



# **DPS 7**

**GCOS**

## **Network Control Terminal Operations**

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### **Software**

**Subject** : This operator's manual describes how the functions of the primary, secondary and TRANSAC networks are activated and controlled.

**Special Instructions** : Updates with regard to the gcOS 64 Release 1E.5 are indicated as follows :  
. Change bars in the margin indicate technical modifications or additions  
. Asterisks indicate deletions.

**Software Supported** : GCOS-LS, GCOS-MS Release V1

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## PREFACE

This manual describes the role of the network control operator in the 64/DPS 7 networking environment.

The term "64/DPS 7" is synonymous with "DPS 7", the prefix "64" being a "carry-over" from previous releases.

For the current release, synchronous links for terminals of the VIP line procedure are directly supported via a URP packet link over the TRANSPAC secondary network. These synchronous links are provided by

- . DCU7010 convertor for VIP-type terminals : VIP7001/7700/7760, TTS7800 & TTU8221
- . TCU7022/7043 terminal concentrators for QUESTAR terminals : DKU7007/7107/7211.

TRANSPAC refers specifically to the public data network in France, the use of which is contracted by PTT subscription.

This manual is intended for the systems engineer, programmer/analyst and console operator to control and manage the communications network comprising secondary networks accessed through BTNS and primary networks accessed through either FNPS or BTNS/HDLG. The TRANSPAC network is also accessed through BTNS/HDLG.

Section I describes the functions of the network which are activated and controlled by the network operator who at the start of the communications session is the console operator. The "communications session" is the duration from when the ST command is issued to when all communications and message management components are terminated through the TT command.

Section II lists the network control commands and the functions they provide when executed by the different modules of GCOS communications software. In addition to normal operational functions, maintenance functions are also provided such as "file traces" for the communications and message management components.

Section III deals with messages output to the network control terminal, which are treated as follows,

- . where the action recommends calling the field engineering service, the operator is advised to consult the maintenance procedures of the installation before doing so
- . where the "return-code" is specific to the message, the appropriate action is as follows,
  - for any of the GCOS "return-codes", refer to the Error Messages and Return Codes Pocket Guide
  - for any of the TRANSPAC PAD "return-codes", refer to Appendix A.

Appendix A gives a resumé of PAD return-codes, the majority of which are transmitted by TRANSPAC and the rest set by the DPS 7. For complementary information on the "mnémoniques", refer to the Terminal Operations Manual.

Appendix B lists all GCOS system files needed for DN7100 support and, where applicable, gives the system utilities which use them.

Appendix C describes how a primary network is configured according to its function. It treats all the CNC commands pertaining to the primary network and the sequence in which these commands are to be declared.

Appendix D treats the maintenance tools available for assuring the performance of the primary network. These tools are executed in "debug" mode and "loop" mode. The "injector" commands in "debug" mode can be used with the "loop" mode.

Appendix E describes the BTNS\_FILE\_TRACE in terms of its characteristics, use and contents. The use of this file in a "trace" session is intended as a maintenance aid for the field engineering service.

Appendix F describes how to fill in the TRANSPAC subscription form with respect to what has been declared in the network generation. Because the form is printed in French, this "annexe" is written in French.

The following publications give more information to topics treated in this manual,

- For DSA concepts and DPS 7 networking
  - . 47A2 01UC Communications Architecture
  - . 47A2 02UC Network Generation
  - . 47A2 06UC Network Administrative Supplement
- For declaring the network control terminal using the CATMAINT utility
  - . 47A2 01US System Management Guide
- For terminal operator messages redirected to the network control terminal
  - . 47A2 04UC Terminal Operations
- For details on the DSALOG and DSADUMP utilities
  - . 47A2 10UC Network Administration Utilities
- For information on OCL commands and GCOS messages
  - . 47A2 01UU Operator Guide
  - . 47A2 02UU Operator Reference Card
  - . 47A2 07UU Console Messages
- For "return-codes" in the network control messages
  - . 47A2 10UJ Error Messages and Return Codes
- For a quick resumé of all aspects of networking
  - . 47A2 09UC Telecommunications Reference Card
- For DN7100 operator commands and messages
  - . 15A2 8023 DN7100 System Operation Manual
- For information on setting up GCOS system files for DN7100 support
  - . 47A2 02US System Installation and Updating Manual
- For the TRANSPAC operator interface
  - . TRANSPAC Guide Utilisateur : accès par le réseau téléphonique commuté
- For "in-line" tests on the DN7100
  - . 15A2 9982 In / On Line Tests Operator Guide
- For the format of administrative records written during the DSA log function
  - . 15A2 9693 DSA Logfile Messages

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These functions can be summarized as follows,

- . system and network generation
- . maintenance services
- . gathering statistics
- . survey and management of network components, being
  - physical units, such as, lines, modems and terminals
  - logical entities, such as, programs and connections
  - DSA primary network objects
- . generating the software for, loading and dumping the DN7100
- . trace operations on BTNS and TNS, and VCAM, BTNS and FNPS.

Most of these functions are activated and controlled by the network control operator.

The network control operator's interface with the GCOS communications system is described in terms of

- . network control operator management
- . network control terminal characteristics
- . network control operator dialog
- . network control operator functions
- . network control terminal recovery
- . network control operator dialog logging.

The relationship of the DPS 7 to the primary, secondary and TRANSPAC networks is shown in "Interlinked Systems in 64/DPS 7 Networking Environment".



## SECTION I

### INTRODUCTION

Release V1 of GCOS 7 allows remote users, such as terminal operators and communications applications located in other computers, to access

- . communications user applications running under the control of GCOS which can be
  - MCS applications, written in COBOL or GPL, under MCS control
  - transaction programs, written in COBOL or RPG, under TDS control
- . GCOS communications services, which are collectively termed VCAM subsystems
  - RBF6 / FTF6, Remote Batch and File Transfer Facilities from/to the Mini 6
  - DJP / DFT, Distributed Job Processing and DSA File Transfer Facility
  - IOF, Interactive Operator Facility
  - TDS, Transaction Driven Subsystem
  - CARDLESS, also known as READER
  - TILS, Transactional and Interactive Load Simulator
  - OLTD, On-Line Tests and Diagnostics.

From a transmission standpoint, access to GCOS is through

- . either the Data Communications Controller of the URP
- . or the DN7100 functioning as a front-end processor.

The URP, in conjunction with BTNS handles communications over secondary networks composed of local, leased or switched lines.

The URP, in conjunction with TNS, a function of BTNS/HDLC, allows access to the TRANSPAC secondary network or to a DSA primary network linked by point-to-point HDLC lines or virtual circuits over TRANSPAC.

The DN7100, in conjunction with FNPS, a GCOS service job, can handle communications over

- . secondary networks, like those supported over the URP
- . the different types of primary networks, namely
  - DSA high level networks
  - public networks, such as TRANSPAC.

The user has a set of functions to control and administrate his network.

## NETWORK CONTROL OPERATOR MANAGEMENT

Network control operations are not restricted to a particular terminal. The commands listed can be entered on the system console or on the network control terminal when logged on.

### NCO Identification

Permission to log on as the network control operator, is given at the GCOS system catalog level.

The network control operator must be cataloged as a member of a project

- . specifying the NETWORK attribute
- . containing IOF in the APPLIST, its "application-list".

Although several users may be cataloged under such a project, only one operator at a time can operate the network control functions.

### NCO Localization

When starting a GCOS session, the system console operator, logged with MAIN rights, has implicit access to the network control functions. It is the system console operator who can first issue the ST network control command to start the communications session.

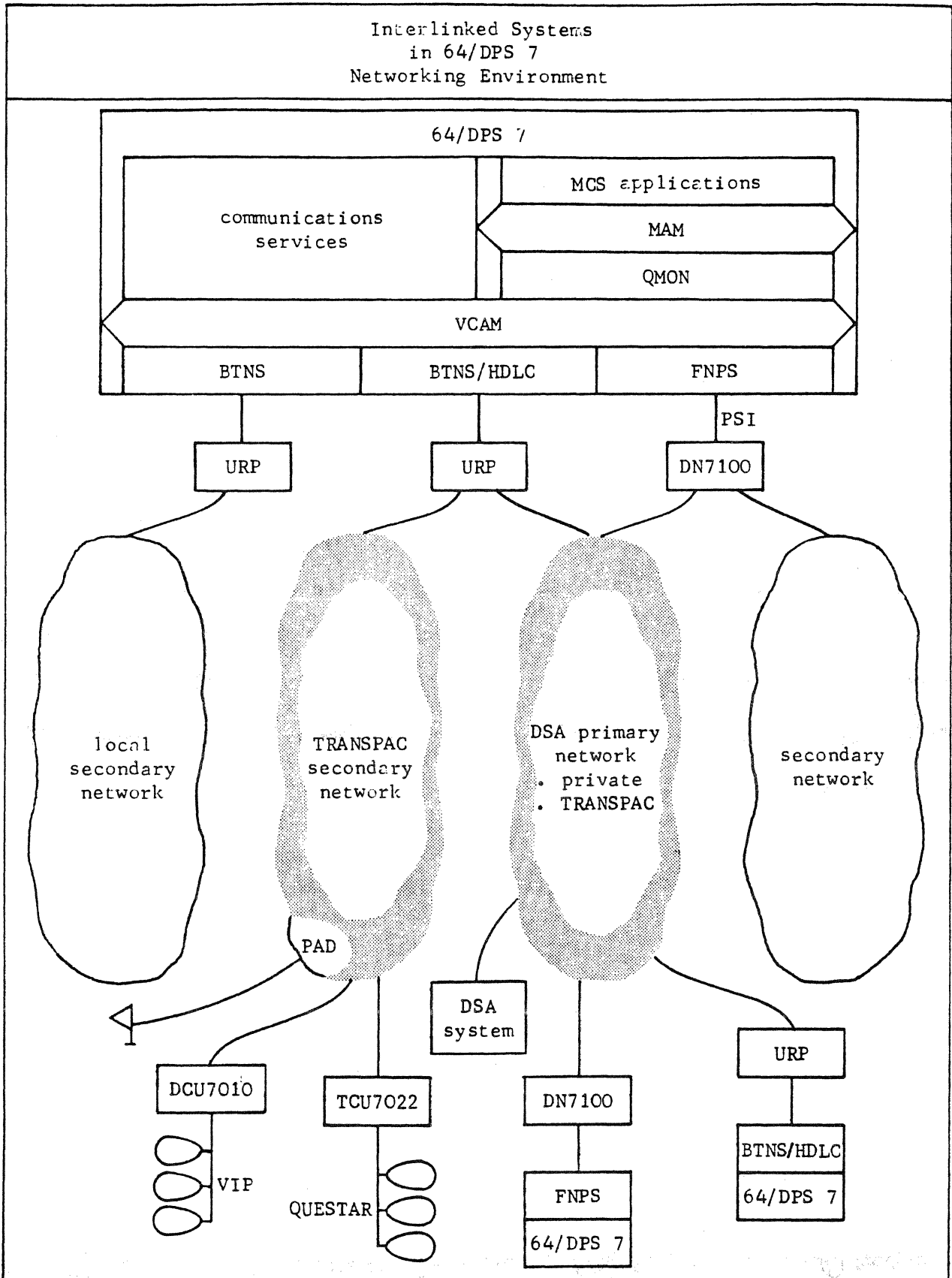
Once the communications session is started, the first operator who logs onto IOF under a project specified with the NETWORK attribute, becomes the network control operator. As a result, the system console operator then ceases his function as the network control operator.

All other operators who log onto IOF under the same conditions, that is, under a project specified with the NETWORK attribute, do not get the network control rights. These rights are retained by the current network control operator until he relinquishes them.

When the network control operator logs off or is disconnected during the session, IOF monitor automatically returns the network control functions to the MAIN operator, being the system console operator.

Another operator can now log onto IOF to become the network control operator. The system console operator is informed of such a logon or disconnection by the appropriate IOF message.

Interlinked Systems  
in 64/DPS 7  
Networking Environment



## NETWORK CONTROL OPERATOR DIALOG

The NCO dialog consists of commands and system messages in either the "interactive" mode or "console" mode.

The operator dialog, whether from the MAIN console or from the network control terminal is completely controlled by IOF, which performs the following actions,

- . analyzes and controls command syntax and semantics
- . translates the commands into internal format
- . routes the command, already translated, towards the GCOS software component in charge of its execution.

### Command Format

`<command-name> <operand(s)> [;]`

- . the "command-name" is a string of up to 3 alphabetic characters
- . the "operand(s)" can be one of the following,
  - the name of the component as defined at network generation, for example, "line-name", "program-name" or "terminal-name"
  - the type of component as declared in "category" in the DT, HT, RT and MTP commands, see note below
  - self-identifying keywords specific to the command indicating the function required
- . the optional terminator ";" is mandatory when in interactive mode.

Note : "Category" is specified with "component-name" to resolve the ambiguity caused by different components having the same names. For example, if "line-name" and "terminal-name" are both called, say, TOTO, the commands "DT LINE TOTO" and "DT TERMNL TOTO" are used respectively to distinguish one from other.

### Message Format

`{ <time> | <key> } message-text`

- . the "time" is shown in hours and minutes, in the form hh.mm
- . the "key" identifies the software component originating the message
- . the system sends messages to the network control terminal
  - either in consequence of events occurring in the networking environment
  - or in response to the network control commands.

## NETWORK CONTROL TERMINAL CHARACTERISTICS

Any terminal may be used as the network control terminal for as long as it is included in the list of interactive terminals that can be handled by IOF, see Appendix A of Network Generation Manual.

Compared with a printer terminal, a keyboard-screen terminal such as DTU7171 or VIP7100 is ideal for use as the network control terminal for the following reasons

- . less noise
- . less space
- . no paper or ribbon cartridges.

Because of the absence of "hard-copy" for keyboard-screen terminals, such terminals should only be used if no "trace" is to be kept of the network control operator dialog. However, a "trace" of the NCO dialog can be obtained with the LOGC facility.

### Management of the URP Primary Network

The primary network accessed through the URP of the DPS 7 is under the control of the TNS function of BTNS/HDLC.

Transport and Network Subsystem commands can be processed once TNS has been activated as follows

- . when the communications session has been started through "ST [gencom-name]"
- . and when one of the HDLC lines configured in the network is "opened"; if the line has been declared with CLOSE, an "RT LNnn" command must be issued.

TNS commands allow the network control operator

- . to enable and disable TRANSPAC remote subscriptions
- . to survey the objects of the primary network such as "netroutes" and "remote-transport-stations".

The physical level of the TNS primary network, however, is composed of HDLC lines on which the RT, HT and DT commands can be performed. These commands can be executed on the startup of the BTNS/HDLC service.

## NETWORK CONTROL OPERATOR FUNCTIONS

Network control operator actions are classified as follows

- . management of the URP primary network (TNS)
- . management of the URP secondary network (BTNS)
- . management of DN7100 service functions
- . management of the communications components
- . management of MCS queues
- . miscellaneous functions.

### Management of the URP local Network

The BTNS secondary network controller executes commands entered by the network control operator and sends back messages through IOF, which are either in response to the command execution or notifications of networking events.

These management functions may be summarized as follows,

- . control of the physical components, such as, enabling and disabling lines, clusters, stations and terminals
- . surveying the physical components, such as,
  - reporting changes in their physical status
  - displaying their physical status
- . control of logical connections between the terminals and applications, such as,
  - breaking and re-establishing logical connections
  - displaying the status of the logical connection on the basis of userid, terminal and application
- . broadcasting service messages
- . activating and deactivating maintenance tools, such as,
  - line trace
  - tracing general events such as occurring in BTNS, TNS, VCAM and FNPS.

Note : "Trace" sessions are performed at the request of the field engineering service. The printouts are not intended for the user; they are to be retained for later diagnostics by the field engineering service.

## Management of the Communications Components

The management of the communications components is described in terms of

- . definition of components
  - workstations
  - mailboxes
- . operator control of components

### WORKSTATION

The DSA definition of a workstation is a set of communications services which are subject to administrative and network control functions such as start-up and shut-down, and which require system resources in terms of memory, CPU-time and disk space.

Some examples of workstations managed by VCAM are

- . GCOS system components such as
  - the BTNS terminal management workstation
  - the TNS primary network workstation
  - the FNPS workstations
  - the ADM administrative service workstation
- . VCAM subsystems such as
  - the IOF service workstation
  - the DJP service workstation
  - the TDS service workstation, 1 per TDS version
  - the CARDLESS service workstation
  - the RBF service workstation
  - the QMON service workstation which operates with MAM.

### MAILBOX

The mailbox is an addressing and security entity within the DSA network, able to accept one or more connections.

The mailboxes managed by VCAM may be classed as follows,

- . terminal-mailboxes for terminals connected over the BTNS/URP and TRANSPAC secondary networks
- . application-mailboxes allowing access to GCOS communications components
- . administrative mailboxes internal to ADM and NASF.



## Management of DN7100 Service Functions

These functions are "service", rather than "network control and administration", because the network control operator is only able to activate the functions concerning the DN7100(s) connected locally to the DPS 7 via the PSI channel interface.

These functions cannot be activated for a remote DN7100 connected over the HDLC X.25 link.

These functions are executed by the ADM and NASF administration modules as a result of commands entered by the network control operator.

The administration module sends back messages which are either in response to the command execution or notifications of events occurring on the DN7100 side or on the DN7100/DPS 7 interface.

These management functions may be summarized as follows,

- . loading and start-up of the DN7100
- . taking a dump of the DN7100
- . generating DN7100 software
- . displaying the status of the DN7100 managed by FNPS
- . suspending and resuming the survey mechanism between FNPS and the DN7100.

Most of these functions require an interface with GCOS system files, described in Appendix B.

### Miscellaneous Functions

The network control operator can, in addition, perform the following

- . in general, to execute any function allowed for a standard IOF user
- . in particular, to become the "master" operator of one or more communications services, such as TDS, as if he were the submitter of the TDS step, thereby giving him the same interface with TDS, as he would have had at the main console.

### NETWORK CONTROL TERMINAL RECOVERY

The network control terminal is controlled by IOF to which it is connected.

Terminal and line failures occurring on the network control terminal are reported to IOF by terminal management. The network control functions are then automatically routed by the IOF monitor to the main console operator.

The network control can then log on, at a later stage, from an available terminal.

### NETWORK CONTROL OPERATOR DIALOG LOGGING

The network control operator dialog is logged in the GCOS system file SYS.LOGC under the following conditions

- . that the network control operator is the main console operator
- . that the file SYS.LOGC has been allocated on the system disk.

IOF performs the logging function, and at the end of the communications session, the operator can print out the log file at the main console using the system utility PRLOGC.

During the communications session, the main console operator can terminate and restart logging through the MCL command.

The number of mailboxes managed by VCAM depends on their type, namely

- . terminal-mailboxes : 1 per terminal
- . application-mailboxes :
  - 2 per TDS occurrence
  - 1 for each VCAM subsystem service workstation
  - 1 per program-queue handled by QMON
- . administrative mailboxes : one for ADM functions and one for NASF functions.

#### OPERATOR CONTROL OF COMPONENTS

The network control commands allow the operator

- . to list and display the status of mailboxes
- . to start and terminate the BTNS terminal management workstation and the FNPS transport workstation.

The start-up of the BTNS and FNPS workstations is performed through the ST command, which results in

- . the activation of the workstation by VCAM
- . the launching of either BTNS or FNPS, corresponding to the service required
- . the activation of VCAM subsystem service workstations, whichever pertains to the first communications workstation to be started.

For the shutdown of the BTNS and FNPS workstations, the TT command performs the above actions in reverse.

#### Management of MCS Queues

The network control operator is able to manage the MCS queues as follows

- . to activate or shut down the QMON service workstation through the ST QMON or TT QMON commands, respectively
- . to list and display the status of the queues
- . for program-queues, to list and display the status of their corresponding mailboxes
- . to enable and disable the queues
- . to modify the editing parameters declared at network generation.

# BT

## Definition

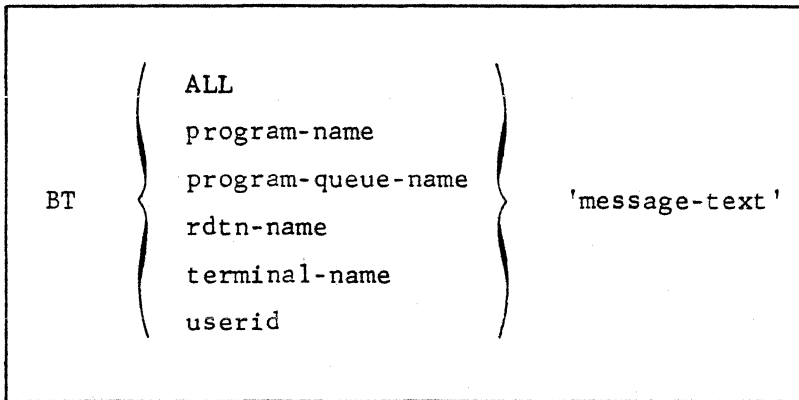
The "Broadcast Telecom" command sends a message to destinations declared by the appropriate operand.

The message, sent to specified terminals, takes priority over application output requests.

Rules : If the message text exceeds 128 characters, the command is rejected.

The BT command can be keyed in on the system console (MAIN) even if it is not the network control terminal.

## Format of Command



## Description of Parameters

### ALL

- keyword defining the destinations to be all the connected users of the URP local and TRANSPAC/URP secondary networks.

### program-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies the VCAM subsystem, such as TDS and IOF.  
It defines the destinations to be all the active terminals currently connected to the appropriate VCAM subsystem.

### program-queue-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies the program-queue used by MCS applications to receive messages.  
The message is queued after other system or data messages already present in the queue.  
The control message ><CTLxxx may be sent through this command.

SECTION II

COMMANDS

The different network control commands activate functions which are executed by the different modules of GCOS communications software.

The list below defines the general functions of each command, the module executing it and the text reference.

SYST denotes either a centralized or distributed function of GCOS.

Network Control Commands						
command	definition	BTNS	FNPS	QMON	SYST	page
BT	broadcast telecom	x				2-02
DT	display telecom				x	2-05
HT	hold telecom	x		x		2-21
MTE	modify telecom edit			x		2-27
MTF	maintain telecom frontal		x			2-30
MTL	modify telecom line	x				2-33
MTP	modify telecom parameters	x				2-39
MTT	modify telecom terminal	x				2-48
RT	release telecom	x		x		2-50
ST	start telecom				x	2-56
TT	terminate telecom	x	x	x		2-58



# BT

## continued

### Examples

- 1) BT command executed for terminal T123

```
S : BT T123 'CREDIT LIMIT EXCEEDED'  
CC03 BT COMPLETED
```

The message CREDIT LIMIT EXCEEDED is sent to the terminal identified as T123.

The message arrives at the receiving terminal together with the time when the message was sent and the identification of the user.

- 2) BT command executed for program-queue QIN

```
S : BT QIN 'END SESSION'  
CC03 BT COMPLETED
```

The MAM application, assumed to be active, will receive the conventional message END SESSION via its program-queue QIN, and will act upon it accordingly.

- 3) BT command executed for all terminals

```
S : BT ALL 'SESSION ENDING IN 5 MINUTES'  
CC03 BT COMPLETED
```

The message for "shut-down" is sent to all connected and active terminals of both the local as well as the TRANSPAC/URP secondary network.

- 4) BT command executed for IOF

```
S : BT IOF 'PLEASE LOG OFF'  
CC03 COMPLETED
```

All IOF terminals currently connected will receive the message.

Description of Parameters (continued)

rdtn-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies the "remote data terminal" in the TRANSPAC/URP secondary network.

Command execution follows the same rules as defined for "terminal-name".

No message can be sent if the rdtn is in the DISABLED state.

terminal-name

- ranges from 1 through 4 alphanumeric characters and uniquely defines the terminal in the URP local network.

The message is immediately sent to the named terminal (priority over applications and output requests) provided that the terminal is not in the HELD state and is accessible to the terminal manager.

The terminal must fulfil the following conditions,

- . be of the subtype CRT, KCT, KPR or PRT
- . not be a BTT7300 of the subtype KCT

If one of the previous conditions is not fulfilled, an error message is returned to the network control operator.

If the terminal is connected over a switched line, the name to be used is

- . either the name declared in either the TERMNL or RDTN commands at network generation
- . or the "userid" of the operator currently logged on to the terminal

userid

- ranges from 1 through 12 alphanumeric characters and uniquely identifies the operator currently logged on to a terminal of the network.

The message is immediately sent to the "user-named" terminal.

Note : From a communications point-of-view, the userid is a dynamic entity known only between logon and logoff.

message-text

- a string of up to 128 alphanumeric characters which must be enclosed within quotes if "spaces" are included in the string.

# DT

## continued

### Format of Command

DT	[ CLUSTER ] [ cluster-name ]
	[ FNP ] [ fnp-name ]
	[ FSC ] [ fsc-name [ LONG ] ]
	[ FSYS ] [ fsys-name [ LONG ] ]
	[ LINE ] [ LNnn [ LONG ] ]
	[ LSC ] [ lsc-name ]
	[ LSUB ] [ lsub-name ]
	[ LSYS ] [ lsys-name [ LONG ] ]
	[ MB ] [ { program-name program-queue-name } [ LONG ] ] [ system-mailbox-name ]
	[ NR netroute-name [ LONG ] ]
	[ QUEUE ] [ program-queue-name [ LONG ] ]
	[ RDTE ] [ rdte-name ]
	[ RDTN ] [ rdtm-name [ LONG ] ]
	[ RSC ] [ rsc-name [ LONG ] ]
	[ RSYS ] [ rsys-name [ LONG ] ]
	[ RTS rts-name [ LONG ] ]
	[ SC ]
	[ STATN ] [ station-name ]
	[ SYS ]
	[ TERMNL ] [ { rdtm-name terminal-name } [ LONG ] ]
	[ USERID ] [ userid ]
	[ dsa-terminal-queue-name ]
	[ TRACE [ LONG ] ]



Definition

The "Display Telecom" command displays the partial or complete status of the network object or the category of network objects, and the status of the trace activated for the BTNS/HDLC service.

Rules : The operand LONG is synonymous with STRONG of previous releases.

(1) The DT command displaying object status :

- . If no operand is specified, all network objects are listed, where applicable, in their hierarchical order
  - . The "category" of network objects is defined by the names of the respective CNC commands, and the keywords MB, SC, SYS and USERID
- "Category" is included in the syntax of the command for the following purposes
- the "category" is used with the "object-name" to resolve the ambiguity caused by different objects having the same name
  - "category" specified on its own is used to display the status of all objects belonging to it
  - the following "categories" which do not take "object-names" are included to display the "global" status of groups of objects, namely,
    - . SC : for displaying all "session-controls"  
"DT SC" combines "DT LSC", "DT FSC" and "DT RSC".
    - . SYS : for displaying all "systems"  
"DT SYS" combines "DT LSYS", "DT FSYS" and "DT RSYS".

(2) The DT command specifying LONG :

The use of the LONG option, where applicable, provides the user with more detailed information.

(3) The DT command for displaying the BTNS file trace :

The command is for maintenance purposes and is used to confirm if the trace has been started. Detailed information can be obtained on which of the domains and subdomains have been activated.

The "trace" includes both BTNS and TNS of BTNS/HDLC.

# DT

## continued

### Description of Parameters (continued)

#### lsub-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies the TRANSPAC subscription that allows access to the DPS 7 via the BTNS/URP interface over the HDLC link.

"DT lsub-name" displays

- . the TRANSPAC subscription number
- . the number of virtual circuits declared and active.

#### lsys-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies the DPS 7 configuring the network.

"DT lsys-name" displays the profile of the DPS 7.

"DT lsys-name LONG" displays, in addition, its associated "lsc".

#### netroute-name

- ranges from 1 through 8 alphanumeric characters known only to the "local-system".

"DT NR netroute-name" displays the status of the connection.

"DT NR netroute-name LONG" displays, in addition, the physical layer object over which the network-route is mapped.

#### program-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies the appropriate communications service, otherwise known as VCAM subsystem.

"DT program-name" is equivalent to "DT MB program-name" and displays

- . the current status of the service, whether present in memory or not
- . the number of terminals connected as well as the maximum allowed
- . the number of terminals waiting for connection and the maximum allowed.

"DT MB program-name LONG" displays, in addition, the list of userid's connected and waiting for connection with the following identification

- . users logged on to BTNS are identified by their "terminal-name"
- . users logged on over the DN7100 are identified by the keyword FNPS.

#### program-queue-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies the "program-queue" used by MCS applications to receive messages.

"DT program-queue-name" is equivalent to "DT QUEUE program-queue-name" and displays

- . the current status of the queue, whether HELD or not
- . the number of messages present and the percentage space occupied
- . the current data formats used over the line.

"DT QUEUE program-queue-name LONG" displays, in addition, the list of userid's and the number of terminals connected and waiting for connection.

For "DT MB program-queue-name" and "DT MB program-queue-name LONG", see "program-name".

Description of Parameters

cluster-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies a set of stations connected over a poiled line of the URP local network.
- "DT cluster-name" displays
- . the current status of the cluster, whether HELD or not
  - . the list and status of stations pertaining to the cluster.

fnp-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies an FNPS service declared in the FNP command at network generation.
- "DT fnp-name" displays
- . the current status of the DN7100
  - . the "fsys-name" of the DN7100 operating with the FNPS service.

fsc-name

- ranges from 1 through 4 alphanumeric characters and is identical to its "fsys-name".
- "DT fsc-name" displays the name of the associated "fsys".
- "DT fsc-name LONG" displays, in addition, the name and status of the associated FNPS service(s).

fsys-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies the DN7100 functioning as the "front-end system" of the DPS 7.
- "DT fsys-name" displays the profile of the "fsys".
- "DT fsys-name LONG" displays, in addition, its associated "fsc".

LNnn

- "line-name", where nn ranges from 01 through 99, uniquely identifies the communications line in the secondary or primary networks as declared in the SRST at the time of installation.
- "DT LNnn" displays
- . the current status of the line, whether HELD or not
  - . the current firmware parameters, such as time-out and speed
  - . the number of messages and errors over the line
  - . the current polling list, if the line is multipoint.
- "DT LNnn LONG" displays, in addition, the list and status of all objects pertaining to the line, namely, clusters, stations and terminals.

lsc-name

- synonymous with "lsys-name" and must be used with the keyword LSC to distinguish the "lsc" object from the "lsys" object.
- "DT LSC lsc-name" displays the name of the associated "lsys".

# DT

## continued

### Description of Parameters (continued)

#### system-mailbox-name

- the name of a system-mailbox such as \$LOGFILE and \$NASF.

For "DT system-mailbox-name" and "DT system-mailbox-name LONG", see "program-name".

#### terminal-name

- ranges from 1 through 4 alphanumeric characters.

"DT terminal-name" displays

- . the current status of the terminal and its userid, if applicable
- . information on its terminal-queue, if it has been defined, refer to "DT program-queue-name".

"DT terminal-name LONG" displays, in addition, the number of messages exchanged by the terminal since the start of the communications session.

#### dsa-terminal-queue-name

- identifies the queue used to send messages to an application over either a DN7100 secondary network or a primary network connecting DSA "remote-systems".

The format of such a queue is : <system-name>.<mailbox-name>, where

- . "system-name" ranges from 1 through 4 alphanumeric characters and can be either "fsys-name" or "rsys-name"
- . "mailbox-name" ranges from 1 through 8 alphanumeric characters, see "system-mailbox-name"
- . the total string, including the "full-stop", is limited to 12 alphanumeric characters.

For "DT dsa-terminal-queue-name", see "DT program-queue-name".

#### userid

- ranges from 1 through 12 alphanumeric characters and uniquely identifies the operator currently logged on to a terminal of the URP local network.

"DT userid" displays

- . the current status of the terminal, whether HELD or not
- . the name of the terminal on which the named user is logged.

#### SC

- keyword to specify all "session-control" objects, namely "lsc", "fsc(s)" and "rsc(s)".

For "DT SC", see "DT SYS" following.

#### SYS

- keyword to specify all "system" objects, namely "lsys", "fsys(s)" and "rsys(s)".

"DT SYS" displays the list of all "systems" configured in the network.

Since the name of the "system" is the same as that of its associated "session-control", "DT SYS" will list the same object-names as "DT SC".

Description of Parameters (continued)

rdte-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies the "remote data equipment" accessed by the TRANSPAC subscription via the BTNS/URP interface over the HDLC link.

"DT rdte-name" displays

- . the TRANSPAC subscription number as specified in the SUBNB parameter
- . the current status of the rdte.

rdtn-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies the "remote data terminal" associated with its corresponding rdte.

The "rdtn-name" can be categorized either by RDTN or TERMNL. Command execution follows the same rules as for "terminal-name".

rsc-name

- ranges from 1 through 4 alphanumeric characters and is identical to its "rsys-name".

"DT rsc-name" displays the name of the associated "rsys".

"DT rsc-name LONG" displays, in addition, the different RSC access paths, being either fnp-name or TS, and their status, being either ENABLED or LOCKED.

rsys-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies the "remote system" connected to the DPS 7 "local system" either directly through the URP of the DPS 7 or through the intermediary of the DN7100.

"DT rsys-name" displays the profile of the "fsys".

"DT rsys-name LONG" displays, in addition, its associated "rsc".

rts-name

- ranges from 1 through 4 alphanumeric characters and identifies the transport-station of the "remote-system".

"DT RTS rts-name" displays the status of the "rts" and its associated connection(s) through the network-route(s).

"DT RTS rts-name LONG" displays, in addition, the HDLC line(s) over which the connection(s) through the network-route(s) is/are mapped.

station-name

- ranges from 1 through 8 alphanumeric characters.

"DT station-name" displays

- . the current status of the station, whether powered up and/or HELD
- . and where applicable, the "station-index" and status of the attached terminals.

# DT

## continued

### Examples

- 1) DT command to display categories, also see example 4.

```
S : DT CLUSTER
      CC16      CLO2 CLO3
```

```
S : DT FNP
      CC16      FEP1 FEP2
```

```
S : DT LINE
      CC16      LN11 LN12 LNO1 LNO5
```

```
S : DT QUEUE
      QC39 VO2  0  MSG  100% OF FREE SPACE
      QC39 V10  0  MSG  100% OF FREE SPACE
      QC39 PRG1 0  MSG  100% OF FREE SPACE
      QC39 ND1.$TR$VIP1 0  MSG  100% OF FREE SPACE
      QC39 ND1.MBS_1  0  MSG  100% OF FREE SPACE
      QC39 USERID1 0  MSG  100% OF FREE SPACE
```

```
S : DT STATN
      CC16      V121 V122 V123 V124
```

```
S : DT TERMNL
      CC16      TT11 V10 V11 V13
      CC16      VO5 VO6 TT05
```

```
S : DT USERID
      CC16      USERID1 USERID2 USERID3 USERID4
```

Description of Parameters (continued)

TRACE

- a maintenance parameter concerning the BTNS\_FILE\_TRACE.
- "DT TRACE" confirms if the "trace" session has been started.
- "DT TRACE LONG" displays the "domain", "subdomain" and "level" for which the "trace" session has been activated, namely
- . NET, for the "network" domain which has 2 subdomains
    - ENCRM, for "network control and resource management"
    - X25L3, for "X25 level 3"
  - . PHY, for the "physical link" which has 1 subdomain
    - HDLC, for "high-level data link control"
  - . TRM, for the "terminal-manager" which has no subdomain
  - . TRPT, for the "transport-station" which has no subdomain
  - . LEVEL, which unless otherwise specified in the RT command, has the default value of 255.

For further information, see Appendix E.

# DT continued

## Examples (continued)

3) The following are examples of the effect of the LONG option.

- A TTY switched line LN11

```
S : DT LN11
    CC18 LN11 HELD TI=50 TO=150 RA=10 SP=F
    CC32          OM=0 IM=0 OE=0 IE=0

S : DT LN11
    CC18 LN11 HELD TI=50 TO=150 RA=10 SP=F
    CC32          OM=0 IM=0 OE=0 IE=0

    CC15          TT11/IDLE
```

- A VIP multipoint line LN12

```
S : DT LN12
    CC18 LN12 IDLE TI=140 TO=16 RA=10 SP=*
    CC30      PL = V121 V122 V123 V124
    CC32      OM=0 IM=0 OE=0 IE=0

S : DT LN12
    CC18 LN12 IDLE TI=140 TO=16 RA=10 SP=*
    CC30      PL = V121 V122 V123 V124
    CC32      OM=0 IM=0 OE=0 IE=0

    CC17      V121/HELD
    CC15      V10/IDLE V11/IDLE

    CC17      V122
    CC15      V13/IDLE V14/IDLE V15/IDLE

    CC17      V123
    CC15      V16/IDLE

    CC17      V124
    CC15      V17/IDLE
```



Examples (continued)

2) DT command for a general display of network components

```
S : DT
CC19 LN11 HELD
CC19 LN12 IDLE
  CC17 V121/HELD
  CC15 V10/IDLE V11/IDLE
  CC17 V122
  CC15 V13/IDLE V14/IDLE V15/IDLE
  CC17 V123
  CC15 V16/IDLE
  CC17 V124
  CC15 V17/IDLE
CC19 LN01 IDLE
  CC17 VO11
  CC15 VO1/IDLE
  CC16 CLO2/HELD
  CC17 VO12
  CC15 VO2/HELD
  CC17 VO13
  CC15 VO3/IDLE
  CC16 CLO3
  CC17 VO14
  CC15 VO4/IDLE
  CC17 VO15
  CC15 VO5/IDLE
CC46 BTNS INACTIVE
CC25 FEP1 CHNB = 13 STATUS = IDLE CNCT = 0
CC19 FSC NAME IS NOD1
CC25 FEP2 CHNB = 13 STATUS = IDLE CNCT = 0
CC19 FSC NAME IS NOD2
CC46 FNPS INACTIVE
CC47 TC1 012345678901234 IDLE SWC: 15/0 PVC: 3/3
CC47 PC2 012345 IDLE SWC: 10/0 PVC: 2/2
```

Note : The boxed messages pertain to TRANSPAC which refers specifically to the public network in France.

# DT

## continued

### Examples (continued)

4) DT command to display categories of TRANSPAC\*/URP network components.

```
S : DT LSUB
      CC16      TC1 PC2
```

```
S : DT RDTE
      CC16      RD11 RD12 RD13 RD14
      CC16      RD15 RD21 RD22 RD23
      CC16      RD24 RD25 RD26 W000
      CC16      W001 W002 W003 W004
      CC16      W005 W006 W007 W008
      CC16      W009 W010 W011 W012
      CC16      W013 W014 W015 W016
      CC16      W017 W018 W019 W020
      CC16      W021 W022 W023 W024
```

```
S : DT RDTN
      CC16      R111 R121 R131 R141
      CC16      R151 R211 R212 R213
      CC16      R219 R221 R222 R223
      CC16      R231 R241 R251 R261
```

Examples (continued)

3) The following are examples of the effect of the LONG option.

- A VCAM subsystem, IOF, while 1 user is connected

```
S : DT IOF
      CC07 IOF  MB DYN ON CNCT : 1/255 WAITING : 0/0
S : DT IOF LONG
      CC07 IOF  MB DYN ON CNCT : 1/255 WAITING : 0/0
      CC15          V12/USER3 CONNECTED
```

- An IDLE "general-purpose" terminal V16 for which an output queue has been declared

```
S : DT V16
      CC08 V16  IDLE      USERID : ***** IN : Y  OU : Y
S : DT V16 LONG
      CC08 V16  IDLE      USERID : ***** IN : Y  OU : Y
      CC39 OQ   0 MSG    100% OF FREE SPACE
      CC41      NBLOCK 80/20
      CC32      OM=0  IM=0  OE=0
```

- A CONNECTED "general-purpose" terminal V12 for which no queue has been declared

```
S : DT V12
      CC08 V12  CONNECTED WITH IOF TEMP. USERID : FRED IN : Y  OU : Y
S : DT V12 LONG
      CC08 V12  CONNECTED WITH IOF TEMP. USERID : FRED IN : Y  OU : Y
      CC32      OM=6  IM=3  OE=0
```

# DT

## continued

### Examples (continued)

- 6) DT command to display the names of all "systems", and then to display the names of "local systems", "front-end systems" and "remote systems" respectively. See note at the end of the page.

S :	DT SYS	<u>or</u>	DT SC	All "systems" configured in the network are listed in the order of their CNC declarations.
CC16	D20	DN20	DNO4 DNO1	
CC16	DNP1	DNO2	DNP3 DNO8	
CC16	DNO9	DNO7	DN74 D224	In order to determine the type of "system", the following commands are entered.
CC16	HDO3	HPR1	HEO2 HDO9	
CC16	H222	HCP6	HBO1 HEO4	
CC16	HPP3	HDO1	HD18 HCP2	
CC16	H224	PICD	PCD1 HPR2	
CC16	DBO4	HPP1	HPP6 HS21	
CC16	DBOA	L64P	D6B5 D6A8	
CC16	BO13	BO05	D6A5 D6A6	
CC16	D6AM	PP20	L6AN D6A3	
CC16	D6A1	PP50	PP51 BCLE	

S :	DT LSYS	<u>or</u>	DT LSC	All "local systems" are listed.
CC16	D20			

S :	DT FSYS	<u>or</u>	DT FSC	All "front-end systems" are listed.
CC16	DN20	DNO4		

S :	DT RSYS	<u>or</u>	DT RSC	All "remote systems" are listed.
CC16	DNO1	DNP1	DNO2 DNP3	
CC16	DNO8	DNO9	DNO7 DN74	
CC16	D224	HDO3	HPR1 HEO2	
CC16	HDO9	H222	HCP6 HBO1	
CC16	HEO4	HPP3	HDO1 HD18	
CC16	HCP2	H224	PICD PCD1	
CC16	HPR2	DBO4	HPP1 HPP6	
CC16	HS21	DBOA	L6AP D6B5	
CC16	D6A8	BO13	BO05 D6A5	
CC16	D6A6	D6AM	PP20 L6AN	
CC16	D6A3	D6A1	PP50 PP51	
CC16	BCLE			

Note : In the "system/session-control" pair sets of CNC commands, the name of the "session-control" is the name of its associated "system".

Examples (continued)

5) DT command to display the status of the BTNS file trace.

```
S : DT TRACE
      CC86 NO BTNS FILE TRACE IN PROGRESS
CC98 DT COMMAND COMPLETED
```

The BTNS "trace" session can now be started by entering an "RT TRACE" command.

```
S : DT TRACE
      CC86 BTNS FILE TRACE IN PROGRESS
CC98 DT COMMAND COMPLETED
```

```
S : DT TRACE LONG
      CC86 BTNS FILE TRACE IN PROGRESS
```

DOMAIN	:	PHY	SUBDOMAIN	:	HDLC	LEVEL	:	255
DOMAIN	:	NET	SUBDOMAIN	:	ENCRM	LEVEL	:	255
DOMAIN	:	NET	SUBDOMAIN	:	X25L3	LEVEL	:	255
DOMAIN	:	TRPT	SUBDOMAIN	:		LEVEL	:	255
DOMAIN	:	TRM	SUBDOMAIN	:		LEVEL	:	255

```
CC98 DT COMMAND COMPLETED
```

# DT

## continued

### Examples (continued)

- 8) DT command to display the status of the "remote transport-station" and its associated "network routes" mapped over HDLC lines.

For the configuration and function of the primary network, see Appendix C.

```
S : DT RTS B13_TS
  CC85 RTS "B13_TS" TRANSPORT STATION RESTART IS NOT AUTHORIZED
      NR "NR_CV"
      CONNECTION IS NOT AUTHORIZED
      NR "NR_CV1"
      CONNECTION IS NOT AUTHORIZED
      NR "NR_O1"
      CONNECTION IS NOT AUTHORIZED
      NR "NR_O6"
      CONNECTION IS NOT AUTHORIZED
  CC98 DT COMMAND COMPLETED

S : DT RTS B13_TS LONG
  CC85 RTS "B13_TS" TRANSPORT STATION RESTART IS NOT AUTHORIZED
      NR "NR_CV"
      CONNECTION IS NOT AUTHORIZED
      AND MAPPED OVER VC.TPC1
      NR "NR_CV1"
      CONNECTION IS NOT AUTHORIZED
      AND MAPPED OVER VC.TPC1
      NR "NR_O1"
      CONNECTION IS NOT AUTHORIZED
      AND MAPPED OVER LNO1
      NR "NR_O6"
      CONNECTION IS NOT AUTHORIZED
      AND MAPPED OVER LNO6
  CC98 DT COMMAND COMPLETED

S : DT NR NR_O6
  CC84 NR "NR_O6"
      CONNECTION IS NOT AUTHORIZED
  CC98 DT COMMAND COMPLETED

S : DT NR NR_O6 LONG
  CC84 NR "NR_O6"
      CONNECTION IS NOT AUTHORIZED
      AND MAPPED OVER LNO6
  CC98 DT COMMAND COMPLETED
```

Examples (continued)

- 7) DT command to display details of individual "systems" and their associated "session-controls".  
The names of the "system/session-control" objects are obtained in Example 6.

```
S : DT LSYS D20
    CC87 D20    PROFILE : L64 / GCOS-64 / 1E.5
S : DT LSYS D20 LONG
    CC87 D20    PROFILE : L64 / GCOS-64 / 1E.5
    CC87        SC      : D20
S : DT LSC D20
    CC88 D20    SYSTEM  : D20
S : DT LSC D20 LONG
    CC88 D20    SYSTEM  : D20
```

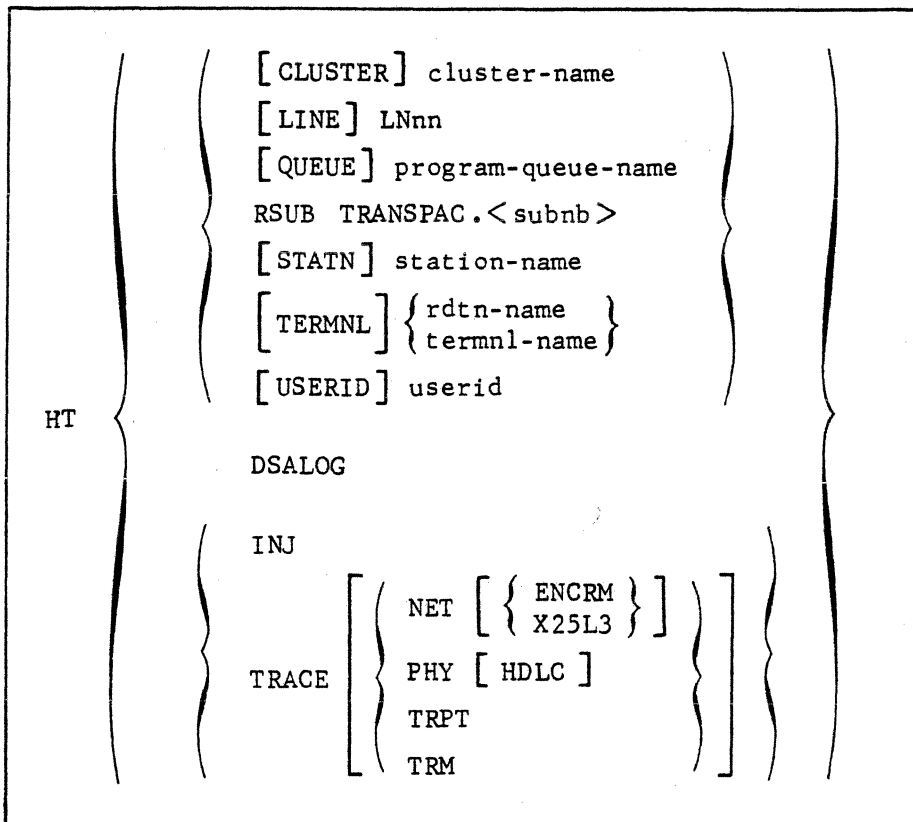
```
S : DT FSYS DN20
    CC87 DN20   PROFILE : DN7100 / DN-B / V2.5
S : DT FSYS DN20 LONG
    CC87 DN20   PROFILE : DN7100 / DN-B / V2.5
    CC87        SC      : DN20
S : DT FSC DN20
    CC88 DN20   SYSTEM  : DN20
S : DT FSC DN20 LONG
    CC88 DN20   SYSTEM  : DN20
    CC88 DN20   ACCESS  : FNP_CC01 ENABLED
```

```
S : DT RSYS PCD1
    CC87 PCD1   PROFILE : L64 / GCOS-64 / 1E.5
S : DT RSYS PCD1 LONG
    CC87 PCD1   PROFILE : L64 / GCOS-64 / 1E.5
    CC87        SC      : PCD1
S : DT RSC PCD1
    CC88 PCD1   SYSTEM  : PCD1
S : DT RSC PCD1 LONG
    CC88 PCD1   SYSTEM  : PCD1
    CC88 PCD1   ACCESS  : FNP_CC01 ENABLED
```

# HT

## continued

### Format of Command



### Description of Parameters

#### cluster-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies a set of stations connected over a polled line of the URP local network.

"HT cluster-name" stops polling on all the stations attached to the same controller. This command should only be used if the controller is no longer in use.

#### LNnn

- "line-name", where nn ranges from 01 through 99, uniquely identifies the communications line in the secondary or primary networks as declared in the SRST at the time of installation.

"HT LNnn"

- stops all activity on the line such as polling and selecting
- and physically disconnects the line, if it is "switched".

#### program-queue-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies the "program-queue" used by MCS applications to receive messages.



Definition

The "Hold Telecom" command disconnects the network object, flagging it as HELD, disables the logging mechanism of "remote systems", and discontinues tuning and maintenance facilities over the BTNS/HDLC-URP interface.

Rules : (1) The HT command specifying the network object :

- . The network objects can optionally be preceded by their "category" which is the name of their CNC command, and the keyword USERID; the "category" RSUB is mandatory
- . While the command only "holds" the network object concerned, all lower-level objects are logically disconnected, see note below, although they are not flagged as HELD

Note : Logical disconnection involves

- stopping all I/O processing concerning the network object
- notifying the communications service, otherwise known as the VCAM subsystem, to which the terminal affected is connected
- notifying the MCS application to which the terminal affected is connected, provided that the program-queue has been defined with the BREAK option at network generation
- notifying interactive terminals affected of their disconnection.

(2) The HT command disabling the DSALOG function :

- . If DSA logging is currently active, all sessions on the \$LOGFILE mailbox will terminate, and the NASF job will abort
- . Any attempt to open an administrative session on \$LOGFILE will be rejected.

(3) The HT command for tuning and maintenance :

The file BTNS\_FILE\_TRACE is closed and can then be printed out.

# HT

## continued

### Description of Parameters (continued)

#### DSALOG

- specifies the DPS 7 system's capability to receive incoming administrative sessions from the NADs of DSA systems on the \$LOGFILE mailbox.

"HT DSALOG" terminates all such sessions and aborts the NASF job.

#### INJ

- specifies the "injector" facility which operates in "debug" mode to validate the link between 2 transport-stations.

"HT INJ" deactivates the "injector" facility.

For the use of the "injector" facility, see Appendix D.

#### TRACE

- a maintenance parameter concerning the BTNS\_FILE\_TRACE.

"HT TRACE" terminates the "trace" session and closes the BTNS\_FILE\_TRACE which can then be printed out.

The "trace" session, however, can be selectively terminated by specifying the "domain" and "subdomain"

- . NET, for the "network" domain which has 2 subdomains
  - ENCRM, for "network control and resource management"
  - X25L3, for "X25 Level 3"
- . PHY, for the "physical link" which has 1 subdomain
  - HDLC, for "high-level data link control"
- . TRM, for the "terminal-manager" which has no subdomain
- . TRPT, for the "transport-station" which has no subdomain.

"HT TRACE domain [subdomain]" terminates the "trace" only for the "domain" and "subdomain" specified for all "levels"; the "trace" for other "domains" and their associated "subdomains" continues unaffected.

For further information, see Appendix E.

Description of Parameters (continued)

program-queue-name (continued)

- "HT program-queue-name" disables the queue and sets it to HELD such that
  - . the application(s) can still receive messages already queued
  - . although no further messages can be queued.

rdtn-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies the "remote data terminal".

The "rdtn-name" can optionally be categorized by the keyword TERMNL.

"HT TERMNL rdtn-name" applies to the "virtual" terminal dynamically created while the rdtn is ACTIVE in order to "clear" down the virtual circuit and set the rdtn to DISABLED.

A subsequent RT command is not necessary, and the rdtn can then try for a connection later on.

station-name

- ranges from 1 through 8 alphanumeric characters.

"HT station-name" applied to multipoint lines of the URP local network performs the following

- . disconnects all ACTIVE terminals attached to the station
- . excludes the station from the polling list and therefore reduces the polling time.

If all the stations on the line are HELD, the line is automatically HELD by BTNS with the message :

CC11 LNnn HELD BY SYSTEM, REASON : NO STATION TO POLL

subnb

- 9 decimal-digits defining the TRANSPAC subscription number for accessing the "remote transport-station", of which the first left-justified digit must be 1.

"HT RSUB TRANSPAC.1nnnnnnnn" disables the access to the "rts" only through the subscription specified. Access to the "rts" through other subscriptions or over point-to-point line(s) is not affected.

termnl-name

- ranges from 1 through 4 alphanumeric characters.

"HT termnl-name" disables the terminal and sets it to HELD.

userid

- ranges from 1 through 12 alphanumeric characters and uniquely identifies the operator currently logged on to a terminal of the URP local network.

The command is used to "force" the logoff of a user without "holding" the terminal itself. The result of not "holding" the terminal means that a subsequent RT command is not necessary, and the "user-named" terminal can then try for a connection later on.

The command is only valid if the user is in the process of logging on or has already connected.

# HT

## continued

### Examples (continued)

- 3) HT command to terminate the BTNS file trace.

```
S : HT TRACE
      CC85 BTNS FILE TRACE CLOSED
CC98 HT COMMAND COMPLETED
```

- 4) HT command to disable access through a "remote" subscription.

```
S : HT RSUB TRANSPAC.178000200
      CC80 ACCESS TO RTS "B13_TS" DISABLED
          THROUGH RSUB TRANSPAC.178000200
CC98 HT COMMAND COMPLETED
```

HT  
continued

Examples

- 1) HT command executed on line LN12.

```
S : DT LN12
    CC18 LN12  TI = 140  TO = 16  RA = 1  SP = *
    CC30      PL = V710  V772
    CC32      OM = 7    IM = 0    OE = 16  IE = 0

S : HT LN12
    CCO3 HT COMPLETED

S : DT LN12
```

CC18 LN12	HELD	TI = 140	TO = 16	RA = 1	SP = *
-----------	------	----------	---------	--------	--------

```
    CC30      PL = V710  V772
    CC32      OM = 7    IM = 0    OE = 16  IE = 0
```

- 2) HT command executed on station V772 of line LN12 followed by an HT command issued to terminal V77S of station V772.

```
S : DT V772
    CC26 V772  ACTIVE  ADD = 3

S : HT V772
    CCO3 HT COMPLETED

S : DT V772
```

CC26 V772	HELD	ADD = 3
-----------	------	---------

```
S : DT V77S
    CC08 V77S  IDLE ASG TO PROG

S : HT V77S
    CCO3 HT COMPLETED

S : DT V772
```

CC08 V77S	HELD ASG TO PROG
-----------	------------------

# MTE

## continued

### Description of Parameters (continued)

#### line-length (continued)

- This parameter is meaningful only with "message blocking" and is used to alter
  - . either the LLENGTH value as specified originally in the QUEUE command at network generation
  - . or a subsequent "line-length" value specified in the MTE command previously issued during the course of the current communications session.

#### block-size

- decimal value ranging from 1 through 9999 and represents the maximum number of lines per message. The symbol \* is used to denote that the current "block-size" is to be left unchanged.

This parameter is meaningful only with "message blocking" and is used to alter

- . either the NBLOCKS value as specified originally in the QUEUE command at network generation
- . or a subsequent "block-size" value specified in the MTE command previously issued during the course of the current communications session.

The length of the message transmitted is defined by the algorithm :

$$(NBLOCKS \times LLENGTH) = \text{maximum message length}$$

Any part of a message exceeding the "maximum message length" will be truncated. In order to avoid this situation occurring, the network control operator can during the course of the current communications session, dynamically alter either or both of these values of any of the terminal-queues as defined under "terminal-name" :

80 \*

This means that the "line-length" is to be altered from whatever value is current to 80, while the "block-size" is to remain unchanged.

\* 30

This means that the "block-size" is to be altered from whatever value is current to 30, while the "line-length" is to remain unchanged.

#### BLOCK

- messages to be blocked on currently defined "line-length" and "block-size". Corresponds to the BLOCKING option in the QUEUE command.

#### NBLOCK

- message blocking to be discontinued, thereby cancelling
  - . either the BLOCKING option, if originally specified in the QUEUE command at network generation
  - . or the BLOCK option in the MTE command previously issued during the course of the current communications session.

Definition

The 'Modify Telecom Edit' command modifies the data format in a terminal-queue. ★

This command must be carefully used in respect of the data formats expected by the MCS application using the terminal-queue.

Rules : The command can only be executed if the queue is not involved in a connection with a terminal. The current status of the queue is obtained by the 'DT queue-name LONG' command, see definition under "queue-name".

Format of Command

MTE queue-name	[	{	line-length	}	{	block-size	}	]
		*		*				
	[	{	BLOCK	}	[	{	IMARK	}
		{	NBLOCK	}		{	INEDT	}
						{	ONEDT	}
							{	ONORM
							}	]

Description of Parameters

## queue-name

- uniquely identifies one of the following,
  - BTNS-terminal-queue used to send messages to a terminal managed by BTNS, the name ranging from 1 through 4 alphanumeric characters
  - DSA-terminal-queue used to send messages to an application over either a DN7100 secondary network or a primary network connecting DSA "remote-systems" having the format <system-name>.<mailbox-name>, where
    - "system-name" ranges from 1 through 4 alphanumeric characters and can be either "fsys-name" or "rsys-name"
    - "mailbox-name" ranges from 1 through 8 alphanumeric characters
    - the total string, including the "full-stop", is limited to 12 alphanumeric characters
  - userid-queue used to send messages to the operator currently logged on to a terminal of the URP local network, the name ranging from 1 through 12 alphanumeric characters.

## line-length

- decimal value ranging from 5 through 9999 and represents the maximum number of characters that the line will contain. The symbol \* is used to denote that the current "line-length" is to be left unchanged.

# MTF

## Definition

The "Maintain Telecom Frontal" command executes service functions on the DN7100, launches the FNPS service associated with the DN7100 and provides tuning and maintenance facilities over the FNPS/DN7100 interface.

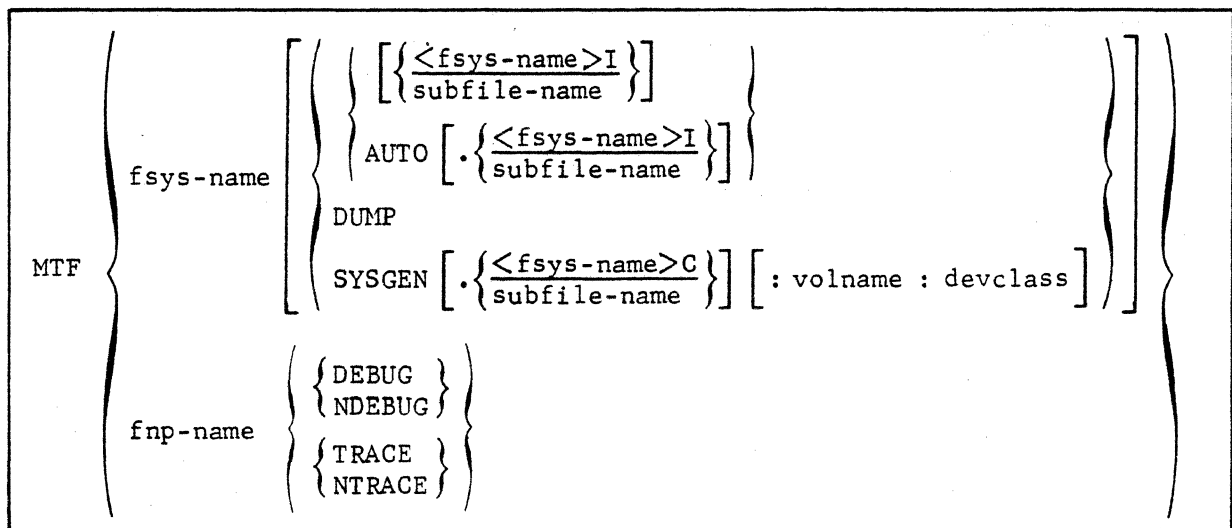
Rules : (1) The MTF command specifying "fsys-name" :

- . The command is rejected if a command of the same function is currently executing on the same DN7100
- . Functions can concurrently execute on different DN7100s, 4 of which are supported in the present release
- . If the DN7100 concerned is active, only the DUMP function can be executed on it
- . The "load" function specified with AUTO launches the FNPS service associated with the DN7100.

(2) The MTF command specifying "fnp-name" :

The operands specified are for tuning and maintenance purposes.

## Format of Command



## Description of Parameters

fsys-name

- ranges from 1 through 4 alphanumeric characters and is the name of the DN7100 declared in the FSYs command at network generation.

fnp-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies the FNPS service declared in the FNP command at network generation.



Description of Parameters (continued)

IMARK

- denotes "input mark mode" and corresponds to the IM=MK option in the QUEUE command whereby
  - . headers are passed as marks of the format ><U03abc
  - . all hexadecimal control codes are translated into their corresponding mark formats
  - . character encoding and "repeat" formats are translated
  - . other characters, including control codes in mark format, are passed without translation.

INEDT

- denotes "input unedited mode" and corresponds to the IM=UN option in the QUEUE command whereby
  - . headers are passed as marks of the format ><U03abc
  - . other characters, including control codes in mark format, character encoding and "repeat" formats, are passed without translation.

INORM

- denotes "input normal mode" and corresponds to the IM=NL option in the QUEUE command whereby
  - . headers and control codes, except HT and ESC, are not passed
  - . character encoding and "repeat" formats are translated
  - . other characters, including control codes in mark format, are passed without translation.

ONEDT

- denotes "output unedited mode" and corresponds to the OM=UN option in the QUEUE command whereby
  - . the user can provide VIP-headers in the mark format ><U03abc
  - . other characters, including control codes in mark format, character encoding and "repeat" formats, are passed without translation.

ONORM

- denotes "output normal mode" and corresponds to the OM=NL option in the QUEUE command whereby
  - . the user can provide VIP-headers in the mark format ><U03abc
  - . character encoding and "repeat" formats are translated
  - . unreserved codes and inapplicable hexadecimal control codes are translated into character encoding formats ><Cab
  - . control codes in mark format specific to the terminal are translated into hexadecimal values
  - . all other characters, including applicable hexadecimal control codes, are passed without translation.

# MTF

## continued

### Description of Parameters : Format 2 : MTF <fnp-name> <parameter>

#### fnp-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies the FNPS service declared in the FNP command at network generation.

#### DEBUG

- a tuning parameter for stopping the "watch-dog" status exchanges between FNPS and the DN7100.

The survey mechanism can be inhibited by zeroising both TIMER in the FNP command and the T3 parameter of the TS command.

#### NDEBUG

- resets DEBUG for starting up the "watch-dog" status exchanges.

#### NTRACE

- resets the TRACE parameter for terminating the sysout "trace" session.

If the last "trace" session has terminated, the SYSOUT file is closed and ready to be printed.

#### TRACE

- a maintenance parameter for initiating the sysout "trace" session and entered at the request of the field engineering service.

Note : The printout of the "trace" session is not intended for the user. Its primary purpose is to serve as a maintenance tool for the field engineering service.

Description of Parameters : Format 1 (continued)

subfile-name

- used for "loading" the DN7100 software and can be named as follows,
  - . either <fsys-name>I, if not specified
  - . or by the user if explicitly specified, in which case, the subfile can bear any name and there can be as many versions of DN7100 software as subfiles created in previous SYSGEN runs.

"MTF fsys-name AUTO" is equivalent to "MTF fsys-name" followed by start-up "ST fnp-name".

DUMP

- specifies that the corresponding DN7100 memory image must be dumped onto <fsys-name>1 or <fsys-name>2 subfile of the GCOS resident file named SYS.FPDUMP.

The subfile may be edited using the GCOS utility DSADUMP, see Network Administration Utilities.

SYSGEN [.subfile-name [: volume-name : device-class ]]

- specifies that the DN7100 system generation is to be started.

To start this generation, the following files must be available to GCOS

- . SYS.FPUNCS containing the software modules of DN7100
- . SYS.FPSGEN for the generation bootstrap
- . SYS.FPCONF containing information on the configuration
- . SYS.FPCORE to contain the generated image of the DN7100 software.

The GCOS console operator is notified of the "sysgen" steps in execution and all events occurring, whether normal or abnormal, through messages issued by the DN7100 software.

For system generation commands and error messages, refer to the DN7100 System Generation Manual.

subfile-name

- the subfile containing the source DN7100 configuration in SYS.FPCONF. The user must explicitly specify the name of this subfile when generating from a subfile other than <fsys-name>C.

volume-name : device-class

- whereas the SYS.FPCONF and SYS.FPCORE files must be resident, the files SYS.FPUNCS and SYS.FPSGEN may be non-resident.

If SYS.FPUNCS and SYS.FPSGEN are non-resident, the "volume-name" and the "device-class" of the non-resident volume containing these two files must be specified.

The corresponding volume must be premounted before the command to SYSGEN is issued.

"Volume-name" ranges from 1 through 6 alphanumeric characters.

"Device-class" defines the type of disk drive of the format MS/Mxxx.

# MTL

## continued

### Description of Parameters (continued)

#### input-timeout

- TLT tuning parameter which defines the "time-out" value used by the URP to control initialization or disconnection of the modem. The "time-out" value ranges from 20 through 255 units, each unit being 50 milliseconds.

This parameter is used for tuning purposes when modem malfunction is detected at BTNS start-up and reported through the system message :  
CC11 LNnn CANNOT BE OPENED REASON : ENABLE CP FAILED.

\* denotes that the "input-timeout" as specified by the CNC option TILEN is not to be altered.

#### output-timeout

- TLT tuning parameter which defines the "time-out" value used by the URP,
  - . when polling a buffered terminal
  - . when timing the interval between characters input from an unbuffered terminal.

#### Buffered terminals:

The "time-out" value ranges from 0 through 65535 units, each unit being 50 milliseconds.

0 value gives a "time-out" value of 50 x 65535 milliseconds.

For a polled line, the "time-out" condition is reported through the system message CC13 station-name UNAVAILABLE.

#### Unbuffered terminals:

The "time-out" value ranges from 0 through 255 units, each unit being 2 seconds.

0 value gives a "time-out" value of 2 x 256 seconds.

For a point-to-point line, switched or otherwise, the idle TTY terminal is disconnected automatically by BTNS.

\* denotes that the "output-timeout" as specified by the CNC option TOLEN is not to be altered.

#### read:write-ratio

- ranges from 1 through 4096 and indicates the ratio of the number of "read's" to the number of "write's" on the specified line.

\* denotes that no alteration to the system management of input and output is required.

MTL LNO2 \* \* 15 A

This command means

- . by the 1st. \*, that the "input-timeout" remains unchanged
- . by the 2nd. \*, that the "output-timeout" remains unchanged
- . that there will be 15 "read's" to every "write" on line O2
- . for A, see "speed"

# MTL

## Definition

The "Modify Telecom Line" command modifies the firmware parameters and software options of a line or makes available maintenance facilities for the line.

Rules : (1) The MTL command specifying firmware and software options :

To modify the parameters of the line, the line must be declared  
. either CLOSED at network generation  
. or HELD by an "HT LNnn" command

New parameters supplied by the MTL command are validated upon a subsequent RT command issued for the line concerned.

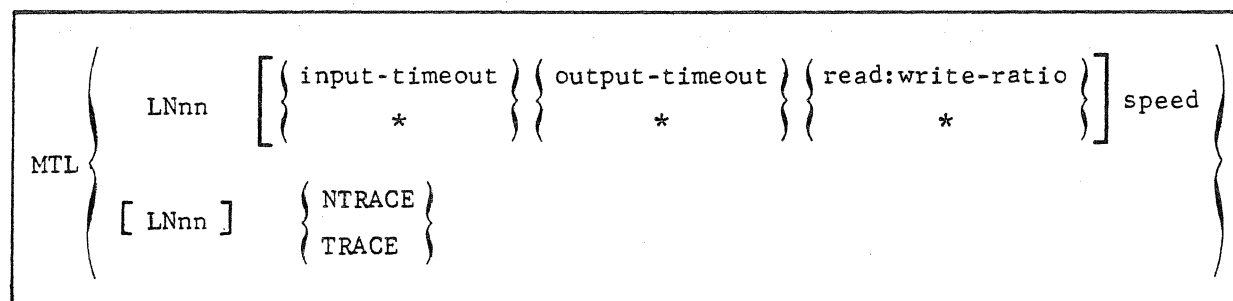
The current status of the line is obtained by the "DT LNnn" command.

Note : The "asterisk" notation can only be used if at least one option, that is, the "input-timeout" or "output-timeout" or "read:write-ratio" is specified. If all these three options are to be left unchanged, the asterisks must be omitted and only "speed" is to be indicated.

(2) The MTL command specifying "trace" :

The sysout "trace" session can be started for the following  
. either for the line  
. or for the line "control-layer".

## Format of Command



## Description of Parameters

LNnn

- "line-name", where nn ranges from 1 through 99, uniquely identifies the communications line in the URP local network as declared in the SRST at the time of installation.

Note : This command does not apply to HDLC lines.

# MTL

## continued

### Description of Parameters : Format 2 : MTL [ LNnn ] parameter

#### NTRACE

- resets the TRACE parameter for terminating the sysout "trace" session for either the specified line or the line "control-layer".

If the last "trace" session has terminated, the SYSOUT file is closed and ready to be printed.

#### TRACE

- a maintenance parameter for initiating the sysout "trace" session for either the specified line or the line "control-layer" and entered at the request of the field engineering service.

The SYSOUT file recording the "trace" session will contain appropriately

- . for "MTL LNnn TRACE", all the information received and sent by the transmission control logic over the line specified
- . for "MTL TRACE", all events received and sent by the "control-layer" of all the communications lines of the network, see Note 2.

NB 1): The printout of the "trace" session is not intended for the user. Its primary purpose is to serve as a maintenance tool for the field engineering service.

NB 2): The "MTL LNnn TRACE" command is not valid for HDLC lines. In order to perform the "trace" in this case, the "trace" session on the BTNS\_FILE\_TRACE must be used instead, see "ST TRACE" and "RT TRACE".

Description of Parameters (continued)

speed

- TLT tuning parameter which defines the speed of an asynchronous line, i.e., TTY, TC or VIP asynchronous. Values range from A through T representing the following speeds in bits per second.

A = 50	E = 135	I = 600	M = 1800	Q = 4800
B = 75	F = 150	J = 900	N = 2000	R = 7200
C = 100	G = 200	K = 1050	O = 2400	S = 9600
D = 110	H = 300	L = 1200	P = 3600	T = 19200

A DCC, data communications controller, is configured with 4 of the 20 speeds listed. CNC checks that the value defined for the parameter is 1 of the 4 speeds configured on the DCC which connects the line.

The speed of a line is selected from the 4 values and is specified at SRST generation time by the LINE resource card in order to tailor the URP buffers for that line.

The new value supplied must be compatible with the URP buffers for that line and overrides the value specified by the CNC option SPEED.

# MTL continued

## Examples (continued)

- 2) This example shows the sequence of operations involving an MTL command issued to change the speed of a TTY line LN11 from 300 bps (H) to 110 bps (D).

```
S : DT LN11  
  
    CC18 LN11  TI = 140  TO = 64  RA = 1  SP = H  
  
    CC32      OM = 0    IM = 0    OE = 0    IE = 0  
S : HT LN11  
    CCO3 HT COMPLETED  
  
S : MTL LN11 D  
  
    CCO3 MTL COMPLETED  
S : DT LN11  
  
    CC18 LN11 HELD  TI = 140  TO = 64  RA = 1  SP = D  
  
    CC32      OM = 0    IM = 0    OE = 0    IE = 0  
S : RT LN11  
    CCO3 RT COMPLETED
```



MTL  
continued

Examples

1) This example shows the sequence of operations involving an MTL command issued to modify the following parameters of the VIP line LN12:

- input-timeout to be altered to 5 seconds :  $\frac{5 \text{ s}}{50 \text{ ms}} = 100$
- output-timeout to be altered to 2 seconds:  $\frac{2 \text{ s}}{50 \text{ ms}} = 40$
- read:write-ratio to be set at 2 "read's" for every 1 "write"

```
S : DT LN12

      CC18 LN12  TI = 140  TO = 16  RA = 1  SP = *

CC30      PL = V710  V772
CC32      OM = 10   IM = 0   OE = 16   IE = 0

S : HT LN12
      CC03 HT COMPLETED

S : MTL LN12 100 40 2

      CC03 MTL COMPLETED

S : DT LN12 STRONG

      CC18 LN12 HELD  TI = 100  TO = 40  RA = 2  SP = *

CC30      PL = V710  V772
CC32      OM = 10   IM = 0   OE = 16   IE = 0
CC15      V710  V771/IDLE
CC15      V772  V77S/IDLE  V77P/IDLE
CC15      V77K/IDLE

S : RT LN12
      CC03 RT COMPLETED
```

# MTP

## continued

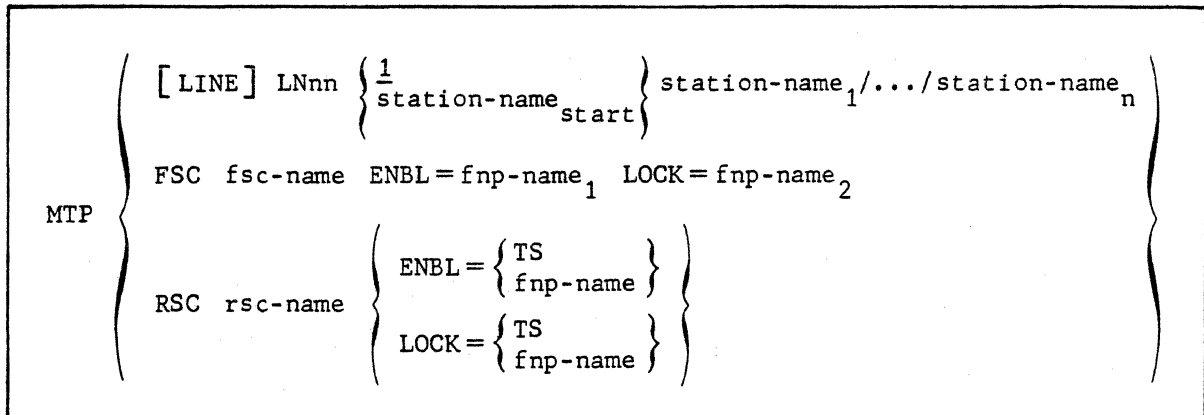
### Definition (continued)

Rules : (3) The MTP command specifying "rsc-name" (continued) :

- . Following the new connection request, the "exit" route chosen is the first access, see note below, whose status is "enabled" and whose transport-module is active, as follows
  - if the access is the "exit" transport station as defined by the keyword TS, the transport-module is the BTNS/HDLC service which is made active by the "ST [gencom-name]" command
  - if the access specified is "fnp-name", the transport-module is the FNPS service; the corresponding DN7100 is loaded and its FNPS service is launched by the "MTF fsys-name AUTO" command.

Note : At network generation, all accesses to the "remote system" are "enabled". The term "first access" refers to the physical order in which the RSC commands appear in the CNC description.

### Format of Command



### Description of Parameters

LNnn

- where nn ranges from 01 through 99 and uniquely identifies the line declared in the SRST at installation time.

fsc-name

- ranges from 1 through 4 alphanumeric characters and is the name of the "front-end session-control" as declared in the FSC command at network generation.

rsc-name

- ranges from 1 through 4 alphanumeric characters and is the name of the "remote session control" as declared in the RSC command at network generation.

Definition

The "Modify Telecom Parameters", previously known as "modify telecom polling", retains its original function of modifying the polling list of stations but extends its capabilities to the following functions,

- . modifies the access status of a bi-PSI DN7100 front-end processor
- . modifies the status of access to the "remote system" according to its configuration as follows,
  - either of the transport-station(s) if its "remote session-control" is declared over the BTNS/HDLC-URP interface
  - or of the transport-service if its "remote session-control" is declared over the FNPS/DN7100 interface.

Rules : (1) The MTP command modifying polling :

- . The command applies to multipoint lines and is executable only if the line is HELD
- . The new polling list cannot exceed the number of stations authorized in the firmware generation for the line concerned and is validated upon a subsequent "RT [LINE] LNnn" command
- . Up to 10 stations are allowed to be specified in a single command; if more than 10 stations are required, successive commands must be used specifying the previous last station as the "start".

(2) The MTP command specifying "fsc-name" :

- . The command is only applicable for a DN7100 connected to the DPS 7 over 2 PSIs, each PSI being associated with its own separate FNPS service whose access status is explained in note a below
- . The command modifies the status of the access to the DN7100 by selecting 1 of the 2 FNPS services under the following provisos,
  - that the FNPS service currently "enabled" is not in active dialog with the DN7100
  - that the 2 FNPS services are named in the same command specifying which is to be "enabled" and which to be "locked".

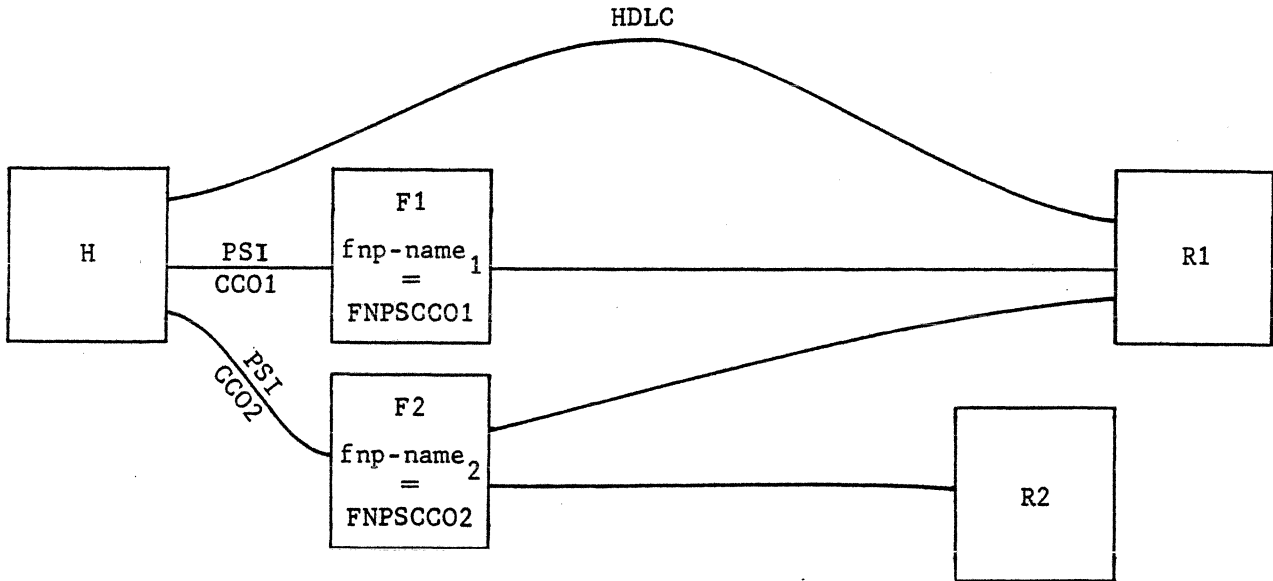
Note : a. The access declared in the first FSC command encountered in the CNC description is "enabled" at network generation; that of the second FSC command is "locked"

- b. Service functions on the DN7100 are executed through the PSI whose access is "enabled", see MTF command
- c. The "ST fnp-name" command is rejected if the FNPS service is already active or if its access is "locked".

(3) The MTP command specifying "rsc-name"

- . The change in the status of the access to the "remote system" does not affect sessions already established over the current "exit" route; this change is only taken into account when a new connection request is made to the "remote system"

**MTP**  
continued



The diagram shows H the "local system" connected to R1 the "remote system"  
 . directly over a point-to-point HDLC line  
 . and through the intermediary of F1 and F2 being the "front-end systems".

The presence of R2 is only incidental to the explanation of the following text.

- At the start of the communications session, the accesses to R1 are "enabled" through the commands
  - "ST [gencom-name]" for launching BTNS/HDLC for the point-to-point HDLC line
  - "MTF F1 AUTO [. subfile-name]" for loading F1 and launching its FNPS service
  - "MTF F2 AUTO [. subfile-name]" for loading F2 and launching its FNPS service.
- In order to "lock" the access to R1 through F2, the following command is issued

```
MTP RSC R1 LOCK=FNPSCCO2
```

This command does not affect the access by H to R2 through F2. It only means that H can no longer access R1 through F2.

As a result of this command, new connection requests to R1 will only pass either through F1 or through the "exit" from H represented by H's "departure transport station" over the point-to-point HDLC line.

- In order to "lock" the access to R1 through the "exit" from H, the following command is issued

```
MTP RSC R1 LOCK=TS
```

As a result of this command and the preceding command already entered, new connection requests to R1 can only pass through F1.

- These accesses remain "locked" until subsequent MTP commands are issued to "enable" them, thereby "restoring" their access status to the start of the communications session.

MTP  
continued

Format 1 : Example of MTP command modifying polling

"Station-name" ranges from 1 through 4 alphanumeric characters, the default "start" station being the first "station" specified in the polling list.

This example shows the sequence of operations involving an MTP command issued to modify the polling list of the VIP line LN12 in the following way,

- . old polling list : stations V710 and V772 are equally polled
- . new polling list : station V710 is not to be polled, station V772 is to be polled twice for each time that it is selected.

```
S : DT LN12 LONG
    CC18 LN12  TI =140  TO =16   RA =1   SP =*

    CC30          PL =V710  V772

    CC30          OM =9     IM =0     OE =16   IE =0
    CC15          V710   V771/IDLE
    CC15          V772   V77S/ACTIVE  V77P/ACTIVE
    CC15          V77K/ACTIVE

S : HT LN12
    CC03 HT COMPLETED

S : MTP LN12 1 V772/V772

    CC03 MTP COMPLETED

S : DT LN12 LONG
    CC18 LN12 HELD  TI =140  TO =16   RA =1   SP = *

    CC30          PL =V772  V772

    CC15          V710   V771/IDLE
    CC15          V772   V77S/IDLE  V77P/IDLE
    CC15          V77K/IDLE

S : RT LN12
    CC03 RT COMPLETED
```

# MTP

## continued

### CNC Generation (Remote System accessed over bi-PSI DN7100)

The CNC description for the network appearing on the facing page, for which the DN7100 generation is applicable, is

```
FNP FNPSCC01 CC01 ;
FNP FNPSCC02 CC02 ;
FSC F SCID=65:43 FNP = FNPSCC01 ; 1st. FSC command
FSC F SCID=65:43 FNP = FNPSCC02 ; 2nd. FSC command
RSC R SCID=87:65 FNP = FNPSCC01 ; 1st. RSC command
RSC R SCID=87:65 FNP = FNPSCC02 ; 2nd. RSC command
```

◦ The terms "first" and "second" refer to the order in which the commands appear in the CNC description.

◦ The first RSC command must specify the same FNPS service as that specified for the first FSC command, in this case FNPSCC01.

At the start of the communications session, the FNPS service "enabled" for a bi-PSI DN7100 is that specified in the first FSC command, while the FNPS service specified in the second FSC command is "locked". In this case, FNPSCC01 is "enabled" while FNPSCC02 is "locked".

Since the first RSC command specifies the "enabled" FNPSCC01, access to R is immediately available at start-up. However, if the first RSC command had specified the "locked" FNPSCC02, there would be no access to R until FNPSCC02 were "enabled" through operator intervention.

◦ At the start of the communications session, the start-up of a bi-PSI DN7100 through the "MTF fsys-name AUTO [.subfile-name]" command is equivalent to

- . MTF fsys-name [subfile-name], to load the DN7100
- . ST fnp-name, to launch the FNPS service specified in the first FSC command irrespective of the order in which the FNPS services have been declared in the FNP commands.

In this example, "MTF F AUTO" is equivalent to

- . MTF F
- . ST FNPSCC01.

If, however, the command "ST FNPSCC02" were issued at start-up, the following message appears

```
CC03 ST COMMAND REJECTED : FNP IS LOCKED
```

◦ The second RSC command is redundant because, even when omitted, access to R is available when FNPSCC02 is "enabled".

Example of Console Dialog  
MTP RSC Command  
(See Facing Page)

```
S : DT RSC R1 LONG
      CC88 R1 SYSTEM : R1
      CC88 R1 ACCESS : FNPSCCO1 ENABLED
      CC88 R1 ACCESS : FNPSCCO2 ENABLED
      CC88 R1 ACCESS : TS          ENABLED

S : DT RSC R2 LONG
      CC88 R2 SYSTEM : R2
      CC88 R2 ACCESS : FNPSCCO2 ENABLED

S : MTP RSC R1 LOCK=FNPSCCO2
      CC90 R1 ACCESS THRU FNPSCCO2 LOCKED

S : DT RSC R2 LONG
      CC88 R2 SYSTEM : R2
      CC88 R2 ACCESS : FNPSCCO2 ENABLED

S : DT RSC R1 LONG
      CC88 R1 SYSTEM : R1
      CC88 R1 ACCESS : FNPSCCO1 ENABLED
      CC88 R1 ACCESS : FNPSCCO2 LOCKED
      CC88 R1 ACCESS : TS          ENABLED

S : MTP RSC R1 LOCK=TS
      CC90 R1 ACCESS THRU TS          LOCKED

S : DT RSC R1 LONG
      CC88 R1 SYSTEM : R1
      CC88 R1 ACCESS : FNPSCCO1 ENABLED
      CC88 R1 ACCESS : FNPSCCO2 LOCKED
      CC88 R1 ACCESS : TS          LOCKED

S : MTP RSC R1 ENBL=TS
      CC90 R1 ACCESS THRU TS          ENABLED

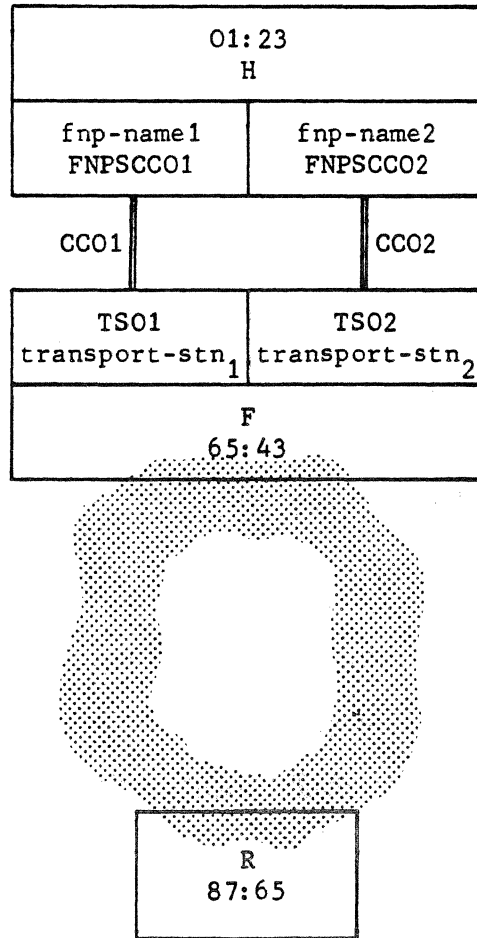
S : MTP RSC R1 ENBL=FNPSCCO2
      CC90 R1 ACCESS THRU FNPSCCO2 ENABLED

S : DT RSC R1 LONG
      CC88 R1 SYSTEM : R1
      CC88 R1 ACCESS : FNPSCCO1 ENABLED
      CC88 R1 ACCESS : FNPSCCO2 ENABLED
      CC88 R1 ACCESS : TS          ENABLED
```





DN7100 Network Generation  
(Bi-PSI Connection to DPS 7 Host)



- ND H RMT -TS TSO1 -ADDR 01:23 -BKTS TSO2  
 ↳ name of LSYS  
 ↳ transport-station<sub>1</sub>  
 ↳ "scid" of LSC  
 ↳ "back-up" transport-station<sub>2</sub>
  - TS TSO1 L64 -CT TSO1 -RCH 8
  - CT TSO1 PSI -PHAD X'1000' -MXCH 16  
 ↳ hardware "physical address" of CCO1 known to DN7100
  - TS TSO2 L64 -CT TSO2 -RCH 8
  - CT TSO2 PSI -PHAD X'0800' -MXCH 16  
 ↳ hardware "physical address" of CCO2 known to DN7100
- (The above DN7100 generation commands represent the link towards "host" H)

# MTT

## Definition

The "Modify Telecom Terminal" command allows

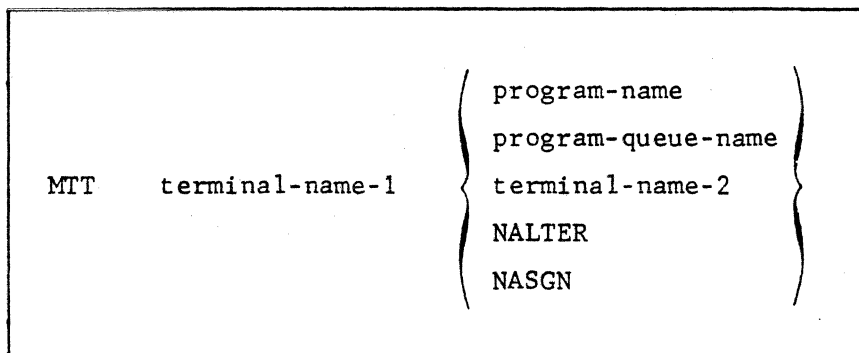
- . modification of a terminal assignment on the URP local network as originally defined by the ASSIGN parameter of the TERMNL command at network generation
- . defining an alternate terminal for the terminal in question

Rules : The MTT command is accepted only if the terminal(s) defined by <terminal-name-1> and <terminal-name-2> are in IDLE or HELD states.

The command with the NALTER option is accepted only if the alternate terminal, terminal-name-1, defined by a previous MTT command is in either IDLE or HELD.

The "MTT <terminal-name-1> <program-name>" command is allowed only if the corresponding VCAM subsystem, otherwise known as communications service, has been declared through the DCTAP command at network generation.

## Format of Command



## Description of Parameters

terminal-name

- ranges from 1 through 4 alphanumeric characters and uniquely defines the terminal in the URP local network.

MTT <terminal-name-1> <terminal-name-2>

- . defines terminal-2 as the alternate of terminal-1 until a subsequent "MTT <terminal-name-1> NALTER" is executed.

program-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies the VCAM subsystem, such as TDS and IOF, declared through the DCTAP command at network generation.

Example of Console Dialog  
Changing Access to Remote System  
over bi-PSI DN7100

DPS 7

```
S : DT FSC F LONG
      CC88 F SYSTEM : F
      CC88 F ACCESS : FNPSCC01 ENABLED
      CC88 F ACCESS : FNPSCC02 LOCKED

S : TT FNPSCC01
      CC20 FNPSCC01 TERMINATED

S : MTP FSC F LOCK=FNPSCC01 ENBL=FNPSCC02
      CC90 F ACCESS THRU FNPSCC01 LOCKED
      CC90 F ACCESS THRU FNPSCC02 ENABLED
```

DN7100

```
?? UP ND H -ST LOCK
      NODE=H TIME=:17:45:7:1983:10:7 ND-CTL
      ND:H ST=ENBL ← "enbl" is the preceding state of "node" H which
                    is now "lock" as specified in the command

?? MP ND H -MOD
      NODE=H TIME=:17:45:22:1983:10:7 ND-CTL
      ND:H OLD=TS:TSO1 NEW=TS:TSO2
                    ↳ the "back-up" transport-station2 now replaces
                    transport-station1 (old)

?? UP ND H -ST ENBL
      NODE=H TIME=:17:45:42:1983:10:7 ND-CTL
      ND:H ST=LOCK ← "lock" is the preceding state of "node" H which
                    is now "enbl" as specified in the command
```

DPS 7

```
S : ST FNPSCC02
      CC46 FNPSCC02 STARTED

S : DT RSC R LONG
      CC88 R SYSTEM : R
      CC88 R ACCESS : FNPSCC02 ENABLED
```

# RT

## Definition

The "Release Telecom" command releases the network object from its HELD state, enables "remote systems" to log on to the "local system", and provides tuning and maintenance facilities over the BTNS/HDLC-URP interface.

Rules : (1) The RT command specifying the network object :

- . The network objects can optionally be preceded by their "category" which is the name of their respective CNC command; the "category" RSUB is mandatory.
- . The command only releases the network object concerned which was either HELD by the HT command, see note a below, or CLOSED at network generation; all lower-level objects are therefore "released" if not HELD or CLOSED.

- Note :
- a. "userid" and "rdtn" are the 2 network objects which can be HELD by the HT command but which cannot be "released"
  - b. The command can also be used to resume activity to an "automatic" terminal disconnected by the BTNS terminal manager due to a line failure.

(2) The RT command enabling the DSALOG function :

The RT DSALOG command enables the DSA log function on the "local" system.

If an HT DSALOG command has been performed since the execution of the last network configuration, the DSA log function remains "disabled".

Irrespective of the communications session, if the DSA log function is then required, an RT DSALOG command must be issued.

The startup or termination of the communications session, has no effect on the state of the DSA log function.

Note : In the case of the secondary network objects, the termination then subsequent startup of BTNS sets these objects in their initial state as they were after the execution of CNC.

(3) The RT command for tuning and maintenance :

The file BTNS\_FILE\_TRACE is opened to record complementary information on the primary network connected over the URP.

Description of Parameters (continued)

program-name (continued)

MTT <terminal-name-1> <program-name>

- . dedicates the terminal exclusively to the VCAM subsystem until a subsequent "MTT <terminal-name-1> NASGN" command is executed.

program-queue-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies the program-queue used by MCS applications to receive messages.

MTT <terminal-name-1> <program-queue-name>

- . dedicates the terminal exclusively to the program-queue, i.e., to the MCS application, until a subsequent "MTT <terminal-name-1> NASGN" command is executed.

NALTER

- denotes "negate alternate" and returns the terminal to its original state after an "alternate" terminal has been defined previously in its place.

MTT <terminal-name-1> NALTER

- . restores terminal-1 to its original state, after another terminal, terminal-2, has been defined as the "alternate" terminal in its place by a previous "MTT <terminal-name-1> <terminal-name-2>" command.

NASGN

- denotes "negate assign" and returns a terminal to a "general-purpose" state after having been previously dedicated to either a VCAM subsystem or MCS application

- . either through the CNC option ASSIGN of the TERMNL command at network generation
- . or through the respective MTT command.

MTT <terminal-name> NASGN

- . overrides the ASSIGN network generation option, if declared
- . restores the terminal to its original state after one of the previously executed commands
  - MTT <terminal-name-1> <program-name>
  - MTT <terminal-name-1> <program-queue-name>

# RT

## continued

### Description of Parameters (continued)

program-queue-name (continued)

- "RT program-queue-name"
  - . enables the program-queue by accepting logon requests to the queue
  - . and, resets the HELD state of the queue.

station-name

- ranges from 1 through 8 alphanumeric characters.

"RT station-name" applied to the VIP line procedure of the URP local network

- . resumes polling of the station
- . allows terminals attached to the station to resume activity.

subnb

- 9 decimal-digits defining the TRANSPAC subscription number for accessing the "remote transport-station", of which the first left-justified digit must be 1.

"RT RSUB TRANSPAC.1nnnnnnnn" enables the access to the "rts" through the subscription specified. The virtual circuit is established to the "remote-system" over the network-route.

terminal-name

- ranges from 1 through 4 alphanumeric characters.

"RT terminal-name" applied to a terminal in the URP local network, resumes BTNS activity according to its function determined at network generation,

- . if the terminal is "general-purpose" or ASSIGNED, it is once again authorized to start a logon sequence to establish connection
- . if the terminal is AUTO ASSIGNED, it will automatically be connected to the active VCAM subsystem, otherwise known as communications service, or MCS application
- . if the terminal is AUTO and not ASSIGNED, it will be logged onto the terminal-manager.

DSALOG

- specifies the DPS 7 system's capability to receive incoming administrative sessions from the NADs of DSA systems on the \$LOGFILE mailbox.

"RT DSALOG" starts DSA logging and activates the NASF job to record events on the SYS.DSALOGi UFAS resident files and/or, for compatibility purposes, on either the JRNL1 or JRNL2 subfiles of the GCOS resident file SYS.FPJRNL.

The logfile may be edited using the GCOS utility DSALOG, see Network Administrative Supplement.

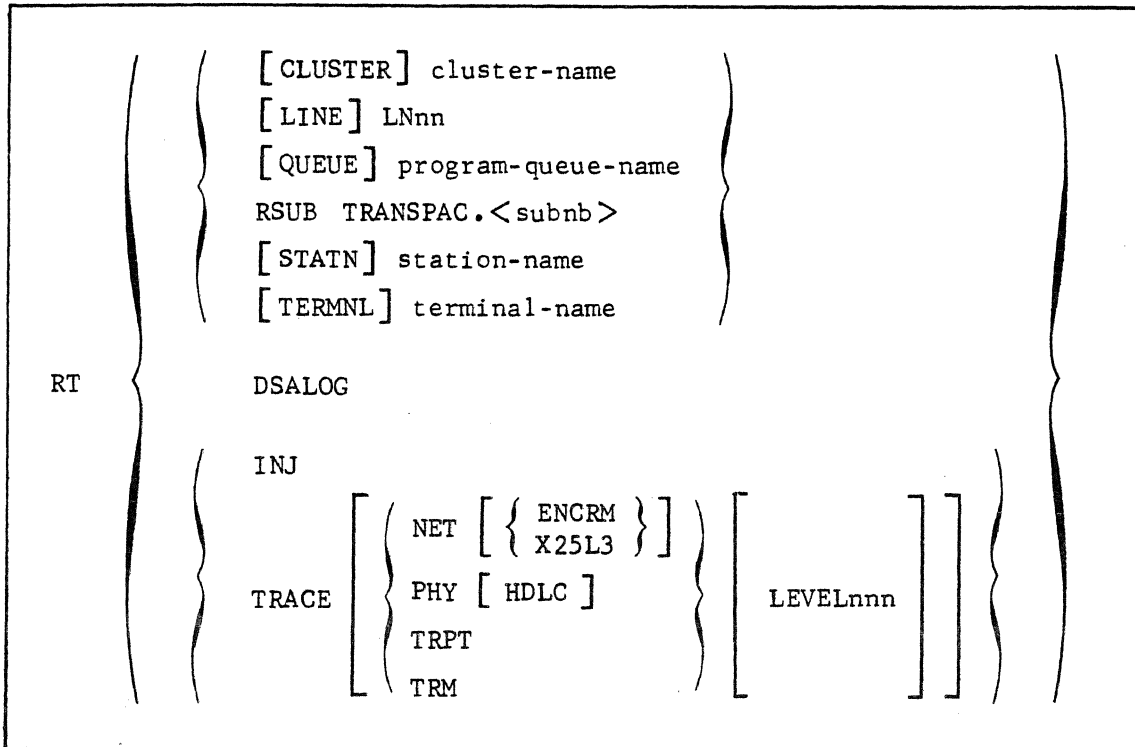
INJ

- specifies the "injector" facility which operates in "debug" mode to validate the link between 2 transport-stations.

"RT INJ" activates the "injector" facility.

For the use of the "injector" facility, see Appendix D.

Format of Command



Description of Parameters

cluster-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies a set of stations connected over a polled line of the URP local network.
- "RT cluster-name" resumes polling on all the stations attached to the same controller.

LNnn

- "line-name", where nn ranges from 01 through 99, uniquely identifies the communications line in the secondary or primary networks as declared in the SRST at the time of installation.
- "RT LNnn" resumes BTNS activity according to the following cases,
- . if the line is multipoint, polling is resumed
  - . if the line is point-to-point, data transmission can resume
  - . if the line is switched, dial-up is again accepted
  - . if the line is non-switched, available AUTO ASSIGNED terminals are re-connected to the communications service, otherwise known as VCAM subsystem, or to the MCS application.

program-queue-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies the "program-queue" used by MCS applications to receive messages.

# RT continued

## Examples

- 1) RT command executed on line LN12 followed by an RT command issued to the station V772 of line LN12.

```
S : DT LN12
    CC18 LN12  HELD  TI = 140  TO = 16  RA = 1  SP = *
    CC30      PL = V710  V772
    CC32      OM = 6    IM = 0    OE = 16  IE = 0

S : RT LN12
    CC03 RT COMPLETED

S : DT LN12
    CC18 LN12  TI = 140  TO = 16  RA = 1  SP = *
    CC30      PL = V710  V772
    CC32      OM = 6    IM = 0    OE = 16  IE = 0

S : DT V772
    CC26 V772  HELD  ADD = 3

S : RT V772
    CC03 RT COMPLETED

S : DT V772
    CC26 V772  ACTIVE  ADD = 3
```

- 2) RT command executed on program-queue TQCI

```
S : DT TQCI
    QC39 TQCI  HELD  1  MSG  96%  OF  FREE  SPACE

S : RT TQCI
    CC03 RT COMPLETED

S : DT TQCI
    QC39 TQCI  1  MSG  96%  OF  FREE  SPACE
```



Description of Parameters (continued)

TRACE

- a maintenance parameter concerning the BTNS\_FILE\_TRACE.

This facility is used at the request of the field engineering service, its primary purpose is to serve as a maintenance tool.

"RT TRACE" opens the BTNS\_FILE\_TRACE and starts the "trace" session.

The "trace" session, however, can be selectively started by specifying the "domain" and its associated "subdomain". Further selection within the "domain" and its "subdomain" can be made by the use of various "levels".

The "level", the maximum of which is the default 255, applies to

- . NET, for the "network" domain which has 2 subdomains
  - ENCRM, for "network control and resource management"
  - X25L3, for "X25 Level 3"
- . PHY, for the "physical link" which has 1 subdomain
  - HDLC, for "high-level data link control"
- . TRM, for the "terminal-manager" which has no subdomain
- . TRPT, for the "transport-station" which has no subdomain.

"RT TRACE domain [subdomain][level]" starts the "trace" for the "domain" and "subdomain" specified for that particular "level". The same command with a different "level" can be entered subsequently.

For further information, see Appendix E.

# ST

## Definition

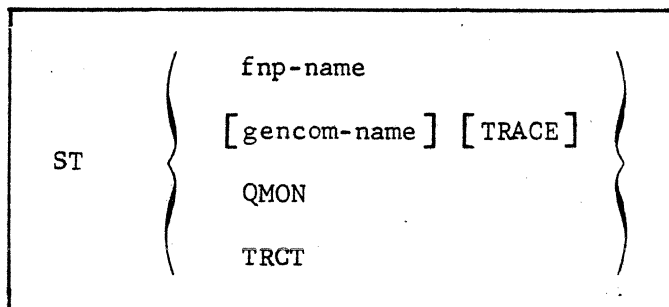
The "Start Telecom" command starts the communications session over

- . the URP local network (BTNS) and the BTNS/HDLC primary network (TNS)
- . and, the FNPS/DN7100 primary network.

Having launched the appropriate service job, the command is then used to start QMON for executing MCS applications.

The ST command also provides for maintenance facilities for the message management component, namely, BTNS, FNPS and VCAM.

## Format of Command



## Description of Parameters

### fnp-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies the FNPS service declared in the FNP command at network generation.

"ST fnp-name"

- . launches the FNPS service job  
Note : Up to 4 FNPS service jobs can be started and executing simultaneously.
- . enables dialog with the corresponding DN7100.

If the DN7100 has not been loaded, the following message will appear:  
CC14 UNABLE TO ACCESS fnp-name TIME-OUT RC=FNPS, TIMEOUT.

The network control operator must then perform the following,

- . enter "TT fnp-name" to terminate the FNPS service job
- . enter "MTF fsys-name [subfile-name]" to load the DN7100
- . enter "ST fnp-name" to restart the FNPS service job.

### gencom-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies a version of the network generation. "ST gencom-name" is the same as ST, and starts up the BTNS service.

"ST TRACE" is equivalent to "ST gencom-name TRACE", which in addition to the functions performed by "ST [gencom-name]", activates the "global" trace of BTNS and TNS on the BTNS\_FILE\_TRACE.

Examples (continued)

3) RT command to start the BTNS file trace.

```
S : RT TRACE NET
    CC85 BTNS FILE TRACE OPENED
    CC98 RT COMMAND COMPLETED

S : DT TRACE LONG
    CC86 BTNS FILE TRACE IN PROGRESS
    DOMAIN: NET      SUBDOMAIN: ENCRM   LEVEL: 255
    DOMAIN: NET      SUBDOMAIN: X25L3   LEVEL: 255
    CC98 DT COMMAND COMPLETED

S : RT TRACE NET LEVEL01
    CC98 RT COMMAND COMPLETED

S : DT TRACE LONG
    CC86 BTNS FILE TRACE IN PROGRESS
    DOMAIN: NET      SUBDOMAIN: ENCRM   LEVEL: 001
    DOMAIN: NET      SUBDOMAIN: X25L3   LEVEL: 001
    CC98 DT COMMAND COMPLETED

S : RT TRACE TRM LEVEL02
    CC98 RT COMMAND COMPLETED

S : DT TRACE LONG
    CC86 BTNS FILE TRACE IN PROGRESS
    DOMAIN: NET      SUBDOMAIN: ENCRM   LEVEL: 001
    DOMAIN: NET      SUBDOMAIN: X25L3   LEVEL: 001
    DOMAIN: TRM      SUBDOMAIN:         LEVEL: 002
    CC98 DT COMMAND COMPLETED

S : RT TRACE LEVEL004
    CC98 RT COMMAND COMPLETED

S : DT TRACE LONG
    CC86 BTNS FILE TRACE IN PROGRESS
    DOMAIN: PHY      SUBDOMAIN: HDLC    LEVEL: 004
    DOMAIN: NET      SUBDOMAIN: ENCRM   LEVEL: 004
    DOMAIN: NET      SUBDOMAIN: X25L3   LEVEL: 004
    DOMAIN: TRPT     SUBDOMAIN:         LEVEL: 004
    DOMAIN: TRM      SUBDOMAIN:         LEVEL: 004
    CC98 DT COMMAND COMPLETED
```

# TT

## Definition

The "Terminate Telecom" command terminates the communications session over

- . the URP local network (BTNS) and the BTNS/HDLC primary network (TNS)
- . and, the FNPS/DN7100 primary network.

The STRONG option is used to effect a fast shutdown. If the STRONG option is not specified, the only action is to notify applications of the "shutdown" request while rejecting new connection requests.

## Format of Command

TT	{	fnp-name [ STRONG ]	}
		[ gencom-name [ STRONG ] ]	
		QMON	
		TRCT	

## Description of Parameters

### fnp-name

- ranges from 1 through 8 alphanumeric characters and uniquely identifies the FNPS service declared in the FNP command at network generation.

If any MCS applications are executing over the specific FNPS/DN7100 primary network, QMON must first be terminated before "TT fnp-name [ STRONG ]" is issued.

### gencom-name

- ranges from 1 through 4 alphanumeric characters and uniquely identifies a version of the network generation. "TT gencom-name" is the same as TT, and terminates the BTNS service.

If any MCS applications are executing over the networks operating on BTNS, QMON must first be terminated before "TT [ gencom-name [ STRONG ] ]" is issued.

### QMON

- QMON operates with MAM to provide the MCS interface for MCS applications. "TT QMON" is issued only after all MCS applications have shut down.

### STRONG

- causes a mandatory shutdown whereby all active connections are disconnected without any notification.

Description of Parameters (continued)

QMON

- QMON operates with MAM to provide the MCS interface for MCS applications.  
"ST QMON" is used with either "ST [gencom-name]" or "ST fnp-name" in order to execute MCS applications.

TRACE

- a maintenance parameter concerning the BTNS\_FILE\_TRACE, see "gencom-name".  
This facility is used at the request of the field engineering service, its primary purpose is to serve as a maintenance tool.  
Once BTNS has started, "ST [gencom-name] TRACE" must not be issued, instead, "RT TRACE" must be used. "RT TRACE" activates either the "global" trace or "selective" traces on the "domain", "subdomain" and "level".  
For further information, see Appendix E.

TRCT

- a maintenance parameter concerning the VCAM\_FILE\_TRACE.  
This facility is used at the request of the field engineering service, its primary purpose is to serve as a maintenance tool.  
"ST TRCT" opens the VCAM\_FILE\_TRACE and starts the "trace" session.  
To terminate the "trace" session and to print out the contents of the file see the "TT TRCT" command.

# TT

## continued

### Examples

- 1) Sequence of messages displayed after a TT command has been issued to the URP (local) network named DCC1 which declares only one line LN12.

```
S : TT STRONG .  
    CC03 TT COMPLETED  
    CC11 LN12 HELD BY SYSTEM, REASON : SHUTDOWN  
    CC20 DCC1 TERMINATED
```

When all lines are deactivated, the network control operator is notified that shutdown has been completed.

- 2) Sequence of messages displayed after a TT command has been issued to the DSA network named DN7100-1.

```
S : TT DN7100-1 STRONG  
    CC03 TT COMPLETED  
    CC20 DN7100-1 TERMINATED
```

Description of Parameters (continued)

TRCT

- a maintenance parameter concerning the VCAM\_FILE\_TRACE.

"TT TRCT" terminates the "trace" session and closes the VCAM\_FILE\_TRACE which can then be printed out using FILMAINT of the following format :

```
FILMAINT INFILE=VCAM_FILE_TRACE ,  
          COMMAND=' DUMP REC ADDR=* FORMAT=BOTH ; ' ;
```

- hh.mm LNnn ACTIVATED  
cause : a switched line has been activated following a successful dial-up connection.
- hh.mm LNnn DEACTIVATED  
cause : a switched line has been deactivated
  - . either at the request of the terminal operator to be disconnected
  - . or because a time-out has occurred.
- hh.mm terminal-name DISCONNECTED BY SYSTEM : reason  
cause : the BTNS terminal manager has disconnected the terminal as indicated by the "reason" :  
If the "reason" is LOGON FAILED,
  - . an automatic terminal cannot be reconnected
  - . logon should be retried for all other types of terminals and for any other "reason".
- hh.mm { terminal-name } message-text  
                  MAIN  
cause : a switching-mode message under BTNS issued by
  - . either the terminal named in the message
  - . or the system console, if MAIN.
- hh.mm { fnp-name } STARTED  
          gencom-name  
cause : successful startup of either FNPS or BTNS, respectively.
- hh.mm { fnp-name } TERMINATED  
          gencom-name  
cause : normal shutdown of either FNPS or BTNS, respectively.
- TT WAITS HDLC TIMER  
cause : normal "shutdown" has been requested at the time that an RT is being executed on an HDLC line: the "timer" is set running in the meanwhile  
action: if after a lapse of up to 3 minutes, the TT command entered as no effect, enter the "TT STRONG" command.



## SECTION III

### MESSAGES

Messages issued to the network control terminal can be

- . either network control messages which appear under the following conditions,
  - as a result of commands entered by the operator
  - as requests to the operator for actions required
- . or messages which are automatically redirected to the network control terminal, but which are intended by BTNS secondary network controller for terminals which have no output capability or which are not interactive.

References for the following types of messages are,

- . for terminal messages redirected to the network control terminal, see Terminal Operations Manual
- . for messages generated by DN7100 software and output to the main console, see DN7100 System Operation Manual.

Messages are classified according to their type which determines the degree of operator intervention, namely,

- . information, which is an acknowledgement that the command has been executed
- . normal operation, which is a request to the operator for a specific action required to be done to continue operating the communications session
- . error, which can be one of either,
  - an exception condition for which operator intervention is necessary and which is considered "recoverable"
  - a system error, affecting either the hardware or software, for which a call to the field engineering service is necessary and which is considered "unrecoverable".

The categories of messages appearing in the order documented, are

- . time-prefixed messages, which are "information" and which require no operator action
- . key-prefixed messages, the keys being CCn and QCnn, where nn represents a 2-digit decimal number.

Where the "return-code" is not treated in the text of the message, refer to the Error Messages and Return Codes Pocket Guide.

CC03 command-name text

- RETRY LATER

cause : a previous command which has not completed is still active on the component referenced by the current command.

action: . wait for the previous command to terminate  
. reissue the command.

**CC03** command-name text

type : information

syntax : . "command-name" defines the command to which the reply given in "text" is related.

The only command specifically named is MTF, due to the modification in the parameters.

. "text" gives information about the execution of the command.

• COMPLETED

cause : the command has been correctly executed.

action: none

• INVALID NAME string

cause : "string" defines a component not known to the communications system.

action: . check the "name" using the DT command

. reissue the command.

• INVALID STATUS string

cause : "string" defines the state of the component to which the command was issued, that prevented the execution of the command.

For example, an MTT command issued to a terminal that was neither in HELD or IDLE.

action: . set the component in the appropriate state

. reissue the command.

• INVALID TYPE string

cause : "string" references the component which is known to the communications system but for which the command issued has no meaning.

For example, an HT command issued to a DN7100.

action: . check the "name" in the command references the right component

. reissue the command, if appropriate for the component.

• INVALID VALUE string

cause : "string" gives the value of the parameter that has exceeded the range allowed.

action: . check the value to be entered in the command specification

. reissue the command.

• MTF NOT ALLOWED (USE FSYS NAME)

cause : the command is syntactically correct but does not apply to the DN7100.

action: reissue the command "MTF fsys-name [option]".

Also see the following "NOT ALLOWED".

• NOT ALLOWED

cause : the command is syntactically valid but is in contradiction

. either with the GCOS catalog definition at network generation, for example, "MTF fsys-name [subfile-name]" issued from a host declared with NLOAD in its FNP command

. or with the authorized order of command entry, for example, "MTF <fnp-name><parameter>" is authorized only after the FNPS workstation has been launched with "ST fnp-name".

action: . check the options declared for the component in question

. cancel the command or issue the correct sequence of commands.

CC08

terminal-name<sub>1</sub> {  
CONNECTED [ { ASG TO } { program-name } ]  
          [ { WITH } { program-queue-name } ]  
DISABLED  
DISCONNECTS  
HELD  
IDLE  
LOGGED | LOGGING  
WAITS TIMER  
}

USERID = { \*\*\*\*\* } [ ALT { OF } terminal-name<sub>2</sub> ] IN = { Y } OU = { Y }  
          { userid } [ { ON } ] { N } { N }

type : information

syntax : . "terminal-name<sub>1</sub>" identifies the terminal to which the information pertains

- . the operational state of the terminal is one of the following
  - CONNECTED denotes that the terminal is currently logged on, as follows,
    - . ASG TO meaning that the terminal is dedicated
      - as a result of either ASSIGN being specified in the TERMNL command at network generation, or an MTT network control command being issued to the terminal
      - to either a VCAM subsystem as denoted by "program-name" or to an MCS application as denoted by "program-queue-name"
    - . WITH meaning that the terminal is not dedicated and can therefore log on to any VCAM subsystem or MCS application.
  - DISABLED denotes that no virtual circuit has been established to the "rdtn", the remote terminal
  - DISCONNECTS denotes that the terminal is in the transient "disconnection" phase
  - HELD denotes that the terminal is logically "closed" to the network
    - . either as the result of CLOSE being specified for the terminal or for any of its higher objects
    - . or as a consequence of the HT network control command being issued to the terminal or to one of its higher objects
  - IDLE denotes that the terminal is "enabled" and eligible for logon to an application
  - LOGGED denotes that the terminal is connected to the BTNS terminal manager and is waiting for a connection request from an application
  - LOGGING denotes that the terminal is in the transient "logging" phase between IDLE and LOGGED: if "program-name" or "program-queue-name" appears, BTNS is waiting for a VCAM subsystem or QMON connection "accept"
  - WAITS TIMER denotes that a VIP printer is waiting for the timer associated with its print mechanism

**CC07** { program-name } MB { DYN } { IDLE } CNCT : n1 / n2 WAITING m1 / m2  
{ program-queue-name } { STAT } { ON }

type : information

syntax : . "program-name" is the version of a VCAM subsystem.

- . "program-queue-name" is the name of the program-queue used by MCS application(s).
- . MB denotes mailbox
- . DYN denotes a "dynamic" mailbox, that is, a mailbox used by a VCAM subsystem like RBF and not declared by a DCTAP command at network generation.
- . STAT denotes a "static" mailbox, that is, one that has been declared by a DCTAP command at network generation.
- . IDLE denotes that the VCAM subsystem either has deactivated its mailbox or is not present in the system.
- . ON denotes that the mailbox is active.
- . CNCT denotes the number of connections as follows,
  - n1 = the number of users currently logged on to the mailbox
  - n2 = the maximum number of users allowed to log on to the mailbox.
- . WAITING denotes the number of users in the waiting state as follows,
  - m1 = the number of users waiting to log on to the mailbox
  - m2 = the maximum number of users allowed to be enqueued for logon to the mailbox

cause : response to either a "DT program-name" or a "DT program-queue-name" command, respectively.

action : none

CC11 line-name { ACTIVATED  
DEACTIVATED [: reason] }

type : normal operation

syntax : as in text.

"reason" specifies the deactivation of the switched line, for which the line returns to IDLE

• ACTIVATED

cause : a switched line has been activated subsequent to a successful dial-up.

action: none

• DEACTIVATED

cause : a switched line has been disconnected by the terminal operator.

action: none

• DEACTIVATED : LINK DISCONNECTED

cause : a switched line has been disconnected due to

- timeout occurring when establishing the link
- the modem on the terminal end or the terminal itself not being powered up.

action: . check the TOLEN parameter value in the LINE command is adequate for establishing connection

- . if not, use the MTL network control command to modify the value

• DEACTIVATED : TIME-OUT

cause : a switched line, not specified with the NDISCNT option in the LINE command at network generation, has been disconnected since no data transfer has taken place for the period of time specified by the TLEN parameter value of the same command for the line.

action: to resume transmission, enter the "RT LNnn" command to activate the line.

CC08 (continued)

syntax : . USERID provides the user identification keyed in by the terminal operator during logon with the following functions indicated

- ALT OF terminal-name<sub>2</sub> means that terminal<sub>1</sub> is currently the alternate of terminal<sub>2</sub> which was previously defined by an MTT network control command issued to the terminal
- ALT ON terminal-name<sub>2</sub> means that terminal<sub>1</sub> has an alternate which is terminal<sub>2</sub> which was previously defined by an MTT network control command issued to the terminal
- IN=Y specifies that the terminal has input capability
- OU=Y specified that the terminal has output capability

cause : response to a "DT terminal-name" command with or without LONG specified

action : none

CC11 line-name { CANNOT BE OPENED } : reason  
                  { HELD BY SYSTEM }

- CKIO FAILED (SC ISSUED LTLT OR LPL)  
  cause : system software or network configuration error  
  action : . check the CNC description against the SRST values  
          . correct the CNC generation if there are any errors  
          . relaunch the communications session  
          . if the error persists, dump the URP memory using the "SJ LURC"  
            command, and call the field engineering service.
- CKIO FAILED ( { SDS } )  
                  { SUSPEND } )  
  cause : most probably a software error  
  action : . issue the "RT LNnn" command  
          . if the error persists, call the field engineering service.
- { DISABLE } CP FAILED  
  { ENABLE }  
  cause : most probably a wrong value specified for TOLEN in the LINE com-  
          mand at network generation  
  action : check the TOLEN value is adequate for the modem  
          a) if the value is inadequate, increase its value using the MTL  
            command  
          b) if the value is adequate and the error persists, call the  
            field engineering service.
- { DISABLE } RING CP FAILED  
  { ENABLE }  
  cause : most probably an intermittent hardware fault  
  action : . check the state of the physical link and modems  
          . issue the "RT LNnn" command  
          . if the fault persists, call the field engineering service.
- HARDWARE FAILURE (PSB1)  
  cause : hardware fault on the peripheral subsystem  
  action : . check the state of the subsystem  
          . issue the "RT LNnn" command  
          . if the fault persists, call the field engineering service.
- LINE TURNED TO OFFSTATE  
  cause : hardware fault over the line  
  action : . check the state of the physical link and modems  
          . issue the "RT LNnn" command.
- LOAD { PARAMETER LIST } CP FAILED  
          { STATION POLLING LIST }  
          { SUBBLOCK DESCRIPTOR }  
          { TCT }  
          { TLT }  
  cause : system software or network configuration error  
  action : . check the CNC description against the SRST values  
          . correct the CNC generation if there are any errors  
          . relaunch the communications session  
          . if the error persists, dump the URP memory using the "SJ LURC"  
            command, and call the field engineering service.



CC11 line -name { CANNOT BE OPENED }  
                  { HELD BY SYSTEM } : reason

type : normal operation or error (see individual case)

syntax : "reason" specifies the cause for

- . CANNOT BE OPENED : the rejection of an "open" line either at startup or on receipt of an RT command
- . HELD BY SYSTEM : the closure of the line by BTNS

• ACTIVATE { HDLC LINK }  
              { STATION } ERROR

cause : hardware fault over the HDLC link

action : 1) . check the state of the physical link and modem

          . issue the "RT line-name" command

2) check the LSUB parameters

- a) if the LSUB parameters are not consistent with the functional capability of the line, correct the CNC generation
- b) if the LSUB parameters are correct, call the field engineering service.

• ACTIVATE LINK ERROR

cause : hardware fault over the BSC link

action : . check the state of the physical link and modem

          . issue the "RT LNnn" command

• ADDRESS ERROR

cause : the value in the ADD parameter of the TERMNL command defines an incorrect address and therefore cannot be used by the system to access the terminal

action : . correct the CNC generation

          . relaunch the communications session.

• APPENDAGE NOT CALLED BY PIO

cause : software error

action : call the field engineering service.

• BAD IOC STATUS

cause : hardware fault detected by the IOC

action : . reissue the "RT LNnn" command

          . if the fault persists, call the field engineering service.

• CKIO FAILED (ENABLED)

cause : most probably an intermittent hardware fault

action : 1) . check the state of the physical link and modem

          . issue the "RT LNnn" command

2) check the TOLEN value in the LINE command

a) if the TOLEN value is not sufficient, increase the value to correct the CNC generation

b) if the TOLEN value is sufficient, call the field engineering service.

**CC11** terminal-name DISCONNECTED : TRANSMIT ERROR

type : normal operation  
syntax : as in text  
cause : an anomaly has occurred when transmitting data to the terminal on a multipoint line due to  
- either a hardware malfunction  
- or a message containing unacceptable control codes or special characters leading to a page-overflow condition on such terminal-subtypes as cassette, disk, diskette or printer.  
action : . enter the "RT terminal-name" command to resume transmission  
• if the anomaly persists, start a "trace" on the line to which the terminal is connected using the "MTL LiNnn TRACE" command, and call the field engineering service.

CC11 line-name { CANNOT BE OPENED } : reason  
                  { HELD BY SYSTEM }

- NO STATION TO POLL  
  cause : the line is HELD since the polling list specifies no station  
  action : . issue the appropriate "RT station-name" command  
          . and, if applicable, modify the polling list for the line with  
          an MTP command.
- PIO CHANGE QUEUE STATE FAILED  
  cause : software error  
  action : call the field engineering service.
- RECEIVE (READ) ERROR  
  cause : hardware malfunction when receiving data from the terminal  
  action : . check the state of the terminal and its controller  
          . if no obvious operator-rectifiable defects are detected and if  
          the fault persists, call the field engineering service.
- SENSE { DETAILED STATUS FAILED }  
          { SUBBLOCK }  
          { TLT }  
  cause : system software or network configuration error  
  action : . check the CNC description against the SRST values  
          . correct the CNC generation if there are any errors  
          . relaunch the communications session  
          . if the error persists, dump the URP memory using the "SJ LURC"  
          command, and call the field engineering service.
- SHUTDOWN  
  cause : the line is HELD subsequent to a previous TT command  
  action : none
- UNRECOVERABLE ERROR (EVENT TYPE)  
  cause : a hardware fault over the line  
  action : . check the state of the physical link and modems  
          . issue the "RT LNnn" command  
          . if the fault persists, call the field engineering service.
- UNRECOVERED CHANNEL EXCEPTION  
  cause : a hardware malfunction over the PSI channel, which may be tran-  
          sient  
  action : . issue the "RT LNnn" command  
          . if the fault persists, call the field engineering service.

CC14

UNABLE TO ACCESS { CLOSE  
CLOSES  
GET  
OPEN  
OPENS  
PUT  
READ  
WRITE } subfile-name / file-name RC = return-code

type : information

syntax : . the option defines the system error detected by ADM or NASF attempting to access the named file needed for such service functions as, load, dump, sysgen or journalization.

. "subfile-name / file-name" defines a standard GCOS64 file description.

. "return-code" is of the format RC = xxxxxxxx → yyyyyyyy, zzzzzzzz where,

- xxxxxxxx : hexadecimal contents of the RC register
- yyyyyyyy : name of the SIU (system integration unit) procedure
- zzzzzzzz : return code

cause : the referenced file is not recognized by the system either as a result of not being present on a resident disk or non-resident disk, in the case of sysgen, or as the result of not conforming to the rules of naming system files available for NASF access.

action : . check the name of the referenced file against values given in Appendix B

- . if the name is incorrect, provide a suitable name for the required service function
- . correct the ASSIGN JCL statement, if necessary, to indicate the new name and rerun the job step
- . if the name is correct, check that it is present in the system and if not, inform the field engineering service.

CC13 { line-name } { AVAILABLE }  
{ station-name } { UNAVAILABLE }

type : information

syntax : as in text

• AVAILABLE

syntax: applicable to "line-name"

cause : this message can appear during BTNS initialization when the ST console command is issued or as a result of an RT command issued to the line, since the line is

- either in HELD from a GCOS device-management point of view resulting from an HD console command
- or being currently used by another service job other than BTNS, like a test/maintenance program, for example.

action: . enter the DD console command to display the status of the line from a device-management point of view

- if the status is in HELD, issue the RD console command to enable the line to become available from the communications point of view and continue normal operations
- if the test/maintenance program is still actively using the line, wait for the program to terminate before issuing any communications commands to the line.

• AVAILABLE

syntax: applicable to "station-name"

cause : a station on a polled line has been powered on.

All stations on a multipoint line are considered as unavailable when the line is initialized.

This message will appear

- either during BTNS startup
- or as the result of an RT command issued to the line.

action: none

• UNAVAILABLE

syntax: applicable to "station-name"

cause : a station on a polled line is unavailable

- either because it is not powered on
- or because the output-timeout value specified for the TOLEN parameter in the LINE command at network generation is too small for the quality of the line, modems or the station itself, in which case, the station may repeatedly switch from AVAILABLE to UNAVAILABLE.

action: . check that the station is powered on

- if not powered on, power on the station, issue the "RT station-name" command and continue normal operations
- if powered on, increase the value for output-timeout using the MTL network control command, issue the RT command and continue normal operations.

CC14 UNABLE TO ACCESS fnp-name system-action RC = FNPS , return-code

- ATRNAL RC = FNPS , SGNV  
cause : a system error has occurred since FNPS cannot create the necessary working segments  
action: call the field engineering service.
  - $\left\{ \begin{array}{l} \text{AUNCOM} \\ \text{AUNEV} \\ \text{AUNRQ} \end{array} \right\} \text{RC} = \text{FNPS} , \left\{ \begin{array}{l} \text{CDUNKN} \\ \text{REQUNKN} \end{array} \right\}$   
cause : a system error has occurred since an inconsistency has developed in the DPS 7/DN7100 dialog  
action: call the field engineering service.
  - IEATTN/FAILED RC = FNPS , NAVAIL  
cause : the hardware configuration of the DPS 7 is not consistent with the hardware actually available on site  
action: . check the SRST against the actual site configuration  
    . (a) if the SRST is in error, correct it using CONFIG  
    . (b) if the SRST is correct, call the field engineering service.
  - I-O ERROR STATUS =  $c_0c_1$  RC = FNPS , IOERR  
cause : an erroneous I/O operation has occurred over the PSI coupler, where  $c_0c_1$ , the PIO completion code, indicates the result of the I/O operation  
action: . check that the "watchdog-timer" value specified for TIMER in the FNP command is consistent with that specified for T3 in the TS command at DN7100 system generation, and that both values are adequate  
    . (a) if the values are not consistent or if they are correct but inadequate, correct the appropriate command(s) and rerun either or both network utilities  
    . (b) if the values are consistent and adequate, call the field engineering service to check the physical state of the link between the DPS 7 and the DN7100.  
    . (c) the following specific values of  $c_0c_1$  are significant :
    - $c_0c_1 = 9010$  : TIMER=0, T3 # 0
    - $c_0c_1 = 9020$  : no match in sharing the LDN in the FNP and TS commands between "native" and "mode".
    - $c_0c_1 = 92FF$  : "initialize" performed on DN7100 while FNPS is running.
- Note : If TIMER=0 and T3=0, no survey is performed.
- SEGSIZE/  $\left\{ \begin{array}{l} \text{PRT} \\ \text{ZME} \end{array} \right\} \text{RC} = \text{FNPS} , \text{EXTERR}$   
cause : a system error has occurred since FNPS cannot extend the appropriate internal working segment  
action: call the field engineering service.

**CC14** UNABLE TO ACCESS fnp-name system-action RC = FNPS , return-code

type : normal operation / information / error (see individual case)  
syntax : . "fnp-name" identifies the FNPS workstation declared in the FNP command at network generation  
          . "system-action" identifies how the anomaly as indicated by the "return-code" occurred.

Note : The following list gives the "system-action" in alphabetical order accompanied by its associated "return-code".

- $\left. \begin{array}{l} \text{ACINDF} \\ \text{ACINEX} \\ \text{ACONDF} \\ \text{ACONEX} \end{array} \right\} \text{RC} = \text{FNPS} , \text{CPERR}$

cause : a PIO function has failed during the execution of a channel program by FNPS

- action:
- check the CNC description against the SRST values to determine that the hardware and its software options are consistent
  - check that the channel definitions in the FNP command are consistent with those in the CT command at DN7100 system generation
  - (a) if the definitions are not consistent, correct the appropriate parameter(s) in the network generation command(s) and rerun either or both network utilities, as applicable
  - (b) if the definitions are consistent, call the field engineering service.

- ACTWKS/ABN RC = FNPS , BUSY

cause : a system error has occurred since FNPS cannot activate the VCAM functions

action: call the field engineering service.

- $\left. \begin{array}{l} \text{ADINDF} \\ \text{ADINEX} \\ \text{ADONDF} \\ \text{ADONEX} \end{array} \right\} \text{RC} = \text{FNPS} , \text{CPERR}$

cause : a PIO function has failed during the execution of a channel program by FNPS

- action:
- check the CNC description against the SRST values to determine that the hardware and its software options are consistent
  - check that the channel definitions in the FNP command are consistent with those in the CT command at DN7100 system generation
  - (a) if the definitions are not consistent, correct the appropriate parameter(s) in the network generation command(s) and rerun either or both network utilities, as applicable
  - (b) if the definitions are consistent, call the field engineering service.

- AIBNIN RC = FNPS , INITERR

cause : a system error has occurred since FNPS cannot initialize its buffers due to lack of system resources

action: call the field engineering service.

CC14 UNABLE TO ACCESS system-module system-action RC = { CCTL }  
{ FNPS }, return-code

Note : In this message format, the entry "RC=FNPS" refers to the system procedure managing communications and not to the system module FNPS.

type : information or error (see individual case)  
syntax : . "system-module" identifies the appropriate network or message management component or communications service  
. "system-action" identifies how the anomaly as indicated by the "return-code" occurred.

Note : The following list gives the "system-module" in alphabetical order accompanied by its associated "system-action" and "return-code".

- { ADM }  
  { BTNS } job-step / ABNORMAL RC=CCTL , JNBERR  
  { FNPS }  
  { NASF }
- syntax: "job-step" identifies the job being started  
  cause : the number of class S jobs, to which "job-step" belongs, is insufficient and therefore the "job-step" cannot execute normally  
  action: increase the number of class S jobs using CONFIG.
- NASF ACPMG/REJECT RC=FNPS , ARGERR  
  cause : attempts to connect to the NASF mailbox have been rejected by VCAM, thereby causing an abort  
  action: call the field engineering service.
- NASF INQUIR/WPARAM RC=FNPS , ARGERR  
  cause : an erroneous negotiation with VCAM has occurred during an "open-message-group" session for NASF  
  action: call the field engineering service.
- QMON job-step / ABNORMAL RC=CCTL , JNBERR  
  syntax: "job-step" identifies the job being started  
  cause : the number of class S jobs, to which "job-step" belongs, is insufficient and therefore the "job-step" cannot execute normally  
  action: increase the number of class S jobs using CONFIG.



CC14 UNABLE TO ACCESS fnp-name system-action RC=FNPS , return-code

- SGCR/  $\left\{ \begin{array}{l} \text{PRT} \\ \text{ZME} \end{array} \right\}$  RC=FNPS , SGNV  
cause : a system error has occurred since FNPS cannot create the necessary internal working segments  
action: call the field engineering service.
  
- SRST RC=FNPS , SRCMFAIL  
cause : the hardware configuration of the DPS 7 is not consistent with the hardware actually available on site  
action: . check the SRST against the actual site configuration  
    . (a) if the SRST is in error, correct it using CONFIG  
    . (b) if the SRST is correct, call the field engineering service.
  
- SSMGET/FAILED RC=FNPS , ILLSEM  
cause : no more free links to semaphores are available  
action: extend the semaphore segment.
  
- TIME-OUT RC=FNPS , TIMEOUT  
cause : the "watchdog-timer" mechanism has been interrupted between the DPS 7 and the DN7100  
action (1) : If at the beginning of the FNPS session, that is, the message "CC20 fnp-name STARTED" has not appeared :
  - issue the "TT fnp-name" command
  - issue the "MTF fsys-name [subfile]" command
  - issue the "ST fnp-name" command to resume the session
  - if the anomaly persists, and the CC20 message still does not appear, follow action (2)(2) : If during the FNPS session :
  - check that the "watchdog-timer" value specified for TIMER in the FNP command is consistent with that specified for T3 in the TS command at DN7100 system generation, and that both values are adequate
  - (a) if the values are not consistent or if they are correct but inadequate, correct the appropriate command(s) and rerun either or both network utilities
  - (b) if the values are consistent and adequate, call the field engineering service to check the physical state of the link between the DPS 7 and the DN7100.
  
- UFCPLC/FAILED RC=FNPS , NAVAIL  
cause : the hardware configuration of the DPS 7 is not consistent with the hardware actually on site (coupler is probably unconnected)  
action: . check the SRST against the actual site configuration  
    . (a) if the SRST is in error, correct it using CONFIG  
    . (b) if the SRST is correct, call the field engineering service.

**CC16** cluster-name/ [ HELD ]

type : information

syntax : . where only "cluster-name" appears, the cluster is active, i.e., all its stations which are not in HELD are included in the polling list for the line.

- . HELD, meaning that the cluster is in HELD, i.e., all its stations are not in the polling list of the corresponding line,
  - either due to the CLOSE option having been specified in the corresponding CLUSTER command at network generation
  - or due to an HT command issued to the referenced cluster.

cause : response to a DT command issued to a cluster giving a list of stations attached to the cluster.

action : none

**CC16** component-name [ component-name ... ]

type : information

syntax : as in text

cause : response to a DT command issued to a category in order to list all the declared components associated with the category.

action : none

CC15

```

terminal-name / { DISCONNECTS
                  HELD
                  IDLE
                  LOGGED
                  LOGGING
                  WAITS TIMER
                  userid
                }

```

type : information (for terminals connected to BTNS)

syntax : . DISCONNECTS, transient state while the terminal disconnects.

- . HELD, due to one of the following,
  - an HT command issued to the referenced terminal
  - the CLOSE option specified in the corresponding TERMNL command at network generation
- . IDLE, meaning that the referenced terminal is not connected but is available for logon, provided that the higher level components, such as line, cluster and station, are available.
- . LOGGED, meaning that logon is automatic since the referenced terminal has been declared with the AUTO option in the corresponding TERMNL command at network generation. The terminal is available to be requested by a VCAM subsystem.
- . LOGGING, meaning that the referenced terminal is in the logon phase.
- . WAITS TIMER, transient state on VIP-type printers lasting up to 3 minutes in some cases.
- . userid, meaning that the referenced terminal is currently in session and the operator using it is known to GCOS64 under such a name.

cause : response to a DT STRONG command issued

- either to a point-to-point line, in which case only 1 TTY terminal entry will appear
- or to a polled line, in which more than one VIP terminal entry will appear and for which several messages will compose the complete description.

action : none

CC15 FNPS userid

type : information

syntax : the userid specified is connected through a DN7100.

cause : response to a "DT program-name STRONG" command issued to a communications service (VCAM subsystem)

action : none

**CC18**

line-name  $\left\{ \begin{array}{l} \text{ACTIVE} \\ \text{HELD} \\ \text{IDLE} \end{array} \right\} \left[ \text{TRACE} \right] \text{TI} = \text{n1} \quad \text{TO} = \text{n2} \quad \text{RA} = \text{n3} \quad \text{SP} = \left\{ \begin{array}{l} \text{x} \\ * \end{array} \right\}$

type : information

syntax : . ACTIVE, meaning that normal data exchanges can take place over the line

- . HELD, due to one of the following,
  - an HT command issued to the referenced line
  - the CLOSE option specified in the corresponding LINE command at network generation
  - a hardware malfunction
- . IDLE, applicable to a switched line which is not active since
  - either no dial-up has been made over the line
  - or the line was disconnected when the previous session terminated.
- . TRACE, appearing as the result of an MTL network control command being issued, thereby requesting all events and data exchanges concerning the line to be logged by BTNS in the SYSOUT file.
- . TI represents "input-timeout" and indicates the maximum time to connect or disconnect a modem
- . TO represents "output-timeout" and indicates the maximum time
  - either for a switched line to remain inactive before being disconnected by BTNS
  - or for a station over a polled line to answer before it is passed over for the next station in the polling list
- . RA denotes the read-to-write ratio over the referenced line
- . SP represents the "speed" of an asynchronous line as a single alphabetic character standing for a value expressed in bits per second; \* means that the line is synchronous and therefore the "speed" parameter is statically defined in the SRST.

cause : response to a "DT LNnn" command.

action : none

## CC17

station-name/ [ { BUSY }  
                  { HELD }  
                  { OFF } ]

type : information

syntax : . where only "station-name" appears, the station is active, i.e., the station is ready to send and receive messages.

- . BUSY, meaning that the station is undergoing
  - either an off-line operation on a terminal-subtype, such as cassette, disk, diskette or printer
  - or, if the station pertains to the VIP line procedure, a page-overflow condition, requiring operator intervention.
- . HELD, due to one of the following,
  - an HT command issued to the referenced station
  - the CLOSE option specified in the corresponding STATN command at network generation
  - a hardware malfunction
- . OFF, meaning that the station is powered off; when the station is powered on, it will be included in the polling list of the corresponding line, and the network control operator will be informed with the message : CC13 station-name AVAILABLE.

cause : response to a DT command giving the general display of the network.

action : none

**CC19** FSYS [TEM] NAME IS fsys-name

type : information

syntax : "fsys-name" is the name of the DN7100 functioning as a front-end processor declared in the FSYS command at network generation

cause : response to a "DT fnp-name" command and appears after the message CC25

action : none

CC19

line-name { ACTIVE }  
          { HELD }  
          { IDLE }

type : information

syntax : . ACTIVE, meaning that normal data exchanges can take place over the line.

- . HELD, due to one of the following,
  - an HT command issued to the referenced line
  - the CLOSE option specified in the corresponding LINE command at network generation
  - a hardware malfunction.
- . IDLE, applicable to a switched line which is not active since
  - either no dial-up has been made over the line
  - or the line was disconnected when the previous session terminated.

cause : response to a DT command giving the general display of the network.

action : none

## CC21

rdte-name { ACTIVE }  
          { IDLE } NUMBER : tpcadd TYPE=PAD

RDTE applies exclusively to TRANSPAC.  
TRANSPAC refers specifically to the public network in France.

type : information

syntax : . "rdte-name" identifies the "remote data terminal equipment" connected to the Level 64 through the TRANSPAC/URP interface as defined by the RDTE command at network generation.

- . ACTIVE, meaning that the virtual circuit is currently established between the RDTE and the Level 64, over which normal data exchanges can take place.
- . IDLE, meaning that the RDTE is not currently connected but is available for dial-up to the TRANSPAC subscription number defined by the following parameter "tpcadd".
- . NUMBER precedes the TRANSPAC subscription number defined by "tpcadd" which represents the "transpac address" declared through the TPCADD parameter of the RDTE command at network generation.
- . TYPE=PAD meaning that the RDTE is an asynchronous adaptor for connecting TTY-type terminals.

cause : response to a DT command issued to an RDTE

action : none



**CC20**

{	fnp-name	}	{	STARTED	}
{	gencom-name	}	{	TERMINATED	}
}	fsys-name	}			

type : information

syntax : . "fnp-name" is the name of the FNPS workstation declared in the FNP command at network generation

- . "gencom-name" is the name of the network generation which also identifies the BTNS service job
- . "fsys-name" is the name of the DN7100 functioning as the front end processor declared in the FSYS command at network generation

- **STARTED**

cause : notification of a successful startup of BTNS and/or FNPS and its associated DN7100, subsequent to the respective commands

- "ST [gencom-name]" for BTNS
- "ST fnp-name" for FNPS
- "MTF fsys-name [subfile-name]" to load the DN7100 associated with the FNPS workstation

action: none

- **TERMINATED**

cause : notification of either the shutdown of BTNS and/or FNPS, or the termination of an administrative function, DUMP or SYSGEN, performed on the DN7100, subsequent to the respective commands

- "TT [gencom-name]" for BTNS
- "TT fnp-name" for FNPS
- "MTF fsys-name { DUMP | SYSGEN [option] }" for the DN7100

Note : The STRONG option used for terminating BTNS and FNPS disconnects all active terminals without notification.

action: none

**CC23**

JOURNAL STARTED ON { JRNL1  
                          { JRNL2  
                          { SYS.DSALOGi }

type : information

syntax : . JRNL1 and JRNL2 define the subfiles used within the GCOS resident system file SYS.FPJRNL for journalizing control events sent by DSA nodes

- . "i" in SYS.DSALOGi represents a numeric digit from 1 through 9: this set of files being user-defined log-files which are alternates to SYS.FPJRNL

cause : NASF has started journalizing on the referenced file

action : none

**CC22**

fsys-name DUMP STARTED ON {<fsys-name>1 }  
{<fsys-name>2 }

type : information

syntax : . "fsys-name" is the name of the DN7100 functioning as the front end processor declared in the NODE command at network generation

- "<fsys-name>1" and "<fsys-name>2" define the names of the subfiles used within the GCOS resident system file SYS.FPDUMP to save the dump image

cause : notification that an "MTF fsys-name DUMP" command has been successfully executed

action : if the second subfile <fsys-name>2 was used, it means that a dump preceding the current dump has been saved onto the first subfile <fsys-name>1 that should therefore be edited using the GCOS utility DSADUMP, see Network Administration Utilities.

**CC25** fnp-name CHNB = n<sub>1</sub> STATUS = status CNCT = n<sub>2</sub>

type : information

syntax : . "fnp-name" identifies the FNPS workstation declared in the FNP command at network generation

- . CHNB specifies the number of logical channels used for the DPS 7 - DN7100 connection
- . CNCT specifies the number of transport connections running on the referenced FNPS workstation

• BEING STARTED

cause : FNPS has sent a "start" request to the DN7100 and is awaiting acknowledgement

action: . if the state is transient, no action is required

- . if nothing happens after 1 or 2 minutes, proceed as follows
  - enter "TT fnp-name" to terminate the session
  - enter "MTF fsys-name [ subfile ]" to load the DN7100
  - enter "ST fnp-name" to start FNPS.

• DUMP RUNNING

cause : the DN7100 memory image is currently being dumped onto the GCOS resident file SYS.FPDUMP

- either as a result of the DN7100 software
- or after an "MTF fsys-name DUMP" command

action: none

• FNPS RUNNING

cause : the "ST fnp-name" command has been successfully executed

action: none

• IDLE

cause : the DN7100 is waiting to be loaded or FNPS is waiting to be started up

action: perform one of the following actions

- 1) enter "ST fnp-name" to start FNPS
- 2) . enter "MTF fsys-name [ subfile ]" to load the DN7100
  - . enter "ST fnp-name" to start FNPS
- 3) . enter "TT fnp-name" if "ST fnp-name" was previously issued
  - . proceed as in (2)

• LOAD RUNNING

cause : an "MTF fsys-name [ subfile ]" command is currently executing

action: none

• SYSGEN RUNNING

cause : an "MTF fsys-name SYSGEN [ option ]" command is currently executing

action: none

• TERMINATION RUNNING

cause : FNPS is being shut down

- either as the result of the "TT fnp-name" command
- or due to a hardware failure

action: . if the TT command has not been entered, and subsequent attempts to start up FNPS fail, call the field engineering service

- . if it is a normal shutdown, no action is required

CC24 { JOURNAL SYS.DSALOGi IS FULL }  
      { {JRNL1} JOURNAL FULL }  
      { {JRNL2} }

type : information

syntax : . JRNL1 and JRNL2 define the subfiles used within the GCOS resident system file SYS.FPJRNL for journalizing control events sent by DSA systems

- . "i" in SYS.DSALOGi represents a numeric digit from 1 through 9: this set of files being user-defined log-files which are alternates to SYS.FPJRNL

cause : the referenced file is full and, as a result, NASF will switch to the other log-file in rotation

action : the referenced file can be now be edited, see Network Administration Utilities.

CC30 { PL = } station-name [ station-name ... ]  
      { \*\*\*\* }

type : information

syntax : lists the stations in the polling list of the corresponding line  
in the format as follows,

- PL = heads the first line of the polling list which contains  
up to 5 stations

- \*\*\*\* is used to align subsequent stations, if more than 5  
stations have been declared.

cause : response to a "DT LNnn STRONG" or DT command to display the cur-  
rent polling list associated with the appropriate line.

action : none

## CC26

station-name  $\left\{ \begin{array}{l} \text{ACTIVE} \\ \text{BUSY} \\ \text{HELD} \\ \text{OFF} \end{array} \right\} \text{STI} = \text{nn}$

type : information

syntax : . STI specifies the "station-index" as defined in the corresponding STATN command at network generation.

- . ACTIVE, meaning that the station is "on-line" and available for data transfers, whether its terminals are active or not.
- . BUSY, meaning that the station is undergoing
  - either an off-line operation on a terminal-subtype, such as cassette, disk, diskette or printer
  - or, if the station pertains to the VIP line procedure, a page-overflow condition, requiring operator intervention.
- . HELD, due to one of the following,
  - an HT command issued to the referenced station
  - the CLOSE option specified in the corresponding STATN command at network generation
- . OFF, meaning that the station is powered off; when the station is powered on, the network control operator will be informed with the message : CC13 station-name AVAILABLE.

cause : response to a "DT station-name" command.

action : none





**CC32** OM=n1 IM=n2 OE=n3 IE=n4

type : information

- syntax :
- . OM denotes "output messages" and specifies the cumulative number of messages sent over the line since the start of the communications session.
  - . IM denotes "input messages" and specifies the cumulative number of messages received over the line since the start of the communications session.
  - . OE denotes "output errors" and specifies the cumulative number of transmission errors when sending over the line since the start of the communications session.
  - . IE denotes "input errors" and specifies the cumulative number of transmission errors when receiving over the line since the start of the communications session.

cause : response to a "DT LNnn STRONG" or DT command.  
The "line-name" appears in the preceding message CC18.

action : none

**CC32** OM=n1 IM=n2 OE=n3

type : information

- syntax :
- . OM denotes "output messages" and specifies the cumulative number of messages sent to the terminal since the start of the communications session.
  - . IM denotes "input messages" and specifies the cumulative number of messages received from the terminal since the start of the communications session.
  - . OE denotes "output errors" and specifies the cumulative number of transmission errors when sending to a terminal since the start of the communications session.

cause : response to a "DT terminal-name STRONG" command.  
The "terminal-name" appears in the preceding message CC08.

action : none

## CC45

NO CNC GENERATION AVAILABLE [ FOR { BTNS  
FNPS  
QMON } ]

type : error

syntax : as in text

cause : the ST console command has been executed while

- 1) no CNC generation exists at all because
  - a. either the CNC utility has not been run
  - b. or a system restart has been made with CLEAN option
- 2) a CNC generation exists, but does not contain any DCC line description to be handled by the referenced component.

action : . If (1), run the CNC utility, and restart the session, see below.

- . If (2), correct the network description and rerun the CNC utility, and restart the session as follows,
  - either enter "ST gencom-name" or ST for BTNS
  - or enter "ST fnp-name" for FNPS
  - followed by "ST QMON" if MCS applications are to be started.
- . If either action does not rectify the problem, call the field engineering service.

CC44

UNABLE TO START { ADM  
NASF } ARGERR RC=FNPS , ARGERR  
program-name }

Note : In this message format, the entry "RC=FNPS" refers to the system procedure managing communications and not to the system module FNPS.

type : error

syntax : as in text

cause : the mailbox defining the appropriate network or message management component or communications service has not been defined for the "open-message-group"

action : call the field engineering service

## CC46 fsys-name status

type : normal operation / information / error (see individual case)  
syntax : . "fsys-name" identifies the DN7100 functioning as the front-end processor declared in the FSYS command at network generation  
      . "status" indicates the functional activity of the DN7100

- ALREADY ACTIVE  
  cause : an "ST fnp-name" command was issued while the FNPS workstation is not IDLE.  
  action: none
- DUMP COMPLETED  
  cause : the dump of the DN7100 memory image has been successfully saved on the GCOS resident file SYS.FPDUMP  
  action: . either edit the dump using the GCOS utility DSADUMP, see Network Administration Utilities  
      . or no action is required
- DUMP IN PROGRESS  
  cause : a command has been issued to the DN7100 which is currently performing a dump of its memory image  
  action: wait until the end of the dump session, as notified by DUMP COMPLETED, before issuing the same command
- DUMP FAILED  
  cause : the dump of the DN7100 memory image has terminated abnormally either because of a hardware malfunction or due to an anomaly in the DN7100 software  
  action: . reissue the "MTF fsys-name DUMP" command  
      . if the anomaly persists, call the field engineering service
- FAILED  
  cause : the DN7100 has failed either because of a hardware malfunction or due to an anomaly in the software  
  action: . issue the "MTF fsys-name [subfile]" command  
      . if the anomaly persists, call the field engineering service
- IDLE  
  cause : the DN7100 has been successfully loaded but the FNPS workstation has not been activated  
  action: . issue the "ST fnp-name" command  
      . if the same message appears, take a dump of the DN7100 memory image by entering the "MTF fsys-name DUMP" command
- INACTIVE  
  cause : a "TT fnp-name" command has been issued while the DN7100 has not yet been loaded  
  action: none
- LOAD COMPLETED  
  cause : the DN7100 has been successfully loaded  
  action: none

CC46

{ fnp-name } { ALREADY ACTIVE }  
{ gencom-name } { INACTIVE }  
                  { STARTED }

type : information

syntax : as in text

• ALREADY ACTIVE

- cause : . for BTNS, an "ST gencom-name" or ST console command has been issued while BTNS has already been activated
- . for FNPS, an "ST fnp-name" console command has been issued while FNPS has already been activated.

action: none

• INACTIVE

- cause : . for BTNS, a "TT gencom-name" or TT command, with or without the STRONG option, has been issued but BTNS has not yet been started up by an ST console command
- . for FNPS, a "TT fnp-name" command, with or without the STRONG option, has been issued but FNPS has not yet been started up by an ST console command
- . for both BTNS and FNPS, this message is also the result of a DT command requesting a general display of the status of the network objects.

action: none

• STARTED

- cause : for both BTNS and FNPS, this message is the result of a DT command requesting a general display of the status of the network objects.

action: none

**CC47** lsub-name subnb { IDLE } SWC : n1 / n2 PVC : m1 / m2  
ACTIVE }

LSUB applies exclusively to TRANSPAC.  
TRANSPAC refers specifically to the public network in France.

type : information

- syntax :
- "lsub-name" identifies the TRANSPAC subscription handled through the BTNS / URP interface and declared by the LSUB command at network generation
  - "subnb" is the TRANSPAC subscriber number provided in the PTT subscription contract and declared by the SUBNB parameter in the LSUB command
  - SWC denotes "switched virtual circuits" and declares
    - n1, the number of swc's currently active
    - n2, the maximum number of swc's allowed for the subscription
  - PVC denotes "permanent virtual circuits" and declares
    - m1, the number of pvc's currently available
    - m2, the maximum number of pvc's reserved for the subscription.

cause : response to a "DT lsub-name" command

action : none

CC46 fsys-name status

- LOAD FAILED
  - cause : loading of the DN7100 has failed either because of a hardware malfunction or due to an anomaly in the software
  - action: . reissue the "MTF fsys-name [subfile]" command
    - . if the anomaly persists, call the field engineering service
  
- LOAD IN PROGRESS
  - cause : a command has been issued to the DN7100 which is currently being loaded
  - action: . wait until the DN7100 has been loaded, as notified by LOAD COMPLETED
    - . issue the "ST fnp-name" command
    - . reissue the same command to the DN7100
  
- LOAD STARTED
  - cause : immediate system response to the "MTF fsys-name [subfile]" command to notify the operator that the command to load the DN7100 has been accepted and is being acted upon
  - action: none
  
- SHUTDOWN
  - cause : an I/O anomaly has occurred in the functioning of the DN7100
  - action: . issue the "TT fnp-name" command
    - . issue the "MTF fsys-name DUMP" command
    - . issue the "MTF fsys-name [subfile]" command
    - . issue the "ST fnp-name" command
  
- STARTED
  - cause : the DN7100 has been successfully loaded and the FNPS workstation has been activated
  - action: none

**CC66** TIMER RUNNING FOR DEVICE terminal-name

type : information

syntax : "terminal-name" identifies the terminal being disconnected

cause : a VIP printer is being disconnected but the BTNS terminal manager  
is waiting for the timer to complete the disconnection

action : wait, up to 3 minutes, before using the terminal.



**CC50** TT WAITS FOR  $\left\{ \begin{matrix} n \\ \text{ALL} \end{matrix} \right\}$  USERS TO DISCONNECT

type : information

syntax : as in text

cause : response to a TT command to indicate that there are still users connected

action : (1) If shutdown is to be affected immediately, regardless of the users, enter the appropriate command

- . "TT [gencom-name] STRONG " for BTNS shutdown
- . "TT fnp-name STRONG" for FNPS shutdown

(2) Otherwise, advise the users of shutdown before terminating the session, as follows,

- . For BTNS, issue the "BT ALL 'message-text'" command
- . For FNPS, use the communications service for broadcasting the message, such as SEND under IOF.

Note : For FNPS, one user may remain after "shutdown", that is, the transport connection for the logfile from the DN7100 to NASF.

**CC74** BT : NO USER IS CONNECTED

type : information

syntax : as in text

cause : no users are connected over the BTNS/URP secondary network for  
the BT command to be effective

action : none

CC68 \*\*\*\* command-name COMMAND ABORTED reason

type : error

syntax : . "command-name" identifies the command previously issued  
          . "reason" specifies the cause of the abort

Note : The following list gives the "reason" in alphabetical order.

- BACKING STORE OVERLOADED  
  cause : a temporary "overload" condition has developed  
  action: reissue the command later
  
- LOGON FAILED  
  cause : an RT command addressed to a BSC2780 line cannot be successfully performed due to an incomplete VCAM connection  
  action: . check that the "userid" entry in the site catalog specifies the name of the terminal with default values for "project" and "billing" attached to the "userid"  
          . check that the "application" specified in the ASSIGN parameter of the TERMNL command is that to which the terminal is attempting to log on  
          . check that QMON has been started up
  
- REJECTED BY DVMGT  
  cause : an RT command cannot be successfully performed since the line is "held" by device management  
  action: . enter an "RD LNnn" console command and retry the RT command  
          . check for a service job using the line, e.g., test program.
  
- { RESOURCES OVERFLOW  
   { USER MEMORY OVERLOADED }  
  cause : a temporary "overload" condition has developed  
  action: reissue the command later

**CC77** LINE line-name IN ABNORMAL STATE : RELEASE FAILED

type : information / error

syntax : "line-name" identifies the line of the BTNS/URP secondary network as declared in the LINE command

cause : the line cannot be "closed" by software

action : verify the condition of the line and the URP

- . if either or both are malfunctioning, call the field engineering service
- . if both are functioning normally,
  - reissue the "RT LNnn" command
  - if the same message appears, an ISL is necessary

**CC75** TERMINAL terminal-name IS DISCONNECTED \*\* BADGE ERROR \*\*

type : information

syntax : as in text

cause : security violation on a DTU7171/7172 terminal due to the absence  
of the "badge" facility

action : none

**CC81** LOCAL SUBSCRIPTION <lsub-name> CONFIGURATION OR PROTOCOL ERROR  
REASON CODE : cause.diagnostic

type : error

syntax : . <lsub-name> is the name of the LSUB command defining the  
TRANSPAC subscription at network generation  
. "cause.diagnostic" takes the format "hh.hh", where the two 2-  
hexadecimal digits specify the "protocol error"

cause : a system error has occurred since the parameters defined in the  
LSUB command do not match the options available in the actual  
TRANSPAC subscription

action : . refer to Appendix A for the explanation of "cause" and "diag-  
nostic"  
. check the "lsub" values against the options laid down in the  
TRANSPAC subscription contract  
. (a) if the definitions are not consistent or if the definitions  
are consistent but are in conflict with the "cause" and  
"diagnostic", modify the appropriate parameter value(s) and  
rerun the CNC utility  
. (b) if the definitions are consistent and the "cause" and  
"diagnostic" do not adequately pinpoint the source of the  
error, call the field engineering service.

**CC80** ACCESS TO RTS "rsys-name" { ENABLED } THROUGH RSUB TRANSPAC.1<subnb>  
[ REASON CODE : cause.diagnostic ]

type : normal operation

syntax : . "rsys-name" is the name of the "remote-system" served by the  
"remote-transport-station"  
. <subnb> defines the DPS 7 TRANSPAC subscriber number specified  
by the SUBNB parameter of the LSUB command at network genera-  
tion  
. "cause.diagnostic" takes the format "hh.hh", where the two 2-  
hexadecimal digits specify the "disabled" reason

cause : a) if "ENABLED", the "REASON CODE" does not appear  
b) if "DISABLED", the "REASON CODE" appears

action : a) continue normal operations  
b) depending on the "cause" and "diagnostic", the appropriate op-  
erator action is required, see Appendix A.

**CC84**

```
NR "netroute-name" TO RTS rts-name

CONNECTION IS { AUTHORIZED | NOT AUTHORIZED }
               { COMPLETED
               { REQUESTED

AND MAPPED OVER { access
                { VC.<subscrid> }
```

type : information

syntax : . "access" is of the format LNnn, where nn defines the SRST value of the HDLC point-to-point line specified as the argument of the ACCESS parameter in the CP command  
. "subscrid" is the name of the LSUB command specified as the argument of the SUBSCRID parameter in the CP command

cause : response to a "DT NR netroute-name LONG" command

This command is issued if the state of the "transport restart" is other than "completed" for an access path composed of several network routes and if the state of only one route is required.

action : the only operator action is in the case of NOT AUTHORIZED : enter the following command(s) as applicable,

- a) for point-to-point HDLC line :  
RT LNnn, where LNnn is the name of the line
- b) for TRANSPAC virtual circuits :
  - . RT LNnn, where LNnn is the name of the line specified in the LSUB command
  - . followed by RT RSUB TRANSPAC.<subnb>, where "subnb" is the "remote" subscription number starting with 1 and defined as the argument of the ADDR parameter in the RTS command.

Note : The terms AUTHORIZED and REQUESTED denote the state of the connection with respect to the "restart" phase :

- AUTHORIZED is when the "restart" phase has yet to be initiated
- REQUESTED is when the "restart" phase has been initiated but has not yet completed at the time when the message was output.





CC85

RTS "rts-name" TRANSPORT RESTART IS { AUTHORIZED | NOT AUTHORIZED }  
 { COMPLETED }  
 { REQUESTED }

```

[ - NR "netroute-name" TO RTS rts-name
  CONNECTION IS { AUTHORIZED | NOT AUTHORIZED }
                 { COMPLETED }
                 { REQUESTED }
  AND MAPPED OVER { access
                   { VC.<subscrid> }
- NR
  .
  . (as many "network routes" as declared in the RTS command)
  .
]

```

type : information

syntax : . the description of the "network routes" NR will appear if the option "LONG" is specified in the DT command  
 . TRANSPORT RESTART IS COMPLETED will only appear if at least 1 of the "network routes" declared for the RTS is in CONNECTION COMPLETED  
 . "access" is of the format LNnn, where nn defines the SRST value of the HDLC point-to-point line specified as the argument of the ACCESS parameter in the CP command  
 . "subscrid" is the name of the LSUB command specified as the argument of the SUBSCRID parameter in the CP command

cause : response to a "DT RTS rts-name LONG" command

action : the only operator action is in the case of NOT AUTHORIZED : enter the following command(s) as applicable,

- a) for point-to-point HDLC lines :  
 RT LNnn, where LNnn is the name of the line
- b) for TRANSPAC virtual circuits :
  - . RT LNnn, where LNnn is the name of the line specified in the LSUB command
  - . followed by RT RSUB TRANSPAC.<subnb>, where "subnb" is the "remote" subscription number starting with 1 and defined as the argument of the ADDR parameter in the RTS command.

Note : The terms AUTHORIZED and REQUESTED denote the state of the connection with respect to the "restart" phase :  
 - AUTHORIZED is when the "restart" phase has yet to be initiated  
 - REQUESTED is when the "restart" phase has been initiated but has not yet completed at the time when the message was output.



**CC87** system-name PROFILE : profile  
[ SC : session-control-name ]

type

syntax : . "system-name" is the name of either the LSYS or FSYS or RSYS commands  
    . "session-control-name" is the name appearing in the corresponding LSC, FSC and RSC commands  
    Note : The name of the "session-control" is the name of the associated "system".  
    . "profile" : <system-type>/<software-type>/<software-release>  
    . "SC: session-control-name" appears if the DT command specifies the STRONG option

cause : response to a "DT {LSYS | FSYS | RSYS} system-name [STRONG]" command

action : none

**CC86** [NO] BTNS FILE TRACE IN PROGRESS

type : normal operation

syntax : as in text

cause : response to a "DT TRACE" command

action : none

**CC98** command-name COMMAND COMPLETED

type : normal operation

syntax : as in text

cause : the command has been submitted, accepted and acted upon

action : none

**CC88** session-control-name SYSTEM: system-name

[ ACCESS : { fnp-name } { ENABLED }  
          { TS } { LOCKED } ]

type : normal operation

syntax : . "session-control-name" is the name of either the LSC or FSC or RSC commands

. "system-name" is the name appearing in the corresponding LSYS, FSYS and RSYS commands

Note : The name of the "session-control" is the name of the associated "system".

. "ACCESS" defined as a list will only appear if LONG is specified for FSC and RSC

cause : response to a 'DT { LSC | FSC | RSC } session-control-name [ LONG ]  
          command

action : none

CC99

DT OPTION ERROR

INCOMPLETE MESSAGE

INVALID	}	COMMAND [ KEYWORD ]	}
		LEVEL TRACE	
		NETWORK NAME	
		NODE NAME	
		OBJECT { KEYWORD }	
		{ NAME }	
		ROAD NAME	
		SUBSCRIPTION NUMBER	
TRACE	}	{ DOMAIN	}
		{ PARAMETER	
		{ SUBDOMAIN	

MISPLACED TRACE PARAMETER

NO PRIMARY NETWORK CONFIGURATED

NO TNS STARTED RETRY LATER
----------------------------

UNKNOWN	}	{ NODE }	} NAME
		{ ROAD }	

type : normal operation

syntax : . "node" is a "carry-over" from the previous release and groups together "lssystem", "fssystem" and "rssystem"

For obtaining the list of "system-names", key in the "DT SYS" command

. "road" is a generic term for "network route" either mapped over an HDLC point-to-point line or a TRANSPAC virtual circuit

cause : except for "NO TNS", all these messages indicate that the syntax in the command is either misspelt, misplaced or not applicable for the option

action : re-enter the command with the proper syntax

NO TNS STARTED RETRY LATER

cause : although the ST command has been issued to launch BTNS/HDLC, the "local" access line to TRANSPAC has not yet "opened"

action : wait or issue the "RT LNnn" command, where nn is the line-number of the line specified in the LSUE CNC command

NO PRIMARY NETWORK CONFIGURATED

cause : a command referring to a primary network object has been issued for a CNC generation which has not declared a primary network

action : none



**CC99**

ABNORMAL BTNS FILE TRACE OPEN RC = { BUSY  
  SPACENAV }

type : normal operation

syntax : as in text

Note : This message is in response to an "RT TRACE" command.

- **BUSY**

cause : the current writer to the BTNS file trace is still active

action: wait for the current writer to terminate before initiating the  
          "trace" session

- **SPACENAV**

cause : the BTNS file trace cannot be opened due to lack of space

action: . continue to monitor for available file space on BTNS\_FILE\_TRACE  
          . when space becomes available, issue the "RT TRACE" command

**QC08** process-name UNABLE TO START USER PROCESS RC=return code

type : error

syntax : . "return code" is of the format RC=xxxxxxx → yyyyyyy, zzzzzzzz  
where

- xxxxxxxx : hexadecimal contents of the RC register
- yyyyyyy : name of the SIU (system integration unit) procedure
- zzzzzzzz : return code, see Error Messages and Return Codes

. "process-name" identifies the user process that cannot be started

cause : the "return code" gives the reason

action : operator -

- . retry the multiprocess MCS application whose process cannot be started
- . if the same condition occurs, retain the console listing for the systems analyst

systems analyst -

- . correct the MCS application, as necessary, according to the "return code"
- . resubmit the job
- . if the same condition occurs, call the field engineering service

**QC06 TELECOM WARNING : QUEUE FILE OVERFLOW PENDING**

type : normal operation

syntax : as in text

cause : the disk queue file is almost full

action : operator -

- . issue the DT QUEUE network control command to monitor the percentage occupancy of all the MCS queues each time the message appears
- . retain the console listing for the systems analyst

systems analyst -

- . examine the occupancy of the queues according to their function, such as input, output, pooled or otherwise
- . increase the size of the disk queue file, as required
- . rerun the MCS application
- . repeat this process until the QC06 message no longer appears

**QC30** QMON INITIALIZATION FAILED RC=return-code

type : error

syntax : "return-code" is of the format RC=xxxxxxxx→yyyyyyyy,zzzzzzzz  
where

- xxxxxxxx : hexadecimal contents of the RC register
- yyyyyyyy : name of the SIU (system integration unit) procedure
- zzzzzzzz : return code

cause : system error

action : call the field engineering service

**QC13** ron TASK USER process-number ABORTED RC=return-code

type : error

syntax : . "return-code" is of the format RC=xxxxxxxx→yyyyyyy,zzzzzzz  
where

- xxxxxxxx : hexadecimal contents of the RC register
- yyyyyyy : name of the SIU (system integration unit) procedure
- zzzzzzz : return code, see Error Messages and Return Codes

. "ron" is the "run-occurrence-number" of the multiprocess MCS application whose

. process indicated by the "process-number" has aborted

cause : the "return-code" gives the reason

action : operator -

- . retry the multiprocess MCS application whose process has aborted
- . if the same condition occurs, retain the console listing for the systems analyst

systems analyst -

- . correct the MCS application, as necessary, according to the "return-code"
- . resubmit the job
- . if the same condition occurs, call the field engineering service

**QC33** QMON ABORTS

type : error

syntax : as in text

cause : system error

action : call the field engineering service

**QC32** QMON FATAL ERROR RC=return-code

type : error

syntax : "return-code" is of the format RC=xxxxxxxx→yyyyyyy,zzzzzzz

where

- xxxxxxxx : hexadecimal contents of the RC register
- yyyyyyy : name of the SIU (system integration unit) procedure
- zzzzzzz : return code

cause : 1) I/O error on drive on which the volume containing the disk queue file is mounted

2) no more space available on disk queue file

action : 1) check the state of the disk drive, and if not operational, mount volume on another disk drive, and retry

2) if the disk drive is operational, rerun the CNC utility to allocate a greater extent for the disk queue file.

**QC35** QUEUE RECEIVE ERROR ON QUEUE mailbox-name RC=return-code

type : error

syntax : . "mailbox-name" is the name of the queue on which the "receive" error has occurred

. "return-code" is of the format RC=xxxxxxxx→yyyyyyy,zzzzzzz where

- xxxxxxxx : hexadecimal contents of the RC register
- yyyyyyy : name of the SIU (system integration unit) procedure
- zzzzzzz : return code

cause : an I/O error has occurred during a "receive" operation from QMON to the designated queue

action : according to the return code, as follows,

- BUFNAV : message could not be "read" from disk because of MAM disk buffer overload.  
Check with field engineering service.
- IOFAIL : message could not be "read" from disk because of MAM disk I/O failure.  
Check the status of the disk queue file.
- For all other return codes, call the field engineering service.



**QC34** QUEUE SEND ERROR ON QUEUE mailbox-name RC=return-code

type : error

syntax : . "mailbox-name" is the name of the queue on which the "send" error has occurred

. "return-code" is of the format RC=xxxxxxxx→yyyyyyyy,zzzzzzzz where

- xxxxxxxx : hexadecimal contents of the RC register
- yyyyyyyy : name of the SIU (system integration unit) procedure
- zzzzzzzz : return code

cause : an I/O error has occurred during a "send" operation from QMON to the designated queue

action : according to the return code, as follows,

- BUFINAV : message could not be "written" to disk because of MCS disk buffer overload.  
Check with field engineering service.
- IOFAIL : message could not be "written" to disk because of MCS disk I/O failure.  
Check the status of the disk queue file.
- MSGOV : message "written" to disk has been truncated because it is too long.  
Check disk drive used for data entry.
- NOTALL : the designated queue is full.  
Check if a greater queue extent can be created.
- SPACENAV: message could not be "written" to disk since the disk queue file is full.  
Check if a greater queue extent can be created.
- For all other return codes, call the field engineering service.

**QC39** { OQ  
          program-queue-name } [ HELD ] n1 MSG n2 % OF FREE SPACE

type : information

syntax : . OQ denotes "output queue" and appears subsequent to a DT STRONG command addressed to a terminal, with the result that the following information pertains to the terminal-queue.

- . "program-queue-name" identifies the program-queue used by MAM applications to receive messages.
- . HELD, due to one of the following,
  - an HT command issued to the referenced queue
  - the CLOSE option specified in the QUEUE command.
- . DISABLE verb has been issued to the referenced queue.
- . MSG denotes "messages" and gives the number of complete messages enqueued, as denoted by the preceding "n1". This number excludes messages currently being sent to or received from the queue.
- . % OF FREE SPACE gives the percentage of space used in
  - a memory queue defined with the NUMBLK parameter
  - a memory pool, where the queue is defined with the QCPOOL option
  - a disk queue, used as a buffer pool to access a disk file, if it is defined with the NUMREC parameter.The above parameters appear in the QUEUE command declared at network generation.

cause : response to one of the following commands,

- DT QUEUE
- DT <terminal-name> STRONG

action : none

**QC36** QMON TABLES OVERFLOW

type : error

syntax : as in text

cause : condition has resulted because of too large a traffic or too many connections

action : call the field engineering service

**QC41** { BLOCK }  
          { NBLOCK } n1 / n2

type : information

syntax : . BLOCK, where length and block-size are meaningful

        . NBLOCK, where length and block-size do not apply

        . "n1" represents the line-length, which when surpassed results  
          in automatic line folding.

        . "n2" represents the block-size which is the maximum number of  
          lines per message sent on a terminal.

cause : response to a "DT <terminal-name> STRONG" command.

action : none

QC40

$IN = \left\{ \begin{array}{c} M \\ N \\ U \end{array} \right\} \quad OU = \left\{ \begin{array}{c} N \\ U \end{array} \right\}$

type : information

syntax : . IN denotes "input mode"

. OU denotes "output mode"

. M denotes "mark mode", applicable only to input

. N denotes "normal mode"

. U denotes "unedited mode"

cause : response to a "DT program-queue-name" command with or without the STRONG option.

action : none



**QC42** MCS NOT AVAILABLE : ERROR ON SYSTEM RESTART WHEN PROCESSING DISK QUEUE  
FILE RC = return-code

type : error

syntax : "return-code" is of the format RC = xxxxxxxx→yyyyyyyy,zzzzzzzz  
where

- xxxxxxxx : hexadecimal contents of the RC register
- yyyyyyyy : name of the SIU (system integration unit) procedure
- zzzzzzzz : return code

cause : an incident has occurred when accessing the disk queue file on  
system restart

action : according to the return code, as follows,

- IOFAIL : check the status of the disk queue file
- MEDNAV : the disk volume containing the queue file has not  
been mounted
- For all other return codes, call the field engineering service.

Note : If MCS is to be used for a subsequent session, ISL should  
be performed again, after the disk queue file incident  
has been fixed.

The tables of return-codes are built in the following hierarchical order :

- cause : a 2-digit hexadecimal value in bold letters heading each page in ascending order, for which the "diagnostic" following gives further details.

For the explanation of equivalent TRANSPAC "mnémoniques", see facing page.

00 : DTE  
01 : dérangement  
      erreur de procédure locale  
      OCC  
03 : INV  
      RPE  
05 : erreur de procédure locale  
      NC  
07 : fin d'incident  
      incident dans le réseau  
      NC  
09 : fin de dérangement  
      DER  
OB : NA  
OD : NP  
OF : fin d'incident  
11 : destination incompatible  
      RPE  
13 : ERR  
19 : PCV  
21 : destination incompatible

Note : The "cause" is not necessarily related to a "mnémonique" and vice versa.

- diagnostic : a 2-digit hexadecimal value representing the return-code either from the TRANSPAC "fault-finding" dictionary or set by the DPS 7

Note : DPS 7 return-codes only apply for "00" cause.

- correspondant : the network participant for which the return-code applies

AFS : "automatic facilities" applicable to the PTT  
ETTD-P : applies to the HDLC line configured in the DPS 7 SRST  
ETTD-C : applies to the terminal  
TELEX : applies to the "telex" terminal connectable over PAD  
réseau : applies to the TRANSPAC administration

- précision : applicable for causes having the values 00, 01, 03, 05, 07, 09 and 11 where the "cause" and "diagnostic" may be the result of more than one action.



## APPENDIX A

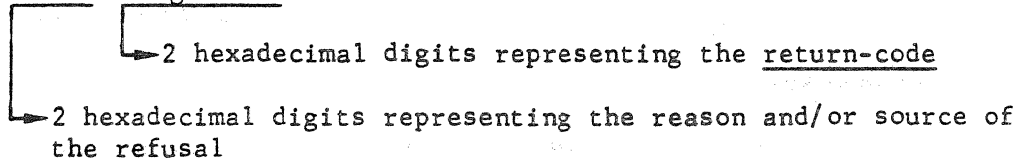
### PAD RETURN CODES

This appendix gives a resumé of the official TRANSPAC list of return-codes and includes where applicable, those return-codes set specifically by the DPS 7. The list of return-codes is in French, being the source language of TRANSPAC specifications, and for consistency, the DPS 7 return-codes have been translated into French. The list of DPS 7 return-codes in English appears at the end of this appendix.

For more detailed explanation of the TRANSPAC return-codes, refer to Spécifications Techniques d'Utilisation du Réseau.

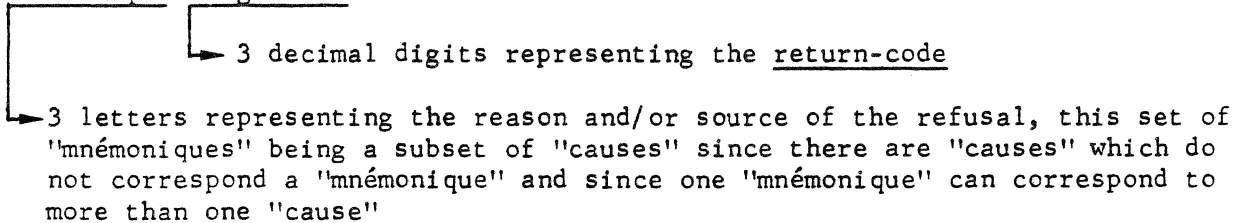
For the network control terminal operator, PAD return-codes from the TRANSPAC network appear in GCOS messages, CC80 and CC81, of the format :

REASON CODE : cause. diagnostic



In messages from TRANSPAC directed to the terminal operator, PAD return-codes appear in the format :

LIB mnémonique diagnostic



For the complete list of "mnémoniques" and accompanying "diagnostics" which complement this appendix, refer to Terminal Operations Manual.

00

Diagnostic		. plus d'une explication	* code mis par le 64/DPS 7
Correspondant	p = reprise, l = libération, i = réinitialisation		Précision
		Explication de Diagnostic	
01	ETTD-C ETTD-C	. commande LIB de l'ETTD-C . "break" de l'ETTD-C	pli i
02	ETTD-C ETTD-C AFS	. réponse à une invitation à libérer de l'ETTD-P . commande RESET de l'ETTD-C . type de service demandé inconnu	pli i pli
03	ETTD-C AFS	. perte de caractères en entrée . erreur dans commande du générateur de trafic	i i
04	ETTD-P ETTD-C AFS	* plus de ressources disponibles . mélange de bits Q dans une même séquence de paquets . manque de ressources	pli i i
05	ETTD-C AFS	. message PAD trop long . lancement de l'exécution d'une commande au générateur	i i
06	AFS	contrôle de flux bloqué sur la VL de l'abonné	i
07	ETTD-C	communication en cours de libération	pli
08	ETTD-C	paramètres PAD incompatibles	pli
30	ETTD-P	* identificateur de protocole PAD erroné	pli
31	ETTD-P	* identificateur de protocole dsa erroné	pli
33	ETTD-P	* numéro d'abonné inconnu	pli
34	ETTD-P	* réseau primaire dsa non soutenu	pli
36	ETTD-P	* numéro d'abonné rejeté	pli
37	ETTD-P	* plus de tables PAD disponibles	pli
38	ETTD-P	* plus de circuits virtuels disponibles	pli
39	ETTD-P	* site PAD occupé	pli
3B	ETTD-P	* groupe fermé d'abonnés inconnu	pli
3C	ETTD-P	* débit demandé trop élevé	pli
3E	ETTD-P	* taxation au demandé refusée	pli
3F	ETTD-P	* code de facilité erroné	pli
40	ETTD-P	* indicateur de débit absent	pli
41	ETTD-P	* code de facilité absent	pli
42	ETTD-P	* taxation au demandé soumise mais mot-de-passe absent	pli
43	ETTD-P	* invalable mot-de-passe	pli

Mnémonique		
Cause ( - denotes "not applicable" )		
		Explication
CONF	-	libération confirmée par le PAD
DER	09	dérangement
DTE	00	reprise, libération ou réinitialisation par l'abonné distant
ERR	13	erreur de procédure locale
INV	03	appel non valide
NA	0B	accès interdit
NC	05 07	incident dans le réseau
NP	0D	numéro inconnu
OCC	01	numéro occupé
PAD	-	libération ou réinitialisation par le PAD
PCV	19	refus de taxation au demandé
RPE	03 11	erreur de procédure distante

# 01

Diagnostic		. plus d'une explication	
Correspondant	p= reprise, l= libération, i= réinitialisation		Précision
Explication de Diagnostic			
00	ETTD-P	. plus de voies logiques libres	l
	ETTD-C	. ETTD-C occupé	l
	TELEX	. mention OCC reçue du réseau TELEX	l
	ETTD-P	. <u>dérangement</u> : niveau trame déconnecté sur l'accès de l'abonné à distance, quelle que soit la raison	i
01	ETTD-P	. collision d'appel	l
	réseau	. type de paquet inconnu	P
02	réseau	erreur lors d'une reprise	P
03	réseau	nature de voie logique incorrecte	P
08	réseau	numéro de voie logique non à zéro dans un paquet de reprise ou de confirmation de reprise	p

Diagnostic		* code mis par le 64/DPS 7	
Correspondant	p = reprise , l = libération , i = réinitialisation		Précision
Explication de Diagnostic			
4A	ETTD-P	* invalable identificateur de protocole de réseau secondaire dsa	pli
4B	ETTD-P	* invalable longueur de numéro d'appel du demandeur	pli
4D	ETTD-P	* appel rejeté par l'application	pli
4E	ETTD-P	* invalable type de demandé	pli
4F	ETTD-P	* numéro d'abonné à distance inconnu	pli
51	ETTD-P	* clôture en route	pli
80	ETTD-P	* plus de ressources requises que disponibles	pli
81	ETTD-P	* erreur dans le contrôle de flux de données	pli
82	ETTD-P	* temps imparti dû à inactivité dépassé	pli
84	ETTD-P	* erreur dans la longueur de paquets	pli
85	ETTD-P	* invalable message PAD  Nota : Dans le cas particulier du Minitel connecté au réseau à travers le "vidéopad", mauvaise réponse à l'ID dans le message CCOI.	pli

# 05

Diagnostic epl=erreur de procédure locale , nc=incident dans le réseau

Correspondant		Explication de Diagnostic	Précision
04	réseau	taille du champ de données incorrecte	epl
05	réseau	erreur de contrôle de flux, P(S) ou P(R) non valable	epl
06	réseau	erreur de procédure en phase de réinitialisation	epl
07	réseau	l'abonné a émis un paquet REJ	epl
nn	réseau	<u>diagnostic quelconque</u> : diagnostic non significatif pour l'utilisateur	nc

Diagnostic		inv = appel non valable , rpe = erreur de procédure à distance	
Correspondant	. plus d'une explication		Précision
Explication de Diagnostic			
01	réseau	. taille de paquet d'appel incorrecte	inv
	réseau	. données d'appel ou mot-de-passe 12 caractères	inv
	ETTD-P	. type de paquet inconnu	rpe
02	réseau	. demande d'une facilité non autorisée à l'abonnement	inv
	ETTD-P	. erreur lors d'une reprise	rpe
03	réseau	. erreur d'emploi d'une facilité quelconque ou GFA	inv
	ETTD-P	. utilisation d'une VL incorrecte pour le type de paquet	rpe
04	ETTD-P	taille du champ de données incorrecte	rpe
05	ETTD-P	erreur de contrôle de flux, P(S) ou P(R) non valable	rpe
06	ETTD-P	erreur de procédure en phase de réinitialisation	rpe
07	ETTD-P	l'abonné a émis un paquet REJ	rpe
08	ETTD-P	numéro de voie logique non à zéro dans un paquet de reprise	rpe

Diagnostic		. plus d'une explication	
Correspondant		der = dérangement , f = fin de dérangement	Précision
		Explication de Diagnostic	
00	ETTD-P	. niveau trame déconnecté sur la liaison d'accès de l'ETTD-P à distance	der
	ETTD-C	. liaison physique entre PAD et ETTD-C non établie	der
	TELEX	. rupture de la communication TELEX	der
	réseau	. coupure du raccordement physique entre TRANSPAC et le réseau TELEX	der
01	ETTD-P	. réinitialisation du niveau trame sur la liaison d'accès de l'ETTD-P à distance	der
		. connexion ou réinitialisation du niveau trame de l'abonné à distance	f
	TELEX	. mention DER reçue du réseau TELEX	der
02	TELEX	mention ABS reçue du réseau TELEX	der



Diagnostic		. plus d'une explication	
Correspondant	f = fin d'incident , nc = incident dans le réseau		Précision
		Explication de Diagnostic	
00	réseau	connexion du niveau trame	f
01	réseau	. réinitialisation du niveau trame . CVP non utilisable	f nc

# OD

Diagnostic		. plus d'une explication
Correspondant		Explication de Diagnostic
00	réseau TELEX	. abonné inexistant . circonscription TELEX inconnue de TRANSPAC
01	TELEX	mention NP reçue du réseau TELEX

Diagnostic		Explication de Diagnostic
Correspondant		
01	réseau	protection par GFA
02	réseau	pas de voie logique mixte ou arrivée
03	TELEX	mention NA reçue du réseau TELEX

Diagnostic		l = libération, i = réinitialisation	
	Correspondant	Explication de Diagnostic	Précision
01	ETTD-P	type de paquet inconnu	1
02	ETTD-P	erreur lors d'une reprise	1
03	ETTD-P	nature de VL incorrecte	1
04	ETTD-P	erreur pendant la phase d'établissement et rupture du circuit virtuel	1
05	réseau	non acquittement par l'ETTD-P à distance d'une réinitialisation répétée	1
08	ETTD-P	numéro de VL non à zéro dans un paquet de reprise	1
09	ETTD-P	expiration du temporisateur de surveillance de confirmation d'appel	1
27	ETTD-P	taille de paquet de communication acceptée incorrecte	1
28	réseau	bit D non géré	i
41	ETTD-P	code de facilité erroné	1
42	ETTD-P	paramètre de facilité erroné	1

Diagnostic		Explication de Diagnostic
	Correspondant	
01	ETTD-P	CVP utilisable

Diagnostic		Explication de Diagnostic
	Correspondant	
00	réseau	abonné refusant la taxation au demandé

Diagnostic		. plus d'une explication
Correspondant		Explication de Diagnostic
04	réseau	<ul style="list-style-type: none"> <li>. réseau pendant la phase d'établissement ou de rupture du circuit virtuel</li> <li>. commande LIB de l'ETTD-C alors qu'aucun circuit virtuel n'est établi</li> </ul>
05	réseau	non acquittement d'une réinitialisation répétée
09	réseau	expiration du temporisateur de surveillance de confirmation d'appel
27	réseau	taille de paquet de communication acceptée incorrecte
41	résezu	code de facilité erroné
42	réseau	paramètre de facilité erroné

List of Specific 64/DPS 7 Return Codes

return code	explanation of return codes
04	no more resources available
30	wrong pad protocol identifier
31	wrong dsa protocol identifier
33	unknown subscription number
34	dsa primary network not supported
36	subscription number rejected
37	no more pad tables available
38	no virtual circuit available
39	pad site busy
3B	unknown "closed subscriber group" (gfa)
3C	throughput requested too large
3E	reverse charges refused
3F	wrong facility code
40	throughput indicator missing
41	facility code missing
42	reverse charges have been requested but password is missing
43	invalid password
4A	invalid dsa secondary network protocol identifier
4B	invalid length of caller's number
4D	call rejected by application
4E	invalid type of callee
4F	unknown remote subscription number
51	shutdown in progress
80	more resources required than are available
81	error in control of data flow
82	inactivity timeout
84	error in length of packet
85	invalid pad message



Diagnostic		
Correspondant		Explication de Diagnostic
28	réseau	bit D non géré

GCOS System Files for DN7100 Support

file-name	subfile-name	contents and usage	command
SYS. FPCONF	CHXMOD	contains the list of uncs-modules to be used as input to NASF during DN7100 software generation.	MTF fsys-name SYSGEN
	{ <u>IMAEXC</u> {<subfile-name>}}OPT	contains the DN7100 GO command to be used as input to ADM during DN7100 software generation.	MTF fsys-name SYSGEN
	PATCHO	contains the patches of the subfile IMAEXC of the file SYS. FPSGEN, to be used as input to NASF during DN7100 software generation.	MTF fsys-name SYSGEN
	PATCH1	contains the patches of DN7100 bound units to be used as input to NASF during DN7100 software generation.	MTF fsys-name SYSGEN
	{<fsys-name>C {subfile-name}}	contains the generation deck to be used as input to NASF during DN7100 software generation, in order to generate the image on the subfile {<fsys-name>I subfile-name} of the SYS. FPCORE file.	MTF fsys-name SYSGEN
	{<fsys-name>I {<subfile-name>}}OPT	contains the DN7100 GO command to be used as input to ADM when "loading" the DN7100.	MTF fsys-name [AUTO]
SYS. FPCORE	{<fsys-name>I {subfile-name}}	contains the generated image of the DN7100 software <ul style="list-style-type: none"> <li>• output by NASF during DN7100 software generation</li> <li>• and, input to NASF when "loading" the DN7100.</li> </ul>	output from NASF : MTF fsys-name SYSGEN  input to NASF : MTF fsys-name [AUTO]

## APPENDIX B

### GCOS SYSTEM FILES FOR DN7100 SUPPORT

This appendix gives a resumé of the system files and each of their subfiles which must be present in GCOS software to execute DN7100 administrative functions.

These files can be located on any resident P-set disk of the DPS 7.

The accompanying flow-charts show the relationship between the use of the subfiles and the various administrative functions of the MTF command, namely, "sysgen", "load" and "dump".

For further information on the DN7100 administrative functions and the DSA log function, refer to the GCOS 7 Network Administrative Supplement.

With the exception of SYS.DSALOGi, all these files are sized at system initialization by TAILOR, refer to System Installation and Updating Manual.

SYS.DSALOGi files do not use the TAILOR utility, instead they must be preallocated by the user.

SYS.FPJRNL and SYS.DSALOGi files may be sorted and edited using the GCOS DSALOG utility.

SYS.FPDUMP files may be edited using the GCOS DSADUMP utility.

For a detailed description of the GCOS utilities DSALOG and DSADUMP utilities, refer to Network Administration Utilities User Guide.

Note a) For the format of administrative records written to either SYS.FPJRNL or SYS.DSALOGi files, see DSA Logfile Messages.

Note b) For the list of tests in the file SYS.FPTEST, see In / On Line Tests Operator Guide.

GCOS System Files for DN7100 Support

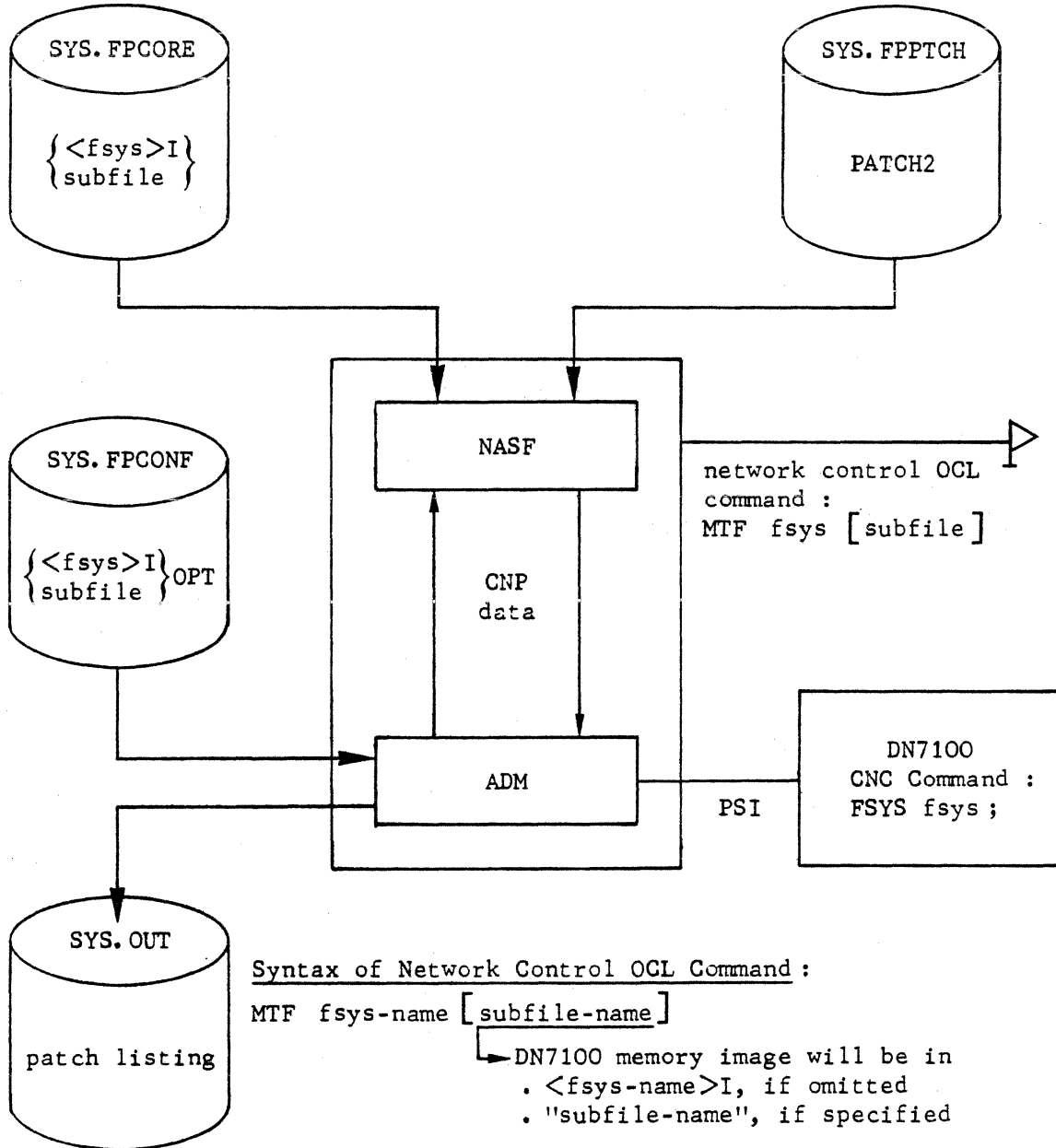
file-name	subfile-name	contents and usage	command
SYS.FPTEST	test-name	<p>contains on-line tests which are launched either automatically by the DN7100 or at the request of <u>its</u> network control operator.</p> <p>Note : This method of "calling" the test from the DPS 7 enables <u>in-line</u> testing of the DN7100.</p> <p>The DN7100 does not have to stop its normal operational function to "load" and execute the appropriate test.</p> <p>Instead, the appropriate test, having been "called" from the DPS 7, is "multitasked" with the normal operational function of the DN7100.</p>	<p>DN7100 Operator Command</p> <p>EX TL <u>xxxx</u>              └─ test-name</p>
SYS.FPUNCS	YTABLE	<p>contains the directory and includes the bound units of the DN7100 software image to be used as input to NASF during DN7100 software generation.</p>	<p>MTF fsys-name SYSGEN</p>

GCOS System Files for DN7100 Support

file name	subfile-name	contents and usage	command
SYS.FPDUMP	<fsys-name> { 1 } { 2 }	contains the last 2 images of the DN7100 memory dumps.  NASF always starts with the subfile <fsys-name>1 at the beginning of the dump session, then to <fsys-name>2 when <fsys-name>1 is full, et seq.	MTF fsys-name DUMP
SYS.FPJRNL	JRNL { 1 } { 2 }	contains statistics sent by the DN7100 in the form of administrative records.  Up to 4 DN7100s can be journalized.	RT DSALOG, see note *
<p>* <u>Note</u> : The file SYS.FPJRNL is retained in the current release for purposes of compatibility since it belongs to the <u>SYS.FPxxxx</u> set GCOS system files for DN7100 support.</p> <p>It is strongly recommended to use SYS.DSALOGi, where i is a decimal value ranging from 1 through 9.</p> <p>Both SYS.FPJRNL and SYS.DSALOGi can be used to log administrative records sent by the DN7100 and the Mini 6/DSA.</p>			
SYS.FPPTCH	PATCH2	contains the patches to the image of the DN7100 software in memory to be used dynamically as input to NASF <ul style="list-style-type: none"> <li>. either during DN7100 software generation</li> <li>. or when "loading" the DN7100.</li> </ul>	MTF fsys-name { SYSGEN } { [AUTO] }
SYS.FPSGEN	IMAEXC	contains the image of the bootstrap of the DN7100 system software to be used as input to NASF during DN7100 software generation.	MTF fsys-name SYSGEN

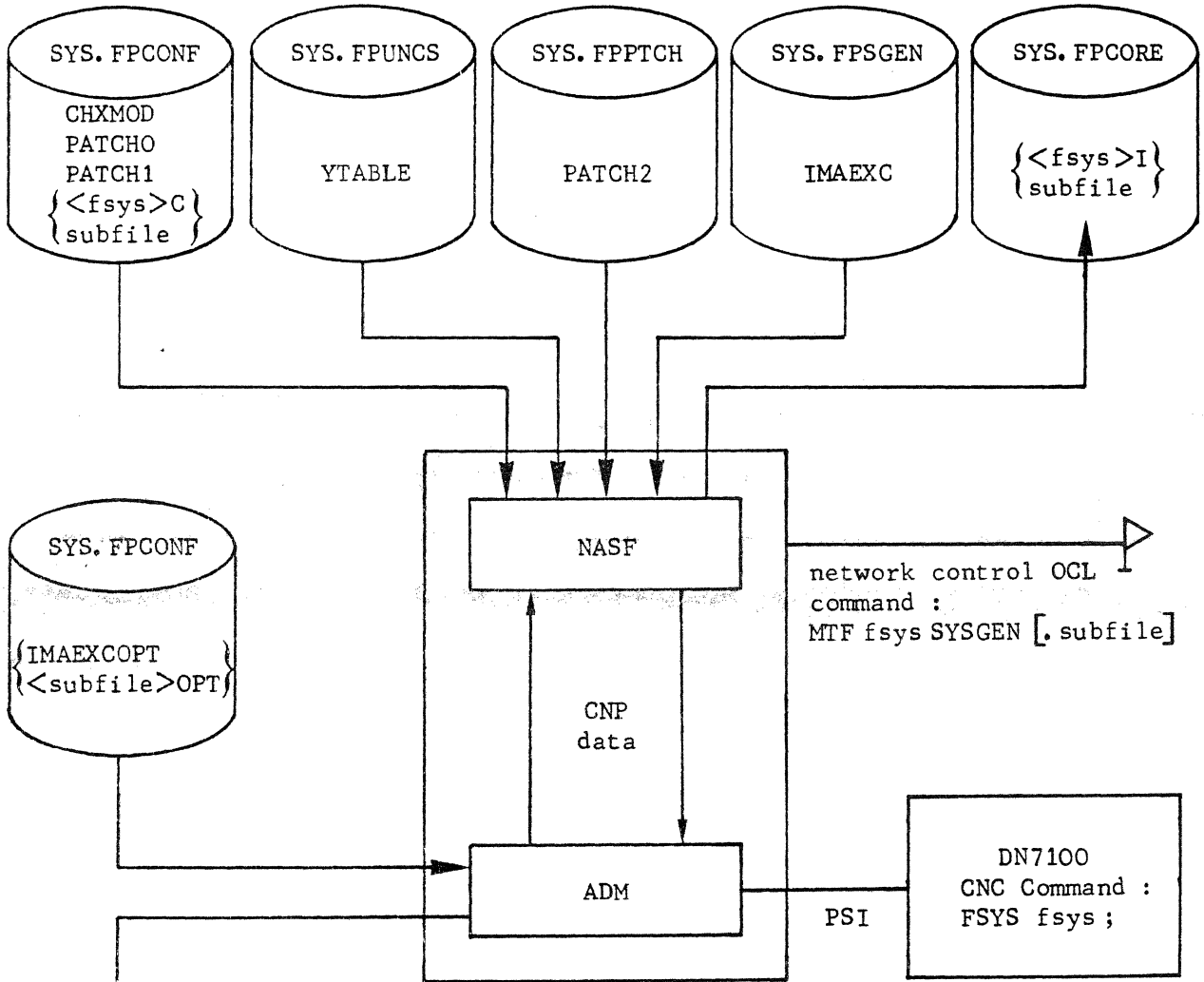
Subfiles  
used in  
"Load" Data Flow

"fsys" and "subfile" are respective abbreviations for "fsys-name" and "subfile-name".



Subfiles  
used in  
SYSGEN Data Flow

"fsys" and "subfile" are respective abbreviations for "fsys-name" and "subfile-name". There is only 1 file SYS.FPCONF. It is shown duplicated in order to illustrate which of its subfiles are input to NASF and which to ADM.



Syntax of Network Control OCL Command :

MTF fsys-name SYSGEN [. subfile-name] [:volume-name:device-class]

specified if SYS.FPUNCS and SYS.FPSGEN are non-resident

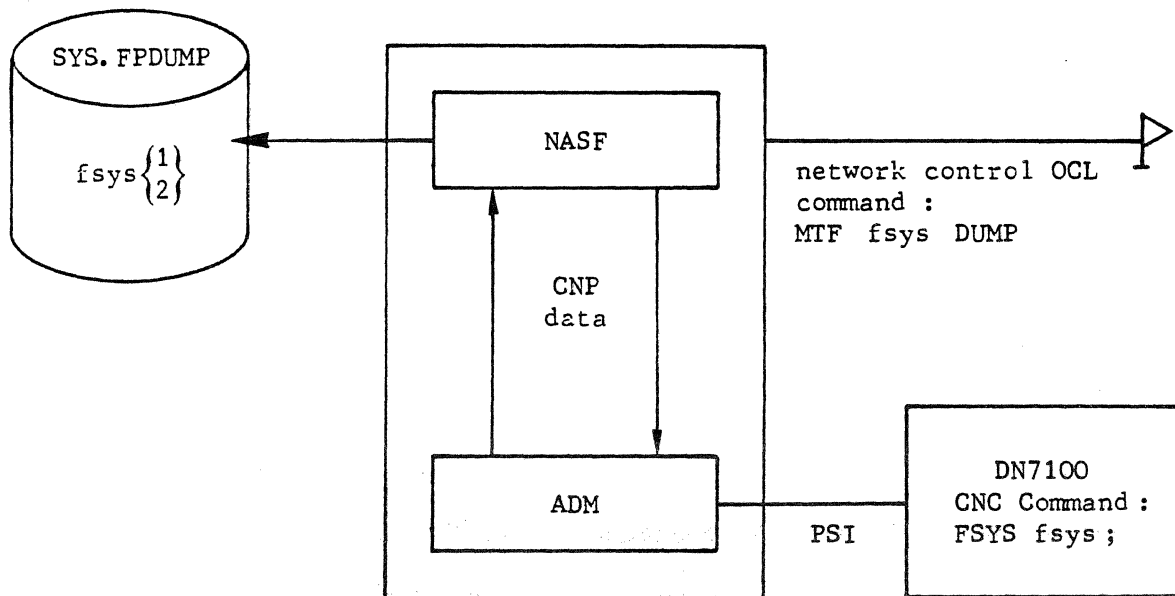
DN7100 source configuration will be in  
. <fsys-name>C, if omitted  
."subfile-name", if specified





Subfiles  
used in  
DUMP Data Flow

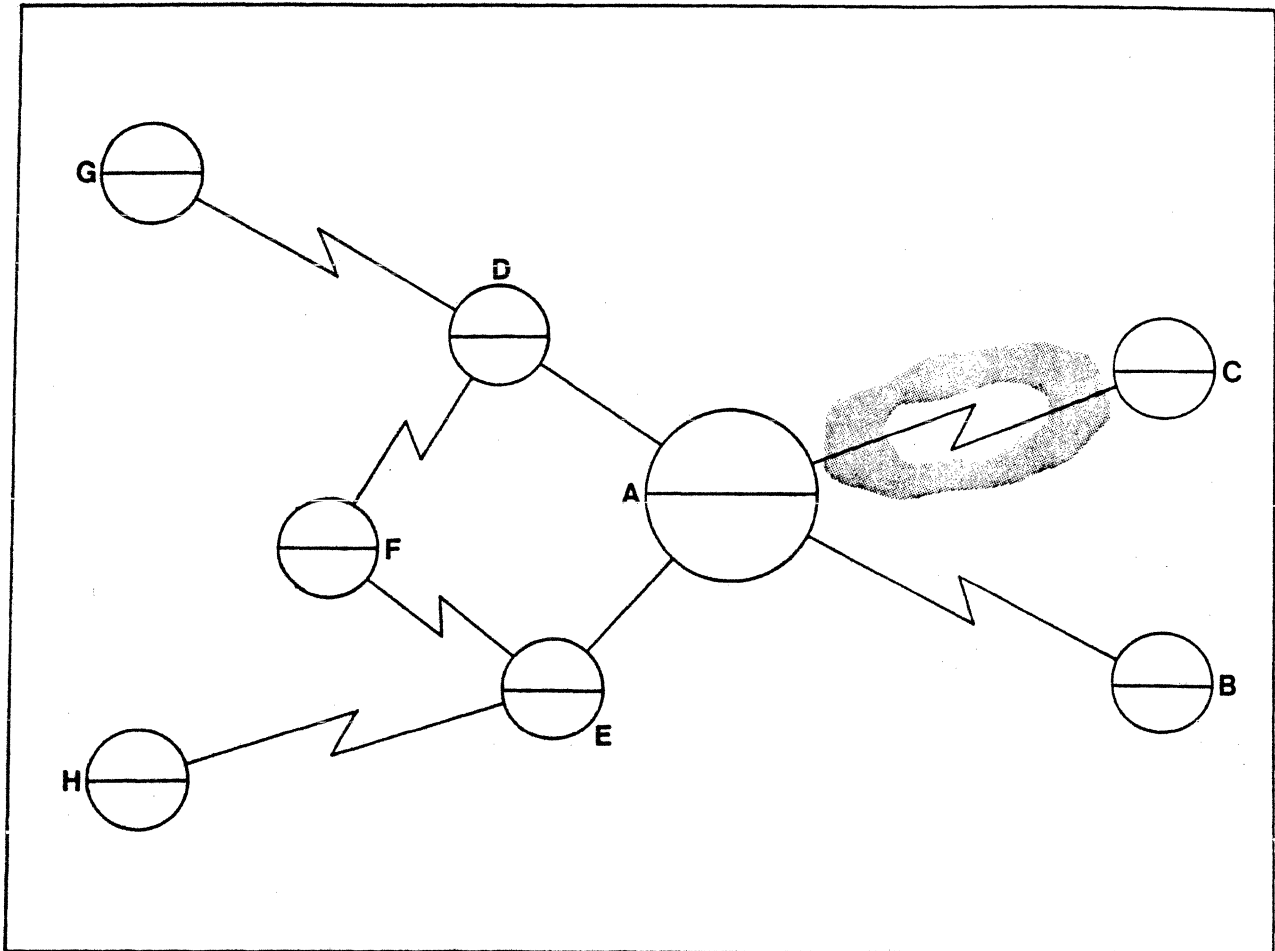
"fsys" is the abbreviation for "fsys-name".



Syntax of Network Control OCL Command :

MTF fsys-name DUMP

Configuring a Primary Network  
Schematic Layout of Systems



The schema shows systems in a primary network as follows :

A : a DPS 7 "local system" generating the CNC description

and the "remote systems", functioning either as "satellites" or "front-end systems", connected to A in 2 different ways, namely

connection type 1 : B and C, directly accessing and accessed by, A through its URP,

B : in any DSA network

C : in the TRANSPAC public network and also in any DSA network

connection type 2 : F, G and H, accessing and accessed by, A through the intermediary of A's "front-end systems", D and E, as follows,

F : having shared access through D and E

G : having sole access through D

H : having sole access through E.

In "connection type 1", A functions as a "satellite", while in "2", it functions as a "host", this distinction being clarified when declaring the "session-controls".

The physical links between A and its "front-end systems", D and E, are PSIs, while all other links over the network are HDLC lines.

## APPENDIX C

### THE PRIMARY NETWORK Configuration and Function

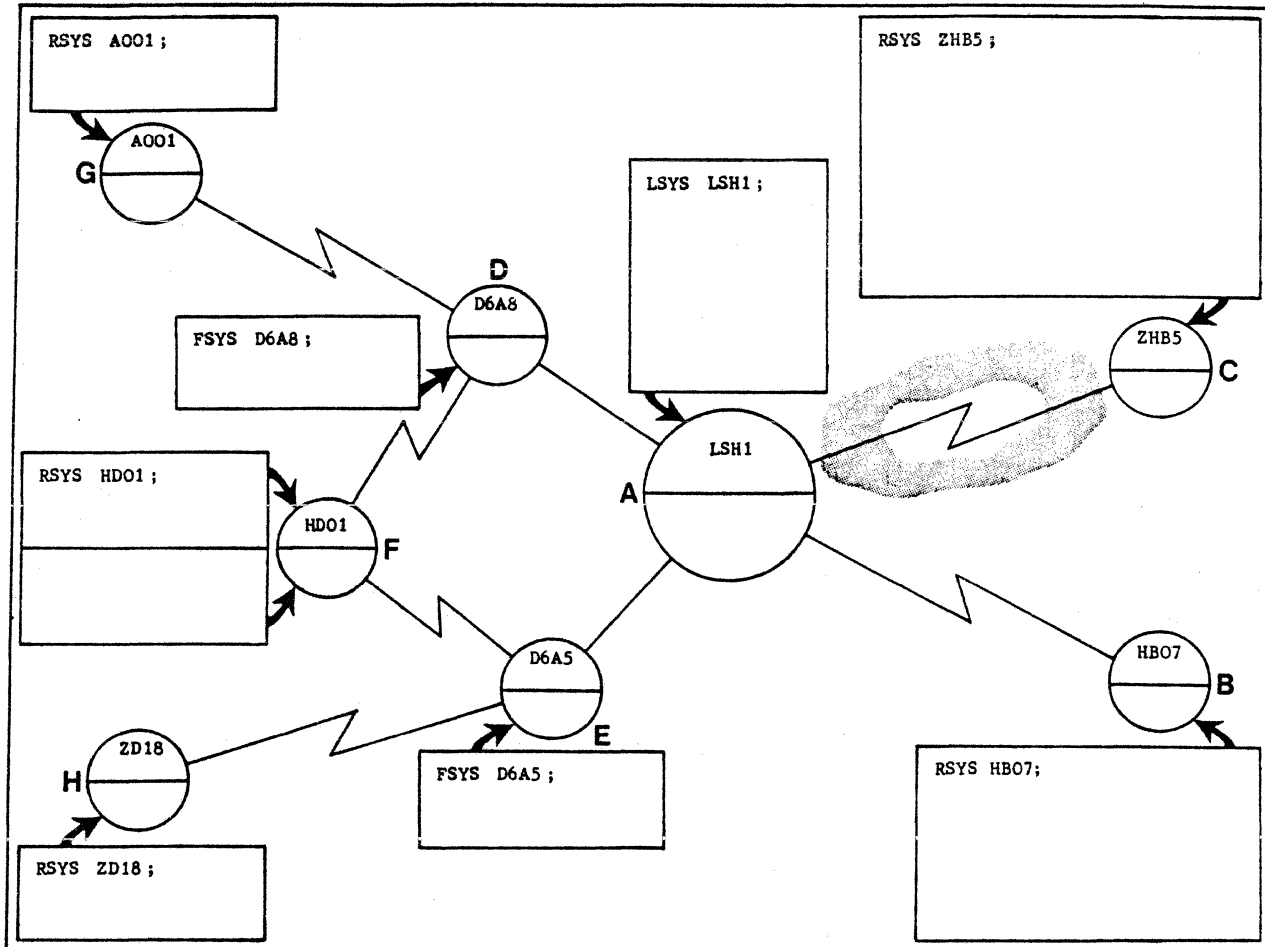
The primary network is configured either through the URP of the DPS 7 or through the DN7100.

The relationship of the DPS 7 to these respective networks configured is reflected in the set of CNC commands to be declared in either case.

This appendix deals with all the CNC commands necessary for configuring both types of primary network. It explains step-by-step the use and function of each CNC command declared starting from the conception of the network to its final generation.

Reference information on the syntax of the CNC commands is treated in the Network Generation Manual.

## Configuring a Primary Network Naming the Systems



Systems are named to identify them as participating entities of the network, by the following commands, LSYS for the "local system", RSYS for the "remote system" and FSYS for the "front-end system".

A : The declaration of A as "LSYS LSH1;" is mandatory and unique since the CNC description applies only to how A sees the other systems.

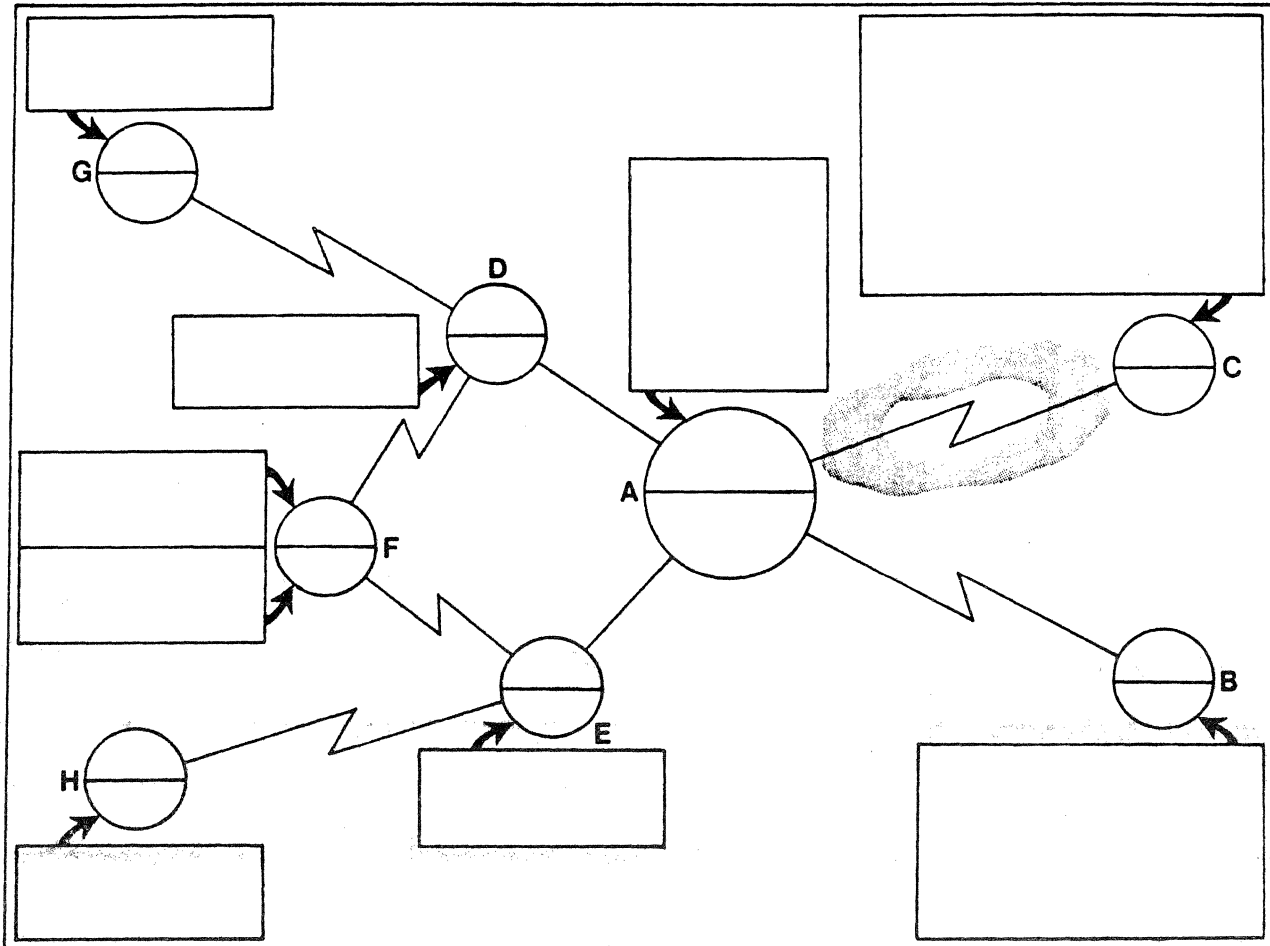
This declaration takes as default the entry "PF=DPS7/GCOS-64/1E.5". If, however, a later version of DPS 7 software has been installed, its "profile" must be explicitly specified.

B, C, F, G and H : These systems are declared by RSYS commands which, as shown, take as default the entry "PF=DPS7/GCOS-64/1E.5". There are other "profiles" available, such as later versions of DPS 7 software or other product lines being the Mini 6 and the DN7100, for instance.

F can be accessed either through D or through E. In order to distinguish its access through the required "front-end system", F must be declared with 2 RSC commands associated with the FNPS service corresponding to either D or E.

D and E : These systems are declared by FSYS commands which, as shown, take as default the entry "PF=DN7100/DN-B/V2.5". The "profile" of later versions of DN7100 software, if installed, must be explicitly specified.

Configuring a Primary Network  
Graphic Representation of the System



A system is a participant of the network, having the notional concept of being a "container" into which objects, determining its function, are built.

To illustrate this concept of the "container", boxes joined by arrows to each system are used to contain their respective CNC descriptions as declared by A.

The purpose of using these boxes is to build on a "step-by-step" basis the objects to be declared for each system until a complete CNC description is built up for the entire network.

Each system, in its turn, describes its correspondants as it sees them until all the correspondants, having declared their own network configuration, can mutually communicate.

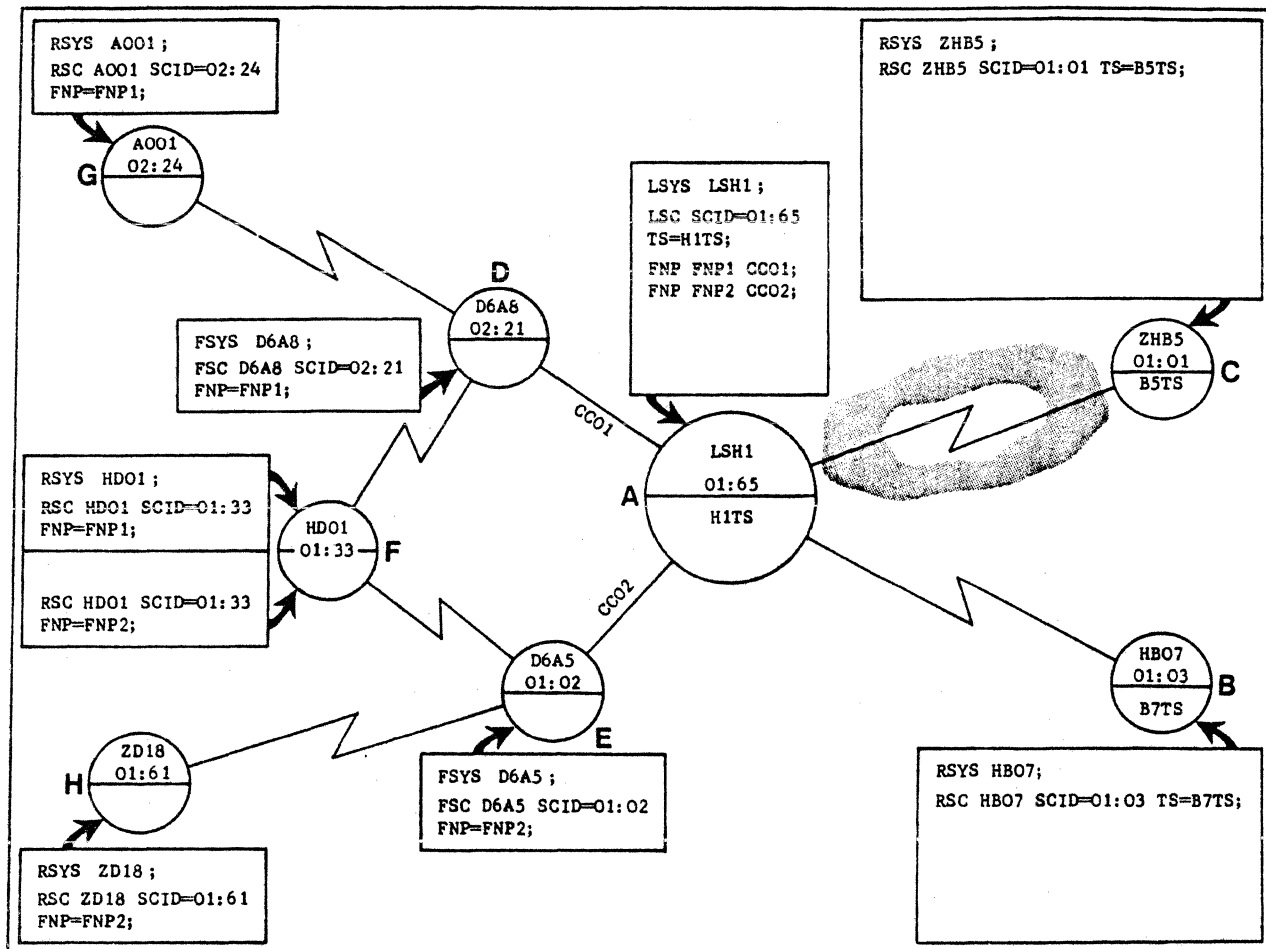
There is no global network configuration but a configuration of each system with respect to the others.

In order for the network to function, a certain number of objects among the systems must correspond.

For the simplicity of the CNC descriptions that follow, only mandatory parameters are shown.

Optional parameters are included only if their presence is meaningful in showing the development of the CNC description.

## Configuring a Primary Network Session Control through the DN7100



Such a configuration is represented by the left-hand portion of the diagram, described earlier as "connection type 2". This concerns A with respect to F, G and H, and the participation of D and E as "intermediaries".

A : The DPS 7 "local system" is relieved of most of its DSA administrative functions by virtue of its being "front-ended" by D and E. A functions as the "host" with D and E determining the "access" and providing the "transport", to and from the "remote systems". The "transport" is declared in the FNP command which describes the operation of the FNPS service and which maps the DN7100 "front-end system" over the PSI of the DPS 7 "host".

In the case where the DN7100 is connected to the "host" over 2 PSIs, 2 FNP commands describing separate "transports" must be declared.

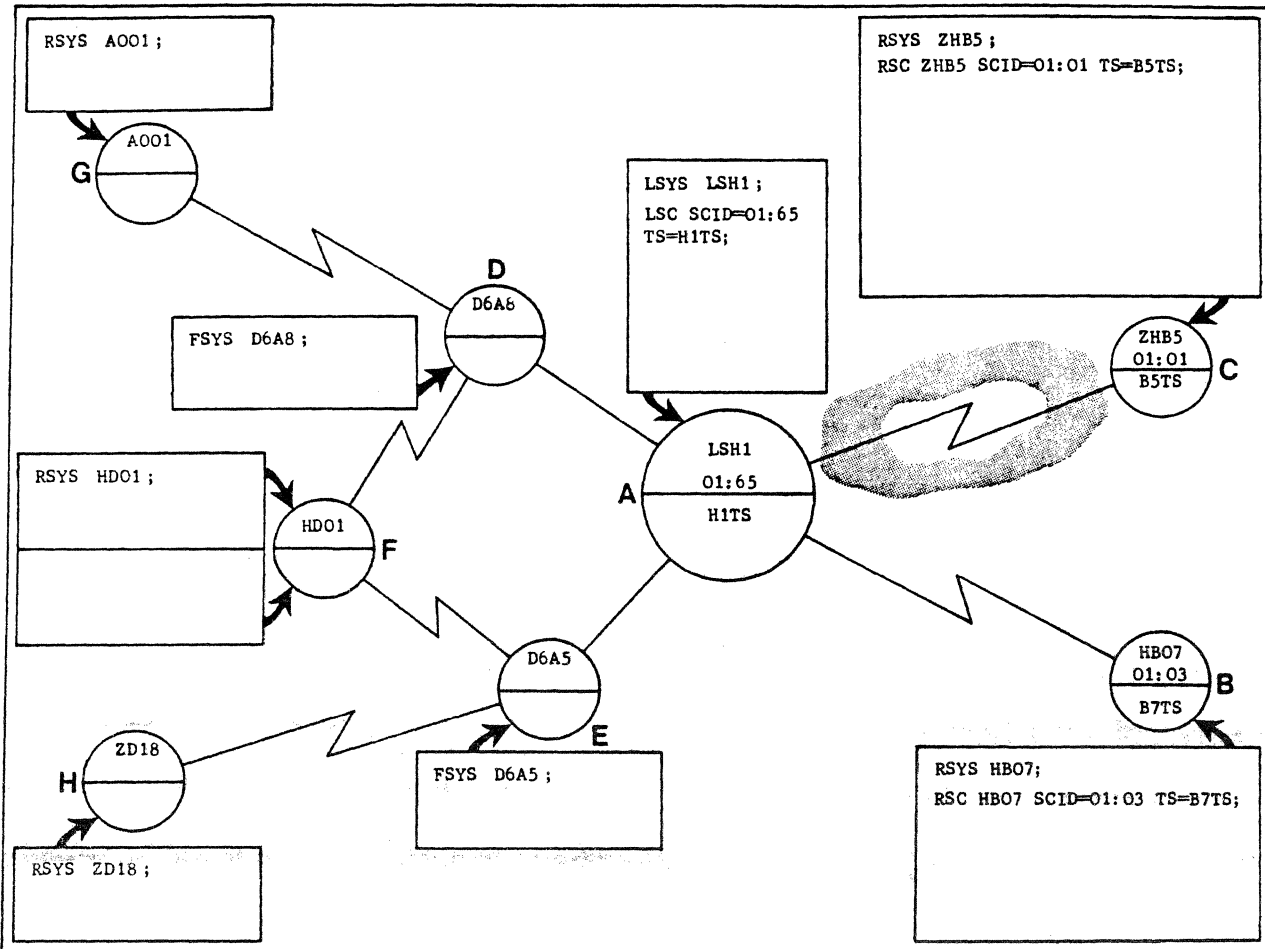
D, E, F, G and H : The "transports" being the FNPS services, link these systems together, F and G through D, and F and H through E.

The FNPS service is specified in the FNP parameter of the following commands :

- . for each "front-end system", namely the FSC command
- . and, for all its attached "remote systems", namely the RSC command(s).

In the particular case of F, although 2 RSC commands are used to declare separate "transport stations", both commands must specify the same "scid".

Configuring a Primary Network  
Session Control through the URP



Such a configuration is represented by the right-hand portion of the diagram, described earlier as "connection type 1". This concerns A with respect to B and C.

A : The DPS 7 "local system" administers all the DSA layers by virtue of its direct connection to the primary network, represented by B and C, through its URP. It is therefore a "satellite" and, as such, has a "transport-station server" which serves the "session-control" and which must be

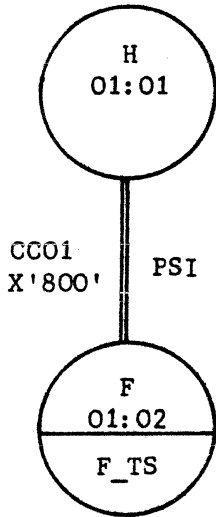
- specified as the argument of the TS parameter in the LSC command
- and declared in the LTS command.

B and C : Irrespective of whether these systems are "satellites" or "front-end systems", the fact that they are directly connected to A through its URP, means that they too have "transport-station servers" capable of negotiating a transport connection with their counterpart in A.

These "transport-station servers" serving the corresponding "session-controls" must be

- specified as the arguments of the TS parameter in their respective RSC commands
- and declared in their respective RTS commands.

Host to Front-end Link-up



H the DPS 7 "host" is connected to F the DN7100 "front-end" system over a PSI.

The link-up between H and F is shown in terms of

- . the CNC generation declared by H
- . the DN7100 generation declared by F.

While the names are arbitrary, the "session-control" identifiers, scid's, must be unique and network-wide.

An example of a CNC generation declared by H is :

```

FNP  FNPSCCO1  CCO1 ;
LSYS  H ;
LSC  SCID=01:01 ;
RSYS  F ;
RSC  F  SCID=01:02  FNP=FNPSCCO1 ;
  
```

An example of the DN7100 generation declared by F is :

```

ND  F  LOC  -ADDR 01:02
      |
      |   ┌───┴───> "scid" of FSC
      |   └───┬───> the DN7100 is describing itself
      |
      └───┬───> name of FSYS

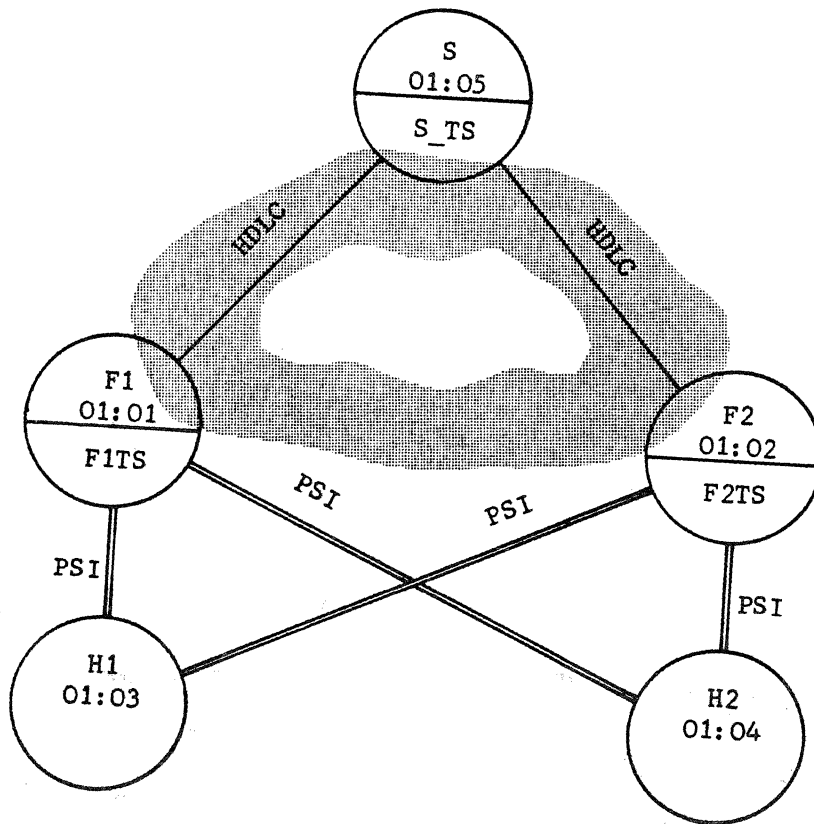
ND  H  RMT  -TS F_TS  -ADDR 01:01  -SERCD
      |
      |   ┌───┴───> "session" record for DPS 7 accounts
      |   └───┬───> "scid" of LSC
      |       └───┬───> "transport station" providing access to H
      |           └───┬───> the DN7100 is describing the DPS 7 "host"
      |               └───┬───> name of LSYS

TS  F_TS  L64  -CT F_TS  -T3 328  -RCH 8  -CNX 100

CT  F_TS  PSI  -PHAD X'800'  -MXCH 16
      |
      └───┬───> "physical address" of CCO1 known to the DN7100
  
```



Configuring Session Controls for Multi-access



The diagram shows the following systems,

- . S the DPS 7 "local" system
- . F1 and F2, DN7100 "front-end" systems
  - connected on the one hand to S over HDLC lines
  - and on the other hand "front-ending" H1 and H2 over PSIs
- . H1 and H2, DPS 7 "hosts" interconnected through F1 and F2.

An example of a CNC generation for such a configuration as declared by S is :

```

LSYS S ;
LSC SCID=01:05 TS=S_TS ;
RSYS F1 ;
RSYS F2 ;
RSC F1 SCID=01:01 TS=F1TS ;
RSC F2 SCID=01:02 TS=F2TS ;
RSYS H1 ;
RSYS H2 ;
RSC H1 SCID=01:03 TS=(F1TS , F2TS) ;

```

↪ H1 can be accessed through either F1 or F2

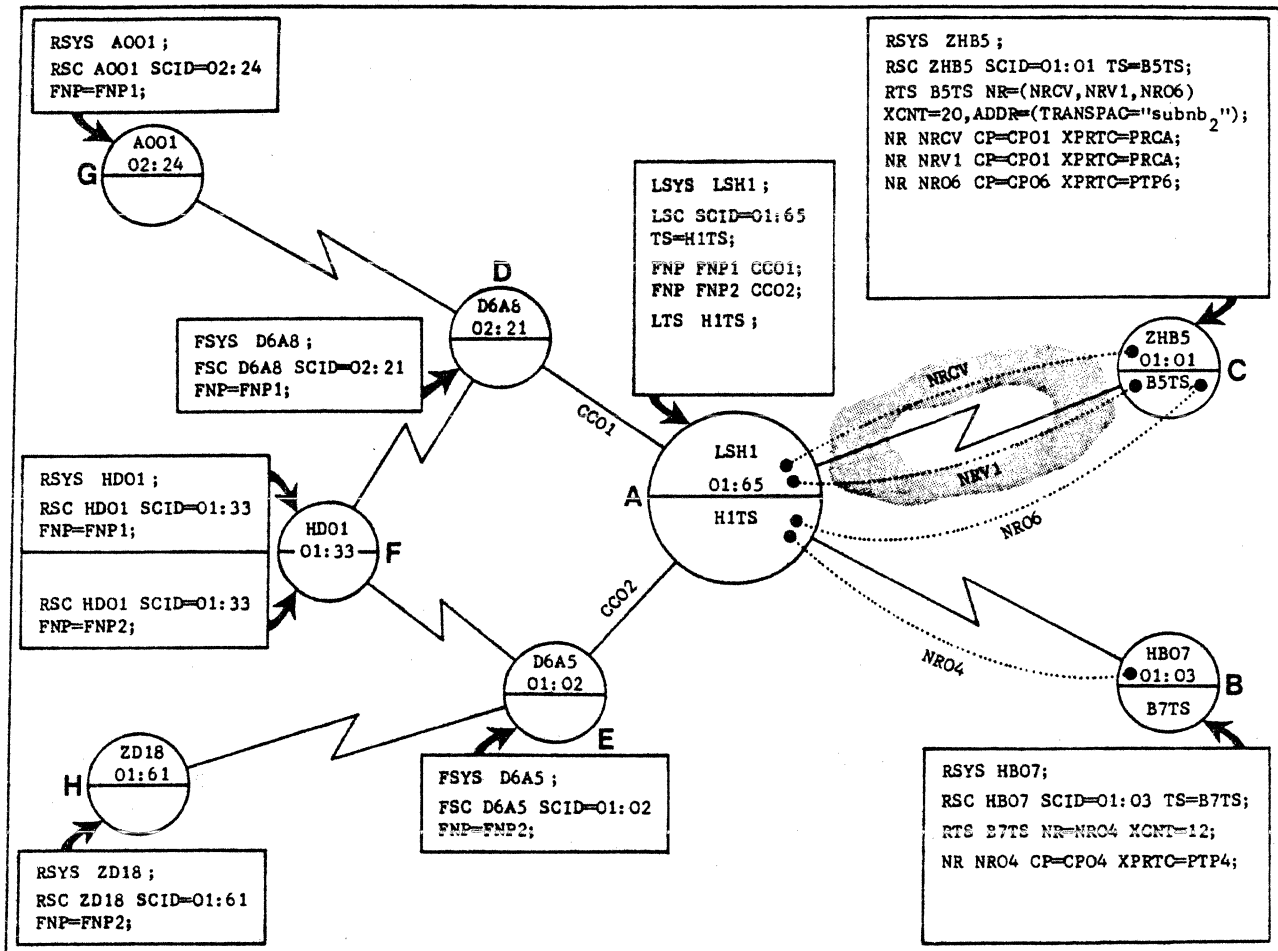
```

RSC H2 SCID=01:04 TS=(F2TS , F1TS) ;

```

↪ H2 can be accessed through either F2 or F1

Configuring a Primary Network  
Defining the Access Path  
1. Network Route



A "network route" declared in the NR command, represents the logical path between a pair of "transport stations" being in this case,

- . the "departure transport station" of A, on the one hand
- . and, on the other hand, the "arrival transport stations" of B and C.

It describes the one end of a physical "conduit" at which the "arrival transport station" is located. It is therefore a "localized" image of the physical path available to the "departure transport station" to "exit" to the "arrival transport station".

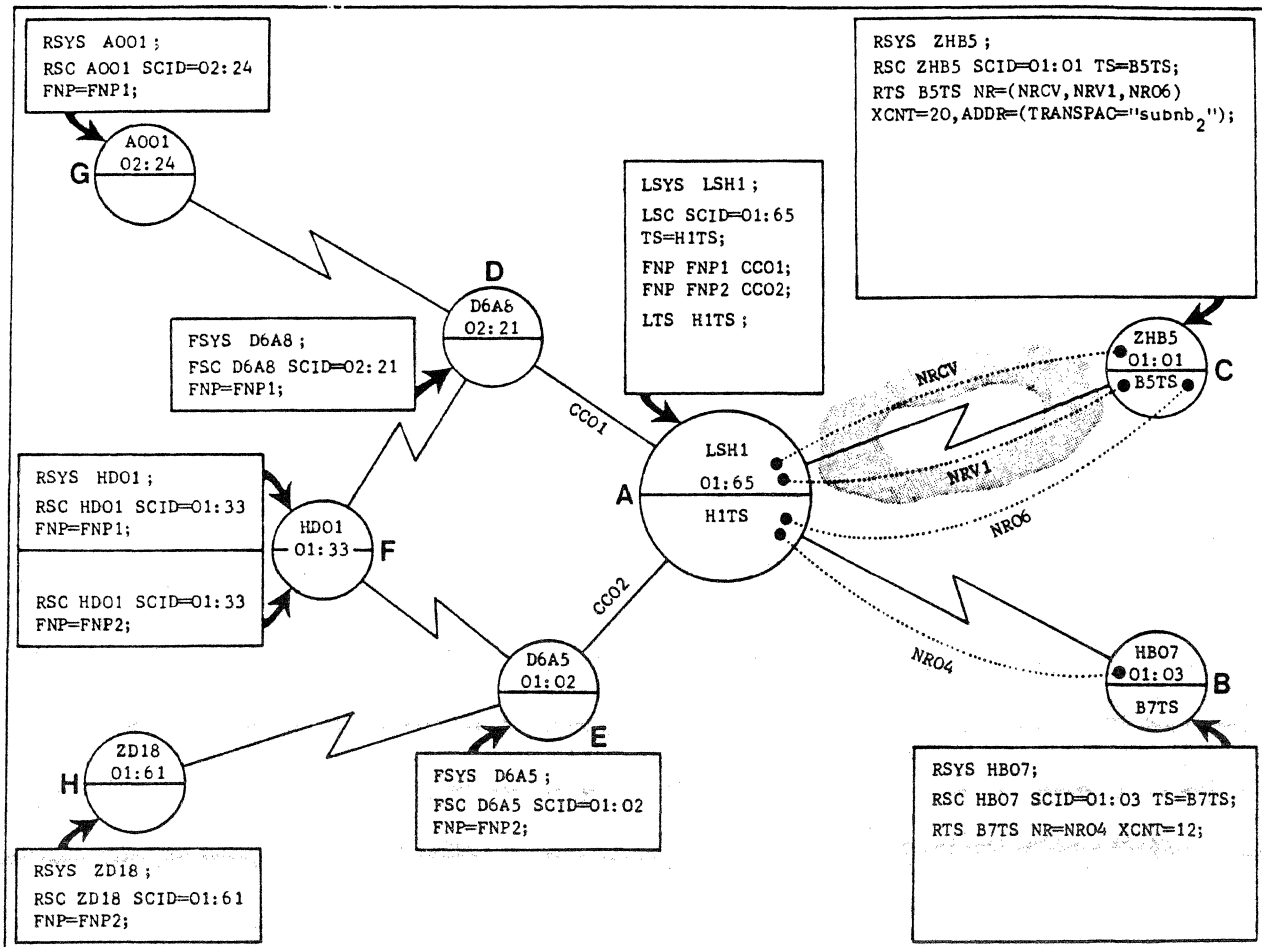
Between the same pair of "transport stations", there can be more than one "network route" defined, not necessarily within the same network, as illustrated by those between A and C as follows

- . NRCV and NRV1 mapped over virtual circuits of the TRANSPAC network
- . NRO6 mapped over a point-to-point HDLC line of any DSA network.

Data is exchanged between A and C over any of the three "network routes", all of which being "enabled" at the start of the communications session provided that their associated "communications paths" are physically functional and logically available.

Note : The "transport protocol" specified for the NR commands is only for the purpose of developing the CNC sequence.

## Configuring a Primary Network When to Define the Access Path



An "access path" links 2 "transport stations" and is defined in terms of

- . network route
- . communications path
- . and, transport protocol.

Each of these is dealt with in detail in the pages following.

"Transport stations" are defined for "satellites", that is, systems which directly interconnect without the intermediary of "front-end systems".

Such a configuration, described earlier as "connection type 1", is represented by the systems A, B and C in the right-hand portion of the diagram.

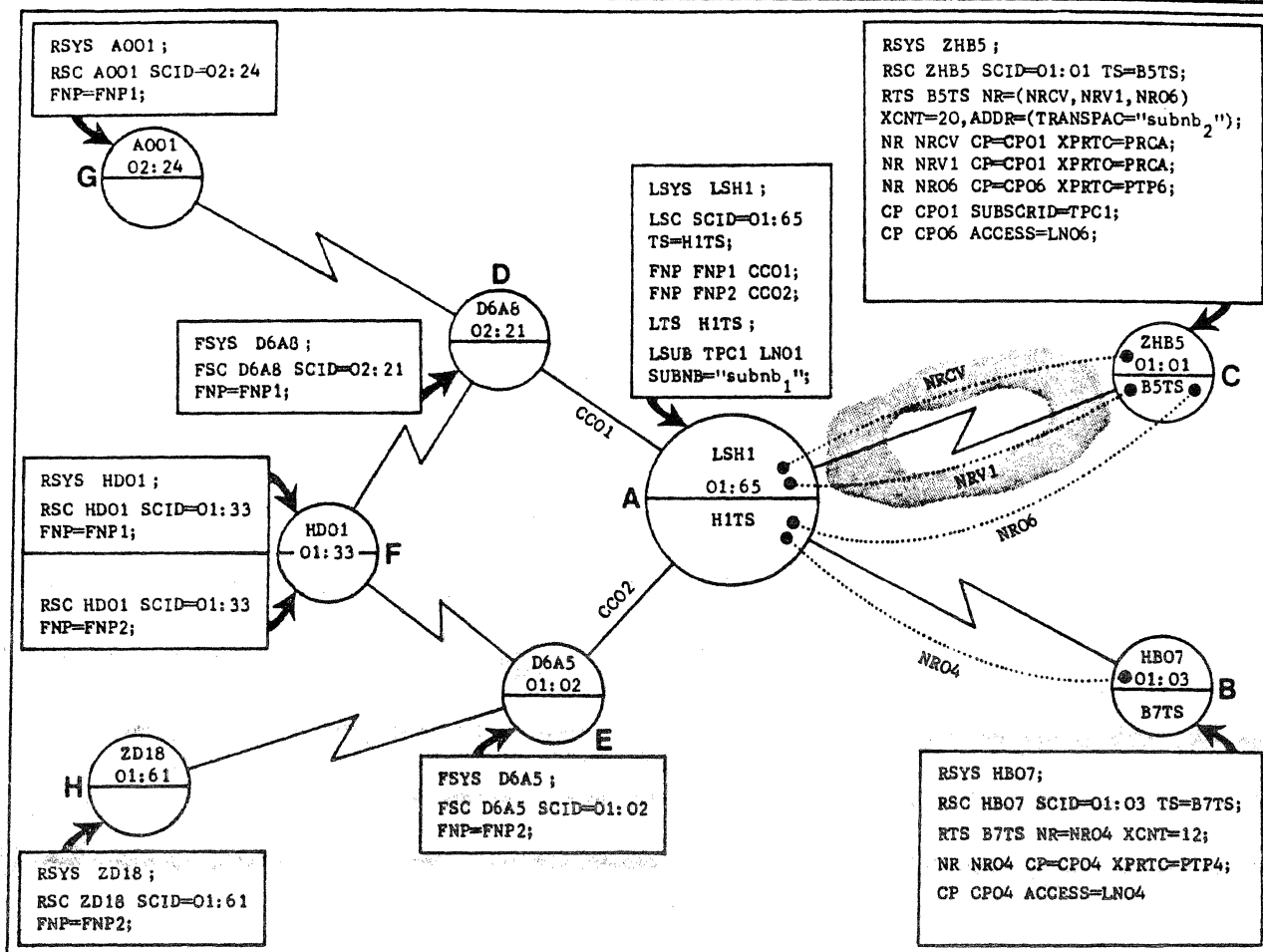
Seen from A, "access paths" link the "exit" from its "departure transport station" to each of the "arrival transport stations" in B and C. While there is 1 "transport station" per system, there can be more than 1 "network route" for an "access path".

A : The LTS command defining the "exit" is unique and mandatory. B and C must declare the same values as FLOWTH (T1), SILENT (T2) and RETRY specified in A's LTS. If B and C are DN7100's, NOKILL must be specified in their TS sysgen commands.

B and C : The RTS command provides TNS with a list of all "network routes" which correspond to the number of "transport connections" that can be made from A. In the current release, there is no session multiplexing over a "transport connection". The entry "subnb<sub>2</sub>" for B defines its "remote" TRANSPAC subscription number for establishing the "network route" over the TRANSPAC network.



Configuring a Primary Network  
Defining the Access Path  
2. Communications Path



A "communications path" declared in the CP command, represents a physical channel serving as the "exit" from the "departure transport station" located in A. The relationship between the "network route" and the "compath" depends on the network type.

TRANSPAC Virtual Circuits : The "network routes" NRCV and NRV1 between A and C are an example of several "routes" which map over virtual circuits of the same local TRANSPAC subscription and which reference a common "compath" CPO1. In other words there is 1 "compath" for many "network routes".

The name of the "local TRANSPAC subscription" must be  
 . specified as the argument of the SUBSCRID parameter in the CP command  
 . and declared in the LSUB command, see note below.

Point-to-point HDLC Lines : The "network routes" NRO4 between A and B, and NRO6 between A and C, are examples of "routes" which map over HDLC lines and which correspond one-to-one with their associated CP command. In other words there is only 1 "compath" per "network route".

Each HDLC line must be  
 . specified as the argument of the ACCESS parameter in the CP command  
 . and declared in the LINE command, see note below.

Note : The CNC generation must include the commands "LINE LNO1;" for LSUB, and "LINE LNO4;" and "LINE LNO6;" for the CP commands CPO4 and CPO6.

## Establishing the Access Path

Until the access path connection is "completed", the state of the network route is either "not authorized" or "not requested" or "not completed".

Establishing the access path applies to "satellites" connected via the URP-HDLC link of the DPS 7 and involves TNS of the BTNS/HDLC service. The following explanation refers to the preceding diagram in "Defining the Access Path".

For a point-to-point HDLC line LNO2, the access path is established when the line is "opened". The network route NR\_PTP to TSS2 the "remote" transport station of S2 is set to "connection completed" and the DSA "restart" phase is entered, see 4.

For a TRANSPAC virtual circuit, the access path is "completed" in the following consecutive stages :

- 1) the line LNO1 giving S1 access to TRANSPAC is "opened"
- 2) the X25 "restart" phase is entered and "completed"
- 3) the "call" phase is set up, comprising the following events
  - TNS selects one of the "remote" subscription numbers either 178000220 or 178000215 to "call" S2
  - when one of these numbers is "available" to connect to S2, TNS enters the X25 virtual circuit "open" phase to establish the network route over either NR\_CV1 or NR\_CV2

The network route thus established to TSS2 the "remote" transport station of S2 is set to "connection completed"
- 4) the DSA "restart" phase is entered when TNS synchronizes with TSS2 to exchange DSA "restart" information and is "completed" when the communications link-up between S1 and S2 is established.

In the case of the S1-S2 link, 3 network routes are available; TNS exchanges DSA "restart" information with TSS2 to "complete" the connection over whichever of the 3 network routes is the first to be set to "connection completed".

When the DSA "restart" information between TNS and TSS2 is successfully negotiated, the TSS2 transport station is set to "restart completed"; this will occur even if only 1 of the 3 network routes has been established.

The "remote" subscription number is set by TNS to one of the 2 following states :

- "access enabled" : where the subscription is "available" and operational
- "access disabled" : where the subscription is "unavailable" either because it is not operational or because S2 has yet to "complete" synchronization with the TRANSPAC switcher.

The subscription remains in this state for as long as S2 the "remote" system rejects the establishment of any virtual circuit.

The network connection over a subscription in such a state will be attempted

- either at the request of the network control operator
- or when TNS receives either a connection request from the session-control of S1 or an X25 "call" from S2 the "remote" system.

TNS then sets the subscription to "access enabled" and retries the connection over a virtual circuit.

```

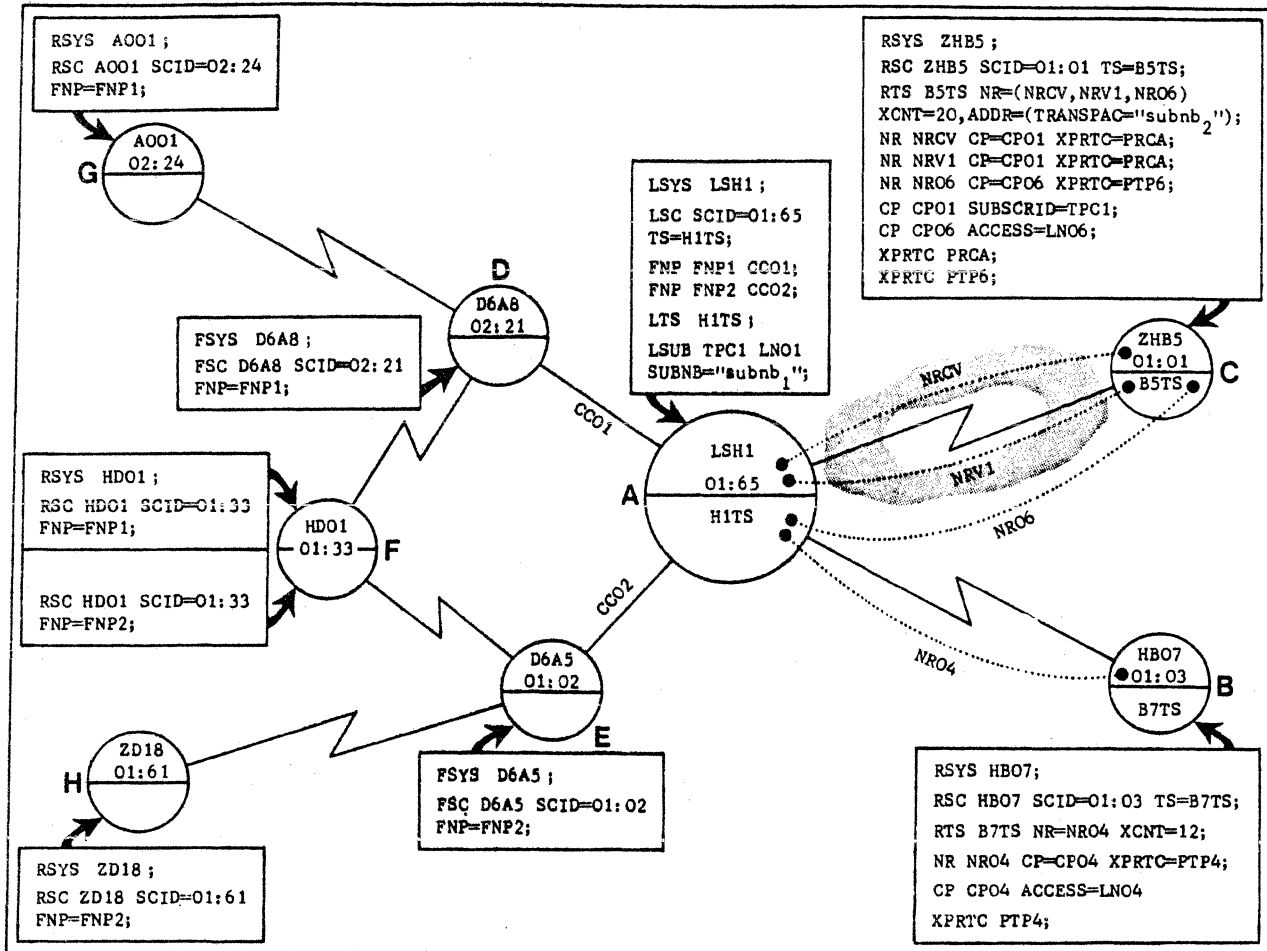
LINE  LNO2 ;
      ↳ to be specified as argument of ACCESS in the following CP command
STATN STPP  1 ;
      ↳ fictitious "station-index" pertinent only to CNC syntax
      ↳ used when indicating result of LAP synchronization
TERMNL - mandatory after STATN but need only be syntactically correct for
        CNC generation

LSYS  S1 ;
RSYS  S2 ;
LSC   SCID=01:01  TS=TSS1 ;
      ↳ mandatory for URP-HDLC link
RSC   S2  SCID=02:02  TS=TSS2 ;
LTS   TSS1 ;
RTS   TSS2  NR=(NR_CV1 , NR_CV2 , NR_PTP)
      ↳ mapped over point-to-point HDLC line
      ↳ each mapped over a TRANSPAC virtual circuit
      ADDR=(TRANSPAC=("178000220", "178000215"))
      ↳ "remote" TRANSPAC subscription numbers for S1 to "exit" from
        the network to connect to S2 : network routes such as NR_CV1
        and NR_CV2 are evenly established over as many "remote" sub-
        scription numbers as are declared

NR   NR_CV1  CP=CPO1 ;
NR   NR_CV2  CP=CPO1 ;
NR   NR_PTP  CP=CPO2 ;
CP   CPO1   SUBSCRID=TPC1 ;
      ↳ relates to the "local" TRANSPAC subscription number providing
        S1 the "exit" to the network
CP   CPO2   ACCESS=LNO2 ;
      ↳ point-to-point HDLC line connecting S1 directly to S2
XPRTC - see "Sizing the Buffer Units", page C-17 et seq

```

Configuring a Primary Network  
Defining the Access Path  
3. Transport Protocol



The "transport protocol" declared in the XPRTC command, provides transport parameters associated with a "network route" to establish the transport connection between the "departure transport station" (LTS) and the "arrival transport station" (RTS).

Several "network routes" can have the same "transport protocol". Conversely, several "routes" mapped over as many virtual circuits of the same local TRANSPAC subscription can each have different "protocols", for instance, NRCV and NRV1 could have specified different "protocols".

In the example, the XPRTC commands take default values. This being the case, in a real CNC generation, the XPRTC parameters of the NR commands, and subsequent XPRTC commands can therefore be omitted.

While the default protocol LEVEL is FLOW\_CONTROL, TNS will override this default value and select FULL\_RECOVERY if several "network routes" are declared, as is the case between A and C, represented by the "routes" NRCV, NRV1 and NRO6. TNS will only accept the default FLOW\_CONTROL if there is only 1 "route" declared, as is the case between A and B, represented by the single "route" NRO4.

Note : The CNC description as declared by A is now complete only with regard to primary network configuration commands; other commands to be included are  
 . the GENCOM command which is unique and mandatory in a CNC generation  
 . LINE commands as mentioned earlier



Example of Console Dialog determining Access Status

S : ST ← BTNS/HDLC is launched thereby activating TNS  
13.41 X1913 STARTED BTNS OPERATOR S  
JBO8 X1913.1 STEP H\_BTNS DPR=0 J=2  
13.42 S1 STARTED ← name of BTNS/HDLC service in GENCOM command

S : DT RTS TSS2 LONG ← for detailed access status to "remote" system S2  
CC85 RTS "TSS2" TRANSPORT RESTART IS COMPLETED  
at least 1 of the network routes NR\_CV1 or NR\_CV2 or NR\_PTP is in "connection completed" thereby allowing the "restart" phase to complete  
NR "NR\_CV1" TO RTS TSS2  
CONNECTION IS REQUESTED  
TNS has selected 1 of the 2 "remote" subscriptions 178000220 or 178000215 and is still in the X25 virtual circuit "open" phase  
AND MAPPED OVER VC. TPC1  
name of LSUB command specified for SUBSCRID in CP command  
NR "NR\_CV2" TO RTS TSS2  
CONNECTION IS NOT AUTHORIZED  
1 of the 2 "remote" subscriptions 178000220 or 178000215 is in the "disabled" state waiting to be "released"  
AND MAPPED OVER VC. TPC1  
NR "NR\_PTP" TO RTS TSS2  
CONNECTION IS COMPLETED  
LNO2 giving S1 direct access to S2 is "opened"  
AND MAPPED OVER VC. LNO2  
point-to-point HDLC line specified for ACCESS in CP command  
CC89 DT COMMAND COMPLETED  
CC80 ACCESS TO RTS "TSS2" DISABLED  
THROUGH RSUB TRANSPAC. 178000215  
"remote" subscription over which NR\_CV2 is "not authorized"  
REASON CODE : 09.00  
see Appendix A for explanation of PAD return-codes

S : RT RSUB TRANSPAC. 178000215 ← to "enable" 178000215 thereby allowing the connection of NR\_CV2 to be retried  
CC80 ACCESS TO RTS "TSS2" ENABLED  
THROUGH RSUB TRANSPAC. 178000215

All network routes between S1 and S2 are now established.

The fragment size proposed by TNS to the "remote" transport station (RTS) is determined by the following consecutive algorithmic procedures :

A) For a given network route, the initial sizing depends on the type of "access"

- 1) Over a point-to-point HDLC line, the fragment size selected is the least of the following parametric values
  - the "data part" of the "frame-length" specified in the URP firmware generation, that is, ("frame-length" - 2), see "Configuring the Line"
  - the "data part" of the buffer unit size, BTBFSZ and DABFSZ of the GENCOM command, that is, ( { BTBFSZ | DABFSZ } - 32)
  - and, the UNITSZ parameter of the XPRTC command.

$$\text{Fragment}_{\text{pt-to-pt}} = \text{Min} ( \text{frame}_{\text{fw}} - 2 , ( \{ \text{BTBFSZ} \mid \text{DABFSZ} \} - 32 ) , \text{UNITSZ}_{\text{xprtc}} )$$

- 2) Over a TRANSPAC virtual circuit, the fragment size is selected according to the following consecutive criteria
  - if the XPRTC command is specified with its UNITSZ parameter, the fragment size selected is equal to UNITSZ
  - if the XPRTC command is specified but without its UNITSZ parameter, or if the XPRTC command is not specified at all, the fragment size selected is calculated as the product of the WINDOW and PKSIZE parameters of the LSUB command.

$$\text{Fragment}_{\text{tpac-vc}} = \left\{ \begin{array}{l} \text{UNITSZ}_{\text{xprtc}} \\ ( \text{WINDOW}_{\text{lsub}} \times \text{PKSIZE}_{\text{lsub}} ) \end{array} \right\}$$

B) Where there are several network routes linking the "local" transport station (LTS) to the RTS, the fragment size chosen is the lowest common minimum of all the fragment sizes determined for each network route according to either A1 or A2, as applicable.

$$\text{Fragment}_{\text{lcm}} = \text{Min} ( \text{fragment}_{\text{nr}_1} , \text{fragment}_{\text{nr}_2} , \dots , \text{fragment}_{\text{nr}_n} )$$

C) Once the connection between LTS and RTS has been confirmed on a mutual exchange, either transport station then selects the smaller of their "input" and "output" fragments for transmitting data.

$$\text{Fragment}_{\text{on-line}} = \text{Min} ( \text{fragment}_{\text{send}} , \text{fragment}_{\text{receive}} )$$

D) Once the fragment size has been selected, TNS will calculate the letter size as the product of the fragment size and the "output" credit.

The "output" credit proposed to the RTS is

- either equal to the non-zero value specified by the WINDOW parameter of the XPRTC command
- or if WINDOW=0 is specified in the XPRTC command, equal to twice the number of network routes declared
- or if the XPRTC command is not specified at all, or if the XPRTC command is specified without WINDOW, equal to the default value of 3.

### Declaring the Line

The LINE command to describe an HDLC line accessing TRANSPAC or point-to-point to a remote system has the following syntax:

```
LINE LNnn [CLOSE] [UHDLCW = (  $\frac{1}{n_1}$ ,  $\frac{7}{n_2}$  )];
```

UHDLCW is a mnemonic for "User HDLC Window" which introduces

- .  $n_1$  : the maximum number of "read's" to be executed in 1 "shoot"
- .  $n_2$  : the maximum number of "write's" to be executed in 1 "shoot".

The term "shoot" refers to the number of input or output CCEs in the physical channel program executable at one time before "turn-around".

Although the LINE command must be followed by STATN and TERMNL commands, the mandatory parameters to be specified for these commands need only be syntactically correct for the CNC utility to accept.

Having described the line, the parameter LNnn must then appear

- . in the case of a TRANSPAC virtual circuit, as a parameter in the LSUB command
- . and, in the case of a point-to-point HDLC line, as the argument of the ACCESS parameter of the CP command.

### Sizing the Buffer Units

The line is configured at URP firmware generation with its hardware and "software visible" attributes. This configuration is the responsibility of the DPS 7 installation engineer.

In the firmware generation for the line, the sizes of the input and output frames are specified. The frame lengths specified determine the sizes of the input and output buffer units, BTBFSZ and DABFSZ parameters of the GENCOM command, used by BTNS/HDLC that can be specified by the user, if the default values of 160 bytes are not selected.

The algorithms for sizing the buffer units are as follows:

- For a TRANSPAC virtual circuit, the buffer unit must be large enough to fit the subscription packet size. The input buffer size, in particular, must be large enough to accommodate in addition, the packet header and the buffer management header.

```
{ BTBFSZ } = (PKSIZE + 32), where PKSIZE is a parameter of LSUB command  
{ DABFSZ }
```

- For a point-to-point HDLC line, the buffer unit must be large enough for the fragment dynamically negotiated by TNS. However, the network administrator can specify the maximum size required.

```
{ BTBFSZ } = (UNITSZ + 32), where UNITSZ is a parameter of XPRTC command  
{ DABFSZ }
```



$$\text{Letter} = (\text{fragment} \times \text{credit} \rightarrow \left. \begin{array}{c} \text{WINDOW}_{\text{xprtc}} \\ 2 \sum_{x=n}^{x=1} nr_x \\ \underline{3} \end{array} \right\} )$$

The Network Administrator must check the BTNS Job Occurrence Report for "overloading" of the buffer pool due to its being "undersized".

This "overloading" for each transport connection can be caused by TNS demanding more buffer units than actually declared in the CNC, for example

- . for a point-to-point HDLC line, as many as, or more than, twice the value specified by the WINDOW parameter of the XPRTC command
- . and, for a TRANSPAC virtual circuit, as many as, or more than, twice the value specified by the WINDOW parameter of the LSUB command.

To resolve this problem, the Network Administrator can perform one or all of the following

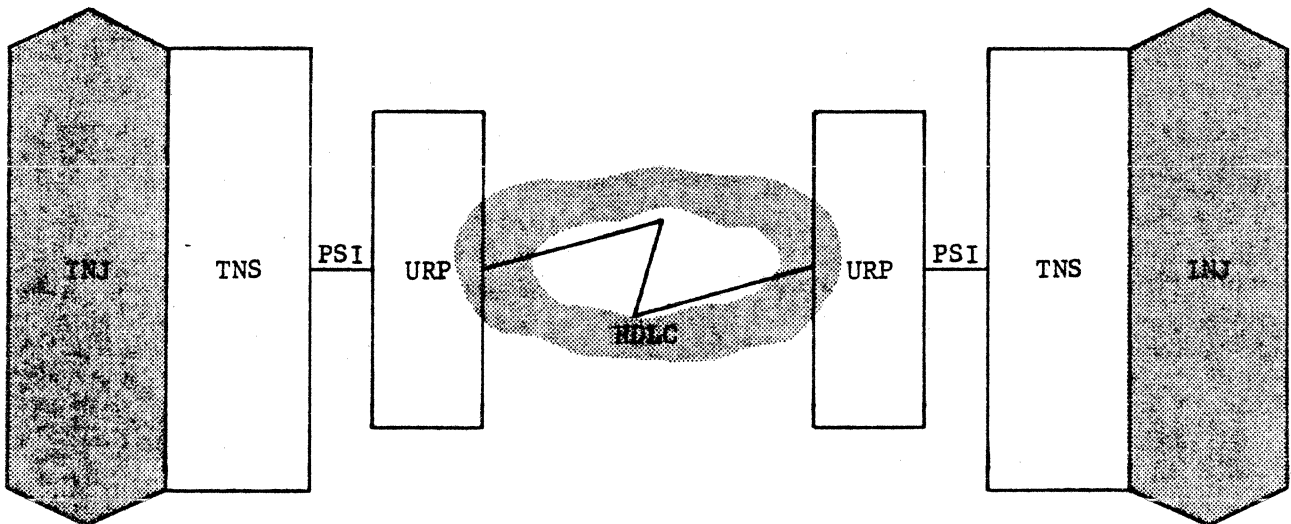
- . increase the number of output buffer units, NBDABF of the GENCOM command
- . decrease the credit value in the WINDOW parameter of the XPRTC command
- . and, in the case of the TRANSPAC virtual circuit, reduce the fragment size specified in the UNITSZ parameter of the XPRTC command.

## Debug Mode

The "injector" facility is an automaton linked within TNS, a function of BTNS/HDLC for simulating the session layer over which connection demands occur. It operates in the "debug" mode to validate the link between 2 transport stations and therefore validates the overall operational function of the following layers

- . the transport layer
- . the network layer
- . and the data link layer.

The following schema is a diagrammatic representation of 2 DPS 7 systems linked up for the use of the "injector" facility.



Since the "injector" INJ operates at the level of the session layer, it is functionally the "maintenance" equivalent of VCAM.

### ACTIVATING THE INJECTOR

The "injector" is activated through the "RT INJ" command. Once the "injector" has been activated, it will accept "injector" commands either from the system console or from any disk file.

"Injector" commands are written to the disk file using the LIBMAINT utility. Each of the commands read from the disk file are executed sequentially just as if they had been entered one at the time at the console.

### DEACTIVATING THE INJECTOR

The "injector" is deactivated through the "HT INJ" command.

## APPENDIX D

### PRIMARY NETWORK TEST TOOLS

The tools available for testing the operational function of a primary network connected through the URP of the DPS 7 are of one of 2 modes, namely

- . "debug" mode whereby the link between 2 transport stations is validated
- . and "loop" mode whereby the data link layer is validated.

This appendix deals with these two modes.

## Loop Mode

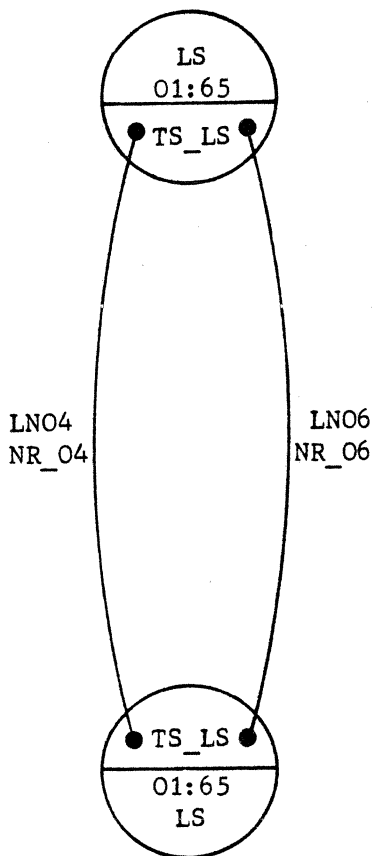
The "loop" mode provides the means of validating the operational function of the data link layer. The system under test "loops" upon itself when transmitting data traffic over the "loop".

To generate this data traffic, the "injector" facility can be used. In general, any VCAM subsystem, otherwise known as communications service, can be used for this purpose.

There are no operator commands for setting the "loop" mode. What is required to set the system in "loop" mode is to launch a CNC version in which the name of the LSYS command is the keyword LOOP.

TNS will then inhibit checking the "session-control identification" when reserving a transport connection. This means that the "local" transport station fulfills the role of both "departure" and "arrival" transport stations.

### CNC GENERATION FOR LOOP MODE



This diagram shows the system LS in a mirror-image of itself connected over 2 point-to-point HDLC lines.

#### Notes concerning "looping" over the TRANSPAC network :

- 1) The lines must be declared in the URP firmware configuration, one as a DTE and the other as a DCE, see "Configuring the Line", page C-20
- 2) 1 of the 2 netroutcs must declare WHEN=DYNAMIC.

```
GENCOM LS ;
LINE LNO4 ;
STATN STO4 1 ;
TERMNL TMO4 HL64 CPU ;
LINE LNO6 ;
STATN STO6 1 ;
TERMNL TMO6 HL64 CPU ;
LSYS LOOP ;
    └─ mandatory for setting LS in "loop" mode
LSC SCID=01:65 TS=TS_LS ;
LTS TS_LS ;
RSYS LS ;
    └─ the "rsystem" is itself the "lsystem"
RSC LS SCID=01:65 TS=TS_LS ;
RTS TS_LS NR=(NR_04 , NR_06) XCNT = 20 ;
NR NR_04 CP=CP_04 ;
NR NR_06 CP=CP_06 ;
CP CP_04 ACCESS =LNO4 ;
CP CP_06 ACCESS =LNO6 ;
```



INITIATOR ← Injector Commands → RECEIVER

• CONNECTION

nn CALL, scid;

└─ "session-control" identification of system in "loop" mode  
└─ message-number in the prompt "nn/DSA COMMAND?"

response :

scid : nn CONNECTED

└─ transport-connection number

IPLUG : nn CONNECTED

└─ transport-connection number

• DISCONNECTION

nn LIB, scid : nn;

└─ transport-connection  
└─ prompt message-number

response :

scid : nn DISCONNECTED

└─ transport-connection number

IPLUG : nn DISCONNECTED

└─ transport-connection number

• ECHO

nn ECHO;

└─ prompt message-number

• NO ECHO

nn NECHO;

└─ prompt message-number

• SEND

nn SEND, scid : nn, data;

└─ either message-text or \*<injector-command>;  
└─ transport-connection number  
└─ prompt message-number

• MSEND

nn MSEND, scid : nn, nn \* nn [ / nnnnn ];

└─ line speed in number of bits per second  
└─ length of letter in number of characters  
└─ number of letters to send  
└─ transport-connection number  
└─ prompt message-number



### Example of Console Dialog

The following console dialog makes use of the CNC generation for the "loop" mode and the "injector" commands in "debug" mode. This test is valid for Step 3/L64.

```
S : ST LS
    └─ start of BTNS/HDLC for which the "loop" mode is to be set
11.45 X54 STARTED BTNS BTNS S
JB20 X54.1 STEP H_BTNS DPR=0 J=1
11.45 LS STARTED

S : RT INJ
    CC98 RT COMMAND COMPLETED
    06 / DSA COMMAND ?

S : 06 CALL,0165 ;
    07 / DSA COMMAND ?
    0165 : 01 CONNECTED
    IPLUG : 01 CONNECTED

S : 07 SEND,0165 : 01 , TOTO ;
    08 / DSA COMMAND ?
    TOTO

S : 08 MSEND,0165 : 01 , 60 * 1020 / 19200 ;
    09 / DSA COMMAND ?
    ELAPSED 00.027.305 0165 : 01
    CPU #0 00.539.915 ── 01,97 % OVERHEAD
    CPU #1 00.288.704 ── 01,05 % OVERHEAD
    00000061800 CHARACTERS IN TOTAL 18106 B/S 94,30 %
    00000061200 USEFUL CHARACTERS 17930 B/S 93,38 %

S : 09 LIB,0165 : 01 ;
    10 / DSA COMMAND ?
    IPLUG : 01 DISCONNECTED
    0165 : 01 DISCONNECTED

S : 10 CALL,0165 ;
    11 / DSA COMMAND ?
    0165 : 01 CONNECTED
    IPLUG : 01 CONNECTED

S : 11 SEND,0165 : 01 , * LIB,0165 : 01 ; ;
    12 / DSA COMMAND ?
    * LIB,0165 : 01 ;
    IPLUG : 01 DISCONNECTED
    0165 : 01 DISCONNECTED

S : 12 END ;

S : HT INJ
    CC98 HT COMMAND COMPLETED
```

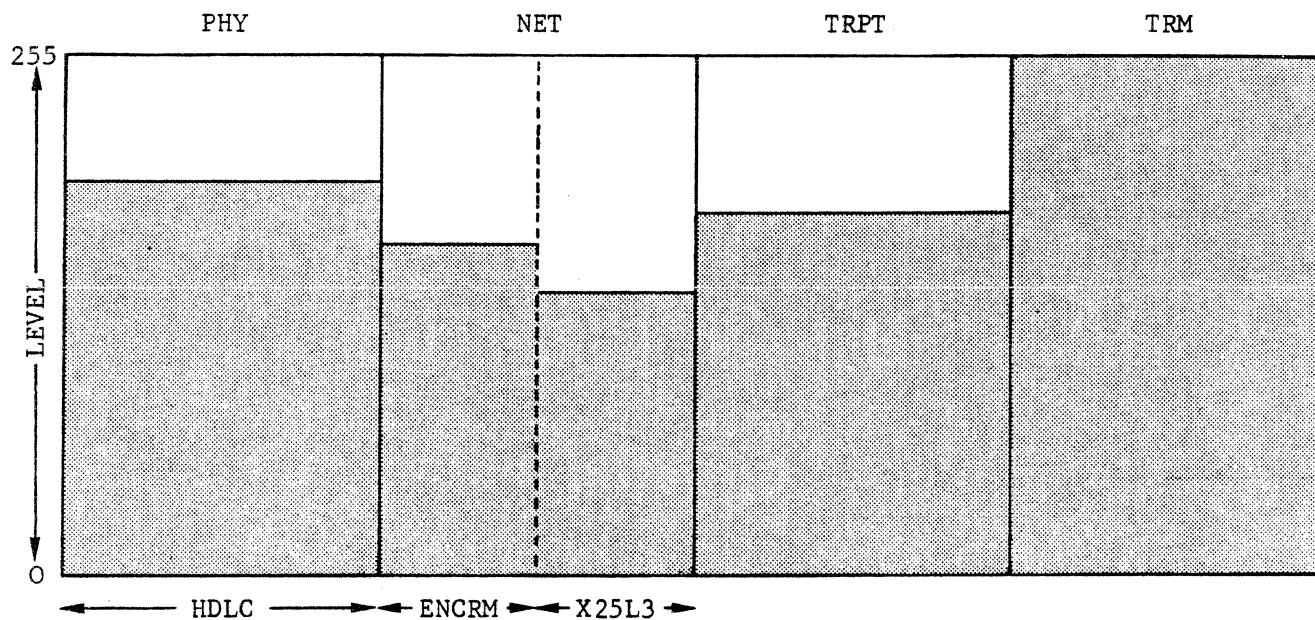
Note : Since the lines LNO4 and LNO6 have not been declared with the CLOSE option, they will be "opened" at the start of the communications session.

## Characteristics of the File

BTNS file trace is a sequential file of 4 cylinders which is dynamically allocated and deallocated for each trace session. Since the use of the file is cyclic, the activation of the trace will have the effect of overwriting recorded information from a previous trace.

File trace information is categorized into domains and subdomains for which a "level" is associated.

The following schema is a diagrammatic representation of these categories.



- PHY the "physical link" has 1 subdomain HDLC "high-level data link control"
- NET corresponds to the "network" layer and is composed of the subdomains
  - . ENCRM the "network control and resource management"
  - . X25L3 the X25 Level 3 portion of the "network" layer
- TRPT corresponds to the "transport" layer and has no subdomain
- PHY, NET and TRPT apply only to TNS
- TRM the "terminal manager" has no subdomain and applies to both BTNS and BTNS/HDLC
- LEVEL denotes the "depth" of the "probe" and while not in use for the current release is a reserved parameter.

## APPENDIX E

### BTNS TRACE FACILITIES

Trace facilities for BTNS and BTNS/HDLC are

- . internal memory traces which are "permanent"
- . the sysout trace activated by the "MTL [LNnn] TRACE" command
- . a complementary trace facility for TNS, a function of BTNS/HDLC, on a resident permanent file of the name BTNS\_FILE\_TRACE.

This appendix treats the file BTNS file trace.

Example of Console Dialog

S : ST TRACE

└─ start of BTNS communications session with startup of "global" trace

09.27 X475 STARTED BTNS BTNS S  
JB08 X475.1 STEP H\_BTNS DPR=0 J=2

09.27 BO5 STARTED

└─ name of BTNS/HDLC service in GENCOM command (CNC generation)

S : DT TRACE

CC86 BTNS FILE TRACE IN PROGRESS  
CC98 DT COMMAND COMPLETED

S : DT TRACE LONG

CC86 BTNS FILE TRACE IN PROGRESS

DOMAIN :	PHY	SUBDOMAIN :	HDLC	LEVEL :	255
DOMAIN :	NET	SUBDOMAIN :	ENCRM	LEVEL :	255
DOMAIN :	NET	SUBDOMAIN :	X25L3	LEVEL :	255
DOMAIN :	TRPT	SUBDOMAIN :		LEVEL :	255
DOMAIN :	TRM	SUBDOMAIN :		LEVEL :	255

CC98 DT COMMAND COMPLETED

S : HT TRACE

└─ termination of "global" trace

CC85 BTNS FILE TRACE CLOSED  
CC98 HT COMMAND COMPLETED

S : DT TRACE

CC86 NO BTNS FILE TRACE IN PROGRESS  
CC98 DT COMMAND COMPLETED

S : RT TRACE NET

└─ selective trace started of the domain NET

CC85 BTNS FILE TRACE OPENED  
CC98 RT COMMAND COMPLETED

S : DT TRACE LONG

CC86 BTNS FILE TRACE IN PROGRESS

DOMAIN :	NET	SUBDOMAIN :	ENCRM	LEVEL :	255
DOMAIN :	NET	SUBDOMAIN :	X25L3	LEVEL :	255

CC98 DT COMMAND COMPLETED

S : RT TRACE NET LEVEL01

└─ selective trace of the domain NET specifying the "level" 01 started

CC98 RT COMMAND COMPLETED

Note : Where the "level" is not specified, a value of 255 is the default.

## Operating the Trace Session

The trace session is the recording of information on the BTNS file trace from the start of the trace to its termination. In a single communications session, there can be more than one trace performed.

### STARTING THE TRACE

The trace session can be started

- . either at the start-up of the communications session through the "ST TRACE" command
- . or during the communications session through the "RT TRACE" command.

The "ST TRACE" command starts the communications session over the URP and activates a "global" trace on the BTNS\_FILE\_TRACE. However, the "RT TRACE" command can be used to activate either a "global" trace or a "selective" trace of a "domain" and its associated "subdomain" at a particular "level" required.

Starting the trace corresponds to the activation of the "probes" according to the domain and subdomain which are recorded on the file dynamically allocated.

### TERMINATING THE TRACE

The trace session is terminated by the "HT TRACE" command

- . either "globally" if no operand is specified
- . or selectively if the domain and, optionally, its subdomain is entered.

If, however, the communications session is terminated through the TT command, the file is "closed" at the termination of the BTNS process group.

Terminating the trace corresponds to the deallocation of the file thereby making it available for output.

## Printing out the File

The BTNS file trace is printed out using WRITER of the format :

```
WRITER ( BTNS_FILE_TRACE , RESIDENT ),  
DVC = PR , MD = volname , DATAFORM = SARF ;
```

BTNS\_FILE\_TRACE  
Printout Structure

RON = X85

```
0001#EMD 11800JFE A_C1 .....0000 00F00100 0000D9E3 4040DEFF
0002&ISC 11800593 P_C1 .....01 00000000 E34040FE FFFFFFFF
0003 CMD 118007E3 CMD_ .....01 00FF04D3 D5F1F040 40404040
                                04500DFB 00100019 004B11B0 06301045
                                0842FFFF 000000E3 D7C3D6E4 40404040
```

→ BTNS ron number

```
0006 TIO 1D500142 GAN .....C100 00014202 02430602 43 FFFF00
                                00000000 0000FFFF FFFFFFFF 0007001D
0007 TIO 1D500194 GAN C1000001 94020243 060243FF FF000000
                                00000000 FFFFFFFF FFF00007 0010503A
0008 TIS 1D5002FD LLT ..E5112A 02FD01FF FF0001E6 FFFF0000
                                01000080 00002710 FFFFFFFF FFFFFFFF
                                00000000 00000000 00000000 00000000
                                FF
0009 TIS 1D50038D LLT ..E51143 033D01FF FF0001E6 FFFF0000
                                01000080 00002710 FFFFFFFF FFFFFFFF
                                00000000 00000000 00000000 00000000
000A TIS 1D50041D → name of dump area 00000000 FFFF0000
                                FFFF0000 FFFFFFFF
                                00000000 00000000 00000000 00000000
                                FF
000B TIS 1D5004AD LLT ..E51175 04AD01FF FF0001E6 FFFF0000
                                01000080 00002710 FFFFFFFF FFFFFFFF
                                00000000 00000000 00000000 00000000
000C TIS → address of "dump" area in memory FF0001E6 FFFF0000
                                FFFFFFFF FFFFFFFF
                                00000000 00000000 00000000 00000000
                                FF
000D TIS 1D5005CD LLT ..E511A7 05CD01FF FF0001E6 FFFF0000
                                01000080 00002710 FFFFFFFF FFFFFFFF
                                00000000 00000000 00000000 00000000
000E → 3 character mnemonic corresponding to the "probe" FF100560
                                5A840100
                                00000000 00000000 00000000 00000000
                                FF
000F TIS 1D5006ED LLT ..E511D9 06ED01FF FF0001E6 FFFF0000
                                01000080 00002710 FFFFFFFF FFFFFFFF
                                00000000 00000000 00000000 00000000
                                FF
```

→ "probe" number (modulo 32K): delineates limit inside cyclic file



S : DT TRACE LONG  
CC86 BTNS FILE TRACE IN PROGRESS

DOMAIN :	NET	SUBDOMAIN :	ENCRM	LEVEL :	001
DOMAIN :	NET	SUBDOMAIN :	X25L3	LEVEL :	001

CC98 DT COMMAND COMPLETED

S : RT TRACE TRM LEVEL02

↳ selective trace of the domain TRM specifying the "level" 02 started

CC98 RT COMMAND COMPLETED

S : DT TRACE LONG

DOMAIN :	NET	SUBDOMAIN :	ENCRM	LEVEL :	001
DOMAIN :	NET	SUBDOMAIN :	X25L3	LEVEL :	001
DOMAIN :	TRM	SUBDOMAIN :		LEVEL :	002

CC98 DT COMMAND COMPLETED

S : RT TRACE LEVEL04

↳ "global" trace specifying the "level" 04 for all domains started

CC98 RT COMMAND COMPLETED

S : DT TRACE LONG

DOMAIN :	PHY	SUBDOMAIN :	HDLC	LEVEL :	004
DOMAIN :	NET	SUBDOMAIN :	ENCRM	LEVEL :	004
DOMAIN :	NET	SUBDOMAIN :	X25L3	LEVEL :	004
DOMAIN :	TRPT	SUBDOMAIN :		LEVEL :	004
DOMAIN :	TRM	SUBDOMAIN :		LEVEL :	004

CC98 DT COMMAND COMPLETED

S : HT TRACE NET

↳ selective trace of the domain NET terminated

CC98 HT COMMAND COMPLETED

S : DT TRACE LONG

DOMAIN :	PHY	SUBDOMAIN :	HDLC	LEVEL :	004
DOMAIN :	TRPT	SUBDOMAIN :		LEVEL :	004
DOMAIN :	TRM	SUBDOMAIN :		LEVEL :	004

CC98 DT COMMAND COMPLETED

S : HT TRACE

↳ termination of trace on all remaining domains

CC85 BTNS FILE TRACE CLOSED

CC98 HT COMMAND COMPLETED

S : WRITER (BTNS\_FILE\_TRACE RESIDENT) DVC=PR MD=110000 DATAFORM=SARF;

↳ submission of file to "writer" for printout, see Printout Structure

RAISON SOCIALE CONTRAT \_\_\_\_\_

(N° Contrat Avt Feuille) ① SUBNB  
N° TRANSPAC

CORRESPONDANT LOCAL (C,P,Q,S) \_\_\_\_\_

Raison sociale: \_\_\_\_\_  
Nom/Service: \_\_\_\_\_  
Rue: \_\_\_\_\_

LSUB (paquet) précédé par \_\_\_\_\_ RDTE  
1 : réseau national (caractère)  
0 2080 : connexion internationale précédé par 1

Bâtiment: Escalier Etage Pièce \_\_\_\_\_  
Commune: \_\_\_\_\_ INSEE: \_\_\_\_\_  
Code/Bureau distrib. \_\_\_\_\_ Pays: \_\_\_\_\_

DEBIT ②  
LINESPEED (SVA) \_\_\_\_\_  
Nb. de fils: \_\_\_\_\_

Identification de l'équipement raccordé (C,P,Q,S) { C.S.T.: Rattach.: Construct.: Modèle: \_\_\_\_\_  
Frontal.: Adaptateur.: Procédure: \_\_\_\_\_

Type de Modem: \_\_\_\_\_  
Nb Modem dépannage: \_\_\_\_\_

Modem Abonné: (C=300 bit) Constructeur: \_\_\_\_\_  
Type: \_\_\_\_\_, N° Agrément: \_\_\_\_\_

TERMINAL, EBVO (C) \_\_\_\_\_

PARAMETRES MODE CARACTERE (C) \_\_\_\_\_  
N° Profil standard: ④ voir tableau "Profils Standard"

ACCEPTATION TAD ③  
PCV \_\_\_\_\_

PARAMETRES MODE PAQUET X25 (P,R,S) \_\_\_\_\_

CVC { Mixte: SLINE ⑤  
Arrivée: SILIN ⑥  
Départ: SOLIN ⑦  
CVP: \_\_\_\_\_  
TRAME  
Enveloppe: \_\_\_\_\_  
Procédure: \_\_\_\_\_  
Temporisateur: PRTOL T1 (MLA) ⑧  
Fenêtre: TFNAK (SVA) ⑨  
Profil: \_\_\_\_\_

NIVEAU PAQUET  
1- ⑧ Longueur paquet: PKSIZE  
2- ⑨ Taille de fenêtre: WINDOW  
3- Choix classe de débit { Emission: \_\_\_\_\_  
Reception: \_\_\_\_\_  
classes de débit: \_\_\_\_\_  
X25 confum. d'appel: \_\_\_\_\_  
des tailles de Paquet et Fenêtre: \_\_\_\_\_

ACCES X25 RTC (Q,S)

N° Téléphone coffret: \_\_\_\_\_  
Modification signature: \_\_\_\_\_  
ENTREE RESERVEE X25

GFA N° Absolu: Local: DA AE  
00 \_\_\_\_\_  
01 \_\_\_\_\_  
02 \_\_\_\_\_  
03 \_\_\_\_\_  
GSG (RDTE)

Localisation: \_\_\_\_\_  
PARTAGEE nb: \_\_\_\_\_ Création: \_\_\_\_\_ Annulation: \_\_\_\_\_  
NON PARTAGEE \_\_\_\_\_  
N° Contrat \_\_\_\_\_ Feuille) \_\_\_\_\_ N° Transpac: \_\_\_\_\_

COFFRET ABONNE X25 RTC (Q) \_\_\_\_\_

Entrée normale: \_\_\_\_\_ R \_\_\_\_\_ Entrée de secours: \_\_\_\_\_ R \_\_\_\_\_

CIRCUITS VIRTUELS PERMANENTS (P,S)

e t a t	Voie logique	Identification de l'abonné distant			Voie logique	Classe de débit		N° Absolu de GFA	DATES		
		N° Contrat	Feuille	N° Transpac		E	R		Contrac.	Mise en service	Modification
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

DELAI: \_\_\_\_\_, DATE CONTRACTUELLE 198 . \_\_\_\_\_

Raccordement CLE: \_\_\_\_\_  
Dépend de: \_\_\_\_\_ ou de \_\_\_\_\_

DATE \_\_\_\_\_, SIGNATURE CLIENT \_\_\_\_\_ ou référence courrier \_\_\_\_\_

DATE, \_\_\_\_\_  
TRANS PAC  
A: \_\_\_\_\_  
Paris le \_\_\_\_\_

Commutateur	N° PTT-identification	Date de mise en service	Date de facturation
_____	1 _____	____/____/____	____/____/____
_____	2 _____	____/____/____	____/____/____
_____	3 _____	____/____/____	____/____/____
_____	4 _____	____/____/____	____/____/____
_____	5 _____	____/____/____	____/____/____
_____	6 _____	____/____/____	____/____/____
_____	7 _____	____/____/____	____/____/____
_____	8 _____	____/____/____	____/____/____
_____	9 _____	____/____/____	____/____/____
_____	10 _____	____/____/____	____/____/____

N° Interne: \_\_\_\_\_  
Date création feuille: \_\_\_\_/\_\_\_\_/\_\_\_\_  
Date de modification: \_\_\_\_/\_\_\_\_/\_\_\_\_  
Date de suppression: \_\_\_\_/\_\_\_\_/\_\_\_\_  
Dernière action: \_\_\_\_\_

Avance: \_\_\_\_\_  
Coffret d'essai: \_\_\_\_\_  
Facturation modif.: \_\_\_\_\_  
Ancien n° Transpac: \_\_\_\_\_



## ANNEXE F

### ABONNEMENTS TRANSPAC LIES AUX PARAMETRES CNC

Les deux types d'abonnements TRANSPAC assurent le raccordement direct de la connexion

- . soit en mode paquet du DPS 7 au réseau
- . soit en mode caractère du terminal au PAD à travers le réseau vers le DPS 7.

Un seul feuillet CNT/02/83 021 intègre les deux abonnements. Cette annexe explique comment le remplir selon le mode requis.

Entrée 4 : Numéro de Profil Standard

No. PS	Valeur	Signification
1	0	Code-de-contrôle DLE non reconnu ayant comme résultat aucune possibilité d'"échappement"
2	1	Echo
3	2	Paquet sera transmis en appuyant sur "retour-de-chariot"
4	0	Temps imparti ne sera pas tenu en compte pendant la transmission de caractères
5	0	PAD ne contrôle pas le flux de données en provenance du terminal
6	1	Les signaux-de-service COMM, LIB et RESET seront envoyés par PAD au terminal
7	21	En recevant une "interruption" du terminal, PAD fera les actions suivantes <ul style="list-style-type: none"> <li>. enverra le paquet "interruption" accompagné d'un message approprié vers le terminal</li> <li>. et rejettera toute donnée destinée au terminal.</li> </ul>
8	0	Utilisation de l'"interruption" en tant que préfixe de commandes est interdite
9	16/64	Demande pour l'insertion de caractères-de-temporisation après l'appui sur "retour-de-chariot": ce nombre de tels caractères dépend du type de terminal
10	0	Pliage de lignes ne permet pas insertion automatique de texte additionnel

Entrée 8 : Longueur Paquet

PKSIZE	BTBFSZ : Taille de Tampons DABFSZ : E/S de BTNS/HDLC
32	64
64	96
<u>128</u>	<u>160</u>
256	288
512	544
1024	1056

## Descriptions d'Entrées

Les entrées utilisées sont les suivantes

- . pour le mode paquet : 1, 2, 3, 5, 6, 7, 8, 9, B, C et éventuellement CVP
- . pour le mode caractère : 1, 4, A et éventuellement D et E.

- 1) Numéro TRANSPAC correspond au paramètre SUBNB spécifié
  - . soit dans la commande LSUB pour le mode paquet dans quel cas le numéro est précédé par
    - 1 pour le réseau national
    - ou 0 2080 pour la connexion internationale
  - . soit dans la commande RDTE pour le mode caractère dans quel cas le numéro est précédé par
    - 1 pour le réseau national
    - ou 9 indiquant le regroupement de terminaux RDTE-RDTN accédant au PAD.
- 2) Debit correspond au paramètre LINESPEED déclaré dans la génération micrologiciel URP comme un des attributs "SVA" pour la ligne HDLC.
- 3) Acceptation Taxation au Demandé correspond au paramètre PCV de la commande LSUB : l'entrée indique si l'acceptation est requise.
- 4) Numéro de Profil Standard décrit le fonctionnement du terminal, voir la page suivante.
- 5) CVC Mixte correspond au paramètre SLINE de la commande LSUB pour spécifier le nombre total de lignes réservées : ce nombre est égal ou supérieur à la somme des lignes déclarées séparément pour entrée ainsi que pour sortie.
- 6) CVC Arrivée correspond au paramètre SILIN de la commande LSUB pour spécifier le nombre total de lignes qui ne seront disponibles que pour entrée.
- 7) CVC Départ correspond au paramètre SOLIN de la commande LSUB pour spécifier le nombre total de lignes qui ne seront disponibles que pour sortie.
- 8) Longueur paquet correspond au paramètre PKSIZE de la commande LSUB pour spécifier la taille maximale du paquet, voir la page suivante.
- 9) Taille de Fenêtre correspond au paramètre WINDOW de la commande LSUB pour spécifier le nombre maximal de paquets qui peuvent être envoyés avant acquittement.
- A) Groupe Fermé d'Abonnés s'associe au paramètre CSG de la commande RDTE et est réservé aux numéros d'appel correspondant à sa valeur.
- B) Temporisateur correspond au paramètre PRTOL ayant la valeur T1 en millisecondes déclaré dans la génération micrologiciel URP comme une des fonctions du MLA.
- C) Fenêtre correspond au paramètre TFNAK déclaré dans la génération micrologiciel URP comme un des attributs "SVA" pour la ligne HDLC.

Les entrées suivantes concernent les circuits virtuels permanents et seront éventuellement disponibles

- D) Numéro TRANSPAC correspondant au paramètre SUBNB de la commande RDTE
  - E) Groupe Fermé d'Abonnés s'associant au paramètre CSG de la commande RDTE
- CVP - ne correspond à aucun paramètre CNC et ne sert que pour réserver un nombre de CVP ayant pour résultat le même nombre de séquences PVC-RDTE-RDTN déclarables dans la génération CNC.



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