Teldat Router

Configuration and Monitoring

Doc. *DM504-I* Rev. *8.30*

April, 2000

INDEX

Chapter 1
Teldat Router Console

1. Introduction

All **Teldat Routers** devices employ the same user interface for every model. They only differ on the protocol software loaded in each device.

The information contained in this chapter is divided in the following sections:

- Local and remote terminal.
- User interface.
- User interface description.
- Console Manager commands (GESTCON).

2. Local and remote terminal

The **Teldat Router** allows user access for configuration and monitoring functions through a local or remote terminal.

Local Terminal

A local terminal is directly connected to the **Teldat Router** through an RS-232 serial cable. For further information see the Device Installation Manual.

Remote Terminal.

The remote connections provide the same functionality as the local ones, except that a local terminal must be used for the initial configuration. The remote terminals are connected to the **Teldat Router** through TELNET once the IP protocol has been enabled. See TCP-IP Configuration Manual (Dm502-I) for further information on this procedure.

By means of local or remote terminals it is possible to access the **Teldat Router** and carry out the distinct procedures related to device configuration with status monitoring and related statistics. Messages can also be received on any events produced. These procedures are named as follows:

P 1 (GESTCON): This is the console management procedure (**GESTCON**) which gives access to other procedures.

P 2 (VISEVEN): This procedure allows events produced in the system to be displayed from established connections to errors in the system (**VISEVEN**). These events should be pre configured in procedure 4 (**CONFIG**) through the Event Logging System. See **Chapter 4 "Event Logging System ELS"** for further information.

P 3 (MONITOR): This permits you to **MONITOR** the system's state as well as the statistics collected by the device.

T 4 (CONFIG): This is the procedure through which the different parameters that define the system's working environment are **CONFIG**ured.

P 5 (DISC): This is the **DISC** control procedure.

P 6 (TELNET): This is the **TELNET** control procedure.

These procedures are accessed from the console by striking the keys P 2, P 3 or P 4.

3. User interface

The following steps are the same for all **Teldat Routers**, regardless the software installed.

- **Teldat Router** connection.
- Executing a command.
- Accessing the procedures.
- Procedure identification through a prompt.
- Return to the Console Manager.
- Obtaining help.

Teldat Router connection

Local Connection

There is a password to control the local connection to the Teldat Router which is disabled by default. In this case it will not be requested when you access the device and the first thing to appear is the welcome text and the console management prompt as shown below.

```
Teldat               (c)1996,97,98,99
Router model NUCLEOX_PLUS CPU M68360      S/N: XXXX/XXXXX
1 LAN, 2 WAN Line , 2 ISDN Line
```

In order to enable a specific password, please see the information on the **SET** command in **Chapter 2 "Teldat Router Configuration"**. Should the password be enabled, this will be requested from the user once the welcome text has been shown with the console management prompt and on pressing the return key.

```
Teldat               (c)1996,97,98,99
Router model NUCLEOX_PLUS  CPU M68360      S/N: XXXX/XXXXX
1 LAN, 2 WAN Line , 2 ISDN Line
Password:******
*
```

If the password is not valid, the following text will be displayed:

```
Password:******
Invalid Password. Access denied
```

If you introduce the password incorrectly the console will remain locked. If on the third attempt the password is still incorrect the application will restart.

If the password has been enabled and an inactive period of time has also been configured (see the **SET** command in **Chapter 2 "Teldat Router Configuration"**), a monitoring process will begin. If the configured inactive time period times out without the user touching any of the keys, the local connection will close. In this case the user must reenter the password again when he wishes to use the console.

Remote connection

To connect to **Teldat Router** initializing a TELNET session in the host (the "host" being the system connected to the remote terminal), you need the IP address of the device you wish to connect to.

Example:

```
TELNET  128.185.132.43
```

The **Teldat Router** acts as a *Telnet server*. The remote terminal acts as a *Telnet client*.

The access to **Teldat Router** is controlled by a password. This is disabled by default and consequently not required when accessing the device through TELNET. To enable a specific password see the **SET** command in the **Chapter 2 "Teldat Router Configuration"**.

Once a TELNET session with the **Teldat Router** has been established, the following text will appear: If required, you will be asked for a password in order to connect to the device.

```
Teldat               (c)1996,97,98,99
Router model NUCLEOX_PLUS  CPU M68360      S/N: XXXX/XXXXX
1 LAN, 2 WAN Line , 2 ISDN Line
Password:******
*
```

If the password is not valid, the following text will be displayed:

```
Password:******
Invalid Password. Access denied
```

If the password is not entered within approximately 20 seconds or the password provided is incorrect, at the third attempt the device will disconnect the TELNET session.

Executing a command

To enter a command you only need to enter the necessary letters that distinguish each command. These are written in **bold** within the syntax of each command. Sometimes only one letter of the command is necessary (and its options) to execute it.

To delete the last character(s) from the command line use the backspace (←) key.

Accessing a procedure

Prompt "*" will appear once the device has been switched on and the application loaded. Prompt "*" is the Console Manager prompt. From this prompt it is possible to access the distinct procedures. *Prompts* are the symbols that identify each procedure.

To access a procedure, the following steps must be followed:

1. Look for the number that identifies the procedure. This can be done by entering the **STATUS** command at the prompt "*".
2. Enter **PROCESS *pid***, where pid is the procedure number we wish to access. For example, to configure **Teldat Router**, enter

```
*PROCESS 4
User Configuration
Config>
```

Identifying a procedure through the prompt

Each procedure has a different prompt. To identify which procedure you are in, observe the prompt.

The following list shows the prompts for different procedures:

Process	Prompt
GESTCON	*
MONITOR	+
CONFIG	*Config>*

Teldat Router offers the possibility to personalize the device including the text shown before each prompt. This text can consist of up to 8 characters and take the name assigned to the device. In order to introduce this, see the configuration command **SET HOSTNAME**

Returning to the Console Manager

To return to the Console Manager (prompt "*") from a procedure, e.g. CONFIG (prompt "Config>") or MONITOR (prompt "+"), enter *Ctrl + p* (the "escape character"). **ALWAYS RETURN TO THE CONSOLE MANAGER BEFORE ENTERING ANOTHER PROCEDURE**. For example if you are in MONITOR and wish to enter CONFIG, enter *Ctrl + p* and return to prompt "*" before doing so.

Example:

```
*PROCESS  4
User Configuration
Config>                                                    Enter (Ctrl +  p)
*
```

```
*PROCESS 3
Console Operator
+                                                          Enter (Ctrl +  p)
*
```

Other protocol configuration/monitoring menus can be accessed from inside the configuration or monitoring procedures. Returning to the corresponding procedure is achieved through the EXIT command and to the Console Manager via the escape character (Ctrl + p by default).

Obtaining help

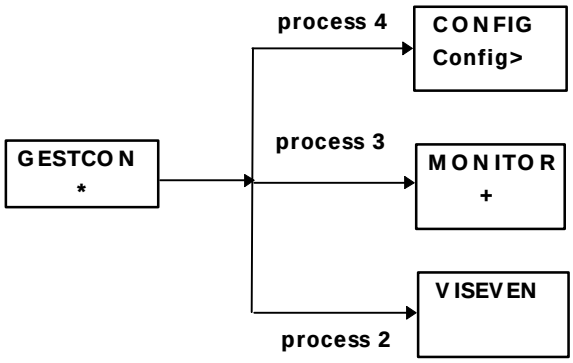
In all procedures there is a command "?" (HELP). This gives information on the commands that can be used with the prompt, not only in the Console Manager ("*"), but also in the configuration ("Config>") and monitoring ("+") procedures.

Example:

```
* ?
FLUSH
INTERCEPT
LOAD
LOGOUT
PROCESS
RESTART
STATUS
TELNET address
*
```

4. User interface description

The procedures normally handled are: GESTCON, MONITOR, CONFIG and VISEVEN. The following diagram describes the structure of procedures in **Teldat Router**.



Each of these procedures is described below:

GESTCON

This is the Console Manager. This provides access to other procedures via the prompts which appear on the console.

MONITOR

Allows the user to monitor the status and statistics of the router hardware and software. Provides access to the protocol and interface menus which in turn, allow the user to monitor the configured protocols and other parameters.

CONFIG

Enables configuration of various parameters such as net addresses and events. Provides access to the configuration of protocols thus permitting protocol parameters configuration.

VISEVEN

Receives messages from the Event Logging System and displays them at the terminal in accordance with the user selection criterion.

5. GESTCON Commands

The GESTCON procedure (P1) allows you to configure and monitor all the device operation parameters. During the GESTCON procedure, the **Teldat Router** processes and transfers data traffic. When the device is switched on and enters the GESTCON procedure the copyright, information on the device, together with an asterisk "*" appears at the local terminal connected. This asterisk "*" is the prompt for GESTCON procedure which is the main user interface permitting access to all other procedures. Most changes made in the **Teldat Router** operation parameters in the GESTCON procedure, have an immediate effect i.e. it is unnecessary to restart the device.

From the GESTCON procedure it is possible to access a set of commands that permit you to check the status of the procedures, monitor the device interface and packet transference efficiency, as well as the configuration of various parameters.

The following diagram shows the commands of the different procedures.

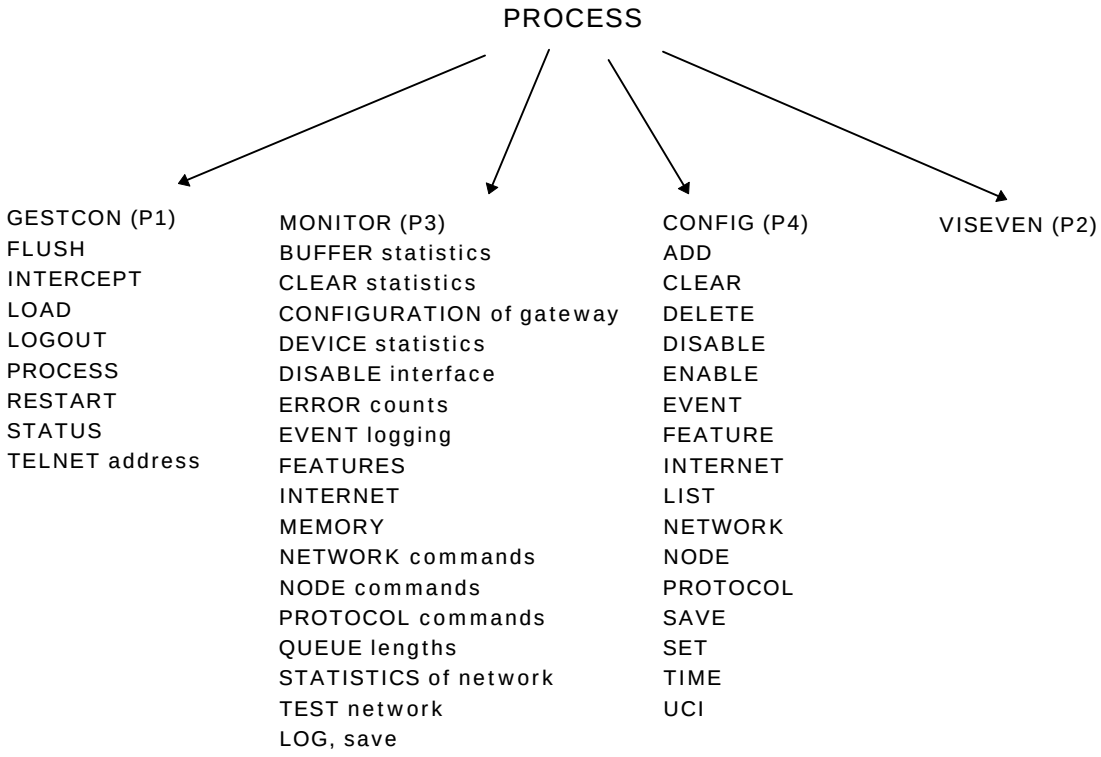


Table of the GESTCON procedure commands

Commands	Function
? (HELP)	Lists all the GESTCON procedure commands.
FLUSH	Clears all the messages stored up to that moment in the event buffer.
INTERCEPT	Permits you to change the procedures' escape character.
LOAD	Permits you to reload the program from the disk (or from the flash memory).
LOGOUT	Ends the Telnet connection established with the device.

PROCESS	Permits access to a different device procedure and to enable its commands.
STATUS	Displays the names and identifiers of each procedure.
RESTART	Allows you to restart the device.
TELNET address	Establishes a Telnet connection as the remote device client with a specified address.

The minimum number of characters to be entered in order to execute this are written in **bold**.

5.1. ? (HELP)

Displays the available commands in the current prompt. It is also possible to enter "?" after a specific command to list its options.

Syntax:

```
*?
```

Example:

```
*?
FLUSH
INTERCEPT
LOAD
LOGOUT
PROCESS
RESTART
STATUS
TELNET address
*
```

5.2. FLUSH

Deletes all the current events messages from the VISEVEN procedure output buffer.

Syntax:

```
*FLUSH
```

Example:

```
*FLUSH
*
```

5.3. INTERCEPT

Allows you to change the procedures' escape character. In the below example the character given is changed by default, (Ctrl+u) in place of (Ctrl+p).

Syntax:

```
*INTERCEPT
```

Example:

```
*INTERCEPT
Press the new escape key and then Enter:          Enter (Ctrl+u) and <¿>
Press the new escape key again and then enter:    Enter (Ctrl+u) and <¿>
Escape key updated
*
```

The escape key should not be a character that can be displayed.

5.4. LOAD

Allows you to reload the program from disk (or from flash memory).

Syntax:

```
*LOAD?
ACTIVATE
DEACTIVATE
IMMEDIATE
```

a) LOAD ACTIVATE

The **ACTIVATE** option allows the user to program a specific time to load a program from disk (or from flash memory).

Example:

```
*LOAD ACTIVATE
Current time: 17:08
Type time you want to reload the system [H:M]:20:00
Reload is timed at 20:00
Are you sure to reload the system at the configured time (Yes/No)? y
System will reload at 20:00
*
```

b) LOAD DEACTIVATE

The **DEACTIVATE** option allows you to cancel a pre-configured reloading which has not as yet been carried out.

Example:

```
*LOAD DEACTIVATE
Reload is timed at 20:00
Are you sure to cancel the timed reload(Yes/No)? y
Timed reload was cancelled
*
```

c) LOAD IMMEDIATE

The **IMMEDIATE** option reloads the application immediately.

Example:

```
*LOAD IMMEDIATE
Are you sure to reload the device?(Yes/No)? y
*
```

5.5. LOGOUT

Ends the Telnet connection established with the device without using a Telnet client command.

Syntax:

```
*LOGOUT
```

Example:

```
*LOGOUT
Do you wish to end telnet connection (Yes/No)?
```

5.6. PROCESS

This permits access to another device procedure e.g. MONITOR, VISEVEN, or CONFIG. Once a new procedure has been accessed, it is possible to send specific commands or receive the procedure output. To obtain the procedure identifier enter the **STATUS** command. Once connected to another procedure, such as MONITOR, VISEVEN, or CONFIG, use the escape character (*Ctrl+p)* in order to return to the Console Manager (GESTCON).

Syntax:

```
*PROCESS PID
```

Example:

```
*PROCESS 4
User Configuration
Config>
```

When in one of the protocol menus such as *Conf IP>* or *IP>*, use the **EXIT** command in order to return to the menu of the procedure you are currently in.

5.7. STATUS

This lets you know each procedure identifier (PID), as well as its name.

Syntax:

```
*STATUS
```

Example:

```
*STATUS
System Processes:
NAME      PID  STATUS
GESTCON   1
VISEVEN   2
MONITOR   3
CONFIG    4
TELNET    6
*
```

5.8. RESTART

Restarts **Teldat Router** without reloading the software. This has the following effects:

- Software counters are set on zero.
- Connected networks are tested.
- Routing tables are cleared.
- All packets are discarded until the restart is completed.
- Current software is executed.

If this command is used during a remote terminal connection, the TELNET session will be lost since all the device procedures will be restarted.

Syntax:

```
*RESTART
```

Example:

```
*RESTART
Are you sure to restart the system?(Yes/No)? y
Disk configuration read
Initializing



Teldat               (c)1996,97,98,99

Router model NUCLEOX-PLUS  CPU M68360      S/N: XXXX/XXXXX
1 LAN, 4 WAN Lines, 2 ISDN Lines


*
```

5.9. TELNET address

Establishes a Telnet connection as the remote device client with a specified address.

Syntax:

```
*TELNET address
```

Example:

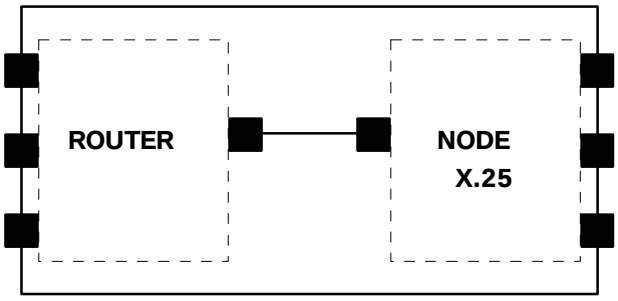
```
*TELNET 176.123. 23.67
Trying to connect...
(Press Control S to come back to local router)
Connection established
```

Chapter 2
Teldat Router Configuration

1. Introduction

From the functional point of view there are two virtual devices integrated in **Teldat Router:**

1. A router that performs the internetworking functions.
2. A packet switch coming from the router as well as from the X.25 and ISDN ports when they carry X.25.



As the figure shows, each virtual device manages its own set of interfaces. Therefore it is necessary to accurately identify the different interfaces and to know whether an interface belongs to the router or the node.

Interfaces in the **Teldat Router** configuration are identified by a number.

The table of interface identifiers is obtained through the **LIST DEVICES** command in the configuration procedure. The output of this command in a specific device is shown below:

```
Config>LIST DEVICES

Con    Ifc Type of interface                  CSR     CSR2  int
---      1 Router->Node                         0             0
---      2 Node->Router                         0             0
ISDN 1   5 ISDN D channel: X25            A000000             1B
ISDN 1   7 ISDN B channel: X25            F001640  F000E00    9C
ISDN 2   6 ISDN D channel: X25            A200000             1B
ISDN 2   8 ISDN B channel: X25            F001660  F000F00    9B
LAN      0 Ethernet                       9000000             1C
WAN1     3 X25                            F001600  F000C00    9E
WAN2     4 X25                            F001620  F000D00    9D
Config>
```

The first column *(Con)* indicates the physical connector which the interface corresponds to, the second *(Ifc)* is the interface identifier, the third column specifies the type of interface programmed, the *CSR* and *CSR2* columns refer to memory positions within the device and the *int* corresponds to address interruption.

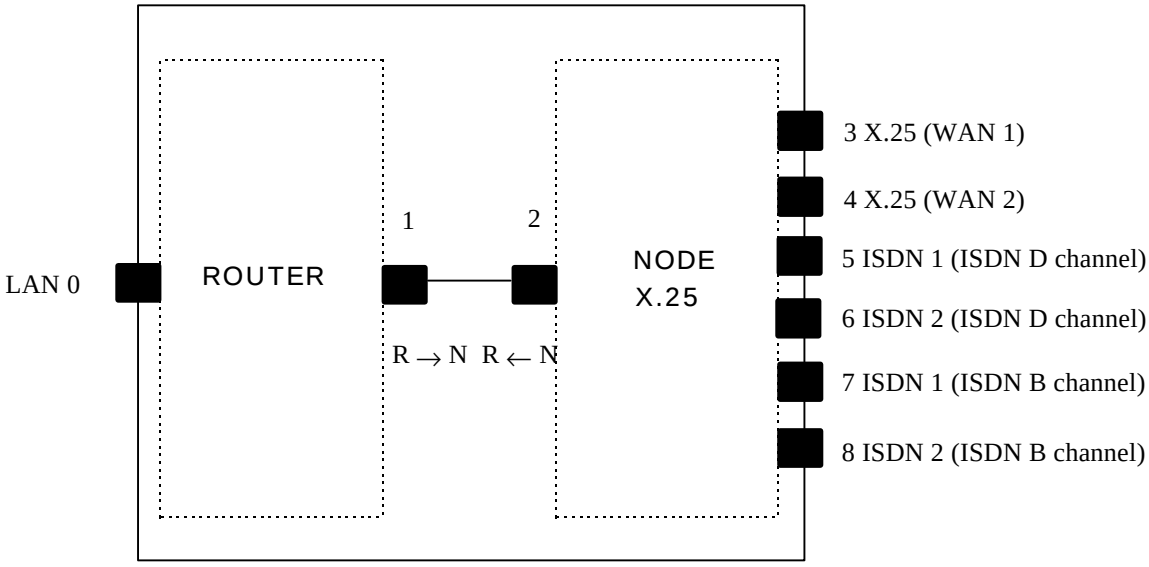
As shown, interfaces 5 and 7 share the ISDN 1 connector while interfaces 6 and 8 share ISDN 2.

Another important aspect is that there are interfaces which do not have a physical connector associated. This is the case of interfaces 1 and 2 in the example. This is due to the fact it is these interfaces that actually allow the virtual machines to join and consequently don't have an external connector associated.

Regarding interface numbers, the following should be taken into account:

- The interfaces managed by the node are: the Node->Router, the X.25s and the ISDNs (carrying X.25).
- The rest of the interfaces are managed by the router.
- Router interfaces begin with 0 which usually corresponds to the LAN connector and end with the Router->Node. The node interfaces are the following.

With all this information it is possible to rearrange the above figure in this case:



Suppose now that the protocol in one of the WAN lines is changed through the command **SET DATA-LINK** and we then refer to the interface table.

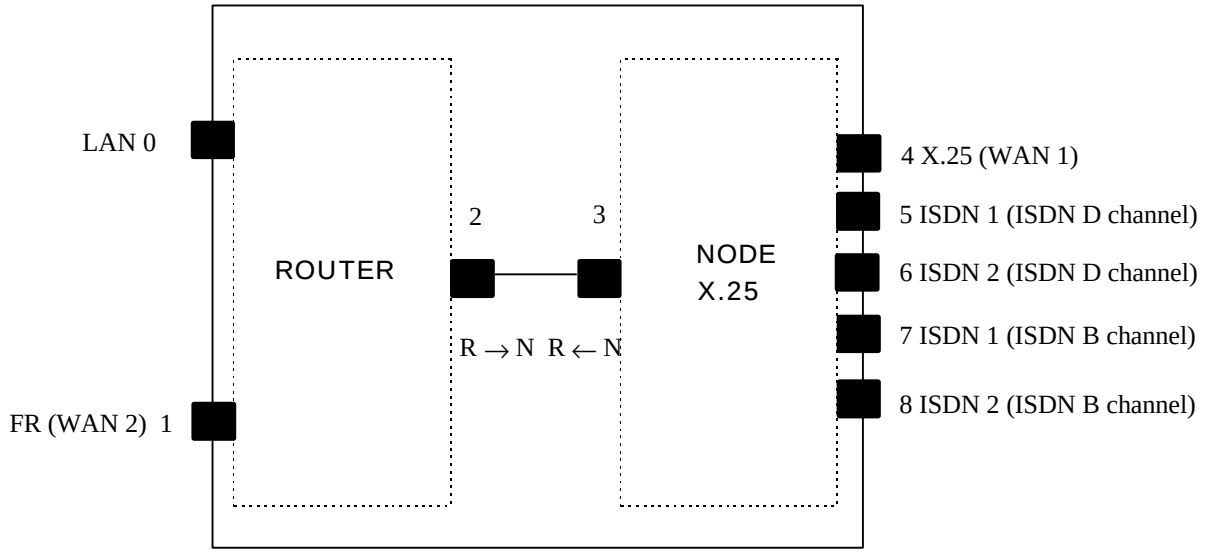
In the following example the Frame Relay protocol is assigned to the physical line 2:

```
Config>SET DATA-LINK FRAME RELAY
which port will be changed[1]? 2
Config>
Config>LIST DEVICES

Con    Ifc Type of interface                  CSR     CSR2  int
---      2 Router->Node                         0             0
---      3 Node->Router                         0             0
ISDN 1   5 ISDN D channel: X25            A000000             1B
ISDN 1   7 ISDN B channel: X25            F001640  F000E00    9C
ISDN 2   6 ISDN D channel: X25            A200000             1B
ISDN 2   8 ISDN B channel: X25            F001660  F000F00    9B
LAN      0 Ethernet                       9000000             1C
WAN1     1 Frame Relay                    F001600  F000C00    9E
WAN2     4 X25                            F001620  F000D00    9D
Config>
```

Now we can observe that there is one more interface managed by the router and one interface less managed by the node. It also shows that the interface corresponding to line 2 is number 1 while the interface corresponding to line 1 is 4.

In this new example the diagram of the device is now as follows:



The ISDN interfaces can be managed by both by the mode or by the router depending on the type of information that is transported over the B channel. If this is X.25 (as in the previous examples) then the ISDN interfaces appear beside the node. If this is PPP or Frame Relay backup, then they appear beside the router. X.25 over the D channel always appears by the node.

In the following example, an ISDN interface is configured to transport Frame Relay backup information to the basic access 1:

```
Config>ADD DEVICE FR-DIAL
Type basic access ISDN [2]? 1
If you are going to config more than two DIAL interfaces, you must config what they
have CSR:F011640 and CSR:F011660 over the ISDN 2
 connector
Ifc number to delete: [0]? 9
Added FR-DIAL interface with num: 3
Config>
```

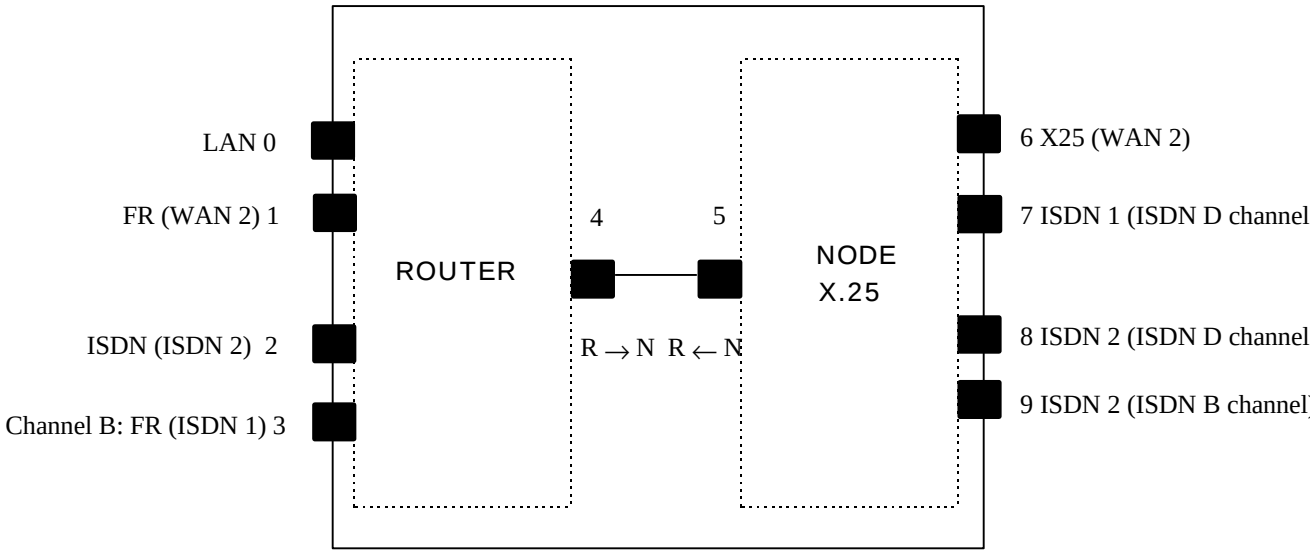
```
Config>LIST DEVICES

Con    Ifc Type of interface                  CSR     CSR2  int
---      4 Router->Node                         0             0
---      5 Node->Router                         0             0
ISDN 1   2 ISDN D channel: X25             A000000            1B
ISDN 1   3 B channel: FR                         0            0
ISDN 1   7 ISDN D channel: X25             A000000            1B
ISDN 2   8 ISDN D channel: X25             A200000            1B
ISDN 2   9 ISDN B channel: X25             F001660  F000F00   9B
LAN      0 Ethernet                        9000000            1C
WAN1     1 Frame Relay                     F001600  F000C00   9E
WAN2     6 X25                             F001620  F000D00   9D
Config>
```

In this new configuration, there are two more interfaces which are managed by the router. One is physical (with number 2) and the other is logical (with number 3). The X.25 over B channel with a basic access number 1 which was associated to the node has disappeared.

The Interface number to be deleted can be another B channel: X.25, an ISDN interface or the X.25 lines 5 or 6.

In this example, the new outline of the device is as shown:



When configuring an device, interfaces must be correctly identified by the identifier shown in the command list devices table. The connector number must not be used.

The main rule to take into account when carrying out interface configuration is:

Ignore the device connector numbering, and note the logical numbering obtained through the **LIST DEVICES** command.

In this chapter the configuration procedure will be described. This includes the following sections:

- CONFIG procedure
- CONFIG procedure user interface.
- CONFIG procedure commands.

2. CONFIG procedure

Configuration procedure (CONFIG) P4 , allows the configuration of router parameters such as:

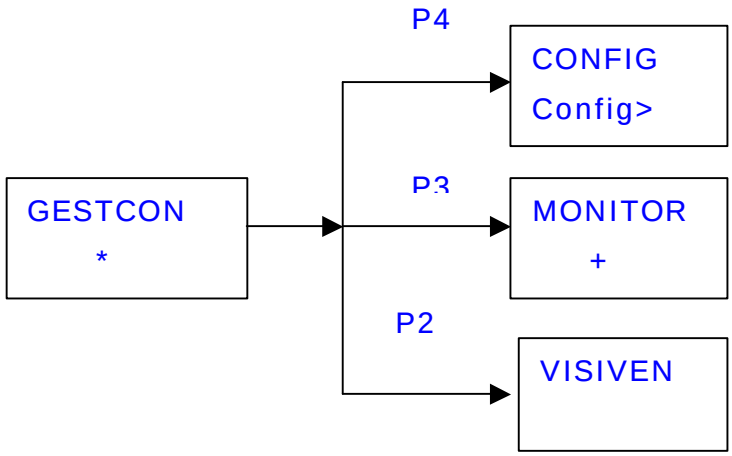
- Interfaces.
- Protocols.

CONFIG allows you to display and change the stored router configuration, either in FLASH memory or DISC. In order to store the changes made in this procedure, execute the **SAVE** command. The router must be restarted so the configuration changes can take effect. To restart the router we can do the following:

- Execute the **RESTART** command at the "*" prompt in the Console Manager or
- Switch the router off then on.

> ***Note: If the router has a floppy drive the configuration will be read and saved in disk, provided there is one in the unit, if not the configuration will be taken by default. If the router does not have a floppy drive the configuration will be read and saved in flash.***

The CONFIG procedure is framed into the router structure as shown in the following figure:



3. CONFIG procedure user interface

CONFIG procedure enter/exit

To enter the configuration procedure CONFIG from prompt "*" in the Console Manager GESTCON, enter the **PROCESS** command followed by the number which identifies the configuration procedure, in this case **4**.

Example:

```
* PROCESS 4
User Configuration
Config>
```

To exit the CONFIG procedure and return to Console Manager GESTCON prompt "*", press the escape character (*Ctrl-p* by default).

Protocol names and numbers

To access the protocols it is possible to enter either the name or number of the protocol required according to the table obtained through the **LIST CONFIGURATION** command.

Example:

```
Config>LIST CONFIGURATION
Hostname: Router Teldat
Number of Restarts before Reload/Dump: 162
Contact person: ......
Host Location: .......

Configurable protocols:
Num     Name          Protocol
 0      IP            DOD-IP
 3      ARP           Address Resolution Protocol
 6      DHCP          Dynamic Host Configuration Protocol
10      QLLC-FR       Handler SNA QLLC-FR
11      SNMP          SNMP
12      OSPF          Open SPF-Based Routing Protocol
13      RIP           Route Information Protocol
14      SDLC-QLLC     Handler SNA SDLC-QLLC
15      SDLC-TUNNEL   Handler SNA SDLC-TUNNEL
19      SDLC-FR       Handler SNA SDLC-FR
22      LAN-QLLC      Handler SNA LAN-QLLC
25      LAN-FR        Handler SNA LAN-FR

59796 bytes of config available memory of 65348
Config>
```

To enter a specific protocol enter **PROTOCOL** with the name or number of the protocol that you wish to configure.

Example:

```
Config>PROTOCOL IP
Internet protocol user configuration
IP Config>
```

or

```
Config>PROTOCOL 0
Internet protocol user configuration
IP Config>
```

Once at this level it is possible to use the commands of the specific protocol selected. See the specific protocol configuration manual for further information.

To exit from the protocol configuration prompt:

1. Enter the **EXIT** command in order to return to the configuration procedure prompt.

```
Conf IP>EXIT
Config>
```

2. Enter *(Ctrl+ p)* escape character to return to the main level (Console Manager prompt "*").

```
Config>                                                    Enter (Ctrl + p)
*
```

4. CONFIG procedure commands

This section describes the CONFIG procedure commands. Each command includes a description, syntax and one example. The following table summarizes the CONFIG procedure commands.

Command	Function
? (HELP)	Lists the configuration commands or specific commands options.
ADD	Allows you to create a virtual interface.
CLEAR	Erases configuration information.
DELETE	Allows you to eliminate a previously added virtual interface created in order to use an ISDN basic access B channel.
DISABLE	Disables an interface.
ENABLE	Enables an interface.
EVENT	Enters the events monitoring configuration procedure.
FEATURE	Defines the additional features of the router not associated with any predetermined interface.
INTERNET	Gives access to the device's quick configuration menu in order to access Internet.
LIST	Shows the system parameters and hardware configuration.
NETWORK	Enters the configuration menu of an specific interface.
NODE	Enters the Node X.25/ISDN configuration.
PROTOCOL	Enters the configuration of a specific protocol.
SAVE	Allows you to save the configuration in disk or flash.
SET	Configures system parameters, buffers, device name, etc.
TIME	Allows you to display and change the date and time in the system.
UCI	Permits you to configure the **Teldat Router** encoding unit.

The minimum number of characters to be entered in order to execute this are written in **bold.**

4.1. ? (HELP)

Shows the commands available in the current menu. After a specific command it is possible to enter "?" to list its options.

Syntax:

```
Config>?
```

Example:

```
Config>?
ADD
CLEAR
DELETE
DISABLE
ENABLE
EVENT
FEATURE
INTERNET
LIST
NETWORK
NODE
PROTOCOL
SAVE
SET
TIME
UCI
Config>
```

4.2. ADD

Allows you to create a virtual interface to be used by an ISDN basic access B channel.

Syntax:

```
Config>ADD?
DEVICE
```

a) ADD DEVICE

Example:

```
Config>ADD DEVICE ?
FR-DIAL
FR-ISDN
PPP-DIAL
X25-DIAL
ATPPP-DIAL
MPPP
TNIP
XOT
270
Config>
```

4.3. CLEAR

Allows you to clear router configuration information. To clear a protocol configuration enter **CLEAR** and the name of the protocol. To erase all the information, except interface information, enter **CLEAR ALL.** To erase interface information, enter **CLEAR DEVICE**.

Syntax:

```
Config>CLEAR ?
ALL
ARP
ASRT
DEVICE
IP
```

a) CLEAR ALL

Example:

```
Config>CLEAR ALL
Everything but the DEVICE configuration will be cleared
Continue clearing? (Yes/No)?
Config>
```

b) CLEAR ARP

Example:

```
Config>CLEAR ARP
Config of ARP will be DELETED
Continue clearing? (Yes/No)?
Config>
```

c) CLEAR ASRT

Example:

```
Config>CLEAR ASRT
Config of ASRT will be DELETED
Continue clearing? (Yes/No)?
Config>
```

d) CLEAR DEVICE

Example:

```
Config>CLEAR INTERFACES
Config of DEVICE will be DELETED
Continue clearing? (Yes/No)?
Config>
```

e) CLEAR IP

Example:

```
Config>CLEAR IP
Config of IP will be DELETED
Continue clearing? (Yes/No)?
Config>
```

4.4. DELETE

Permits you to delete a previously added virtual interface created to be used by an ISDN basic access B channel.

Syntax:

```
Config>DELETE?
DEVICE
```

a) DELETE DEVICE

Example:

```
Config>DELETE DEVICE
Interface number[0]?
Config>
```

4.5. DISABLE

Disables a specific interface or a specific patch.

Syntax:

```
Config>DISABLE?
DEVICE
PATCH
```

a) DISABLE DEVICE

Disables a specific interface.

Example:

```
Config> DISABLE DEVICE
Interface number[0]?
Config>
```

b) DISABLE PATCH

This command serves to deactivate behavior activated by the **ENABLE PATCH** command. In order to use it you need to know the name of the activated parameters. This application is dynamic, you do not need to restart the router for this to take effect.

Example:

```
Config> DISABLE PATCH
Patch Name: []?
Config>
```

4.6. ENABLE

This enables a specific interface, a specific patch or a specific user.

Syntax:

```
Config>ENABLE ?
DEVICE
PATCH
USER
```

a) ENABLE DEVICE

Example:

```
Config>ENABLE DEVICE
Interface number[0]?
Config>
```

b) ENABLE PATCH

This command allows you under certain circumstances to modify the router's behavior. It deals with the management of personalized versions. You need the names of the available parameters and their possible admitted values in order to use it. Introducing the name and desired value for the parameter will activate it. The application is dynamic making it unnecessary to restart the router for the new values to take effect.

Example:

```
Config>ENABLE PATCH
Patch Name: []?xxxxx
Patch Value: [0]?#
Config>
```

c) ENABLE USER

Enables a specific user.

Example:

```
Config>ENABLE USER
User:
User Password:
Config>
```

4.7. EVENT

This allows you to record in the configuration, those events you wish to be stored by the Event Logging System. Enter **EXIT** to return to the *Config>* prompt.

Syntax:

```
Config>EVENT
```

Example:

```
Config>EVENT
-- ELS Config --
ELS Config>
```

To find out which commands can be executed from this prompt, please see **Chapter 4 "Event Logging System ELS"**.

4.8. FEATURE

This defines the additional features of the router which are not associated to a pre-determined interface.

Syntax:

```
Config>FEATURE ?
ALARMS
BANDWIDTH-RESERVATION
CONTROL-ACCESS
MAC-FILTERING
WRS-BACKUP-WAN
WRR-BACKUP-WAN
```

a) FEATURE ALARMS

This permits access to the proprietary alarm configuration environment.

Syntax:

```
Config>FEATURE ALARMS
```

The prompt changes to *Alarms Config>*.

Example:

```
Config>FEATURE ALARMS
Alarms Configuration
Alarms Config>
```

The commands that can be entered in this environment are as follows:

Example:

```
Alarms Config>?
ADD
        ADDRESS (alarms destination)
DEL
        ADDRESS (alarms destination)
LIST
        ADDRESS (alarms destination)
        PARAMETERS
SET
        PARAMETERS
EXIT
```

ADD ADDRESS

This is the command used to add IP addresses for those systems loaded from the proprietary management.

Example:

```
Alarms Config>ADD ADDRESS
New destination address for alarms [0.0.0.0]?144.60.62.4
Destination port for this address[2004]?2003
Alarms Config>
```

DEL ADDRESS

Command used to delete an IP address.

Example:

```
Alarms Config>DEL ADDRESS
Enter the address to be deleted [0.0.0.0]?144.80.72.6
Alarms Config>
```

LIST ADDRESS

This lists all the destination addresses for the proprietary management systems currently configured in the system.

Example:

```
Alarms Config>LIST ADDRESS
144.60.62.4     port:2003
Alarms Config>
```

LIST PARAMETERS

Lists those parameters which define the send algorithm.

Example:

```
Alarms Config>LIST PARAMETERS
Max time between sendings of proprietary alarms: 60 seconds
Alarms Config>
```

SET PARAMETERS

Configures the send algorithm parameters which define how the alarms are to be sent.

Example:

```
Alarms Config>SET PARAMETERS
Max time between sendings of proprietary alarms (sec.)[60]?
Alarms Config>
```

EXIT

Returns to the configuration procedure prompt.

Example:

```
Alarms Config>EXIT
Config>
```

NOTE: So that the remote system manager acknowledges the local system to be managed, you must have the internal IP address configured.

b) FEATURE BANDWIDTH-RESERVATION

This permits access to the Bandwidth-Reservation configuration environment (BRS).

Example:

```
Config>FEATURE BANDWIDTH-RESERVATION
-- Bandwidth Reservation User Configuration --
BRS Config>
```

c) FEATURE CONTROL-ACCESS

This permits access to the control-access configuration environment.

Example:

```
Config>FEATURE CONTROL-ACCESS
CtrlAcc Config>
```

d) FEATURE MAC-FILTERING

Example:

```
Config>FEATURE MAC- FILTERING
Config>
```

e) FEATURE WRS-BACKUP-WAN

This permits access to the WRS configuration environment.

Example:

```
Config>FEATURE WRS-BACKUP-WAN
WAN Back-up User Configuration
Back-up WAN>
```

f) FEATURE WRR-BACKUP-WAN

This permits access to the WRR configuration environment.

Example:

```
Config>FEATURE WRS-BACKUP-WAN
WAN Reroute Back-up User Configuration
Back-up WRR>
```

4.9. INTERNET

Gives access to the device's quick configuration menu in order to access Internet.

Syntax:

```
Config>INTERNET
```

Example:

```
Config>INTERNET
Internet quick configuration
INTERNET Config>
```

4.10. LIST

Lists information on protocols, interfaces and enabled patches configuration.

Syntax:

```
Config>LIST ?
CONFIGURATION
DEVICES
PATCH
```

a) LIST CONFIGURATION

Example:

```
Config>LIST CONFIGURATION
Hostname: Router Teldat
Number of Restarts before Reload/Dump: 162
Contact person: ......
Host Location: .......

Configurable protocols:
Num     Name          Protocol
 0      IP            DOD-IP
 3      ARP           Address Resolution Protocol
 6      DHCP          Dynamic Host Configuration Protocol
10      QLLC-FR       Handler SNA QLLC-FR
11      SNMP          SNMP
12      OSPF          Open SPF-Based Routing Protocol
13      RIP           Route Information Protocol
14      SDLC-QLLC     Handler SNA SDLC-QLLC
15      SDLC-TUNNEL   Handler SNA SDLC-TUNNEL
19      SDLC-FR       Handler SNA SDLC-FR
22      LAN-QLLC      Handler SNA LAN-QLLC
25      LAN-FR        Handler SNA LAN-FR

59716 bytes of config available memory of 65348
Config>
```

b) LIST DEVICES

Example:

```
Config>LIST  DEVICES

Con     Ifc Type of interface                   CSR      CSR2  int
---       5 Router->Node                          0             0
---       6 Node->Router                          0             0
---      12 XOT                                   0             0
ISDN 1    3 ISDN                             F001640  F000E00   9C
ISDN 1    4 B channel: FR                         0             0
ISDN 1    9 ISDN D channel: X25              A000000            1B
ISDN 2   10 ISDN D channel: X25              A200000            1B
ISDN 2   11 ISDN B channel: X25              F001660  F000F00   9B
LAN       0 Ethernet                         9000000            1C
WAN1      1 Frame Relay                      F001600  F000C00   9E
WAN2      2 Frame Relay                      F001620  F000D00   9D
WAN3      7 X25                              F011600  F010C00   BE
WAN4      8 X25                              F011620  F010D00   BD
Config>
```

c) LIST PATCH

This command enables you to check that the personalized parameters are active.

Example:

```
Config>LIST PATCH
Patch Name                    Value
----------------------------------------
XXXXXX                        X
Config>
```

4.11. NETWORK

This allows you to the access to the command menu for the configuration of a specific interface. Enter **EXIT** to exit this menu. In order to find out the interface number enter **LIST DEVICES**.

Note: Not all interfaces are configured through this command.

Syntax:

```
Config> NETWORK num
```

Where *num* is the interface number.

Example:

```
Config> NETWORK 0
-- Config of the Ethernet Interface --
ETH config>
```

Example:

```
Config>NETWORK  2
Interface does not exist or not access
Config>
```

4.12. NODE

This allows you to access the node configuration (ISDN, X.25, XOT and 270). Enter **EXIT** to exit this menu.

Syntax:

```
Config>NODE ?
ISDN
X25
XOT
270
```

Example:

```
Config>NODE ISDN
ISDN Config>
```

Example:

```
Config>NODE X25
X25 Config>
```

Example:

```
Config>NODE XOT
XOT Config>
```

Example:

```
Config>NODE 270
270 Config>
```

4.13. PROTOCOL

This allows you to access to the configuration environment of an specific protocol. The **PROTOCOL** command followed by either a protocol number or a short name gives access to the configuration of the desired protocol. The IP configuration is entered by default.

To enter in the configuration environment of an specific protocol:

1. Enter **PROTOCOL ?** to see the list of configurable protocols in the router.

Example:

```
Config>PROTOCOL ?
00  IP
03  ARP
06  DHCP
```

```
10  QLLC-FR
11  SNMP
12  OSPF
13  RIP
14  SDLC-QLLC
15  SDLC-TUNNEL
19  SDLC-FR
22  LAN-QLLC
25  LAN-FR
Protocol name or number[IP]?
```

2. Enter the name or number of the protocol to be configured. The specified protocol prompt will appear. From this prompt it is possible to enter the configuration commands of the selected protocol.

Example:

```
Protocol name or number[IP]?ARP
-- ARP user configuration --
ARP config>
```

3. Enter **EXIT** in order to return to the *Config>* prompt menu.

Example:

```
ARP config>EXIT
Config>
```

Syntax:

```
Config>PROTOCOL  name_prot or num_prot
```

Where *name_prot* is the protocol name, and *num_prot* is the protocol number.

Example:

```
Config>PROTOCOL  IP
Internet protocol user configuration
IP config >
```

or

```
Config>PROTOCOL 0
Internet protocol user configuration
IP config >
```

4.14. SAVE

This allows you to store the configuration either in flash memory or disk. This depends on the router the command is executed in. If the router has a floppy drive, the configuration will be saved in a non volatile flash memory file. If it does not have a floppy drive, the configuration will be saved in flash.

Syntax:

```
Config>SAVE configuration
```

Example:

```
Config>SAVE
Save configuration [n]? y
Saving configuration...OK
```

4.15. SET

This allows you to configure various general parameters in the system.

Syntax:

```
Config>SET ?
CONTACT-PERSON
DATA-LINK
HOSTNAME
HOST-LOCATION
INACTIVITY-TIMER
POOLS Size
PASSWORD
RX-BUFFERS
SRAM size
```

a) *SET CONTACT-PERSON <contact-person>*

This allows you to assign a name or an identification to the contact-person for this router. The name is limited to a maximum of 80 characters. This information can be displayed by entering **LIST CONFIGURATION**.

Example:

```
Config>SET CONTACT-PERSON
Contact person []?   Antonio  Leon
Config>
```

b) SET DATA-LINK <type> <WAN line>

Selects the *type* of data link for a WAN line. These can be X.25, FRAME RELAY, etc. The WAN line number you wish to configure can be selected in *WAN line*. Enter **LIST CONFIGURATION** to obtain the WAN line number and to check if the change has been successful.

Syntax:

```
Config>SET DATA-LINK ?
ASTM
FRAME-RELAY
PPP
ASPPP
SDLC
X25
X28
```

Example:

```
Config>SET DATA-LINK FRAME-RELAY
which port will be changed[1]? 1
Config>LIST DEVICES
Con     Ifc Type of interface                   CSR      CSR2  int
---       5 Router->Node                          0                0
---       6 Node->Router                          0                0
---      12 XOT                                   0                0
ISDN 1    3 ISDN                           F001640  F000E00    9C
ISDN 1    4 B channel: FR                         0                0
ISDN 1    9 ISDN D channel: X25            A000000             1B
ISDN 2   10 ISDN D channel: X25            A200000             1B
ISDN 2   11 ISDN B channel: X25            F001660  F000F00    9B
LAN       0 Ethernet                       9000000             1C
WAN1      1 Frame Relay                    F001600  F000C00    9E
WAN2      2 Frame Relay                    F001620  F000D00    9D
WAN3      7 X25                            F011600  F010C00    BE
WAN4      8 X25                            F011620  F010D00    BD
Config>
```

c) SET HOSTNAME <hostname>

This allows you to assign a name to the device permitting a maximum of 80 characters in length. This information may be displayed by entering **LIST CONFIGURATION**. In order to delete the name, simply execute the command again and press (↵) in response to the question "What is the new router name? []?". The first 8 characters are shown in the prompt. If you wish this to appear in all the prompts, you need to save the configuration and restart the device.

Example:

```
Config>SET HOSTNAME
What is the new router name?[]? SuperRouter
Config>
```

d) SET HOST-LOCATION

This is the physical location of the router. A maximum of 80 characters is permitted for the location length. This information can be displayed by entering **LIST CONFIGURATION**.

Example:

```
Config>SET HOST-LOCATION
Host Location [.......]? Tres Cantos (Madrid)
Config>
```

e) SET INACTIVITY-TIMER

This allows you to configure the maximum inactivity time permitted in the procedure in order to access the device through a remote terminal (TELNET). This value is given in minutes and the permitted range is between 1 minute and 10 hours. Once this has timed out, the device's Telnet server disconnects.

This maximum inactivity time period is also applied to the local connection in the device console should the access password be enabled (see the **SET** command in chapter 2 "Teldat Router Configuration"). If the configured inactive time period times out without any of the keys being touched, the local connection will close. In this case the user must reenter the password again when he wishes to use the console.

Example:

```
Config>SET INACTIVITY-TIMER
Current inactivity timer: 10 (min). 0 -> disable
Max. inactivity time (minutes)[10]?
Config>
```

f) SET POOLS Size

This permits you to configure the memory distribution in the device's various POOLs. If this is not correctly configured, it can cause the device to malfunction.

Example:

```
Config>SET POOLS
1 Permanent memory pool: 3580000
2 Temporal memory pool: 2500000
3 Iorbs pool: 5120000
4 MSGs pool: 522000
5 T/R_FRAMES pool: 276000
6 DLS pool: 3000000
7 Pools memory for FTP: 0
Total memory pools: 14998000
Warning: do not modify unless it is absolutely necessary
Type pool number 1-7, or 0 to exit
[0]?
Config>
```

This command is problematic and should only be executed by a specialist. An incorrect configuration can cause the device to malfunction.

g) SET PASSWORD

This permits you to configure the device access password through a TELNET remote terminal or a local connection via the console.

Example:

```
Config>SET PASSWORD
Type New Password: ********
Re-type New Password: ******
Password changed
Config>
```

If you wish to delete the password and have access without it, enter <↵> twice.

Example:

```
Config>SET PASSWORD
Type New Password: <↵>
Re-type New Password: <↵>
Clear Password? (Yes/No)? y
Password cleared
Config>
```

h) SET RX-BUFFERS <interface> <num>

This permits you to configure the number of packet buffers assigned to each interface.

Example:

```
Config> SET RX-BUFFERS
Interface number[0]?
Receive Buffers  (5-255, 0 default value)? [0]?50
Config>
```

i) SET SRAM size

This allows you to modify the size of the device configuration memory. The size of the memory is 64 Kbytes by default. It can be increased to 256 Kbytes (depending on the available memory of the device). You need to save the configuration and restart the device for the modification to take effect. Once this has been done, you need to check it. This is carried out through the **LIST CONFIGURATION** command.

Example:

```
Config>SET SRAM
```

On entering this command, the current size is displayed in Kbytes and a new value requested.

```
Current SRAM pool size in Kbytes 64
New SRAM pool size in Kbytes[64]? 256
```

If this value is not between 64 and 256, the following message will be displayed.

```
Value out of range
```

It is highly recommended that the default value is not modified unless absolutely essential.

4.16. TIME

This allows you to change and check the date and time of the device.

Syntax:

```
Config>TIME ?
LIST
SET
```

a) TIME LIST

Example:

```
Config>TIME LIST
Set by: operator
Date: Tuesday, 10/26/99         Time: 12:26:15
Config>
```

b) TIME SET

Example:

```
Config>TIME SET
Month[10]?
Day[26]?
Year[99]?
Week day (1 Monday, 7 Sunday)[2]?
Hour[12]?
Minute[26]?
Seconds[43]?
Config>
```

4.17. UCI

The UCI command allows you to configure the **Teldat Router** encryption unit. For further information on this command, please consult the **Teldat Router** Manual Dm 526-I “Encription”.

Chapter 3
Teldat Router Monitoring

1. Monitoring procedure commands

MONITOR procedure enter/exit

To enter the monitoring procedure MONITOR from prompt "*" in the Console Manager GESTCON, enter the **PROCESS** command followed by the number which identifies the configuration procedure, in this case **3**.

Example:

```
*PROCESS 3
Console Operator
+
```

To exit the MONITOR procedure and return to Console Manager GESTCON prompt "*", press the escape character (*Ctrl-p* by default).

MONITOR Procedure command table

Command	Function
? (HELP)	Lists the MONITOR commands.
BUFFER statistics	Displays information about packet buffers assigned to each interface.
CLEAR statistics	Clears network statistics.
CONFIGURATION of gateway	Lists the status of current protocols and interfaces.
DEVICE statistics	Displays network hardware statistics or statistics for the specified interface.
DISABLE interface	Takes the specified interface off line.
ERROR counts	Displays error counts.
EVENT logging	Enters the Event Logging System environment.
FEATURES	Accesses to monitoring commands for router features outside the usual protocol and network interface monitoring processes.
INTERNET	Enters Internet monitoring environment.
MEMORY	Displays memory, buffer and packet data.
NETWORK commands	Enters the console environment of the specified network.
NODE commands	Enters the node monitoring environment.
PROTOCOL commands	Enters the command environment of the specified network.
QUEUE lengths	Displays buffer statistics for a specified interface.
STATISTICS of network	Displays statistics for the specified interface.
TEST network	Enables a disabled interface or tests the specified interface
LOG, save	Sets or views the logging level for events not included in the Event Logging System.

ARCHIVE LOG.TXT, delete Deletes Log files created with the Log save command.

Letters written in **bold type** are the minimum set of characters you must enter to use a command properly.

1.1. ? (HELP)

List the commands that are available from the current prompt level. You can also type ? After a command to list its options.

Syntax:

```
+?
```

Example:

```
+?
BUFFER statistics
CLEAR statistics
CONFIGURATION of gateway
DEVICE statistics
DISABLE interface
ERROR counts
EVENT logging
FEATURES
INTERNET
MEMORY
NETWORK commands
NODE commands
PROTOCOL commands
QUEUE lengths
STATISTICS of network
TEST network
LOG, save
ARCHIVE LOG.TXT, delete
+
```

1.2. BUFFER statistics

Displays information about packet buffers assigned to each interface

Note: Each buffer on a single device is the same size and is dynamically built. Buffers vary in size from one device to another.

To display information about one interface only, enter the interface or network number as part of the command. To get the interface number, type **CONFIGURATION** at the + prompt.

Syntax:

```
+BUFFER
```

Example:

```
+BUFFER

Ifc Interface Req  Alloc  Low  Curr  Hdr Wrap   Data Trail  Total     Alloc
0   Eth/0      40     40     5   40   22   96   1500     4   1622     64880
1   R->N/0      0      0     0  100   20   96   1500     0   1616    161600
+
```

Ifc	Network interface number associated with the software.
Interface	Type of interface.
Req	Number of input buffers requested.
Alloc	Number of input buffers allocated.
Low	Low water mark (flow control).
Curr	Current number of input buffers on this device. The value is 0 if the device is disabled. When a packet is received, if the value of *Curr* is below *Low*, then the packet is eligible for flow control. See the **QUEUE** command for conditions.
Hdr	It is the maximum over two terms: • largest LLC, plus MAC, plus size of devices headers on output. • MAC plus size of devices headers on input.
Wrap	Allowance given for MAC, LLC, or Network-layer.
Data	Maximum data link layer packet size.
Trail	Sum of the largest MAC and hardware trailers.
Total	Overall size of each packet buffer.
Alloc	Amount of buffer memory bytes for this device. This value is determined by multiplying the values of *Curr* x *Total*.

The Req, Alloc, Low and Curr parameters refer to the Input Buffers. The parameters Hdr, Wrap, Data, Trail and Total refer to the Buffer Size.

1.3. CLEAR statistics

Deletes statistical information on all of the router's network interfaces from the console terminal. Use this command when tracking changes in large counters. It does not save space or speed in the router however.

Syntax:

```
+CLEAR
```

Example:

```
+CLEAR
Are you sure to clear stats?(Yes/No)?
+
```

1.4. CONFIGURATION of gateway

Displays information about the protocol and network interfaces. The output appears in three sections, the first section lists the router identification, software version, boot ROM version, and the state of the watchdog. The second and third sections list the protocol and interface information.

Syntax:

```
+CONFIGURATION
```

Example:

```
+CONFIGURATION

Teldat's Router, NUCLEOX-PLUS 40  S/N: 0200/01783
Boot ROM release: 1.0N 9644     Watchdog timer Enabled
Software release: 8.0.0B May 21 1999
Hostname:
Date:    Sunday, 06/13/99     Time: 18:29:54

Num  Name     Protocol
0    IP       DOD-IP
3    ARP      Address Resolution Protocol
11   SNMP     SNMP

9 interfaces:
Conn   Ifc Interface MAC/Data-Link         Hardware                Status
---      1 R->N/0   internal               Router->Nodo            Up
---      2 N->R/0   internal               Node->Router            Up
ISDN 1   5 ISDND/0  ISDN D channel         ISAC PSB 2186           Up
ISDN 1   7 ISDNB/0  ISDN B channel         SCC Serial Line- RDSI   Up
ISDN 2   6 ISDND/1  ISDN D channel         ISAC PSB 2186           Up
ISDN 2   8 ISDNB/1  ISDN B channel         SCC Serial Line- RDSI   Up
LAN      0 Eth/0    Ethernet/IEEE 802.3    TMS380C27 Ethernet      Up
WAN1     3 X25/0    X25                    SCC Serial Line- X25    Up
WAN2     4 X25/1    X25                    SCC Serial Line- X25    Up
+
```

The first line lists the type of router and its serial number.

The second line displays the version of the Boot ROM (Read Only Memory) that is currently installed in the router and the current setting of the watchdog timer.

The third line lists the version of the software that is currently running on the router.

The fourth line displays the Hostname.

The fifth line displays the date and time.

There is a list of configured protocols, and interfaces.

The meaning of each field is:

Num	Number associated with the protocol.
Name	Abbreviated name of the protocol.
Protocol	Full name of the protocol.

Conn	Connector associated to the interface.
Ifc	Network number that the software assigns to the interface. Networks are numbered starting at 0.
Interface	Name of the interface and the connector number on the card that the interface uses.
MAC/Data Link	Type of MAC/Data link configured for that interface.
Hardware	Specific kind of interface by hardware type.
Status	Current state of the network interface.

Testing	The interface is undergoing a self-test. Occurs when you first start the router and when it detects a problem on the interface. Once the interface is on the network, it periodically sends out test packets to ensure that it is still functioning properly. If the test fails, the router removes the interface from the network and runs the self-test to ensure its integrity. If a failure occurs during self-test, the router declares the network down. If the self-test is successful, the router declares the network up.
Up	The interface is operational and connected.
Down	The interface is not operational and has failed a self-test. The router re-tests the network at increasing intervals beginning at five seconds, until the router does not test the interface any more (approximately two minutes.)
Disabled	The **+DISABLE** command or the `Config>` **DISABLE** command has temporarily or permanently disabled the interface. The **+DISABLE** command is temporary and goes away when the router is re-initialized. The `Config>` **DISABLE** command is permanent and stays across router re-initialization. You can enable the network with **+TEST** command.
Not present	Either no interface is present in the router, or the board is improperly configured.
Available	This is the state of the secondary interface in a WAN configuration when the primary is active.

1.5. DEVICE statistics

Displays statistical information about the network interfaces, such as Ethernet, Token Ring etc. Use this command to provide a summary of the interfaces shown in the output below, or with an interface number to provide detailed information of one specific interface.

To get the interface number, type **CONFIGURATION** at the + prompt.

Syntax:

```
+DEVICE
```

Example:

```
+DEVICE

                                    Auto-test   Auto-test     Maintenance
Ifc  Interface     CSR     Vect       valids    failures        failures
0    Eth/0     9000000      1C            1           0               0
1    R->N/0          0       0            1           0               0
+
```

Ifc	Global interface number.
Interface	Interface name.
CSR	Command and Status Register address.
Vec	Interrupt vector.
Auto Test Valids	Number of times auto-test succeeded (state of interface changes from down to up).
Auto-Test Failures	Number of times auto-test failed (state of interface changes from up to down).
Maintenance Failures	Number of maintenance failures.

Example:

```
+DEVICE 0
                                    Auto-test   Auto-test     Maintenance
Ifc  Interface     CSR     Vect       valids    failures        failures
0    Eth/0     9000000      1c            1           0               0

Physical address:  00A026400EA8
PROM address:      00A026400EA8

Input statistics:
  failed, frame too long             0  failed, FCS error              18145
  failed, alignment error            1  failed, FIFO overrun               0
  internal MAC rcv error             0  packets missed                     0

 Output statistics:
  deferred transmission          40603  single collision                5916
  multiple collisions            12179  total collisions               53855
  failed, excess collisions         19  failed, FIFO underrun               0
  failed, carrier sense err          0  SQE test error                     0
  late collision                     0  internal MAC trans errors          0
  Ethernet MAC code release EF 1.07 512K
+
```

Note: The screen being displayed can vary depending on the router and device.

1.6. DISABLE interface

Takes a network interface off line, making it unavailable. This command immediately disables the interface. The software does not prompt you to confirm, and no verification message appears. If you

disable an interface with this command, it remains disabled until you use the **TEST** command at the + prompt or a **RESTART** or **LOAD** command at the * prompt to enable it.

Enter the interface or net number as part of the command. To get the interface number, type **CONFIGURATION** at the + prompt.

> ***Note: This command may not be accepted during states of interface auto-testing or down. In this case you will receive an `Interface not up` message.***

Syntax:

```
+DISABLE #
```

If the Interface state is not "up".

Example:

```
+DISABLE 0
Interface not up
```

If the interface state is "up".

Example:

```
+DISABLE 0
+
```

1.7. ERROR counts

Displays error statistics for the network. This command provides error counters.

Syntax:

```
+ERROR
```

Example:

```
+ERROR

                  Input      Input      Input      Input      Output     Output
Ifc Interface  Discards     Errors  Unk Proto  Flow Drop    Discards     Errors
0   Eth/0              0          0      38736          0          0          0
1   R->N/0             0          0          0          0          0          0
+
```

Ifc	Network interface number associated with the software.
Interface	Type of interface.
Input Discards	Number of inbound packets discarded because input overflow.

Input Errors	Number of packets found to be defective at the data link.
Input Unk Proto	Number of packets received for an unknown protocol.
Input Flow Drop	Number of packets received discarded because output overflow.
Output Discards	Number of outbounds packets discarded because output overflow.
Output Errors	Number of output errors, such as attempts to send over a network that is down or over a network that went down during transmission.

The sum of all the "*Input Flow Drop*" and "*Output Discards*" interfaces are not the same. This is due to the fact that the "Output Discards" may contain locally generated packets.

1.8. EVENT logging

Puts you in the Event Logging System (ELS) where you can set up temporary message filters for troubleshooting purposes. All changes you make in ELS take effect immediately but go away when the router is re-initialized. See **Chapter 4 "Using the Event Logging System,"** for information. Type **EXIT** to return to the + prompt.

Syntax:

```
+EVENT
```

Example:

```
+EVENT
-- ELS Monitor --
ELS>
```

1.9. FEATURES

Lets you get to the specific router features outside the protocol and network interface processes. Type **?** after **FEATURES** to get a list of the features available for your software release.

With this command you enter in the corresponding feature monitoring. For further information please consult the corresponding manual.

You need to enable the feature at the `Config>` prompt before monitoring it.

Syntax:

```
+FEATURES ?
BANDWIDTH-RESERVATION
MAC-FILTERING
WRR-BACKUP-WAN
```

a) BANDWIDTH-RESERVATION

With this command you enter in the Bandwidth-Reservation feature monitoring environment. For further information please consult manual Dm515-I.

Example:

```
+FEATURES BANDWIDTH-RESERVATION
-- Bandwidth Reservation console --
BRS>
```

b) MAC-FILTERING

With this command you enter in the MAC-Filtering feature monitoring.

Example:

```
+FEATURES MAC-FILTERING
+
```

c) WRR-BACKUP-WAN

With this command you enter in the Backup WAN Reroute feature monitoring. For further information please consult manual Dm527-I.

Example:

```
+FEATURES WRR-BACKUP-WAN

-- Back-up WAN Reroute user console --
WRR>
```

1.10. INTERNET

In order to access the Internet Monitoring menu you first need to access the general monitoring menu and from there enter **INTERNET**. With this command you access the Internet Monitoring. For further information please consult manual Dm149.

Syntax:

```
+INTERNET
```

Example:

```
+INTERNET
Internet quick monitoring
INTERNET>
```

1.11. MEMORY

In the **first part** of the command, information relative to the memory POOLs is displayed.

The system's total memory is divided into POOLs. A POOL is a memory zone managed by the O.S. There are two types of POOLs.

- Fixed size POOL partitions: in this type of POOL, the memory is divided into sections of the same size.
- Variable size POOL partitions: in this type of POOL, the memory is divided into sections of distinct sizes (according to requests made by the application).

The variable size POOL partitions are:

SYSMEM: area of reserved memory for the internal structures of the operative system.

POOLDIS: area of reserved memory for disk management task.

POOLMDIS: area of reserved memory to store disk task information messages.

POOLT: area of reserved memory to store the application's temporary variables.

POOLP: area of reserved memory to store the application's permanent variables.

The fixed size POOL partitions are:

POOL0, POOL1, POOL2: area of reserved memory for messages from the node part.

POOLI: area of reserved memory for messages from the router part.

The S.O. stores information on the state of the said POOLs. Part of this information can be displayed through the **MEMORY** command:

The following is displayed for the variable size POOL partitions:

Sz: POOL size in bytes.

Avl: currently available space (not used) in bytes.

The following is displayed for the fixed size POOL partitions:

Sz: POOL size in bytes.

RestPart: number of reserved partitions.

Avl: number of available partitions.

In the **second part** the parameters relevant to the system's RAM memory are displayed:

Total mem: system's total memory in bytes.

Free cache mem: available free cache memory in bytes.

Free non-cache mem: available free non-cache memory in bytes.

In the **third part,** the parameters relevant to the system's flash memory are displayed:

Flash memory: system's flash memory measured in bytes.

In the **fourth part,** public buffer and heap information is displayed:
Free global Buffers: number of available public buffers in the system.
Heap: heap size available measured in bytes.

Lastly, information relevant to the CPU's loading state is displayed:
IC: CPU used percentage/CPU Index.
TC: Cycle time.

Syntax:

```
+MEMORY
```

Example:

```
+MEMORY

SYSMEM   Sz:200000     Avl:19932
POOLDIS  Sz:57344      Avl:36420
POOLMDIS Sz:3200       Avl:3168
POOLT    Sz:2500000    Avl:2370156
POOLP    Sz:3580000    Avl:2791864

POOL0    Sz:276000     RestPart:500        AvlPart:2260
POOL1    Sz:522000     RestPart:404        AvlPart:1046
POOL2    Sz:4176       RestPart:0          AvlPart:11
POOLI    Sz:5054720    RestPart:2000       AvlPart:1097

Total mem:        16777216
Free cache mem:     908932  Free non-cache mem:     908932

Flash Memory: 0

Free global Buffers:1899

Heap:26104

IC: 2/102 TC: 120
+
```

1.12. NETWORK commands

Displays the monitoring prompt for the specified network interface, such as the Frame Relay, PPP, X.25 network etc. From the prompt, you can display statistical information.
Type **DEVICE** at the + prompt to see the networks for which the router is configured. For example:

```
+DEVICE

                                  Auto-test   Auto-test     Maintenance
Ifc  Interface     CSR     Vect      valids    failures        failures
0    Eth/0     9000000      1C           1           0               0
1    R->N/0          0       0           1           0               0
+
```

Syntax:

```
+NETWORK
```

Example:

```
+NETWORK

-- Frame Relay Console --
FR>
```

1.13. NODE commands

Permits you to access the node monitoring (X.25, ISDN, XOT and 270). To exit this menu, enter the **EXIT** command.

Syntax:

```
+NODE  ?
ISDN
X25
XOT
270
```

a) NODE ISDN

Permits you to access the part of the node monitoring related to ISDN. To exit this menu, enter the **EXIT** command.

Example:

```
+NODE ISDN
ISDN Monitor
ISDN>
```

b) NODE X25

Permits you to access the part of the node monitoring related to X.25. To exit this menu, enter the **EXIT** command.

Example:

```
+NODE X25
X25 Monitoring
X25>
```

c) NODE XOT

Permits you to access the part of the node monitoring related to XOT. To exit this menu, enter the **EXIT** command.

Example:

```
+NODE XOT
XOT Monitoring
XOT>
```

d) NODE 270

Permits you to access the part of the node monitoring related to 270. To exit this menu, enter the **EXIT** command.

Example:

```
+NODE 270
270 Monitoring
270>
```

1.14. PROTOCOL commands

Puts you in the command environment for the protocol software installed in your router. The **PROTOCOL** command followed by the desired protocol number or short name lets you enter a protocol's command environment. After you enter this command, the prompt of the specific protocol appears. From this prompt, you can enter commands specific to that protocol.

To enter a protocol command environment,

1. Type **PROTOCOL ?** to see a list of the protocols configured on your router.
2. Type the desired protocol name or number. The prompt of the specified protocol appears. From the prompt, you can type the protocol specific commands.
3. Type **EXIT** to return to the + prompt.

Syntax:

```
+PROTOCOL ?
00  IP
03  ARP
11  SNMP
Protocol's name or number: IP
IP>
```

Example:

```
+PROTOCOL ?
00  IP
03  ARP
11  SNMP
Protocol's name or number:03
ARP>
```

1.15. QUEUE lengths

Displays statistics about the length of input and output queues on the specified interfaces. Information provided by the **QUEUE** command includes:

- The total number of buffers allocated
- The low-level buffer value
- The number of buffers currently active on the interface

To display information about one interface only, type the interface or network number as part of the command. To obtain the interface number, type **DEVICE** at the + prompt.

Syntax:

```
+QUEUE
```

Example:

```
+QUEUE

                    Input Queue          Output Queue
Ifc  Interface Alloc   Low  Curr       Fair   Current
0    Eth/0        40     5    40         20         0
1    R->N/0        0     0   100         40         0
+
```

Ifc	Network interface number associated with the software.
Interface	Type of interface.
Input Queue:	
Alloc	Number of buffers allocated to this device.
Low	Low water mark for flow control on this device.
Curr	Current number of buffers on this device. The value is 0 if the device is disabled.
Output Queue:	
Fair	Fair level for the length of the output queue on this device.
Curr	Number of packets currently waiting to be transmitted on this device.

The router attempts to keep at least the *Low* value packets available for receiving over an interface. If the router receives a packet and the value of *Curr* is less than *Low*, then the packet is subject to flow control. If a buffer subject to flow control is on this device and the *Curr* level is greater than *Fair*, the

router drops the buffer instead of queuing. The **ERROR** command displays the dropped buffer in its Output Discards column. It also generates ELS event GW.036 or GW.057.

Due to the scheduling algorithms of the router, the dynamic numbers of *Curr* (particularly the *Input Queue Curr*) may not be fully representative of typical values during packet forwarding. The console code runs only when the input queues have been drained. Thus, *Input Queue Curr* will generally be non-zero only when those packets are waiting on slow transmit queues.

1.16. STATISTICS of network

Displays statistical information about the network software, such as the configuration of the networks in the router.

To display information about one interface only, type the interface or network number as part of the command. To obtain the interface number, type **CONFIGURATION** at the + prompt.

Syntax:

```
+STATISTICS
```

Example:

```
+STATISTICS

                  Unicast  Multicast      Bytes      Packets          Bytes
Ifc Interface   Pkts Rcv   Pkts Rcv   Received   Transmitted   Transmitted
0   Eth/0            915    2666906  301009572        152521      10368147
1   R->N/0             0          0          0             0             0
+
```

Ifc	Network interface number associated with the software.
Interface	Type of interface.
Unicast Pkts Rcv	Number of non-multicast, non-broadcast, specifically addressed packets at the MAC layer.
Multicast Pkts Rcv	Number of multicast or broadcast packets received.
Bytes Received	Number of bytes received at this interface at the MAC layer.
Packets Trans	Number of packets of unicast, multicast, or broadcast type transmitted.
Bytes Trans	Number of bytes transmitted at the MAC layer.

1.17. TEST network

Verifies the state of an interface or enables an interface that was previously disabled with the **DISABLE** command at the + prompt. If the interface is enabled and passing traffic, the **TEST** command removes the interface from the network and runs the auto-test diagnostics on the interface.

For this command to work, you must type the complete name of the command followed by the interface number.

Enter the interface or network number as part of the command. To get the interface number, type **DEVICE** at the + prompt.

Syntax:

```
+TEST
```

Example:

```
+TEST
Testing the interface    0   Tkr/0   OK
```

When testing ends or fails, or GESTCON times out (after 30 seconds), the following possible messages appear:

```
+TEST
Testing net              0   Tkr/0   failed
```

or:

```
+TEST
Testing net              0   Tkr/0   Test running
```

Some interfaces may take more than 30 seconds before testing is done.

1.18. LOG, save

Allows you to view or temporarily change the current logging level of messages that are not included in the Event Logging System.

The command results go to a file LOG.TXT., which can be deleted with the command ARCHIVE LOG.TXT, delete. The command requests the number of items to be recorded (5 by default).

Syntax:

```
+LOG <number>
```

Example:

```
+LOG
number of items to save[5]?
+
```

1.19. ARCHIVE LOG.TXT, delete

This command is used to delete the LOG file created with the previous command.

Syntax:

```
+ARCHIVE
```

Example:

```
+ARCHIVE
+
```

Chapter 4
Event Logging System ELS

1. Introduction

This chapter describes the Event Logging System (ELS). It also describes the VISEVEN procedure and how to obtain messages from the Event Logging System. The VISEVEN procedure provides information on the internal performance of the device and its interfaces.

This chapter contains the following sections:

- Event Logging System
- Event Logging System user interface
- Event Logging System commands

2. Event Logging System

Events occur continuously while the system is operating. These may occur due to various causes:

- System activity.
- State changes.
- Service requests.
- Data transmission and reception.
- Errors in the internal data of the system.

The Event Logging System is a device monitoring mechanism, generating messages as a result of its activity. When something occurs within the system, the Event Logging System (ELS) receives data which identifies the source and nature of the event. A message is then generated using the received data.
Through the ELS it is possible to enter a new configuration in order to display the messages that the user considers to be relevant.
The Event Logging System and the MONITOR procedure counters, allow you to isolate device problems. A quick view of the messages informs the user if there is a problem in the device and where to start searching for it.
In *Config ELS*> prompt, there are commands that may be used to establish a default configuration. This configuration does not take effect until the device is restarted.
Sometimes, you may wish to temporarily display messages with a different configuration to that in the ELS Configuration procedure (*Config ELS* > prompt). This can be done in the ELS monitoring procedure (*ELS*> prompt) without needing to restart the device. With this prompt's commands, it is possible to temporarily change the selection of events to be displayed on the screen. These changes take effect immediately and are not stored in the system configuration.
The following figure summarizes the process to access the *Config ELS*> prompt from the Config> prompt, and the *ELS*> prompt from the "+" prompt.

Event Logging System Configuration

To access the Event Logging System configuration procedure:

1. In the Console Manager procedure prompt "*", enter **STATUS** in order to find out the process identifier (pid) for the configuration environment.

```
*STATUS
System Processes:
NAME      PID  STATUS
GESTCON   1
VISEVEN   2
MONITOR   3
CONFIG    4
TELNET    6
*
```

2. Enter **PROCESS** and the pid to access the CONFIG process (number 4 in this case).

```
*PROCESS 4
Config>
```

3. Enter **EVENT** to access the Event Logging System.

```
Config>EVENT
-- ELS Config --
ELS Config>
```

Now it is possible to execute Event Logging System commands.

To exit the Event Logging System configuration and return to prompt *Config>*, enter **EXIT**.

```
ELS Config>EXIT
Config>
```

All the changes performed in this procedure will only take effect when the device is restarted, provided that the configuration has been previously saved either in Flash memory or Disk.

Event Logging System Monitoring

To access the Event Logging System monitoring:

1. Enter **STATUS** to find the MONITOR ("+" prompt) process identifier

```
*STATUS
System Processes:
NAME      PID  STATUS
GESTCON   1
VISEVEN   2
MONITOR   3
CONFIG    4
TELNET    6
*
```

2. Enter **PROCESS** and the process identifier (pid) to access the MONITOR procedure, number 3 in this case.

```
*PROCESS 3
Console operator
+
```

3. Enter **EVENT** to access the Event Logging System.

```
+EVENT
-- ELS Monitor --
ELS>
```

Now it is possible to execute Event Logging System monitoring commands.

To exit the Event Logging System monitoring and return to "+", enter **EXIT.**

```
ELS>EXIT
+
```

Events display

To display the events that have occurred while the system was operating, you need to access the VISEVEN process from the Console Manager:

1. At the "*"prompt, enter **STATUS** to find out the VISEVEN process identifier.

```
*STATUS
System Processes:
NAME      PID  STATUS
GESTCON   1
VISEVEN   2
MONITOR   3
CONFIG    4
TELNET    6
*
```

2. Enter **PROCESS** and the process identifier (pid) in order to access the VISEVEN process, in this case number 2.

```
*PROCESS 2
```

This process does not present prompts nor commands to be executed. However it shows the messages that have been saved.

To exit VISEVEN and return to the Console Manager ("*" prompt), enter *(Ctrl + p)*.

The VISEVEN process receives messages from the (ELS) Event Logging System and displays them on the screen.

There is a command in the Console Manager procedure that enables you to erase the messages collected by this procedure. This command is **FLUSH**. To obtain the messages from the VISEVEN process, you need to enter **PROCESS 2** as previously described. The VISEVEN procedure shows all the messages collected from the last time the procedure was called. All the messages occurring during the procedure are displayed.

Reading messages from the Event Logging System

On entering the command, a message from the Event Logging System has the following appearance:

```
ELS>LIST SUBSYSTEM GW
GW.019                    C-INFO            Slf tst nt %d int %s/%d
```

(Subsystem Event Number) (Type of Event) (Message Text)

Subsystem

Subsystem is an abbreviated and pre-defined name for a **Teldat Router** component such as protocol or interface, etc. The name **GW** identifies the subsystem through which this event has occurred. GW is an abbreviated name for Gateway.

Other examples of subsystems are ARP, IP, ETH. To see the list of available subsystems in the device, execute the **LIST SUBSYSTEM** command.

Enter the subsystem as a parameter in an Event Logging System Command, if the command is required to affect the whole subsystem. For example, the **ENABLE SUBSYSTEM GW** command enables all the events in GW subsystem so that when events are produced they will be collected by the VISEVEN procedure.

Event Number

The Event number is a pre-defined, unique and arbitrary number assigned to each message within a subsystem. This does not indicate message priority. For example in GW.019, 19 indicates the event number in the GW subsystem. It is possible to obtain a list of all the events in a subsystem through the **LIST SUBSYSTEM** command.

The event number always appears with a subsystem separated by "." , e.g. GW.019. The subsystem and event number jointly identify an individual event. They are entered as a parameter in some Event Logging System commands. When a command is required to affect only one specific event, enter the subsystem and event number as a command parameter.

Type of Event

Type of Event or *Filter Level* is a pre-defined identifier that classifies each message by the event that generates it. This identifier appears when the command **LIST SUBSYSTEM** <name_subsystem> is executed.

TYPE OF EVENTS LIST

Identifier	**Description**
ALWAYS	Each time the device software is loaded displays copyright and configuration confirmation information.
UI-ERROR	Abnormal internal errors.
CI-ERROR	Usual internal errors.
UE-ERROR	Abnormal external errors.
CE-ERROR	Usual external errors.
ERROR	Includes all previously mentioned errors.

U-INFO	Comments on abnormal information.
C-INFO	Comments on usual information.
INFO	Includes all types of previously mentioned comments.
STANDARD	Includes all types of errors and comments. By default.
P-TRACE	Packet trace.
U-TRACE	Trace message from abnormal operation.
C-TRACE	Trace message from usual operation.
TRACE	Includes all types of previously mentioned traces.
ALL	Includes all types of events.

In this table ERROR, INFO, TRACE, STANDARD and ALL are associated to other filtered levels. STANDARD is the filter level recommended by default.

Groups

Groups are a collection of events defined by the user who gives them a group name. The name of the group can be entered as a parameter in some Event Logging System commands. There are no pre-defined groups. It is necessary to create a group before the name of the group can be specified in the command line.

To create a group, execute the configuration command **ADD**, specify the name required for the group, and then specify the events to be included in the group. The events included in the group may be from different subsystems and have different types of events.

Once a group has been created, it can be used to globally handle the events in the group. For example, to enable the event messages of all events that have been added to a group called MYGROUP to be displayed on screen, include the name of the group in the command line as follows:

```
ELS Config>ENABLE TRACE GROUP MYGROUP
```

To delete a group, execute the command **DELETE**.

3. Event Logging System user interface

In order to work efficiently with the Event Logging System:

- It is necessary to know what information is to be required from the Event Logging System. The problem or events that you wish to be displayed before using the VISEVEN process must be clearly defined.
- Execute the **CLEAR** command in the configuration procedure to erase all the events enabled in configuration, as well as the groups created. Or execute the same command in the Monitoring procedure to erase all the events enabled during execution.
- Enable only those messages that are related to the problem you wish to investigate.

When enabling messages, should they be produced too frequently and not displayed on the screen at the same time as being produced in the VISEVEN procedure, the circular message buffer in the VISEVEN process may become full so losing the initial messages.

When you need to trace an specific problem, enable the events related to that problem. For example, if you are having a problem with the IP protocol, enable the IP messages by executing the command:

```
ELS Config>ENABLE TRACE SUBSYSTEM IP ALL
```

At the same time as you receive the messages, they may be enabled or disabled depending on which events are of interest to you.

Proprietor Alarms

The Event Logging System can be used for a specific event sent as a proprietor management alarm to one or various remote stations. Any event, be it individual or belonging to a group or subsystem, can be enabled with this intention.

In order to enable the icmp.002 event so it can be sent as a proprietor alarm,

1. In the ELS Config> or en ELS> prompts, enter

   ENABLE ALARM EVENT ICMP.002

> ***Note: If you are in the ELS Config> you need to save the configuration and restart the device in order for the change to take effect.***

2. In the Alarms Config> prompt, enter

   ADD ADDRESS <ip address of the remote manager station>

> ***Note: You need to save the configuration and restart the device in order for the change to take effect.***

3. A ping can be carried out from any system to the router. The alarm appears in the manager station.

These three steps should be followed in order to enable a subsystem, a group or an individual event as alarms.

Note: So that the remote manager system recognizes the local system to be managed, the internal IP address must be configured.

SNMP Traps

The Event Logging System can be used so that a determined event can be sent as a specified private company trap to any station with SNMP management. The information sent with this type of trap is the message that will be displayed on screen if the event is enabled as a trace. A trap occurs each time the selected event occurs (enabled as an SNMP trap). For more information on how to configure SNMP, please consult the SNMP Protocol configuration manual (Dm096).

Any individual event, group of events or subsystem can be enabled as an SNMP trap.

In order to enable the SNMP.002 event so it can be sent as a specific company trap,

1. In the ELS Config> prompt or ELS>, enter

ENABLE SNMP-TRAP EVENT SNMP.002

Note: If you are in the ELS Config> you need to save the configuration and restart the device in order for the change to take effect.

2. In the SNMP Config> prompt, enter

ADD ADDRESS <community> <ip address of the SNMP remote manager station>

Note: You need to save the configuration and restart the device in order for the change to take effect.

Using the Event Logging System to solve problems

When you are trying to resolve a specific problem with the Event Logging System, enable all those events related to the problem so they are displayed on the console. E.g. if you think that the problem is or could be related to the IP protocol, enable all the events of the IP subsystem by entering:

```
ELS>ENABLE TRACE SUBSYSTEM IP ALL
```

Once you are familiar with the distinct messages that appear, you can enable or disable those events which contain the information that you require.

The Event Logging System allows you to specify which messages which are to be shown temporarily or permanently.

The Event Logging System's configuration commands allow you to design a permanent message filter which takes effect each time the system is switched on or reset.

The monitoring commands allow you to start up the temporary filters which ignore the permanent filter. When the system is restarted or reset, the temporary filter is deleted by the software.

Below there are various examples of the Event Logging System.

Example 1. Starting the device

```
*PROCESS 2                                                  call Event Logging System
06/10/99 17:03:22  GW.001 Copyright Teldat S.A. 1995,96,97,98,99
06/10/99 17:03:22  GW.002 Portable CGW NUCLEOX-PLUS Rel 8.0.0D strtd
06/10/99 17:03:22  GW.005 Bffrs: 1488 avail 1488 idle   fair 231 low 297

enter <Ctrl  + p>                                    exiting Event Logging Syistem
*
```

Example 2. Enabling the Ethernet interface test event

```
ELS>ENABLE ALL EVENT ETH.045
ELS>                                                          enter <Ctrl + p>
*PROCESS 2
ETH.045 Eth self-test Operational Test fld Unknown nt 0
ETH.045 Eth self-test Operational Test fld Unknown nt 0
ETH.045 Eth self-test Operational Test fld Unknown nt 0
```

Example 3. GW protocol operation messages

```
ELS>ENABLE  ALL SUBSYSTEM  GW ALL
ELS>                                                          enter <Ctrl + p>
*PROCESS 2
06/10/99 17:32:35  GW.026 Mnt nt 0 int Eth/0
06/10/99 17:32:37  GW.026 Mnt nt 1 int R->N/0
```

4. Event Logging System Commands

This section describes the Event Logging System commands. Each command includes a description, syntax and one example. Some commands are executed in the Configuration procedure at the *ELS Config>* prompt and others in the Monitoring procedure at the *ELS>* prompt.

4.1. Configuration Procedure Commands

These commands are executed in the Configuration procedure at the *ELS Config>* prompt. The following steps must be performed so that the changes made in the Event System take effect:

1. Once the changes have been made, save the configuration (Flash or Disk) with the **SAVE** command at the *Config>* prompt.
2. Restart the device again.

Another possibility would be to execute the command **RESTORE** at the *ELS>* prompt in the Monitoring procedure.

Event System Configuration command table.

Command	Function
? (HELP)	Lists all the commands for the Event Logging System configuration.
ADD group	Adds an event to a specific group or creates a new group.
CLEAR configuration	Erases all the event and group configuration from the Event Logging System.
DELETE group	Deletes an event from a specific group or the whole group.
DISABLE	Disables messages so that they are not displayed on screen.
ENABLE	Enables messages so that they are displayed on screen.
LIST	Presents information on enabled events and messages.
EXIT	Permits you to exit the Event Logging System configuration.

The minimum number of characters to be entered in order to execute these commands are written in **bold.**

a) ? (HELP)

Lists the available commands in the current prompt. It is also possible to enter "?" after a specific command in order to list its options.

Syntax:

```
ELS Config>?
```

Example:

```
ELS Config>?
ADD group
CLEAR configuration
DELETE group
DISABLE
ENABLE
LIST
EXIT
ELS Config>
```

Example:

```
ELS Config>LIST ?
ALL
CONFIGURATION
EVENT
GROUPS
SUBSYSTEM
ELS Config>
```

b) ADD group

Adds an individual event to a previously created group or creates a new group. The names of groups must be composed with alphabetical characters. Numbers or other type of ASCII characters are not permitted. The name can have a maximum extension of 7 characters. The maximum number of groups that can be created is 10 and the maximum number of events in a group is 20.

Syntax:

```
ELS Config>ADD  <nam_group> <subsystem.event_num>
```

Example:

```
ELS Config>ADD
Group name ?MYGROUP
Group not found
Create new group (yes or no) ? y
event ?IP.001
ELS Config>
```

If the specified group does not exist, confirmation to create a new group will be requested.

c) CLEAR configuration

Clears all the configuration information from the Events Logging System.

All the groups created, events, and subsystems enabled in configuration are erased. Execute this command with the command **SAVE** at the *Config>* prompt to clear the configuration from the Flash or Disk.

Syntax:

```
ELS Config>CLEAR
```

Example:

```
ELS Config>CLEAR
All ELS configuration will be deleted
Are you sure to do this?(y/n)(n): y
ELS configuration deleted
ELS Config>
```

d) DELETE group

Deletes an event from an already created group or deletes the whole group. A message will be displayed if the event specified is the last one in the group. When *ALL* is specified instead of *subsystem.event_num*, confirmation to delete the whole group will be requested.

Syntax:

```
ELS Config>DELETE   <nam_group> <subsystem.event_num>
```

Example:

```
ELS Config>DELETE MYGROUP IP.001
```

Example:

```
ELS Config>DELETE MYGROUP ALL
Do you want to delete the group(y/n)? y
group deleted
ELS Config>
```

e) DISABLE

Selects and disables events so that their messages are not displayed on screen, nor sent as proprietary alarms or traps. It is also possible to disable groups and subsystems.

Syntax:

```
ELS Config>DISABLE
ALL
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
ALARM
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
TRACE
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
SNMP-TRAP
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
```

Example:

```
ELS Config>DISABLE  TRACE EVENT ICMP.001
ELS Config>
```

This example disables the individual ICMP.001 event so it is not displayed on screen.

Example:

```
ELS Config>DISABLE  ALARM GROUP  MYGROUP
ELS Config>
```

This example disables the MYGROUP group so it is not sent as a proprietor alarm.

Example:

```
ELS Config>DISABLE  ALL SUBSYSTEM IP INFO
ELS Config>
```

This example disables events with INFO filter level from the IP subsystem so they are not shown or sent as either alarms or SNMP traps.

f) ENABLE

Selects and enables events so that their messages are displayed on screen, sent as proprietary alarms or traps. It is also possible to enable groups and subsystems.

Syntax:

```
ELS Config>ENABLE
ALL
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
ALARM
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
TRACE
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
SNMP-TRAP
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
```

Example:

```
ELS Config>ENABLE  TRACE EVENT ICMP.001
ELS Config>
```

This example enables the individual ICMP.001 event so it is displayed on screen.

Example:

```
ELS Config>ENABLE  ALARM GROUP   MYGROUP
ELS Config>
```

This example enables the MYGROUP group so it is sent as a proprietor alarm.

Example:

```
ELS Config> ENABLE  ALL SUBSYSTEM IP INFO
ELS Config>
```

This example enables events with INFO filter level from the IP subsystem so they are shown or sent as alarms and SNMP traps.

> ***IMPORTANT:*** ***Do not execute this command during long periods of time while the device is transferring packets, since a great deal of time is spent contacting the VISEVEN procedure. It should never be used when contacting the Teldat Router through a remote terminal. This would give rise to the device spending most of its time contacting the remote terminal.***

g) LIST

Lists information on enabled events, created groups, subsystems and configuration.

Syntax:

```
ELS Config>LIST ?
ALL
CONFIGURATION
EVENT
GROUPS
SUBSYSTEM
```

- *LIST ALL*

This lists all the subsystems, defined groups, the subsystems configuration status, groups and individual events.

Example:

```
ELS Config>LIST  ALL
ELS Config>
```

- *LIST CONFIGURATION*

This lists the status (enabled or disabled) of the subsystems, groups and individual events which have been configured. These will begin to operate when the device is restarted provided they have previously been saved in the memory.

Suppose that you previously enable the SNMP subsystem in order to display the events containing STANDARD filter levels on screen and that there exists a group called MYGROUP. This group is enabled as a proprietary alarm and the user enabled a ICMP.001 event to be send as a specific company trap. You would achieve the results that appear in the below example.

Example:

```
ELS Config>LIST CONFIGURATION
Name      Events    Description

ARP       9         Address Resolution Protocol
BAN       29        Boundary Access Node
BR        29        Bridge/Routing
CIF       24        Encryption
DLS       457       Data Link Switching
ETH       49        Ethernet
FLT       7         Filter Library
FR        53        Frame Relay
FRBK      8         Frame Relay BACKUP
FTP       4         File Transfer Protocol
GSTP      1         Proprietary management (Teldat)
GW        58        Router kernel
H323      6         H323
ICMP      20        Internet Control Message Protocol
IP        86        Internet Protocol
IPPN      27        IP Tunnel
ISDN      26        Integrated Services Digital Net
LLC       33        Logical Link Control
MCF       9         MAC Filtering
NBS       50        NetBIOS Support Subsystem
PPP       100       Point to Point
Q933      20        Q933
RIP       28        IP Routing Information Protocol
SDLC      95        IBM SDLC
SL        35        Serial Line
SNMP      18        Simple Network Management Protocol
SPF       61        Open SPF-Based Routing Protocol
SRT       87        Source Routing Transparent Bridge
STP       32        Spanning Tree Protocol
TCP       55        Transmission Control Protocol
TKR       46        Token Ring
TNIP      20        IP Tunnel
UDP       4         User Datagram Protocol
X252      23        X.25 Layer 2
X253      25        X.25 Layer 3

Group: MYGROUP
       IP.002
       IP.003
       IP.004

Subsystem     :GW
    Trace     :ALL
    Alarm     :ALL
    SNMP-Trap :ALL
Subsystem     :IP
    Trace     :STANDARD
    Alarm     :none
    SNMP-Trap :none

Group         Trace     Alarm     SNMP-Trap
MYGROUP       Off       On        Off

Event         Trace     Alarm     SNMP-Trap
ICMP.001      On        Off       Off
ELS Config>
```

- *LIST EVENT*

Lists the filter level and the specified event message.

Example:

```
ELS Config>LIST  EVENT  ICMP.001
Level: UE-ERROR
Message: bd cks 0x%04x (exp 0x%04x) %I -> %I
ELS Config>
```

- *LIST GROUPS*

Lists the names of the groups defined by the user and their content.

Example:

```
ELS Config>LIST GROUPS
Group: MYGROUP
       IP.002
       IP.003
       IP.004
ELS Config>
```

- *LIST SUBSYSTEM*

Lists all the events of a specified subsystem.

Example:

```
ELS Config>LIST SUBSYSTEM  ICMP
Event         Level     Message

ICMP.001      UE-ERROR  bd cks 0x%04x (exp 0x%04x) %I -> %I
ICMP.002      C-INFO    ech %I -> %I
ICMP.003      U-INFO    ech rp %I -> %I
ICMP.004      CI-ERROR  unhnd typ %d %d  %I -> %I
ICMP.005      U-TRACE   unhnd brd typ %d %d  %I -> %I
ICMP.006      UE-ERROR  bd typ %d %d  %I -> %I
ICMP.007      C-INFO    addr msk %I -> %I
ICMP.008      C-TRACE   addr msk rep %I -> %I
ICMP.009      UI-ERROR  no pkt or mem
ICMP.010      UE-ERROR  amb addr msk %I -> %I
ICMP.011      UI-ERROR  err %d sndng pkt to nt %d int %s/%d
ICMP.012      C-INFO    rdr %I -> %I to %I
ICMP.013      U-INFO    bd prm off %d %I -> %I
ICMP.014      U-TRACE   snd %d %d pkt %I -> %I
ICMP.015      UE-ERROR  shrt ICMP hdr %d src %I
ICMP.016      U-TRACE   %I rdr dest %I to %I
ICMP.017      UE-ERROR  Bad rdr from %I, rsn: %S
ICMP.018      U-TRACE   Router advertisement received from %I
ICMP.019      UE-ERROR  Bad router adv from %I, rsn: %S
ICMP.020      U-INFO    rcvd typ %d %d  %I -> %I
ELS Config>
```

If the subsystem name is not entered, a list will appear with the name, event number and a description of all the subsystems.

Example:

```
ELS Config>LIST SUBSYSTEM ?
Name      Events    Description

ARP       9         Address Resolution Protocol
BAN       29        Boundary Access Node
BR        29        Bridge/Routing
CIF       24        Encryption
DLS       457       Data Link Switching
ETH       49        Ethernet
FLT       7         Filter Library
FR        53        Frame Relay
FRBK      8         Frame Relay BACKUP
FTP       4         File Transfer Protocol
GSTP      1         Proprietary management (Teldat)
GW        58        Router kernel
H323      6         H323
ICMP      20        Internet Control Message Protocol
IP        86        Internet Protocol
IPPN      27        IP Tunnel
ISDN      26        Integrated Services Digital Net
LLC       33        Logical Link Control
MCF       9         MAC Filtering
NBS       50        NetBIOS Support Subsystem
PPP       100       Point to Point
Q933      20        Q933
RIP       28        IP Routing Information Protocol
SDLC      95        IBM SDLC
SL        35        Serial Line
SNMP      18        Simple Network Management Protocol
SPF       61        Open SPF-Based Routing Protocol
SRT       87        Source Routing Transparent Bridge
STP       32        Spanning Tree Protocol
TCP       55        Transmission Control Protocol
TKR       46        Token Ring
TNIP      20        IP Tunnel
UDP       4         User Datagram Protocol
X252      23        X.25 Layer 2
X253      25        X.25 Layer 3
ELS Config>
```

h) EXIT

This allows you to exit the Events Logging System configuration and return to the *Config>* prompt.

Syntax:

```
ELS Config>EXIT
```

Example:

```
ELS Config>EXIT
Config>
```

4.2. Monitoring procedure commands

These commands are executed in the Monitoring process at the *ELS>* prompt.

The changes made in this procedure are automatically executed and are lost when the device is restarted. These commands allow you to enable events during operation time.

Event System Monitoring command table

Command	Function
?(HELP)	Lists all the commands for monitoring the Event Logging System.
CLEAR actives	Permits you to disable all enabled events at a given time.
DISABLE	Allows you to disable event messages so they are not displayed on the screen, nor sent as proprietor alarms nor specific traps.
ENABLE	Allows you to enable event messages to be displayed on the screen, sent as proprietor alarms or specific traps.
LIST	Lists information on established events and messages.
RESTORE configuration	Permits you to restore all the existing Event System configuration at a given time.
EXIT	Permits you to exit event monitoring.

The minimum number of characters to be entered in order to execute these commands are written in **bold.**

a) ? (HELP)

Lists the commands available for the current prompt. It is also possible to enter "?" after an specific command in order to list its options.

Syntax:

```
ELS> ?
```

Example:

```
ELS> ?
CLEAR actives
ENABLE
DISABLE
LIST
RESTORE configuration
EXIT
ELS>
```

Example:

```
ELS> LIST ?
ACTIVE
EVENT
GROUPS
SUBSYSTEM
 ELS>
```

b) CLEAR actives

Permits you to disable all enabled events at a given time.

Syntax:

```
ELS>CLEAR
```

Example:

```
ELS>CLEAR
Do you want to disable all active events?(Y/N)(N): y
ELS>
```

c) DISABLE

Selects and disables events so that their messages are not displayed on the screen in the VISEVEN process, nor sent as proprietor alarms or SNMP traps. It is possible to disable groups and subsystems.

Syntax:

```
ELS>DISABLE
ALL
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
ALARM
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
TRACE
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
SNMP-TRAP
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
```

Example:

```
ELS>DISABLE  TRACE EVENT ICMP.001
ELS>
```

This example disables the ICMP.001 individual event so it is not displayed on screen.

Example:

```
ELS>DISABLE  ALARM GROUP   MYGROUP
ELS>
```

This example disables the MYGROUP group so it is not sent as a proprietor alarm.

Example:

```
ELS> DISABLE  ALL SUBSYSTEM IP INFO
ELS>
```

This example disables the INFO filter level events of the IP subsystem so that it is not displayed nor sent as an alarm or SNMP trap.

d) ENABLE

Selects and enable events so that their messages are displayed on the screen in the VISEVEN process, sent as proprietor alarms or traps. It is possible to enable groups and subsystems.

Syntax:

```
ELS>ENABLE
ALL
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
ALARM
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
TRACE
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
SNMP-TRAP
        EVENT <subsystem.event_num>
        GROUPS <nam_group>
        SUBSYSTEM <subsystem> <filtering_level>
```

Example:

```
ELS>ENABLE  TRACE EVENT ICMP.001
ELS>
```

This example enables the ICMP.001 individual event so it is displayed on screen.

Example:

```
ELS>ENABLE  ALARM GROUP   MYGROUP
ELS>
```

This example enables the MYGROUP group so it is sent as a proprietor alarm.

Example:

```
ELS>ENABLE  ALL SUBSYSTEM IP INFO
ELS>
```

This example enables the INFO filter level events of the IP subsystem so that it is displayed or sent as an alarm and an SNMP trap.

IMPORTANT: ***Do not execute this command during long periods of time while the device is transferring packets, since a great deal of time is spent contacting the VISEVEN procedure. It should never be used when contacting the Teldat Router through a remote terminal. This gives rise to the device to spend most of its time contacting the remote terminal.***

e) LIST

Lists information on events enabled, groups created and subsystems.

Syntax:

```
ELS> LIST ?
ACTIVE
EVENT
GROUP
SUBSYSTEM
```

- *LIST ACTIVE*

Example:

```
ELS>LIST ACTIVE   ARP
Actives      Count   Trace   Alarm   Snmp-Trap
ARP.001      0       on      off     off
ELS>
```

This lists the enabled events in the ARP subsystem, the number of times that each event has occurred and the enabling vector of each event.

Note: Events with ALWAYS filter levels are always enabled to be displayed on screen and to be sent as alarms and traps (e.g. GW.001). In the same way there are events enabled as traps which cannot be disabled as they generate the SNMP generic traps (e.g. GW.021 link up).

- *LIST EVENT*

Lists the ICMP.001 event information.

Let's suppose that the event is enabled to be displayed on screen, sent as proprietor alarm and a specific company trap, the information that we can received is shown below in the example.

Example:

```
ELS>LIST  EVENT  ICMP.001
Level: UE-ERROR
Message: bd cks 0x%04x (exp 0x%04x) %I -> %I

Count:  0 Status: enable as  (Trace) (Alarm) (SNMP Trap)
ELS>
```

- *LIST GROUPS*

This shows the group name, the set of events which it is composed of, the enabling status of each event and the current global status of group enabling.

If all the group events are enabled to be displayed on screen and some to be sent as traps and alarms, the information we receive is as shown in the below example.

Example:

```
ELS>LIST GROUP
Group: MYGROUP
Event        Trace   Alarm   Snmp-Trap
IP.002       on      on      off
IP.003       on      on      off
IP.004       on      on      off
Globally enable as:  (Trace) (Alarm)
ELS>
```

- *LIST SUBSYSTEM*

Example:

```
ELS>LIST SUBSYSTEM  ICMP
Event         Level     Message

ICMP.001      UE-ERROR  bd cks 0x%04x (exp 0x%04x) %I -> %I
ICMP.002      C-INFO    ech %I -> %I
ICMP.003      U-INFO    ech rp %I -> %I
ICMP.004      CI-ERROR  unhnd typ %d %d  %I -> %I
ICMP.005      U-TRACE   unhnd brd typ %d %d  %I -> %I
ICMP.006      UE-ERROR  bd typ %d %d  %I -> %I
ICMP.007      C-INFO    addr msk %I -> %I
ICMP.008      C-TRACE   addr msk rep %I -> %I
ICMP.009      UI-ERROR  no pkt or mem
ICMP.010      UE-ERROR  amb addr msk %I -> %I
ICMP.011      UI-ERROR  err %d sndng pkt to nt %d int %s/%d
ICMP.012      C-INFO    rdr %I -> %I to %I
ICMP.013      U-INFO    bd prm off %d %I -> %I
ICMP.014      U-TRACE   snd %d %d pkt %I -> %I
ICMP.015      UE-ERROR  shrt ICMP hdr %d src %I
ICMP.016      U-TRACE   %I rdr dest %I to %I
ICMP.017      UE-ERROR  Bad rdr from %I, rsn: %S
ICMP.018      U-TRACE   Router advertisement received from %I
ICMP.019      UE-ERROR  Bad router adv from %I, rsn: %S
ICMP.020      U-INFO    rcvd typ %d %d  %I -> %I
ELS>
```

Example:

```
ELS>LIST SUBSYSTEM o LIST SUBSYSTEM ?
Name      Events    Description

ARP       9         Address Resolution Protocol
BAN       29        Boundary Access Node
BR        29        Bridge/Routing
CIF       24        Encryption
DLS       457       Data Link Switching
ETH       49        Ethernet
FLT       7         Filter Library
FR        53        Frame Relay
FRBK      8         Frame Relay BACKUP
FTP       4         File Transfer Protocol
GSTP      1         Proprietary management (Teldat)
GW        58        Router kernel
H323      6         H323
ICMP      20        Internet Control Message Protocol
IP        86        Internet Protocol
IPPN      27        IP Tunnel
ISDN      26        Integrated Services Digital Net
LLC       33        Logical Link Control
MCF       9         MAC Filtering
NBS       50        NetBIOS Support Subsystem
PPP       100       Point to Point
Q933      20        Q933
RIP       28        IP Routing Information Protocol
SDLC      95        IBM SDLC
SL        35        Serial Line
SNMP      18        Simple Network Management Protocol
SPF       61        Open SPF-Based Routing Protocol
SRT       87        Source Routing Transparent Bridge
STP       32        Spanning Tree Protocol
TCP       55        Transmission Control Protocol
TKR       46        Token Ring
TNIP      20        IP Tunnel
UDP       4         User Datagram Protocol
X252      23        X.25 Layer 2
X253      25        X.25 Layer 3
ELS>
```

f) RESTORE configuration

This allows you to restore the existing configuration at a given time without having to previously record and reset the system. This is a useful tool for checking the configuration to be saved for problems.

Syntax:

```
ELS> RESTORE
```

Example:

```
ELS> RESTORE
Do you want to restore ELS configuration?(Y/N)(N): y
ELS>
```

g) EXIT

This allows you to exit the Event Logging System monitoring and return to + prompt.

Syntax:

```
ELS> EXIT
```

Example:

```
ELS> EXIT
+
```

Appendix
Personalized parameters

1. Supported personalized parameters

There are three commands in the configuration prompt used to control the personalized versions in the router:

ENABLE PATCH. This command allows you to apply a personalized parameter by introducing its name and the value it must have in order to modify the required behavior.

DISABLE PATCH. This command allows you to deactivate an active parameter.

LIST PATCH. This command allows to consult the list of active parameters.

DEFAULT

Through this parameter you can deactivate all the active personalized parameters in the router at the same time.

NO_TEST_FRAMES

DLSw sends TEST frames to the SDLC links when the physical signals are activated to check if the station is active or not. As some stations do not admit these frames, this parameter can override this behavior.

Value: 0 DLSw sends TEST frames to the SDLC links.

Value: 1 DLSw does not sent TEST frames to the SDLC links.

DLS_IGNORE_LFS

DLSw uses the FLS bits of the RIF field and the SSP messages in order to find out if the established routes support the necessary frame length. If at some point the frame length cannot be supported the DLSw will not connect. The DLSw can ignore the LFS bits content of these fields and permit the connection at all times through this parameter. .

Value: 0 DLSw tests the LFS bits content in order to discard routes and connections.

Value: 1 DLSw ignores the LFS bits content.

DLS_USE_QRR

In activating the QLLC, link, the DLSw can send a QRR message when the whole data path has been activated in order to inform the other end. This means it is as if the QLLC link, once established, remains in a RNR state until the whole path is activated. Some stations need to receive this type of message in order to move on to the data transfer stage.

Value: 0 DLSw does not send QRR when the whole link is completely activated.

Value: 1 DLSw sends QRR when the link is completely activated.

DLS_PASS_ABM

In the SDLC and QLLC links, the machines deactivate the XID-3 ABM_SUPP bit. This parameter allows the bit to pass instead of setting it to '1' when it passes the XID-3 towards the DLS network (SSP Messages).

Value: 0 DLSw sets the ABM_SUPP bit to 1 in the XID-3 received from the SDCL and QLLC.

Value: 1 DLSw sets the ABM_SUPP bit to 1 only in the XID-3 received from QLLC.

Value: 2 DLSw sets the ABM_SUPP bit to 1 only in the XID-3 received from the SDCL.

Value: 3 DLSw DOES NOT CHANGE the ABM_SUPP bit in the XID-3 received from the SDCL and QLLC.

En los enlaces SDLC y QLLC, las máquinas desactivan el bit ABM_SUPP del XID-3. Este parámetro permite dejar pasar ese bit según sale de la máquina, en lugar de forzarlo a '1' cuando se pasa el XID-3 hacia la nube DLS (Mensajes SSP).

CPY_USE_DMA

The *memcpydma* function which copies memory blocks using DMA has been found to be incompatible with the disk control in some software versions (6.0 - 6.2) and will produce errors in the latter. This parameter allows you to activate or deactivate DMA for use in copying the memory blocks. This option is disabled by default.

Value: 0 The router operates in a secure mode.

Value: 1 The router uses DMA to make block copies of the memory.

If you wish to enable (CPY_USE_DMA = 1), you must make sure that you do not use the disk. If you do the disk will produce operating errors, especially when FTP is used (software versions 6.3 and 6.4). This problem can be detected when you request a file from the router using FTP through the LAN with existing X.25 traffic.

DLS_GIVE_MEM

Given the insufficient memory produced when the DLS is operating, this parameter is created so the DLS can release a part of the memory assigned to its congestion pool. I.e. you can remotely download

using FTP even when the DLS is active, something which up until now couldn't be done due to insufficient memory. Although this option does use DLS memory, there is a minimum of 1 Mb that is always kept free for operation purposes.

Value: 0 The DLS tries to use all the memory reserved for its congestion pool.

Value: x The DLS leaves the memory indicated by an 'x' free.

This value indicates the amount of reserved memory which is not used by the DLS for its congestion pool. This parameter only take effect when the router is switched on or reset. THIS IS NOT DYNAMICALLY APPLICABLE.

SRE_INT_FLAGS

This patch permits you to modify the events logging system behavior. Normally it is not necessary to use this, but it is useful to have this patch for debugging and development effects. The patch value is the sum of the flags used.

Value: 0 Normal event logging system operation.

Flag: 1 The event logging system stops introducing events in the round viewing buffer when this is full. This means that when the events cannot be viewed and the buffer is full, CPU time is not consumed thus increasing performance. The secondary effect of this is that the latest events to arrive are lost, not the oldest.

Flag: 2 In viewing, the time and date do not appear as it does not consult the real time clock which takes up a lot of time and the performance is improved.

LINEA_2_DTE

This command only effects those Nucleox Plus hardware versions superior or equal to TS-300/xx; this modifies the line 2 behavior when this is configured as DTE.

The Nucleox Plus has a hardware limitation which manifests itself when line 2 is configured as DTE and it cannot retrieve the clock directly from the line. In hardware versions prior to TS-300/xx the problem was resolved using a PLL which retrieved the clock once the data had been received. In certain applications (when frames containing a number of 0s arrived) this solution is insufficient as the PLL disconnects and the clock is lost.

In equal or superior versions to TS-300/xx, a hardware modification is carried out thus permitting clock retrieval from the line at the cost of losing the ISDN primary interface. This new function is disabled by default and can be enabled through this patch.

Value: 0 Line 2 configured as DTE uses a PLL to retrieve the clock from the data.

Value: 1 At the cost of losing the ISDN primary interface, line 2 configured as DTE can retrieve the clock from the line.

This parameter only take effect when the router is switched on or reset. THIS IS NOT DYNAMICALLY APPLICABLE.

ARPI_SND_LCL

You can modify the Inverse ARP protocol behavior through this patch.

Valor: 0 The Inverse ARP does not send the configured internal IP address.
Valor: 1 The Inverse ARP sends the configured internal IP address.

As this value takes immediate effect (dynamically) you do not need to restart the device.

FTP_ALLO_STGY

This flag permits you to define the memory use strategy for the temporary buffer driver of the FTP server. The patch value consists of the sum of the flags used.

Valor: 0 This is not applied to the patch.

Flag: 1 Does not use the unused memory zone.
Flag: 2 Does not use the permanent pool memory (POOLP).
Flag: 4 Does not use the temporary pool memory (POOLT).
Flag: 8 Does not use the public buffer memory. (POOLI).
Flag: 10 Uses the free memory until no more blocks can be introduced.
Flag: 20 Uses the POOLP until no more blocks can be introduced.
Flag: 40 Uses the POOLT until no more blocks can be introduced.
Flag: 80 Uses the POOLI until the buflow mark is reached.

XOT_NO_FACI

This patch allows Packet Size and Window negotiation facilities not to be sent by the XOT system if the source port and destination coincide.

Value: 0 Always sends the 2 facilities by XOT (RFC 1613 Compatible).
Value: 1 Does not sent the 2 facilities if the source port and destination coincide.

As this value takes immediate effect (dynamically) you do not need to restart the device.

QLLC_USE_QUEUE

This patch permits you to use an intermediate queue in order to transmit QLLC traffic from the X.25 node to the DLSw QLLC module. This is currently at an experimental stage.

Value: 0 Normal operation.
Value: x X.25 traffic -> DLSw passes through an intermediate queue.