circuits *1* _____ [10]
 Primary Port *P021* _____ [18]

DTE Name *DTE01* _____ [8]²
 Network name *TRANSPAC* _____ [9]²
 Local address *11111111* _____ [9]²
 Receiving Packet Length *128* _____ [9]²
 Receiving Window *2* _____ [9]²
 Transmit Packet Length *128* _____ [9]²
 Transmit Window *2* _____ [9]²
 Time-out on Calls *200* _____ [9]
 Time-out on Packets *180* _____ [9]
 Anticipation (K) *7* _____ [9]²
 Max # retries (N2) *10* _____ [9]²
 Time-out (T1) *3* _____ [9]²
 DTE (1) or DCE (3) *1* _____ [9]²

Virtual Circuit name [11]	Virtual Circuit number [11]	Virtual Circuit type [11] ²	Remote DTE address [12] ²	Virtual Circuit user [13]
<i>VC01</i> _____	<i>1</i> _____	<i>SR</i> _____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Numbers in brackets refer to steps in the planning process
²Network Subscription Parameters

Figure 5-28. Hierarchical Network — Completed Regional Office Planning Form

