Teldat Router

Configuration of Frame Relay over E1/PRI ISDN Interfaces

Doc. *DM531-I* Rev. *8.30*

May, 2000

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Chapter 1
Configuration of FR over E1/PRI ISDN

1. Introduction

This chapter describes the function of Frame Relay interface over E1/PRI ISDN.

The information given in this chapter is divided into the following sections:

- FR-DIAL interface assignment.
- Configuration of the FR Generic Dial interface over E1/PRI ISDN.
- Configuration of the E1/PRI ISDN interface.

Should you have any doubts over the meaning of any of the Frame Relay interface own concepts, please consult manual Dm503-I “Frame Relay”.

2. FR-DIAL Interface Assignment

Should you wish to configure a Frame Relay interface over a channel B E1/PRI ISDN link, you must enter the following command:

```
Config>ADD DEVICE FR-DIAL
Added FR-DIAL interface with num: 4
Config>
```

You can check that the new interface has been correctly added by listing the current interfaces present in the router (and verifying that the *FR Generic Dial* interface has been generated):

```
Config>LIST DEVICES

Con    Ifc Type of interface                  CSR     CSR2  int
---      2 PPP Generic Dial                     0             0
---      3 PPP Generic Dial                     0             0
---      4 FR Generic Dial                      0             0
---      5 Router->Node                         0             0
---      6 Node->Router                         0             0
ISDN 1   1 G.703 port (E1)              F001600  F000C00   9E
LAN      0 Ethernet                     A000000            1D
WAN1     7 X25                          F001620  F000D00   9D
Config>
```

The Frame Relay interface over E1/PRI ISDN (FR-DIAL over E1/PRI ISDN) is one of the interfaces which act as 'users' for the E1/PRI ISDN base interfaces. This deals with a logical interface with its own physical connector.

You can configure various Frame Relay interfaces over E1/PRI ISDN over a single E1/PRI ISDN base interface. The E1/PRI ISDN interface can also be configured to support semipermanent connections. This latter case does not require a call to be established in order to transmit data through the B channel.

NOTE: Please remember that you must save any changes made to the configuration and restart the device in order for the changes to take effect.

3. Configuration of the FR Generic Dial Interface

In order to configure an *FR Generic Dial* interface over an E1/PRI ISDN interface (Primary ISDN) you need to enter **NETWORK n** in the general configuration menu, where **n** is the number of the associated interface. For example, if interface 4 is the FR Generic Dial interface, you need to enter:

```
Config>NETWORK 4
FR-DIAL User Config
FRD Cfg>
```

The following are the options presented in the FR Generic Dial interface configuration menu:

```
FRD Cfg>?
DIAL
FR
EXIT
FRD Cfg>
```

3.1. DIAL

Through the DIAL command you can access the interface 'call' options configuration menu. In the *Dial Config>* configuration menu, the parameters related with the FR link association over an E1/PRI ISDN interface channel are specified.

```
FRD Cfg>DIAL
Dial Config
Dial Config>
```

The following commands are available from the *Dial Config>* prompt:

```
Dial Config>?
LIST
SET
EXIT
Dial Config>
```

a) LIST

This command permits you to view the options configured for the DIAL part of the interface.

```
Dial Config>LIST
Circuit name          : PRUEBA
Base interface        : 1
Base circuit id       : 2
Dial Config>
```

"Circuit name" is the name of the call profile associated to the FR-DIAL link. This identifier relates the circuit to the call characteristics it is going to have (source address, destination

address, type of permitted calls etc.). This is only applicable for the Primary ISDN interface, as the E1 does not carry out calls.

"Base interface" this refers to the number of the base interface over which the FR interface is established (in this case it must be the number of the interface associated to an E1 or a Primary ISDN).

"Base circuit id" this is the B channel number over which you wish to establish the FR connection in the *E1* or *PRIMARY ISDN* frame. The system takes into account the contents of this parameter depending on the type of channel the FR link is established over. In cases where you have the base interface configured as the Primary ISDN, you cannot use channel 16.

b) SET

The SET command permits you to configure the parameter values associated to the DIAL part of the *FR Generic Dial* interface.

- ***SET BASE-INTERFACE***

Through this command you can specify the interface number associated to the base interface (E1 or Primary ISDN) as well as the channel B number through which you wish to establish the FR link (this is used only in cases of semipermanent).

```
Dial Config>SET BASE-INTERFACE
Base interface:[1]?
Base circuit id:[255]?1
Dial Config>
```

NOTE: The channel number (Base circuit id) is significant only in cases of FR connections over SEMIPERMANENT channels as in cases of switched channels the channel is assigned when the call is being carried out. The number 255 indicates that a channel is not associated so if you are dealing with semipermanent connections, the link will not function.

- ***SET NAME-CIRCUIT***

This permits you to assign the *Dial Profile* link. This parameter associates the link with the indicated profile (this contains data such as types of calls permitted, where to send the outgoing calls, which incoming calls are permitted, inactivity time and whether the access controls are enabled or not). If there is no call profile associated, the link will not establish (in the same way if you associated a profile that does not exist or is not configured).

For more information on this, please consult manual Dm532-I Dial Profile.

```
Dial Config>SET NAME-CIRCUIT
Assign circuit name[CIRCUIT1]?
Dial Config>
```

c) EXIT

This command exits the *Dial Config>* configuration.

```
Dial Config>EXIT
FRD Cfg>
```

3.2. FR

The FR command takes you to the Frame Relay configuration prompt.

```
FRD Cfg>FR

-- Frame Relay user configuration --
FR config>
```

The commands that can be used within the Frame Relay configuration menu are the same as those described for normal interfaces over a serial line.

NOTE: The use of configuration commands for Frame Relay interfaces over a serial line are also valid for Frame Relay interfaces over ISDN. For further information please consult manual DM503 "Frame Relay".

Non-configurable parameters

Some specific Frame Relay parameters are not configurable in the Frame Relay interfaces over E1/PRI ISDN. If you try to configure these, the following message will appear:

```
Option not supported on dial FR interfaces
```

The commands detailed below are not operative in this protocol:

- ADD SVC-SWITCHED-CIRCUIT
- ADD NUMBER-ADDRESS
- CHANGE SVC-SWITCHED-CIRCUIT
- DISABLE NUCLEOX-LIKE-BIR
- ENABLE NUCLEOX-LIKE-BIR
- DELETE SVC-SWITCHED-CIRCUIT
- DELETE NUMBER-ADDRESS
- SET ENCODING NRZ
- SET ENCODING NRZI
- SET IDLE FLAG
- SET IDLE MARK
- SET LINE-SPEED
- SET TRANSMIT-DELAY
- SET S1-PARAMETER
- SET CALLING-ADDRESS

These commands refer to the configuration of Frame Relay switched circuits (not supported) and the configuration of the serial line physical and HDLC parameters (these do not exist in Frame Relay interfaces over E1/PRI ISDN).

3.3. EXIT

Through the EXIT command you return to the general configuration prompt, *Config>*.

```
FRD Cfg>EXIT
Config>
```

4. Configuration of the E1/PRI ISDN interface

In order to correctly establish a FR-DIAL link over an E1/PRI ISDN interface you must correctly configure certain E1/PRI ISDN interface parameters according to the behavior you wish to specify. The possibilities are:

a) *FR link over an E1 interface channel*

In this case, the connections are always over a semipermanent channel. You need to configure the E1/PRI ISDN interface to operate in E1 mode. For further information on how to configure the E1/PRI ISDN interface, please consult manual Dm 530-I "E1/PRI ISDN Interface".

b) *FR link over Primary ISDN interface Semipermanent channel*

First you must configure the E1/PRI ISDN interface so it behaves as Primary ISDN. In this case, you need to configure the channel where you wish to establish the FR connection as *PVC*. For further information on how to configure the E1/PRI ISDN interface, please consult manual Dm 530-I "E1/PRI ISDN Interface".

c) *FR link over Primary ISDN interface switched channel*

As in the above case, you need to configure the E1/PRI ISDN interface as Primary ISDN and there must be a Primary ISDN interface channel configured as switched (*SVC*). For further information on how to configure the E1/PRI ISDN interface, please consult manual Dm 530-I "E1/PRI ISDN Interface".

Chapter 2
Monitoring of FR over E1/PRI ISDN

1. FR-DIAL interface statistics

The FR-DIAL interface over E1/PRI ISDN statistics are displayed by entering the **DEVICE** command followed by interface number for the statistics you wish to obtain at the monitoring prompt (+).

```
+DEVICE 2

                                        Auto-test   Auto-test     Maintenance
Ifc  Interface     CSR     Vect          valids     failures        failures
2    FR/0            0        0               2            1               0
+
```

2. FR-DIAL monitoring

2.1. Accessing the FR-DIAL monitoring prompt

In order to access the Frame Relay over E1/PRI ISDN monitoring prompt, you need to enter **NETWORK** following by the interface number.

```
+NETWORK 4
FR-DIAL Console
FRD>
```

2.2. FR-DIAL monitoring commands

All FR-DIAL interface monitoring commands must be entered at the prompt specified above, *FRD>*.
The available commands are described below.

a) ? (HELP)

This command permits you to view the available options from the menu you are in and to list the possible command options. The commands available for monitoring in the FR-DIAL console menu are:

```
FRD>?
DIAL
FR
EXIT
PPPD>
```

b) DIAL

The DIAL command takes you to the interface 'call' monitoring prompt. You can enter commands to view the statistics relative to the DIAL part of the interface at this prompt.

```
FRD>DIAL
Dial Console
Dial>
```

The DIAL monitoring console has the following commands:

- *? (HELP)*

This lists the available commands.

```
Dial>?
LIST
EXIT
Dial>
```

- *LIST*

Displays the parameters relative to the DIAL part.

```
Dial>LIST
Destination address    : 384200
Local address          :
Base interface         : 1
Circuit id request     : 255
Dial circuit status    : OPEN
Circuit id assigned    : 1
Dial>
```

The meaning of the information displayed is as following:

"Destination address", this is the link destination address i.e. the ISDN number called (this only appears when the E1/PRI ISDN interface is configured as Primary ISDN).

"Local address", local ISDN number.

"Base interface", base interface number (E1/PRI ISDN).

"Circuit id request", the number of the channel through which you request the Frame Relay link establishment.

"Dial circuit status", current circuit status. The possible values are:

OPEN, the circuit is established.
CLOSED, the circuit is not established.
DOWN, the E1/PRI ISDN interface is not active.

"Circuit id assigned", the circuit number (channel B) associated to the link (in cases of Frame Relay links over switched circuits, although a determined circuit is configured, this is assigned when the call is established and does not, therefore, have to coincide with that requested).

- *EXIT*

Exits the Dial monitoring prompt.

```
Dial>EXIT
FRD>
```

c) FR

Through this command you can access the monitoring menu for Frame Relay interface own parameters. This is described in more detail in manual *Dm503-I Frame Relay*.

```
FRD>FR

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

d) EXIT

This command exits the FR-DIAL monitoring prompt and returns to the previous prompt.

```
FRD>EXIT
+
```