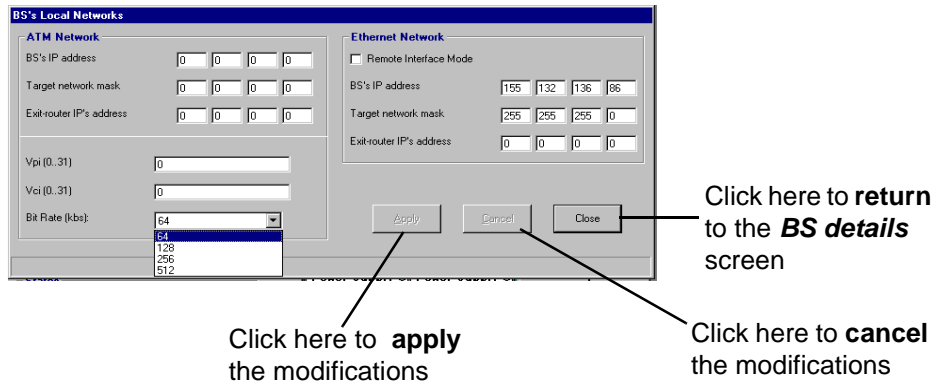


4.9.2 IP addresses



To access the parameters of the **IP addresses** of the BS, click on the button shown here (in the **BS Details** screen toolbar).

The following configuration screen is displayed, then its two main parts detailed below:

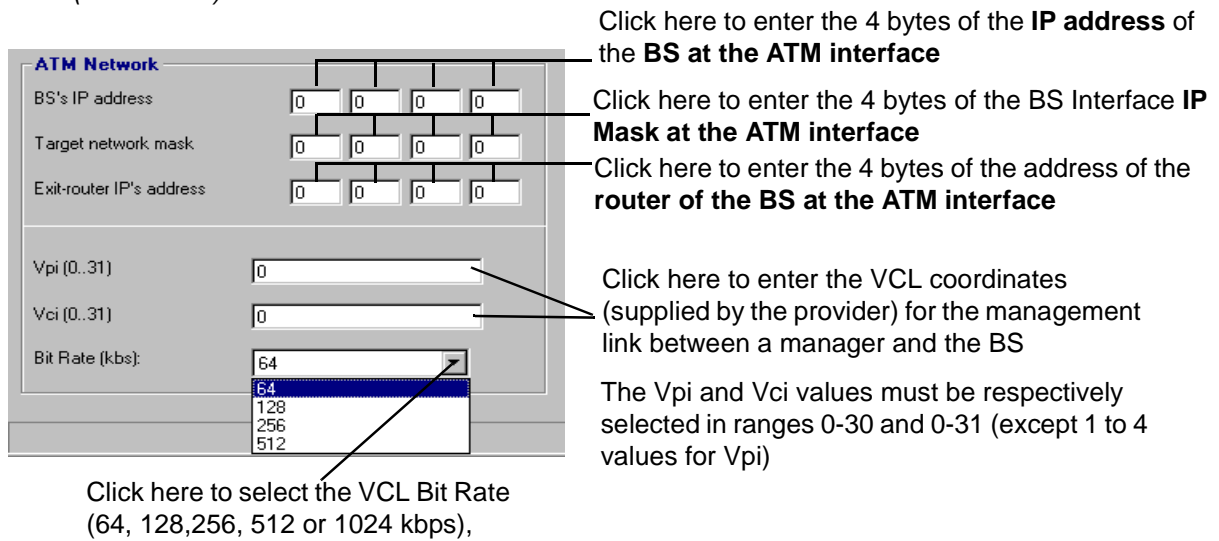


Click here to **return** to the **BS details** screen

Click here to **apply** the modifications

Click here to **cancel** the modifications

Note: To configure IP addressing on all the interfaces for connection to the manager (OS or LT), the BS has two physical interfaces to choose from: the ATM port (fiber optic) and Ethernet port (10bT: J102).



Click here to enter the 4 bytes of the **IP address** of the **BS at the ATM interface**

Click here to enter the 4 bytes of the BS Interface **IP Mask at the ATM interface**

Click here to enter the 4 bytes of the address of the **router of the BS at the ATM interface**

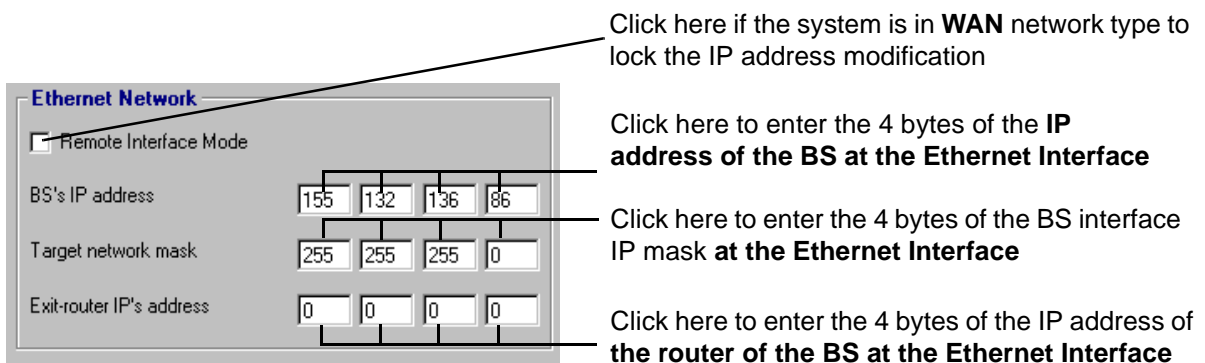
Click here to enter the VCL coordinates (supplied by the provider) for the management link between a manager and the BS

The Vpi and Vci values must be respectively selected in ranges 0-30 and 0-31 (except 1 to 4 values for Vpi)

Click here to select the VCL Bit Rate (64, 128,256, 512 or 1024 kbps),

Note: The router is the first equipment to be connected to the BS, at the external network side.

Note: The encapsulation type for the management link is IP over ATM. The IP cross-connection service uses a different type of encapsulation.



Click here if the system is in **WAN** network type to lock the IP address modification

Click here to enter the 4 bytes of the **IP address of the BS at the Ethernet Interface**

Click here to enter the 4 bytes of the BS interface IP mask **at the Ethernet Interface**

Click here to enter the 4 bytes of the IP address of **the router of the BS at the Ethernet Interface**

4.9.3 Network addresses



To access the settings for configuring the interfaces, click on the button in the **BS Details** screen toolbar, shown here.

This involves informing the system of the interfaces used by the managers.

The manager is the network supervision software (7390 LT or NSM).

FOR REMOTE LT: INTERFACE ROUTE MUST BE DEFINED IN "IP ADDRESS" DIALOG BOX (§ 4.9.2) BEFORE ENTERING THE MANAGER IP ADDRESS INSIDE THE "NETWORK ADDRESS" WINDOW.

Both addresses together define the subnetwork the manager connected to route 1 belongs to

IP address of manager connected to route 1

Target Network mask used on route 1

IP address of manager connected to route 2

Target Network mask used on route 2

Click here to scroll down the list and select the **type of interface** used on the BS to connect the **local manager** (ETH) (no by default)

Click here to scroll down the list and select the **type of interface** used on the BS to connect the **remote manager** (ATM)

Note: In order to allow modifications in this **Network address** screen the "Remote Interface Mode" box of the **IP addresses** screen (see § 4.9.2 IP addresses) must not be selected.

4.10 Environment and equipment incident management

4.10.1 Alarms

Alarms allow incidents occurring on the equipment managed by the 7390 LT to be reported to the supervisor.

For complete alarm management and, in particular, the corrective actions to be performed, refer to § 6.4 *Corrective maintenance* of this manual.

4.10.1.1 Current alarms synthesis

The current alarms synthesis window is opened automatically for the first connection and remains active as long as the connection to the NE is supervised.

Current Alarms Synthesis	
Critical	2
Major	1
Minor	0
Warning	0
Indeterminate	0
Total	3

This window offers a view of the **number of active alarms** in the system in terms of critical levels. There are five levels: **Critical / Major / Minor / Warning / Indeterminate**.

Note: the highest level of criticality is displayed at the bottom right of the general status bar (see § 4.2.2 *Accessing and running 7390 LT*).

The final line, "**Total**", totalizes the number of active alarms.

By double-clicking on one of the levels, the list of same level alarms is displayed; by double-clicking on the last line, the list of all the alarms is displayed (see § 4.10.1.3 *Alarms list*).

4.10.1.2 Alarms color code

A color code has been adopted to symbolize the **five** critical levels:

- **red**: critical alarm;
- **orange**: major alarm;
- **yellow**: minor alarm;
- **light blue**: warning alarm;
- **mauve**: indeterminate alarm;

Note: **Green** is used to symbolize no alarm or end of alarm in several screens: BS representation, Alarms list and Event log.

Note: There is one color per line in accordance with the ASAP data table (see § 4.10.2 *Alarms correspondence tables (ASAP)*).

4.10.1.3 Alarms list



To display the alarms list at any time :

- click on the button shown here (in the 7390 LTmain screen),
- or, open the **Windows** pull-down menu and choose the line **Current alarms synthesis**,
- or, open the **Alarms** pull-down menu and choose the item **Alarms List**.



Alarm number: number increases incrementally in order of appearance

Time-stamping of the alarm (format: day / month/year/hours/minutes/seconds)

The part of the system affected by the alarm (format: name and number)

Number of the equipment to which the alarm is assigned

Probable cause of the alarm

Alarm type

Click here to **print** the list of alarms on the default printer (cf: § 4.1.4)

Alarms List	Print	AltID	Start Date	Object	Eq ID	Probable Cause	Type
56	03/01/1970 22:11:44	radioBaseStationEntry # 5	BS	Communications Subsystem Failure	Communication Alarm		
53	03/01/1970 06:21:46	andBoardEntry # 3	BS	Configuration error	Processing Error		
45	03/01/1970 06:12:56	almPortEntry # 1	BS	Loss of frame	Communication Alarm		
34	03/01/1970 05:09:55	almClientEntry # 1	BS	Time server loss alarm	Equipment Alarm		
33	03/01/1970 05:09:53	andBoardEntry # 4	BS	Configuration error	Processing Error		
28	03/01/1970 05:09:47	radioBaseStationEntry # 4	BS	Communications Subsystem Failure	Communication Alarm		
27	03/01/1970 05:09:47	radioBaseStationEntry # 3	BS	Communications Subsystem Failure	Communication Alarm		
26	03/01/1970 05:09:47	radioBaseStationEntry # 2	BS	Communications Subsystem Failure	Communication Alarm		
25	03/01/1970 05:09:47	radioBaseStationEntry # 1	BS	Communications Subsystem Failure	Communication Alarm		
14	03/01/1970 05:09:46	andBoardEntry # 4	BS	Communications Subsystem Failure	Communication Alarm		
13	03/01/1970 05:09:46	andBoardEntry # 3	BS	Communications Subsystem Failure	Communication Alarm		
8	03/01/1970 05:09:46	bsExtInputPointEntry # 8	BS	Minor House Keeping	Environment Alarm		
7	03/01/1970 05:09:46	bsExtInputPointEntry # 7	BS	Minor House Keeping	Environment Alarm		
6	03/01/1970 05:09:46	bsExtInputPointEntry # 6	BS	Minor House Keeping	Environment Alarm		
5	03/01/1970 05:09:46	bsExtInputPointEntry # 5	BS	Minor House Keeping	Environment Alarm		
4	03/01/1970 05:09:46	bsExtInputPointEntry # 4	BS	Minor House Keeping	Environment Alarm		
3	03/01/1970 05:09:46	bsExtInputPointEntry # 3	BS	Minor House Keeping	Environment Alarm		
2	03/01/1970 05:09:46	bsExtInputPointEntry # 2	BS	Minor House Keeping	Environment Alarm		
1	03/01/1970 05:09:46	bsExtInputPointEntry # 1	BS	Minor House Keeping	Environment Alarm		

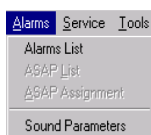
4.10.1.4 Sound adjustment of alarms

It is possible to associate or disassociate the emission of a sound warning for alarms corresponding to a certain critical level:



To access the **alarm sound parameters**:

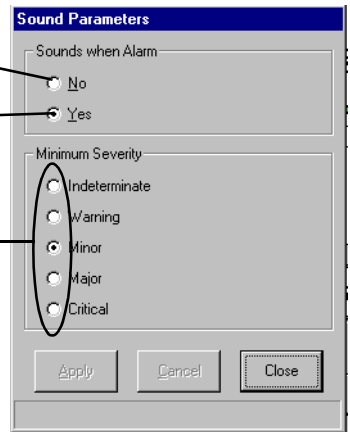
- click on the button shown here (on the 7390 LT main screen),
- or, open the **Alarms** pull-down menu and choose the item **Sound Parameters**.



Check **No** to **deactivate** the sounds associated with the alarms

Check **Yes** to **activate** the sounds associated with the alarms

Choose the critical level starting from which the sound warning should be emitted



4.10.2 Alarms correspondence tables (ASAP)

The correspondence between the alarms and the severity levels is managed by an ASAP table. There are two types of correspondence tables:

- one table for alarms relating to the BS ("BS ASAP"),
- one or several tables for alarms of the NTs ("NT Default" and customized tables).



To view the correspondence tables:
- click on the button shown here, in the 7390 LT main screen,

or
- open the Alarms pull-down menu and choose the item Alarm list,

The following screen appears:

Click here to **modify** an ASAP table

Click here to **delete** an ASAP table

Click on the arrow to **select the ASAP table** to be displayed: «BS ASAP», NT Default or the table created by the operator

Click here to **create** a customized NT ASAP table

ID number of alarms

Alarm designation corresponding to the «Probable cause» column of the alarms list (cf: § 4.10.1.3) and the list of events (cf: § 4.8)

ID	Label	Severity
14	Enclosure Door Open	Major
16	Excessive Vibration	Critical
18	Fire Detected	Critical
19	Flood Detected	Critical
21	Heating Ventilation or Cooling	Critical
22	Humidity Unacceptable	Critical
25	Leak Detected	Critical
35	Power Problem	Major
36	Pressure Unacceptable	Critical
50	Temperature Unacceptable	Critical
53	Toxic Leak Detected	Critical
126	Board missing	Critical
127	Communications Subsystem Failure	Critical
128	Type mismatch	Critical
129	Configuration error	Minor
130	Temperature unacceptable	Critical
131	Version mismatch	Critical

Quick search possibility (cf: § 4.1.2.4)

Alarm severity assigned to each probable alarm cause

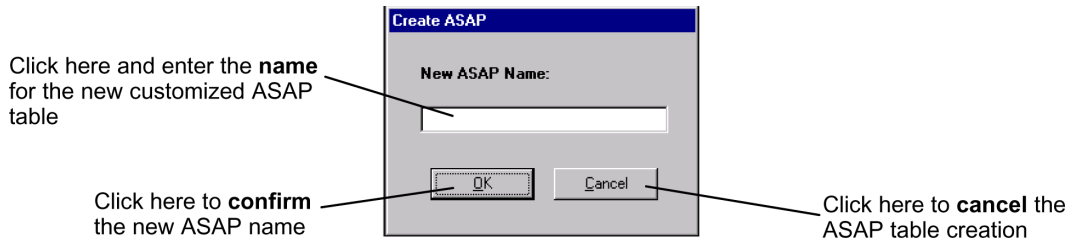
Click here to **quit** the correspondence tables display window

4.10.2.1 Creation of ASAP table for NT



To create a personalized **ASAP table** for alarms of the NTs, click on the button shown here (on the **ASAP List** screen).

The following screen appears:



By default, the new table has the same characteristics as the "NT Default" table. To modify the severity levels, (see § 4.10.2.24.10.2.2 *Modification of alarm severity profile*).

Note: You can only create ASAP tables for **alarms of the NTs**. The maximum number of ASAP NT tables is 10 including "ASAP NT Default".

Note: You can assign a customized ASAP table to NTs (see § 4.6.2 *Declaring a new NT* or § 4.6.3 *NT Details*)

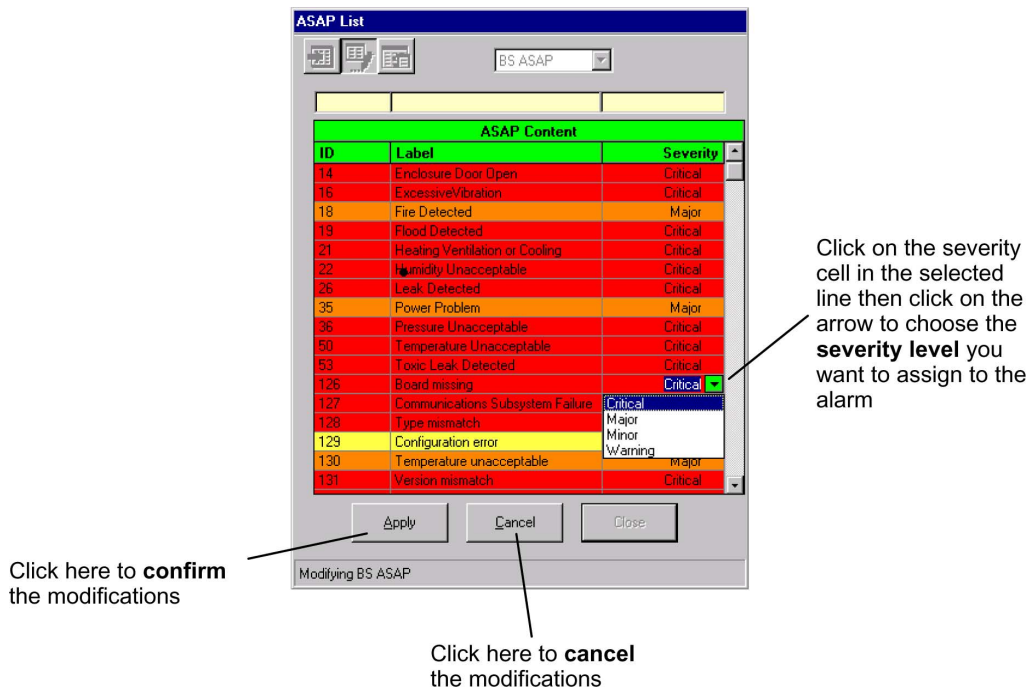
Note: The name of the new asap table must be shorter than 36 characters

4.10.2.2 Modification of alarm severity profile



To modify the severity levels of a customized **ASAP table**, click on the button shown here (on the **ASAP List** screen).

The following screen appears:

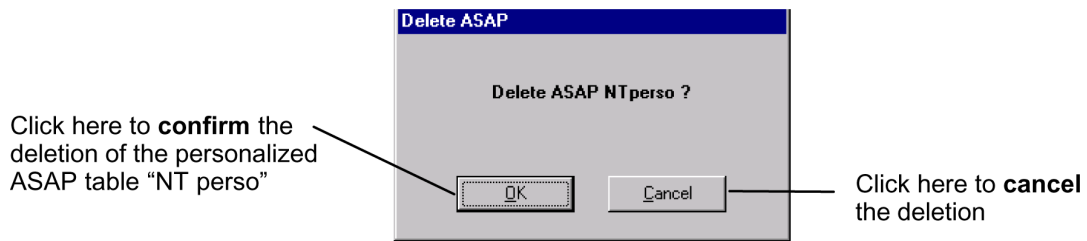


4.10.2.3 Deletion of ASAP table for NT



To delete a customized **ASAP table**, click on the button shown here (on the **ASAP List** screen).

The following screen appears:



Note: You can only delete customized ASAP tables (you **cannot** delete the "BS ASAP" or the "ASAP NT default" tables).

Note: You cannot delete a table assigned to at least one NT. You have to assign another table to this NT before (see § 4.6.3 NT Details).

4.10.3 Alarms and remotes

In addition to **alarms** reporting problems for the system and occurring on the **equipment** (see § 4.10.1 *Alarms*), two configurable types of device are available to the operator for **notification** and remote **solving** of problems linked to the cabinet **environment** (DBS).

These devices are: **sensors** (fire detection, etc.) and **remote controls** (extinguisher, etc.) present in the vicinity of the cabinet.

Sensors are used for problem **detection** (see alarms § 4.10.1 *Alarms*), and **remote controls** for problem **correction**.



To access the alarms (sensors) and remotes list, click on the button shown here (**BS Details** screen toolbar) (see § 4.5 *Base Station Supervision*).

Designation of alarms and remotes

External Point List		
Name	User Label	External State
Alarm 1		ON
Alarm 2		ON
Alarm 3		ON
Alarm 4		ON
Alarm 5		ON
Alarm 6		ON
Alarm 7		ON
Alarm 8		ON
Remote 1		OFF
Remote 2		OFF
Remote 3		OFF
Remote 4		OFF

Close

Select a line and click on this button (remote details) or double click on a line to display the **details** of the selected equipment.

Alarms and remotes external state

- alarms: see § 4.10.3.1 *Alarm characteristics*
- remotes: see § 4.10.3.2 *Remote characteristics*

Note: Default external state is ON for alarms and OFF for remotes.

4.10.3.1 Alarm characteristics

Click here to **indicate** alarm location

Click here to **modify** the alarm designation

Click here to **choose** the **probable cause** which will be affected to this alarm when its state is set on ON (see External state section): (see Note below)

Sensor polarity: active if the signal front is high or low (not subject to change from the 7390LT)

Alarm external state reminder: ON /OFF

Click here to **apply** changes to sensor characteristics

Note: The operator must choose the **probable cause** from the list of alarms relevant to the BS. This list includes **three types of alarm**:

- X721 standard environment alarms,
- A7390 system specific alarms
- environment generic alarms:
 - Environment: critical,
 - Environment: urgent,
 - Environment: not urgent.

The operator will therefore choose from the first group of alarms and, if necessary, from the last group of alarms.

4.10.3.2 Remote characteristics

Click here to **indicate**
remote **location**

Click here to **modify** the
remote **designation**

Sensor **polarity**: active if the
signal front is high or low
(not subject to change from
the 7390LT)

Remote control **external state**
reminder: ON /OFF can be
changed in the **External**
Points List screen (cf: §
4.10.3)

Click here to **apply** changes to remote characteristics

4.11 Performance

4.11.1 Radio Performance

Radio performance survey can be configured to manage complete radio links, or NT. Survey can be configured on up to 4 NTs per radio links simultaneously and a maximum of 16 NTs.

The Radio Performance feature gives the quality of the internal radio transport.

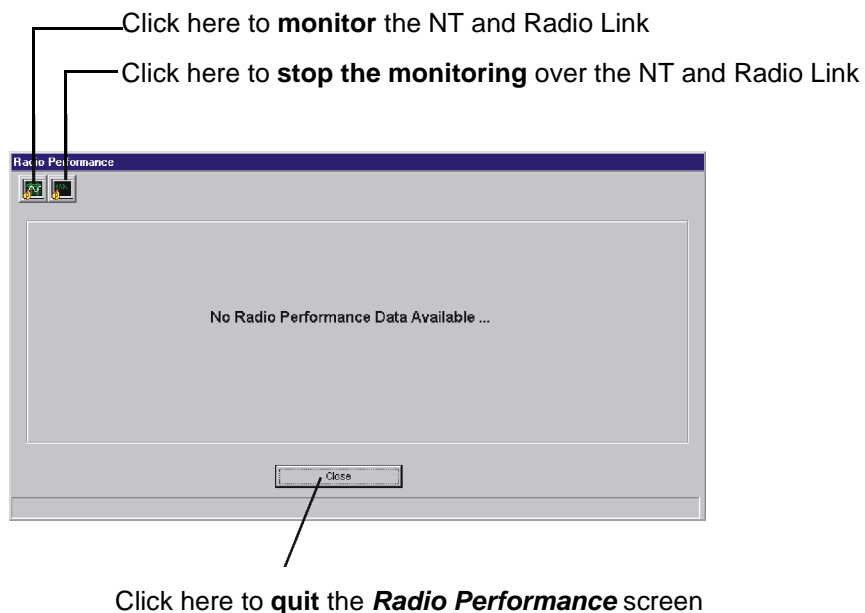
To access the radio performance:



– click on the button shown here (in the main screen toolbar),



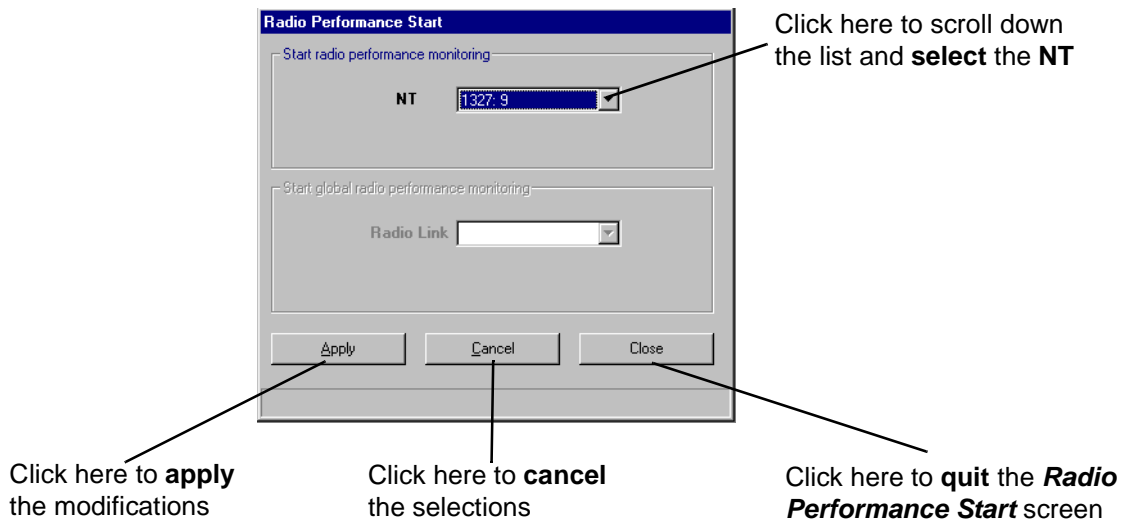
– or else, open the Performance pull-down menu and choose the first item: **Radio Performance**



4.11.1.1 NT or radio link supervision start

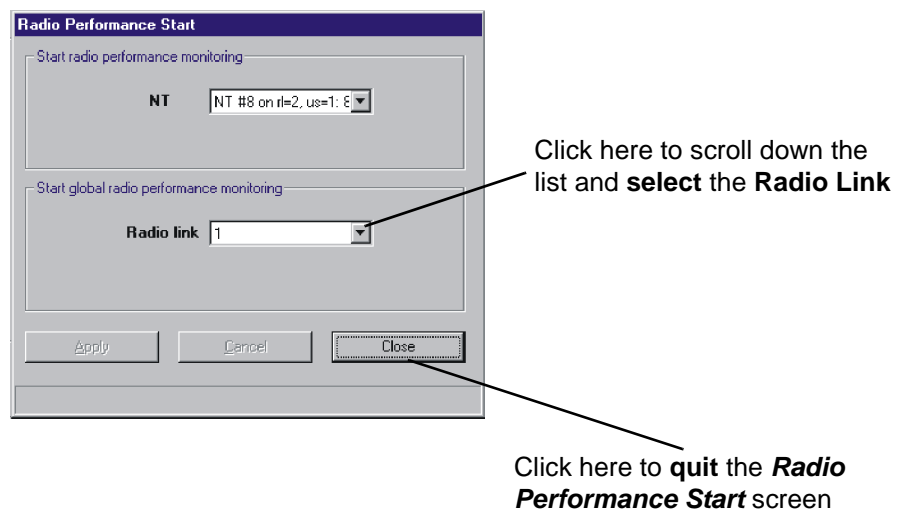
- To start radio performance supervision on a NT, select one NT in the list and click on «Apply».
- To start radio performance supervision on a radio link, select one radio link in the list, click on the «Apply» button.
- Selection of NT and radio link are exclusive.
- If a NT is selected and the required performance is radio link, or if a radio link is selected and the required performance is NT, click on «Cancel», then select the desired item.

START RADIO PERFORMANCE FOR A NT



Once you have applied monitoring on one NT, you can close the screen

START RADIO PERFORMANCE FOR A RADIO LINK



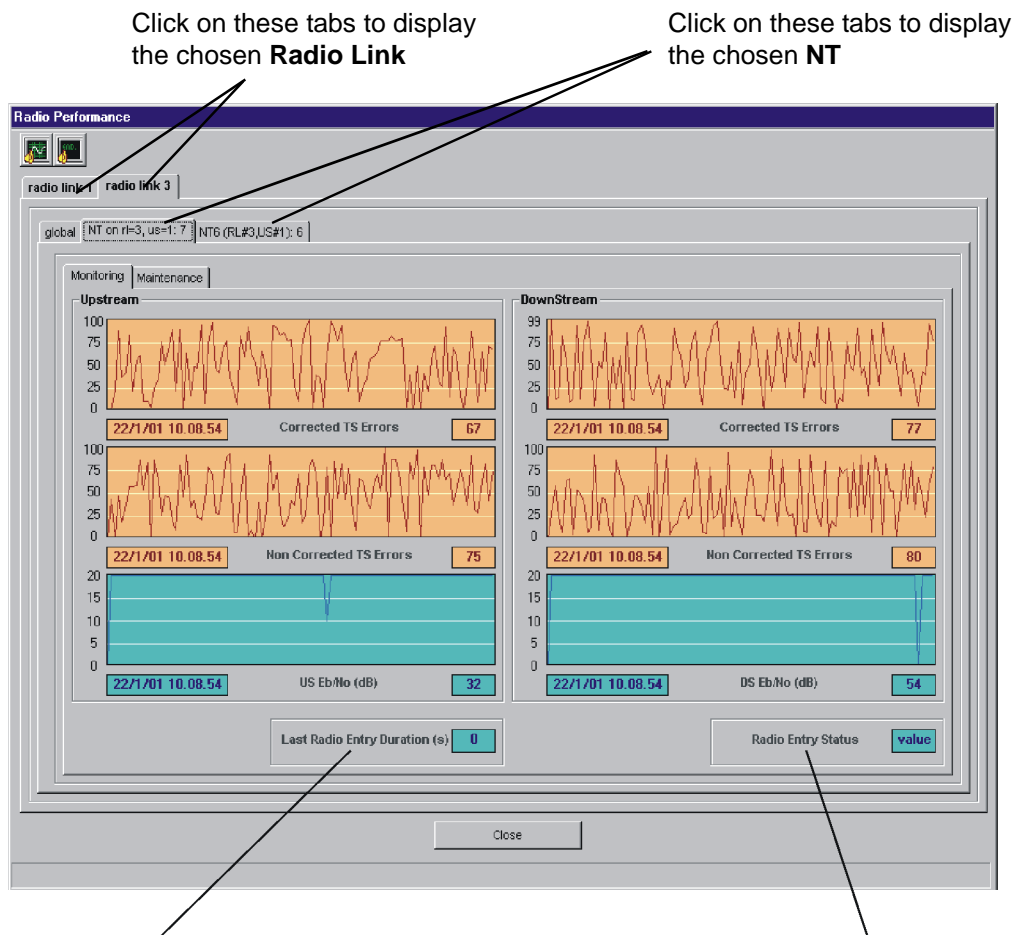
Once you have applied monitoring on one radio link, you can close the screen.

4.11.1.2 Monitoring the Radio Performances

- On global Performance screens, performances are displayed globally for one radio link.
- Two graphs are displayed for each upstream.
- Each graph receives a «date-time field», a «value» field and a «total number» field.
- All measures are made for a 5 seconds period. A full graph allows to keep +/- 10 minutes of performances

MONITORING THE RADIO PERFORMANCE FOR A NT

- Upper graph is for time slots received erroneously by DBS and corrected.
Lower graph is for time slots received erroneously by DBS and not corrected.
- At measure reception, the «date-time» field contains the time stamp of the received measure. The «value» field contains the measure. The «total number» field contains the total number of time slots received.
- When mouse cursor is moved inside a graph, the «date-time» field of that graph displays the time stamp of the graph at cursor position. The «value» field contains the measure received at cursor position. The «total number» field contains the total number received at cursor position.



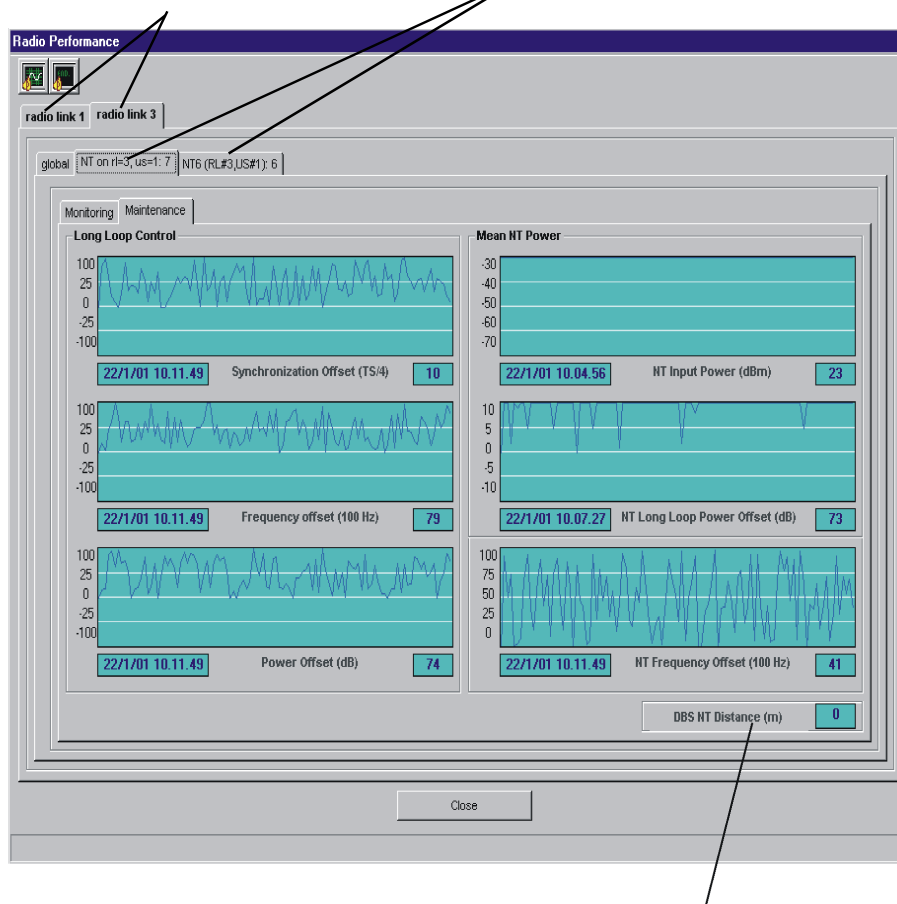
Last radio Entry Duration is the time duration while the NT remained in acquisition state before the last tracking state

Radio Entry Status can have two values: **Tracking** (when the NT is active and enabled) or **Acquisition** (when the NT is out of service)

This screen is read only.

- When data is not received, the graph is not updated.
- If a time gap appears in a graph, the corresponding period will be drawn in white.
- At measure reception, the «date-time» field contains the time stamp of the received measure. The «value» field contains the measure. The «total number» field contains the total number of time slots received.
- When mouse cursor is moved inside a graph, the «date-time» field of that graph displays the time stamp of the graph at cursor position. The «value» field contains the measure received at cursor position. The «total number» field contains the total number received at cursor position.
- The vertical scales are variable (corrected TS and non-corrected TS) or fixed (Eb / No).
- Upper graph is for time slots received erroneously by NT and corrected.
Middle graph is for time slots received erroneously by NT and **not corrected**.
Lower graph is for signal over noise ratio.

Click on these tabs to display the chosen **Radio Link** Click on these tabs to display the chosen **NT**

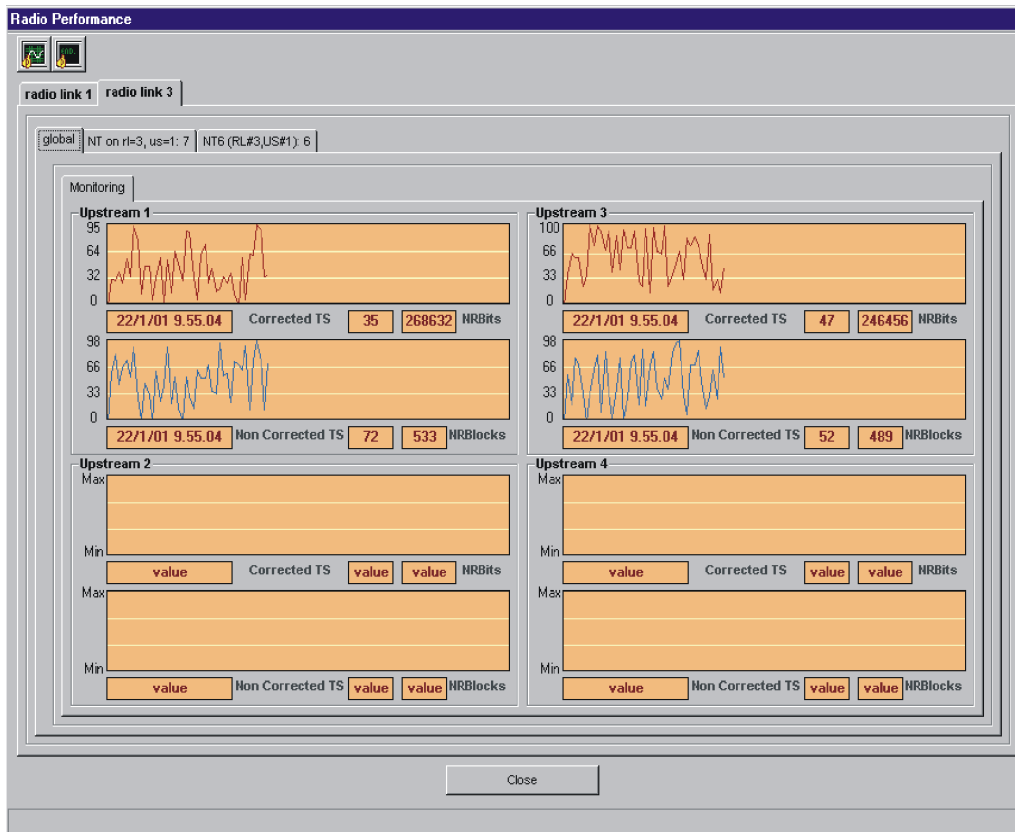


DBS NT distance: that value corresponds to the sum of DBS - RBS cable length, RBS - RT distance and RT - NT cable length, in meters. Precision +/- 50m.

- **Long loop control** panel contains the graphs of corrections required from the NT by the DBS.
- Upper graph contains **synchronization** corrections.
Middle graph contains **frequency** corrections.
Lower graph contains **power** corrections.

- **Mean NT power** panel contains graphs of power at NT level.
- **NT input power** is the power received from the RBS at NT level.
- **NT long loop power offset** is the result of corrections received from the DBS.
- **NT frequency offset** is the result of corrections received from the DBS.

MONITORING THE RADIO PERFORMANCE FOR A RADIO LINK



This screen is read only.

4.12 Client services: leased lines

There are three types of service: **Leased Lines (LL)**, **IP lines** (see § 4.13 *Client services: IP links*) and **Circuit Emulation Services (CES)**: see § 4.12.6 *Circuit emulation (CES)*.

For service **traffic supervision**, refer to § 4.7 *Radio supervision and parameters*. For **synchronization**, refer to § 4.5.4 *Clock synchronization parameters*.

The leased lines cross-connections managed by the 7390 LT are declined in 4 types: **E1** traffic (see § 4.12.1 *Leased lines E1*), **X21** (see § 4.12.2.2 *Access to the X21 link management*), **T1** (see § 4.12.3 *Leased lines T1*) and ISDN (see § 4.12.4.2 *Presentation of the ISDN link management screen*).

4.12.1 Leased lines E1

A **E1** cross-connection is a link between a **TNT** board of the BS linked to the TDM network (or ATM if the CES is used: see § 4.12.6 *Circuit emulation (CES)*) and the **NT** terminal (E1 port) linked to the user peripheral devices.

The maximum **flow** offered on a **E1** link is a symetrical **2.048 Mbit/s**.

4.12.1.1 Procedure of creation of an E1 link (E1 cross-connection)

The implementation **steps** for an **E1** cross-connection are as follows:

1. Selection and configuration of the ports for cross-connect: BS side (TNT board) (see § 4.12.1.4 *Ports configuration of TNT board (BS)*);
2. Selection and configuration of the ports for cross-connect: NT side (see § 4.12.1.5 *Configuration of NT ports*);
3. Cross-connect between time-slots of selected ports: (see § 4.12.1.6 *Cross-connect*);
4. Creation of an E1 link: (see § 4.12.5 *Principles of management common to all types of leased lines*);

4.12.1.2 Access to the E1 link management

To access E1 lines management:



- click on the button shown here (in the main screen toolbar),
- or else,
- open the **S**ervice pull-down menu and choose the first item: **E1**.

4.12.1.3 Presentation of the E1 link management screen

Click here to access the **TNT ports configuration** of the selected equipment

Click here to access the **NT ports configuration**

E1 cross-connections

Delete the chosen link

Allow to **modify the name** of the selected cross-connection (cf: § 4.12.5.4)

Cancel the current cross-connection

Locking / unlocking the administrative state (cf: § 4.12.5.5)

List of E1 links (cf: § 4.12.5.1)

Quick search (cf: § 4.1.2.4)

User Label	TNT	TNT Port	NT	NT Port	Administrative State	Operational State
cross-co#(1,2)#(2,3)	1	2	NT2 (RL#1,US#1)	3	Unlocked	Enabled
cross-co#(1,1)#(2,4)	1	1	NT2 (RL#1,US#1)	4	Locked	Disabled

BS

Board TNT 1 Local

E1 Ports:

- 1: G704
- 2: G703
- 3: G704
- 4: G703
- 5: G703
- 6: G703
- 7: E1
- 8: E1
- 9: E1
- 10: E1
- 11: E1
- 12: E1
- 13: E1
- 14: E1
- 15: E1
- 16: E1

E1 Frames

BS - Board TNT 1 - E1 Port n°2

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

NT - NT2 (RL#1,US#1) - E1 Port n°3

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

NT

NT2 (RL#1,US#1)

E1 Ports:

- 1
- 2
- 3: G703
- 4: G704

Close

Enabling traffic on the cross connection NT N° 2 Port N° 3 in progress

Input / output characteristics of the selected TNT board

Cross-connect zone

Indicator of cross-connect position

1 IT = 64 kbps

Quick search (cf: § 4.1.2.4)

Display of the 16 E1 ports of the chosen TNT:

- «E1» port: not configured
- «G703» port: unstructured
- «G704» port: structured (cf § 4.12.4.3 and § 4.12.3.5)

Display of the 2 E1 ports of the chosen NT (the grayed out ports are not accessible to the leased lines)

4.12.1.4 Ports configuration of TNT board (BS)



On the E1 cross-connection screen (see § 4.12.1.3 Presentation of the E1 link management screen), **select first of all, the TNT board** concerned by the cross-connect by scrolling down the list.



Next, access the **ports configuration** of the TNT board selected by clicking on the first button, shown here (on the toolbar of the E1 cross-connections screen).

The screen listing the E1 ports of the TNT is displayed:

The port labels are to be entered in the **TNT Ports Configuration** screen: (cf: § 4.5.3.2)

Check box to lock / unlock the port's administrative state. By default, the port is locked. Port configuration modification is only possible when the port is locked

Port n°	User Label	Type	Administrative State	Line Code	Operational State	Configuration State	Crc4 Mode
1		G704	<input checked="" type="checkbox"/> locked	hdb3	Enabled	structured	<input checked="" type="checkbox"/> ON
2		G703	<input checked="" type="checkbox"/> locked	hdb3	Disabled	unstructured	
3		G704	<input checked="" type="checkbox"/> locked	hdb3	Enabled	structured	<input checked="" type="checkbox"/> ON
4		G704	<input checked="" type="checkbox"/> locked	hdb3	Disabled	structured	<input checked="" type="checkbox"/> ON
5		G703	<input checked="" type="checkbox"/> locked	hdb3	Disabled	unstructured	
6		G703	<input checked="" type="checkbox"/> locked	hdb3	Disabled	unstructured	
7		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
8		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
9		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
10		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
11		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
12		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
13		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
14		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
15		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
16		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	

Port type: G703, G704 (initially E1)

Type of line code: hdb3 (one choice)

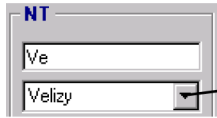
Scroll down the list to **configure the port:** structure or unstructured (initially: not configured)

Appears if the configuration state is structured; to be checked if the corresponding hardware uses CR4

Note: The modification of the port configuration is possible if the port state is locked.

Note: Unlocking a TNT port state is only possible when you have configured it.

4.12.1.5 Configuration of NT ports



On the E1 cross-connection screen (see § 4.12.1.3 Presentation of the E1 link management screen),
Click on the arrow to scroll down the NT list declared, then **select** the **NT** concerned by the cross-connect.



Next, access the **ports configuration** of the chosen NT by clicking on the second button, shown here (on the toolbar of the **E1 cross-connections** screen).

The ports label is to be entered in the **NT Details** screen (see § 4.6.2)

Type of line code: hdb3

Check box to **lock / unlock** the port's administrative state; by default, the port is locked

Scroll down the list to **configure** the port: structured or unstructured

Port n°	User Label	Type	Administrative State	Line Code	Operational State	Configuration State	Crc4 mode
3		G703	<input type="checkbox"/> locked	hdb3	Disabled	unstructured	<input type="checkbox"/> Off
4		G704	<input checked="" type="checkbox"/> locked	hdb3	Disabled	structured	<input checked="" type="checkbox"/> On

Click here to **confirm** a modification

Port type: G703, G704

Click here to **cancel** modifications

Click here to **return** to the **Cross-connections** screen

See § 4.11.1

Note: The modification of the port configuration is possible if the port state is locked.

Note: Unlocking a NT port state is only possible when you have configured it.

4.12.1.6 Cross-connect

Cross connection consists in matching the time-slots (TSs) of a configured port of the TNT board with those of a configured port of the NT.

Note: To make an E1 "cross-connection", E1 type TNT ports can be cross connected with E1 or X21 type NT ports.

There are **two types** of cross-connect: between structured ports and between unstructured ports.

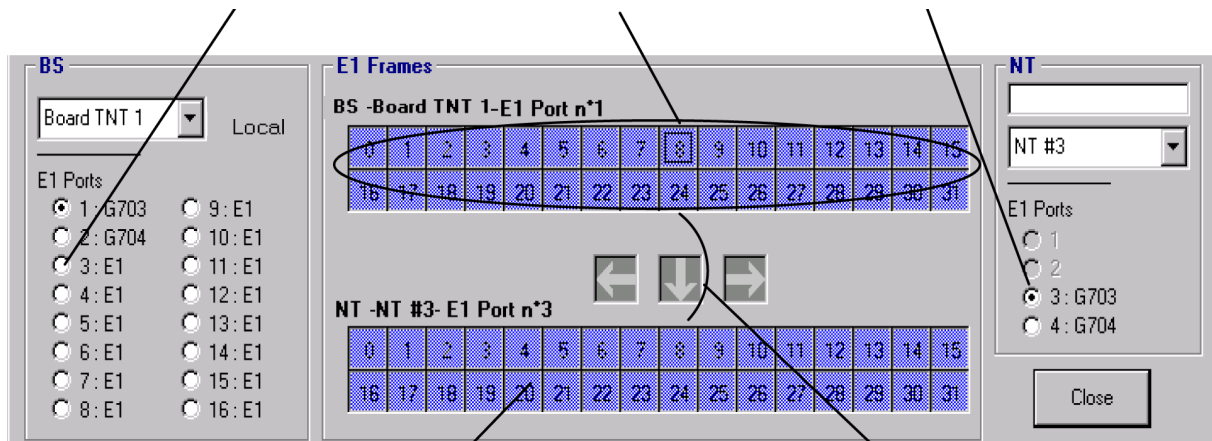
If the operator wants to offer a 2 Mbps contract, the cross connection must be **unstructured**: using a **G703** TNT port (32 available TSs, global selection of TSs).

If the operator wants to offer a **less than 2 Mbps** contract, the cross connection must be **structured**: using a **G704** TNT port (31 available TSs, individual selection of TSs).

– *Unstructured case:*

In this case, the maximum bit rate is supplied because all the selected TNT port time-slots are connected to the NT port time-slots.

- 1 Select the unstructured ports that you wish to connect
- 2- Select the block of time slots at the TNT by pressing a time slot of the of the time slot block at the TNT



4- **Release** the buttons: all the slots are selected

5- **Confirm** the cross-connect by creating the cross-connection (see § 4.12.1.3)

3- Press the CTRL key while clicking on the left button of the mouse on a TNT time slot and slide the mouse pointer towards NT time slots

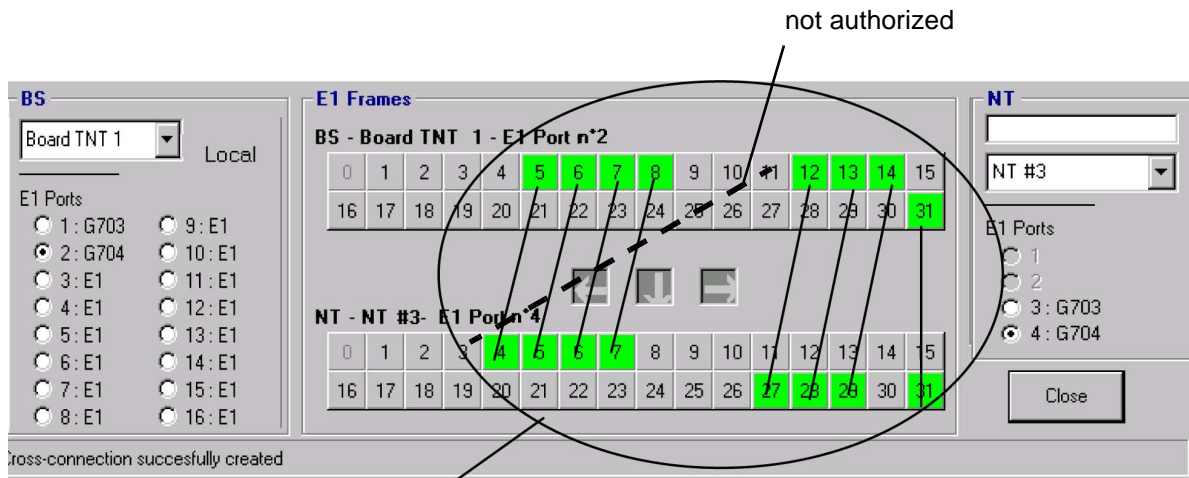
– *Structured case:*

To implement the cross-connect in structured case, proceed in the same way as for non-structured ports, but this time select the time-slots **individually**.

Thirty one time-slots can be brought into play in a E1 cross-connection (the first time-slot (grayed out) is not accessible because reserved for synchronization). The maximum bit rate is 31*64 kbps.

The **cross-connect** arrows offer you guidance for dragging the TNT slots to the available NT slots; if the current cross-connection corresponds to "unauthorized" ones, an error message is displayed at the bottom of the window and the cross-connect arrows indicate the NT time-slots to which the cross-connection is directed.

The slots of a real cross-connection (following the creation phase: see § 4.12.5.3 *Creation of a cross-connection*) are colored in **green**.



Structured cross-connect illustration

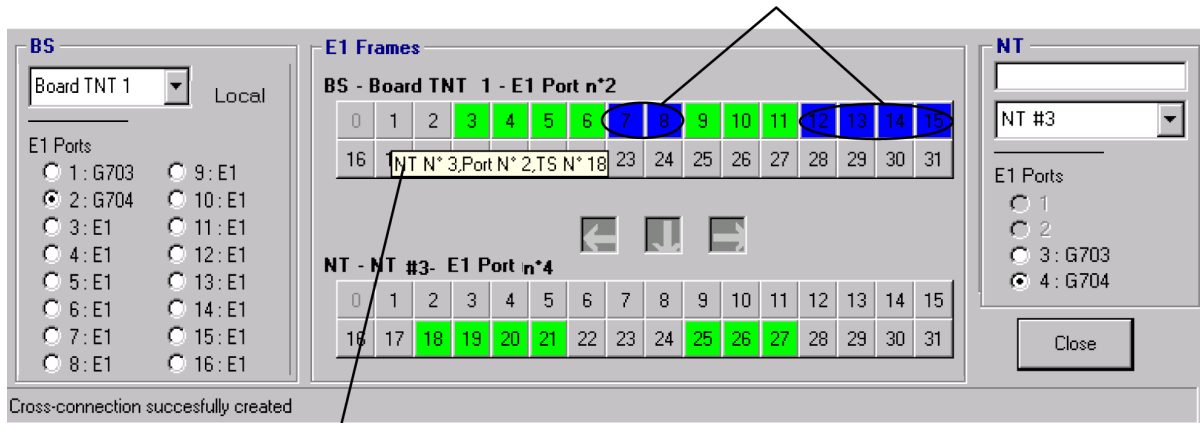
Note: It is not mandatory to create cross-connections with consecutive time slots. In that case, you must match the first group of TNT time slot with a group of NT time slot, and then match the second group and so on.

Note: It is not possible to «cross» the links between TNT and NT time slots. Example on the above configuration link between TNT-TS 10 and TNT-TS 3 not authorized.

4.12.1.7 Grooming

Several NTs can be fed from a single TNT board and a single E1 port. This is known as "grooming".

"blue" slots (inactive): correspond to another NT



A textual key describes the links between time-slots

4.12.2 Leased lines X21

A **X21** cross-connection is a link between a **TNT** board of the BS linked to the TDM network (or ATM if the CES is used: see § 4.12.6 *Circuit emulation (CES)*) and the **NT** terminal (X21 port) linked to the user peripheral devices.

The maximum **flow** offered on an X21 link is 2 Mbps.

4.12.2.1 Creation procedure of an X21 link

The implementation stages for an X21 cross-connection are as follows:

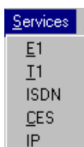
1. Selection and configuration of the ports for cross-connect: BS side (TNT board): see § 4.12.2.4 *Ports configuration of TNT board (BS)*;
2. Selection of NT ports for cross-connect: see § 4.12.2.5 *Port selection on the NT side*;
3. Cross-connect between time-slots of selected ports: see § 4.12.2.6 *Cross-connect*;
4. Creation of an X21 link: see § 4.12.5.3 *Creation of a cross-connection*;

4.12.2.2 Access to the X21 link management

To access X21 line management:



- click on the button shown here (in the main screen button bar),
or else,



- open the **Service** pull-down menu and choose the item: **E1**.

4.12.2.3 Presentation of the X21 link management screen

Cross-connections						
User Label	TNT	TNT Port	NT	NT Port	Administrative state	Operational state
cross-co#[1,2]#[2,4]	1	2	NT #2	4	Locked	Disabled
cross-co#[1,4]#[13,4]	1	4	NT #13	4	Locked	Disabled
cross-co#[1,1]#[14,3]	1	1	NT #14	3	Locked	Disabled
cross-co#[1,9]#[16,3]	1	9	NT #16	3	Locked	Disabled
cross-co#[1,11]#[16,4]	1	11	NT #16	4	Locked	Disabled

Display of the X21 and E1 **ports** of the chosen **NT**:
(the grayed out ports are not accessible to the leased lines)

As the other sections are the same as that of the E1 leased lines screen, refer to § 4.12.1.3 *Presentation of the E1 link management screen*.

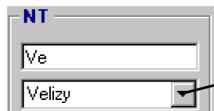
4.12.2.4 Ports configuration of TNT board (BS)

As the TNT board port configuration principle is the same as that of E1 leased lines, refer to § 4.12.1.4 *Ports configuration of TNT board (BS)*.

In case of 32 TS transmission, the TNT port has to be unstructured.

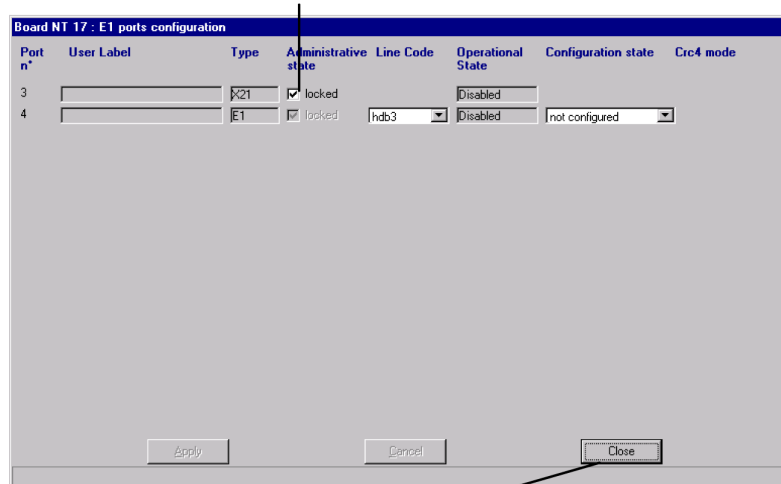
In case of transmission < 32 TS, the TNT port has to be structured.

4.12.2.5 Port selection on the NT side



On the E1 cross-connection screen (see § 4.12.1.3 Presentation of the E1 link management screen),
Click on the arrow to scroll down the NT list declared, then **select** the NT concerned by the cross-connect.

Click here to lock/unlock the port (only possible modification)



Click here to return to the leased lines management window.

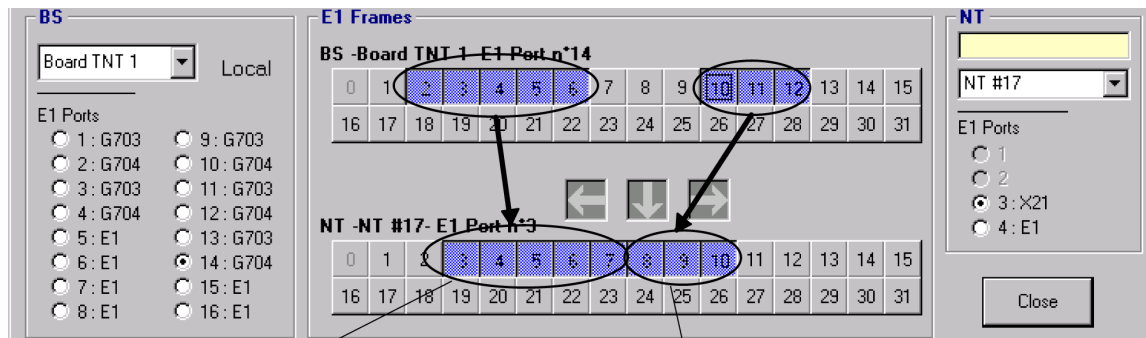
There is no particular configuration to define the X21 ports.

4.12.2.6 Cross-connect

In the case of an X21 "cross-connection", the cross connect is performed between an NT X21 port and a TNT board E1 port.



IN THE CASE OF STRUCTURED CROSS CONNECT, ALL THE TIME SLOTS MUST BE CONSECUTIVE ON THE NT SIDE.



First group of connected TS: free position

Second group of connected TS: **consecutive** position to that of the previous group.

As the TNT/NT ports cross connection principle is the same as that of the E1 leased lines, refer to § 4.12.1.6 *Cross-connect*.

4.12.2.7 Grooming

As the possibility of grooming is of the same type as for E1 leased lines, refer to § 4.12.1.7 *Grooming*.

4.12.3 Leased lines T1

A **T1** cross-connection is a **link** between a **TNT** board of the BS linked to the TDM network (or ATM if the CES is used: see § 4.12.6 *Circuit emulation (CES)*) and the **NT** terminal (E1 port) linked to the user peripheral devices.

The maximum flow offered on a **T1** link is **1.544 Mbit/s**.

4.12.3.1 Creation procedure of a T1 link

The implementation **stages** for a **T1** cross-connection are as follows:

1. Selection and configuration of the ports for cross-connect: BS side (TNT board) (see § 4.12.3.4 *Ports configuration of TNT board (BS)*);
2. Selection and configuration of the ports for cross-connect: NT side (see § 4.12.3.5 *Configuration of NT ports*);
3. Cross-connect between time-slots of selected ports: (see § 4.12.3.6 *Cross-connect*);
(see § 4.12.2.4 and § 4.12.3.5)
4. Creation of a T1 link: (see § 4.12.5 *Principles of management common to all types of leased lines*).

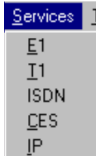
4.12.3.2 Access to the T1 link management

To access T1 link management:



– click on the button shown here (in the main screen button bar),

or else,



– open the Service pull-down menu and choose the item: **I1**

4.12.3.3 Presentation of the T1 link management screen

User Label	TNT	TNT Port	NT	NT Port	Administrative state	Operational state
cross-co#(3,1)#(18,3)	3	1	NT #18	3	Locked	Disabled
cross-co#(3,2)#(18,4)	3	2	NT #18	4	Locked	Disabled

Display of the 16 T1 ports of the chosen TNT:

Display of the 2 T1 ports of the chosen NT: (the grayed out ports are not accessible to the leased lines).

- “T1” ports: not configured
- “G703” ports: unstructured
- “G704SF” ports: structured SF
- “G704ESF” ports: structured ESF

As the other sections are the same as that of the E1 leased lines screen, refer to § 4.12.1.3 Presentation of the E1 link management screen.

Nota: In unstructured mode, 24 + 1 TS are used on the radio.

In the other cases, the same number of TS is used for the TS link as well as for the radio.

4.12.3.4 Ports configuration of TNT board (BS)



On the E1 cross-connection screen (see § 4.12.1.3 Presentation of the E1 link management screen), **select first of all**, the **TNT board** concerned by the cross-connect by scrolling down the list.

Note: The TNT board must comprise T1 type ports (see § 4.5.3.2 TNT board screen).



Next, access the **ports configuration** of the TNT board selected by clicking on the first button, shown here (on the toolbar of the **T1 cross-connections** screen).

The screen listing the T1 ports of the TNT is displayed:

The port labels are to be entered in the **TNT Ports Configuration** screen: (cf: § 4.5.3.2)

Check box to lock / unlock the port's administrative state. By default, the port is locked.

Scroll down the list to **choose the line code** type: ami or b8zs

Port n°	User Label	Type	Administrative State	Line Code	Cable Length	Operational State	Configuration State
1		G703	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Enabled	unstructured
2		G704 SF	<input checked="" type="checkbox"/> locked	ami	0 - 110 ft	Enabled	Structured SF
3		G704 ESF	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Enabled	Structured ESF
4		G703	<input checked="" type="checkbox"/> locked	ami	110 - 220 ft	Enabled	unstructured
5		T1	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Disabled	not configured
6		T1	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Disabled	not configured
7		T1	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Disabled	not configured
8		T1	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Disabled	not configured
9		T1	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Disabled	not configured
10		T1	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Disabled	not configured
11		T1	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Disabled	not configured
12		T1	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Disabled	not configured
13		T1	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Disabled	not configured
14		T1	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Disabled	not configured
15		T1	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Disabled	not configured
16		T1	<input checked="" type="checkbox"/> locked	b8zs	0 - 110 ft	Disabled	not configured

Port type: G703, G704SF, G704ESF and initially T1

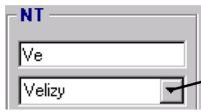
Scroll down the list to **configure the port:** structured SF structured ESF or unstructured (initially: not configured)

Scroll down the list to **select** the interval covering **the length of the cable connected** to this port: 0 to 110 ft / 110 to 220 ft / 220 to 440 ft / 440 to 660 ft (1 ft = 1 foot = 0.3048 m)

Note: The modification of the port configuration is possible if the port state is locked.

Note: Unlocking a port state is only possible if you have configured it.

4.12.3.5 Configuration of NT ports




On the E1 cross-connection screen (see § 4.12.1.3 Presentation of the E1 link management screen), Click on the arrow to scroll down the NT list declared, then **select** the **NT** concerned by the cross-connect.



Next, access the **ports configuration** of the chosen NT by clicking on the second button, shown here (on the button bar of the **T1 Leased Lines** screen).

As the NT port configuration principle is the same as that for E1 leased lines, refer to § 4.12.1.5 *Configuration of NT ports*.

4.12.3.6 Cross-connect

	<p>T1 type (TNT) ports cannot be cross connected with E1 or X21 type (NT) ports. To make a T1 "cross-connection", only T1 type ports with the same configuration can be cross connected:</p> <ul style="list-style-type: none"> G703-G703 (unstructured cross connect), G704SF-G704SF (structured cross connect), G704ESF-G704ESF (structured cross connect).
--	--

As the TNT/NT ports cross connection principle is the same as that for E1 leased lines, refer to § 4.12.1.6 *Cross-connect*.

Note: In the case of cross connection G703 we have 25 TSs transmitted on the radio (24 used and 1TS for the frame management from where $25 \times 64 = 1.6$ Mbps).

4.12.3.7 Grooming

As the possibility of grooming is the same as for the E1 leased lines, refer to § 4.12.1.7 *Grooming*.

(see §4.12.4.3)

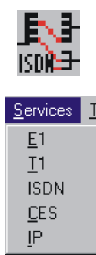
4.12.4 Leased lines ISDN

An **ISDN** cross-connection is a **link** between a **TNT** board of the BS linked to the TDM network (or ATM if the CES is used: see § 4.12.6 *Circuit emulation (CES)*) and the **NT** terminal (ISDN port) linked to the user peripheral devices.

The maximum **flow** offered on an ISDN link is 128 kbps.

4.12.4.1 Access to the ISDN link management

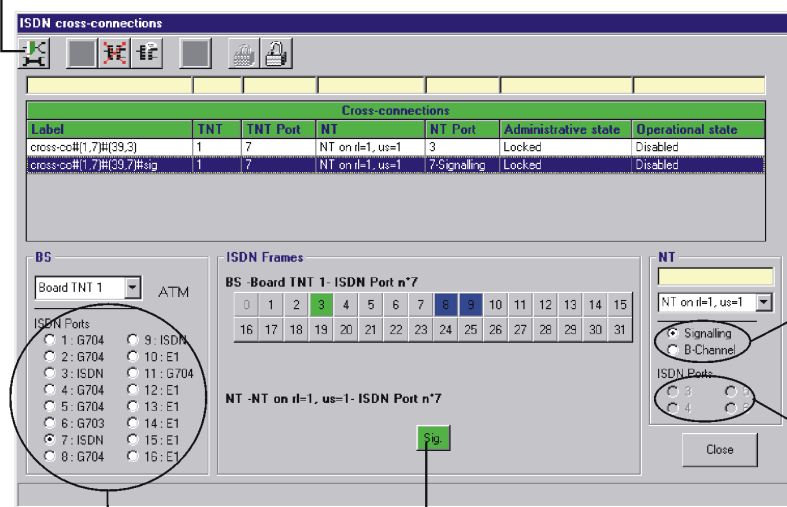
To access ISDN line management:



- click on the button shown here (in the main screen button bar),
- or else,
- open the **Services** pull-down menu and choose the item: **ISDN**.

4.12.4.2 Presentation of the ISDN link management screen

Click here to access the TNTports configuration

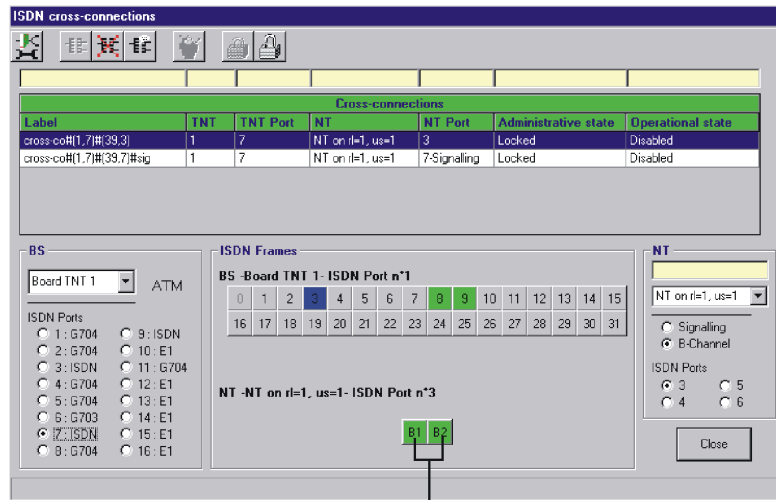


Display of the 16 ports of the chosen TNT

Selection of the **Signalling** screen or **B-Channel** screen

Display of the 4 ISDN ports of the chosen NT

- "E1" port: not configured
- "G703" port: unstructured
- "G704" port: structured
- "ISDN" port: ISDN configured



B-Channels

As the other sections are the same as that of the **ISDN Leased Lines** screen, refer to § 4.12.1.3 Presentation of the E1 link management screen 4.12.1.3 Presentation of the E1 link management screen.

Nota: There is no particular confirmation when creating an ISDN link for a ISDN port.

4.12.4.3 Ports configuration of TNT board (BS)



Select first of all the TNT board concerned by the cross-connect by scrolling down the list

Nota : The TNT board must comprise ISDN type ports (see § 4.5.3.2 TNT board screen).



Next, access the **ports configuration** of the TNT board selected by clicking on the first button, shown here (on the toolbar of the **ISDN Cross-connections** screen).

The screen listing the ISDN ports of the TNT is displayed:

The port labels are to be entered in the **TNT Ports Configuration** screen: (cf:§ 4.5.3.2)

Check box to **lock / unlock** the port's administrative state. By default, the port is locked.

Scroll down the list to **choose** the **line code** type: hdb3

Port n°	User Label	Type	Administrative State	Line Code	Operational State	Configuration State	Cr4 Mode
1		G704	<input checked="" type="checkbox"/> locked	hdb3	Enabled	structured	<input checked="" type="checkbox"/> ON
2		G703	<input checked="" type="checkbox"/> locked	hdb3	Disabled	unstructured	
3		G704	<input checked="" type="checkbox"/> locked	hdb3	Enabled	structured	<input checked="" type="checkbox"/> ON
4		G704	<input checked="" type="checkbox"/> locked	hdb3	Disabled	structured	
5		G703	<input checked="" type="checkbox"/> locked	hdb3	Disabled	unstructured	
6		G703	<input checked="" type="checkbox"/> locked	hdb3	Disabled	unstructured	
7		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
8		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
9		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
10		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
11		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
12		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
13		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
14		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
15		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	
16		E1	<input checked="" type="checkbox"/> locked	hdb3	Disabled	not configured	

Appears if the configuration state is structured: to be checked if the corresponding hardware uses CR4

Port type: G703, G704, ISDN and initially E1

Scroll down the list to **configure** the **port**: unstructured, structured, structured ISDN (initially: not configured)

Note: The modification of the port configuration is possible if the port state is locked.

4.12.4.4 Grooming

The possibility of grooming is the same as for the E1 leased lines, refer to § 4.12.1.7 *Grooming*.4.12.1.7

4.12.5 Principles of management common to all types of leased lines

4.12.5.1 List of cross-connections

The **Leased Lines** screen lists existing links by displaying their **characteristics**:

Cross-connections						
Label	TNT	TNT Port	NT	NT Port	Administrative state	Operational state
cross-co#(1,3)#(2,1)	1	3	NT #2	1	Locked	Disabled
cross-co#(1,4)#(2,2)	1	4	NT #2	2	Locked	Disabled
cross-co#(1,1)#(3,1)	1	1	NT #3	1	Locked	Disabled
cross-co#(1,2)#(3,2)	1	2	NT #3	2	Locked	Disabled

Link designation

TNT used in the link

TNT port used in the link

NT used in the link

NT port used in the link

Administrative status of the link:
locked / unlocked (see § 4.12.5.5)

4.12.5.2 Cancelling a current configuration of cross-connection



To **cancel** a configuration of cross-connection:

- select the cross-connection you wish to cancel in the cross-connection list and then,
- click on the button shown here (in the button bar of the **Leased Lines** screen).

4.12.5.3 Creation of a cross-connection



Following cross-connection, access cross-connect creation by clicking on the button shown here (in the button bar of the **Leased Lines** screen).

Click in this field to **modify** the designation by default

Click here to **create** the cross-connection

Create a cross-connection

Cross-connection's label

cross-co#(1,6)#(2,7)#sjd

Click here to **cancel** the cross-connection creation and to return to the **Leased Lines** screen

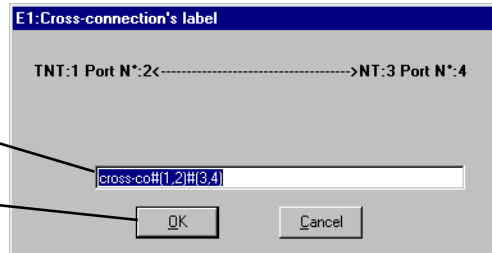
4.12.5.4 Editing the name of a link of leased line type



To **edit the name** of a link, select the link in the cross-connections list (see § 4.12.1.4 *Ports configuration of TNT board (BS)*), then click on the button shown here.

Click here to **modify** the link name

Click here to **confirm** a modification



4.12.5.5 Locking / Unlocking of a cross-connection

It is possible to lock or unlock a cross-connection:

- **unlocking authorises** traffic on the link
- **locking blocks** traffic on the link

This action is carried out by modifying the **administrative status** of the cross-connection.

When a link is created, its administrative status is **locked by default**, which prevents the system from being blocked during cross-connection, in the event of equipment problems.

	FOR A SUBSCRIBER TO HAVE ACCESS TO TRAFFIC, THE CROSS-CONNECTION MUST BE UNLOCKED FOR CREATION OF CLIENT SERVICES. THIS OPERATION IS THE RESPONSIBILITY OF THE TELECOMS OPERATOR.
--	--

The **locking** operation may then be implemented on the cross-connection for reasons of maintenance or for freezing services during disputes between end user and telecoms operator.

Note: *The administrative status of the cross-connections is not correlated with that of the ports. This makes it possible to manage the "grooming" capacity at the TNT board ports (see § 4.12.1.7 *Grooming*) where several cross-connections to different NT ports can be cross-connected to the same port of a TNT board.*

	IF A PORT IS LOCKED / UNLOCKED, ALL THE CROSS-CONNECTIONS INVOLVING THIS PORT WILL BE RESPECTIVELY LOCKED/UNLOCKED.
--	--

To lock / unlock a link, select the cross-connection concerned on the **E1 cross-connection** screen (see § 4.12.1.3 *Presentation of the E1 link management screen*) and:



- click on the icon of the toolbar shown here to **lock**: the administrative status of the cross-connection switches from "unlocked" to "**locked**".



- click on the icon of the toolbar shown here to **unlock**: the administrative status of the cross-connection switches from "locked" to "**unlocked**".

4.12.5.6 Suppression of a leased line



To **leave out** a link: select the link in the cross-connections list (see § 4.12.1.4 *Ports configuration of TNT board (BS)*), then click on the button shown here (in the button bar of the screen).

Note: an unlocked cross-connection cannot be suppressed (see § 4.12.1.1 *Procedure of creation of an E1 link (E1 cross-connection)*).

4.12.6 Circuit emulation (CES)

Circuit emulation allows leased lines (E1, X21, T1, ISDN) to be implemented on the **ATM** network (and no longer TDM).

It deals with the creation, in addition to the standard leased line link, of a second "cross-connection" between the **TNT** board and the **ANT** board which is linked to the **ATM** network. The CES processes the signal to recreate it on the TNT board, which therefore emulates a direct "cross-connection" between the ATM network and the TNT board.

This operating mode notably allows a single connection cable on the BS for all types of client services.

Note: a TNT board (and therefore all its ports) can operate only in a given mode: either local (TDM network) or ATM..

	BEFORE PERFORMING CIRCUIT EMULATION, YOU MUST CONFIGURE THE INPUT / OUTPUT TYPE OF THE TNT BOARD IMPLEMENTED IN ATM MODE AND ALSO THE CHARACTERISTICS LINKED WITH SYNCHRONIZATION, USED TO RECREATE THE FRAMES ON THE TNT BOARD (SEE 4.5.3.2).
	BEFORE CREATION OF A CES LINK, ASSOCIATED TNT PORTS MUST BE LOCKED.

4.12.6.1 CES link creation procedure

The **steps** to implement a CES "cross-connection" are as follows:

1. Selection of the implemented TNT board;
2. Selection of the selected TNT board ports;
3. Choice of the ATM link Vci on the ANT board;
4. Creation of the CES link.

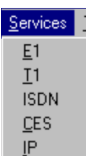
Note: There is **only one type of CES link**. Indeed, there is no correlation between the TNT port type (E1, T1, ISDN and their G703, G704 (SF, ESF) configurations and the CES "cross-connection".

4.12.6.2 Access to CES management

To access circuit emulation management:



– click on the button shown here (in the main screen button bar),
or else,



– open the **Services** pull-down menu and choose the item: **CES**

4.12.6.3 Presentation of the CES management screen

Click on this button to create the CES link being configured (TNT/ANT)

Click here to **suppress** the selected CES link

Existing CES «cross-connections» list

Click here to scroll down the installed TNT board lists and **select the TNT board** implemented in the CES cross-connection

ATM Interface	Vpi	Vci	TNT	TNT Port	Administrative State	Buf. Max Size	Cdv Rxs T
1	31	55	1	1	Unlocked	375	250
1	31	56	1	3	Unlocked	375	250

Configuration fields:

- ATM: ATM Interface Index, Vpi (31), Vci (32..1023) (55)
- CES: ATM / LL
- TNT: Board TNT 1, 16 radio buttons (1: G704, 2: G703, 3: G704, 4: G704, 5: G703, 6: G703, 7: E1, 8: E1, 9: E1, 10: E1, 11: E1, 12: E1, 13: E1, 14: E1, 15: E1, 16: E1)

Buttons: Close

Vpi value (31 for the CESs)

Click here to **define** the **Vci** value (from 32 to 1023)

Click here to **select** the implemented TNT board **port**

Click here to **exit** the **CES Management** screen

	<p>ONCE THE TNT / ANT LINK IS CREATED, THE TNT BOARD CAN NO LONGER BE CONFIGURED IN LOCAL MODE, AND THE VALUES LINKED TO THE SYNCHRONIZATION (CELL DV AND MAX BUFF) CANNOT BE MODIFIED. TO DO SO WOULD REQUIRE THIS LINK TO BE PREVIOUSLY SUPPRESSED.</p>
--	--

To allow modification, the TNT port must be locked. Unlock it after CES creation.

4.12.6.4 Suppression of a CES link



To **suppress** a CES type link, select it in the circuit emulation services list of the **Circuit Emulation Service** screen (see § 4.12.6.3 *Presentation of the CES management screen*) then click on the button of the toolbar shown here.

Note: to suppress a CES type link, the associated TNT port has to be locked.

4.13 Client services: IP links

An IP cross-connection is a link between an **ATM** input of the BS linked to the network and an Ethernet port of the **NT** terminal linked to the user peripheral devices.

The maximum bit rate offered on an IP link is **8512 Kbps** in downlink (BS to NT) and **7448 Kbps** in uplink (NT to BS).

There are 2 types of TS link: the **static IP** service and the **dynamic IP** service.

4.13.1 Creation procedure of an IP link

The implementation **stages** for an **IP** cross-connection are as follows:

1. ATM board configuration at the BS: see § 4.9.1 *ATM*;
2. Configuration of the NT Ethernet ports: see § 4.13.2.2 *Configuration of NT Ethernet ports*;
3. Selection of the ATM channel: see § 4.13.2.3 *Creation of an IP link*;
4. Selection of the NT Ethernet port implemented in the link: see § 4.13.2.3 *Creation of an IP link*;
5. Choice of the IP link type: see § 4.13.2.3 *Creation of an IP link*;
6. Choice of transmission and reception traffic: see § 4.13.2.3 *Creation of an IP link*;
7. IP link creation: see § 4.13.2.3 *Creation of an IP link*;

4.13.2 Access to the IP link management

To access **IP services** management:



- click on the button shown here (in the main screen button bar),
- or else,**
- open the **Service** pull-down menu and choose the item: **IP**.

4.13.2.1 Presentation of the IP screen

Click here to access the **NT ports configuration**: (cf § 4.12.2.2)

Click here to **create** an IP cross-connection: (cf § 4.12.2.3)

Click here to **delete** the IP link chosen from the list: (cf § 4.12.2.7)

Click here to access the **details** of the IP link chosen from the list: (cf § 4.12.2.4)

Allow to **modify the name** of the selected «cross-connection»

Locking/unlocking the administrative status: (cf § 4.12.5.5)

Downstream Minimum Cell Rate

Quick search: (cf § 4.1.2.4)

The screenshot shows a web-based configuration interface for IP links. At the top, there are several icons for different services: ATM, Eth, VPI, VCI, VPI/VolP, and VCI/VolP. Below these is a table with the following columns: User Label, Vpi Data, Vci Data, Vpi VolP, Vci VolP, NT Name, Port, Administrative State, Operational State, Allocation, Up MCR (kbits/s), Up PCR (kbits/s), and Down MCR (kbits/s). Two rows of data are visible. Below the table is a 'Close' button and a status message: 'Enabling traffic on the cross connection NT N° 2 Port N° 1 successfully done'.

User Label	Vpi Data	Vci Data	Vpi VolP	Vci VolP	NT Name	Port	Administrative State	Operational State	Allocation	Up MCR (kbits/s)	Up PCR (kbits/s)	Down MCR (kbits/s)
Xco IP[0.32]#(2.1)	0	32	N/A	N/A	NT2 (RL#1.US#1)	1	Unlocked	Enabled	static	66.5	66.5	66.5
Xco IP[10.32]#(2.2)	10	32	N/A	N/A	NT2 (RL#1.US#1)	2	Locked	Disabled	Full Dynamic	399	399	9984

Designation of IP link

VCL coordinates

Name and number of NT port used in the link

(cf § 4.4.3)

Allocation type: full dynamic or static

Upstream Minimum Cell Rate

Upstream Peak Cell Rate

Up MCR: This value indicates the Minimum Cell Rate in Kbit/s, which can be used in the upstream bandwidth in order to transmit flow. For Ethernet flow, the maximum value is 7168. For ATM flow, the maximum value is 8192 on ETSI channels and 9984 on FCC channels.

Up CCR: This value indicates the Complementary Cell Rate in kbit/s (PCR = MRC + CCR).

Up PCR: This value indicates the Peak Cell Rate in Kbit/s in the upstream bandwidth.

Down MCR: This value indicates the rate in kbit/s, which can be used in the downstream bandwidth in order to transmit flow.

4.13.2.2 Configuration of NT Ethernet ports



To access the **NT Ethernet ports configuration**, click on the button shown here (on the button bar of the *IP* screen).

Quick search (cf: § 4.1.2.4)

Click on the arrow to **select** the **NT** used in the cross-connection from the pull-down list

Administrative state of the Ethernet port of the selected NT: **locked or unlocked**

The **NT ID number** is displayed automatically once the NT is selected

Configuration state of the Ethernet port of the selected NT: **half duplex or full duplex**

Port n°	User Label	Type	Administrative State	Operational State	Configuration State
1		Ethernet	<input checked="" type="checkbox"/> Locked	Disabled	half duplex
2		Ethernet	<input checked="" type="checkbox"/> Locked	Disabled	half duplex

Click here to **apply** the ports configuration

Click here to **cancel** the current configuration

Operational state of the Ethernet port of the selected NT: **enabled or disabled**

The **designation** of the Ethernet ports of the selected NT is to be performed in the **NT Details** screen (cf: § 4.6.3)

Click here to **return** to the IP links list

Note: Do not enter more than 60 characters.

Note: When a NT port is full duplex the Configuration State field is deactivated in the other port. When the Administrative State is unlocked the Configuration State field is deactivated.

4.13.2.3 Creation of an IP link

AN IP link can be composed of 2 kinds of traffic: data and voice. At creation, the operator has to choose if the 2 kinds are used or not. Then, he configures each part.



To access **creation** of an IP link, click on the button shown here (in the button bar of the **IP** screen).

The screenshot shows the 'New IP Cross-connection' dialog box. It includes fields for 'User Label' (Xco IP#[2.1]), 'Traffic Type' (static), and 'ATM' options (Only Data or Both Data & Voice). It also features 'VCL Data Traffic' and 'VCL Voice over IP' sections with Vpi and Vci fields. The 'Upstream' and 'DownStream' sections have MCR(Kbits/s) dropdowns and CCR/PCR(Kbits/s) input fields. An 'NT' dropdown menu is set to 'NT2 (RL#1.US#1)', and 'Ethernet Ports' are set to '1'. Buttons for 'Apply', 'Cancel', and 'Close' are at the bottom.

Callouts and instructions:

- Click here to enter the **name** of the cross-connection to be created
- Click here to define the **IP traffic type** used: static or dynamic
- Click here to select the **type of cross-connection**: only data or both data and voice
- Click here to enter the **VCL coordinates** of the ATM board: **connection**: only data or both data and voice (Vpi: 0 to 30, Vci: 32 to 1023)
- Click here to **cancel** creation of the IP cross-connection
- Click here to **create** the IP cross-connection
- Click here to **return** to the IP links list
- Move the pointers to define the new **upstream and downstream bit rates** of the new IP link: see the possible values in the table below.
- Quick search: (cf § 4.1.2.4)
- Click on the arrow to **select the NT** used in the cross-connection from the pull-down menu
- Select the **Ethernet port** used in the cross-connection

The following table gives the information to define the different bit rate types in the **New IP Cross-connection** screen::

IP traffic type	Upstream channel (transmission)		Downstream channel (reception)
	Possible MCR values (Kbps)	Possible CCR values (Kbps)	Possible MCR values (Kbps)
Full dynamic IP	Discrete values from 8.3125 to 7448	Discrete values from 0 to 8512 by 66.5 kbps pitch	Discrete values 8.3125; 16.625; 33.25; 66.5; 133; 266; 532; 1064; 2128; 3192; 4256; 5320; 6384; 7448 and 8512
Static IP	Discrete values from 66.5 to 7448 by 66.5 kbps pitch		Discrete values from 66.5 to 8512 by 66.5 kbps pitch

Note: The bit rates represent the bit rates used on the ATM access of the DBS.

 **PHYSICALLY, EACH NT CAN ACCEPT A MAXIMUM TOTAL BIT RATE OF 15 MBPS FOR THE SUM OF THE DOWNSTREAM CHANNELS AND THE UPSTREAM CHANNELS**

Note: Only one "cross-connection" may be sufficient to use all the capacity of an NT. In case of overflow, the 7390 LT displays an error message after the agent has rejected the IP link creation. The agent checks that maximum bit rate on all the Ethernet ports is lower or equal than 15 Kbps. That maximum bit rate on DS traffic of all Ethernet ports is lower or equal than 8512 Kbps. That maximum bit rate on the US traffic of all the Ethernet ports is lower or equal than 7448 Kbps.

Note: A pair of coordinates of ATM cells (Vpi, Vci) is single. When creating the IP cross-connection, if you define a pair already existing, an error message will inform you at the bottom of the window. You can consult the list of the couples already defined, reserved to the IP cross-connections in the list of the IP links § 4.13.2.1 Presentation of the IP screen.

Note: Ethernet port 2 has a 32 bytes buffer (port 1 only 16). Also use this one for heavy bursty traffic.

4.13.2.4 Characteristics and traffic of an IP link



To access the consultation of the **characteristics** of an IP link chosen from the list of IP cross-connections, click on the button shown here (in the button bar of the **IP** screen).

The screenshot shows the 'IP Cross-connection Details' window. It is divided into four main sections:

- IP Cross-connection characteristics:** Includes fields for Eqpt Index (2), Port (1), Bandwidth allocation (static), Operational State (Enabled), Administrative State (Unlocked), User Label (Xco IP(0.121)#(2.1)), and NT Name (NTZ (PL#1,US#1)).
- Up Traffic Descriptor:** Includes Traffic Index (1), Traffic MCR (Kbps) (66.5), Traffic CCR (Kbps) (0), and Traffic PCR (Kbps) (66.5).
- Down Traffic Descriptor:** Includes Traffic Index (1) and Traffic MCR (Kbps) (66.5).
- VCL Characteristics:** Includes Vpi (0), Vci (32), and AAL Type (Other).
- VCL Voice characteristics:** Includes Vpi (N/A), Vci (N/A), and AAL Type (N/A).

 Callouts from the left point to the 'IP cross-connection characteristics' and 'VCL characteristics for data' sections. Callouts from the right point to the 'IP cross-connection traffic characteristics' and 'VCL characteristics for voice' sections. A 'Close' button is at the bottom center.

– IP cross-connection characteristics:

IP Cross-connection characteristics Eqpt ID: <input type="text" value="2"/> Port: <input type="text" value="1"/> Bandwidth allocation: <input type="text" value="dynamic"/> Operational State: <input type="text" value="Enabled"/> Administrative State: <input type="text" value="Unlocked"/> User Label: <input type="text" value="Xco IP(0.121)#(2.1)"/>	— NT identification number — NT Ethernet port number — Traffic type: IP static — Operational state: enabled/disabled — Administrative state: locked/unlocked — Name of IP cross-connection
---	---

– VCL characteristics for data:

Vpi coordinate of the VCL: from **0 to 30**

Vci coordinate of the VCL: from **32 to 1023**

Characteristics of the frame level conveyed in the ATM

VCL Characteristics

Vpi:

Vci:

AAL Type:

Encapsulation Type:

– VCL characteristics for voice

– Uplink (reception) and downlink (transmission) traffic description:

Vpi coordinate of the VCL from 0 to 31

Vci coordinate of the VCL: from 32 to 1023

VCL Characteristics

Vpi:

Vci:

AAL Type:

VCL Voice characteristics

Vpi:

Vci:

AAL Type:

Close

Characteristics of the frame level conveyed in the ATM

Up Traffic Descriptor

Traffic Index:

Traffic MCR (Kbps):

Traffic CCR (Kbps):

Traffic PCR (Kbps):

Down Traffic Descriptor

Traffic Index:

Traffic MCR (Kbps):

Traffic index number

MCR (Minimum Cell Rate) traffic: average bit rate ensured with respect to the required bit rate

CCR (Complementary Cell Rate) which can be used in the upstream bandwidth in order to transmit flow. For Ethernet, the maximum value is 7168

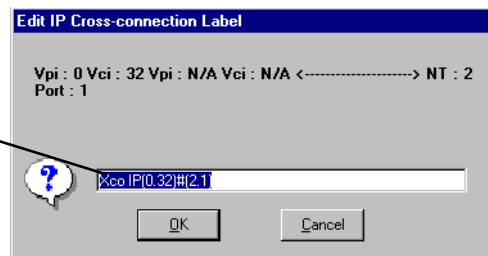
Upflow PCR (Peak Cell Rate) from cross-connection (max = 7448 Kbps): possible bit rate upper limit with respect to the required bit rate (MCR plus CCR equal PCR)

4.13.2.5 Editing the name of an IP link



To modify the name of an IP link selected in the IP cross-connections list, click on the button shown here (on button bar of the *IP* screen).

Click in this field to modify the name of an IP link



4.13.2.6 Locking / unlocking of an IP cross-connection

It is possible to **lock** or **unlock** a cross-connection:

- unlocking authorises IP traffic on the link,
- locking blocks IP traffic on the link.

This action is carried out by modifying the **administrative status** of the IP cross-connection.

When a link is created, its administrative status is **locked by default**, which prevents the system from being blocked during cross-connection, in case of equipment problems..

	FOR A SUBSCRIBER TO HAVE ACCESS TO TRAFFIC, THE CROSS-CONNECTION MUST BE UNLOCKED FOR CREATION OF CLIENT SERVICES. THIS OPERATION IS THE RESPONSIBILITY OF THE TELECOMS OPERATOR.
--	--

The **locking** operation may then be implemented on the cross-connection for reasons of maintenance or for freezing services during disputes between end user and telecoms operator.

Note: the administrative status of the cross-connections is not correlated with that of the ports.

	IF A PORT IS LOCKED, THERE WILL BE NO SERVICE ON ANY CROSS-CONNECTION INVOLVING THIS PORT.
--	---

To lock / unlock a link, select the cross-connection concerned on the *IP Cross-connection* screen (§ 4.13.2.1 *Presentation of the IP screen*), and:



- click on the icon of the button bar shown here to **lock**: the administrative status of the IP cross-connection switches from "**unlocked**" to "locked".



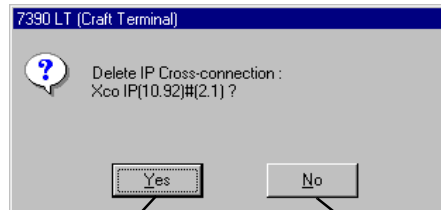
- click on the icon of the button bar shown here to **unlock**: the administrative status of the IP cross-connection switches from "**locked**" to "unlocked".

4.13.2.7 Deleting an IP link



To **delete** an IP link chosen from the list of IP cross-connections, click on the button shown here (on button bar of the **IP** screen).

A confirmation screen is displayed:



Click here to **delete** the IP cross-connection

Click here to **cancel** the request to delete the IP cross-connection

Note: An IP link can be deleted only if it is locked.

4.14 Utilities

4.14.1 NFS server

To configure the NFS server:



- click on the button shown here (on the **7390LT** main screen),
- or, open the **Management** pull-down menu and choose **NFS Server**.

4.14.2 Backup / Restore

The backup and restore functions are mainly used for protection during maintenance operations in order to avoid the loss of system configuration data (equipment parameters, created customer services, etc.).

These functions are implemented locally, on the 7390 LT craft terminal. The configuration data is backed up on the ANT board.

To access the backup / restore function:



- click on the button shown here on the main button bar,
- or else,**
- open the **Database** pull-down menu and select the heading: **Backup / Restore Management**.

The following screen appears, in which each tab is dedicated to each of the 2 functions:

Click on this tab to access the **backup** management (cf: § 4.14.2.1)

Click on this tab to access the **restore** management (cf: § 4.14.2.2)

Click here to **display** the phase color **legend**

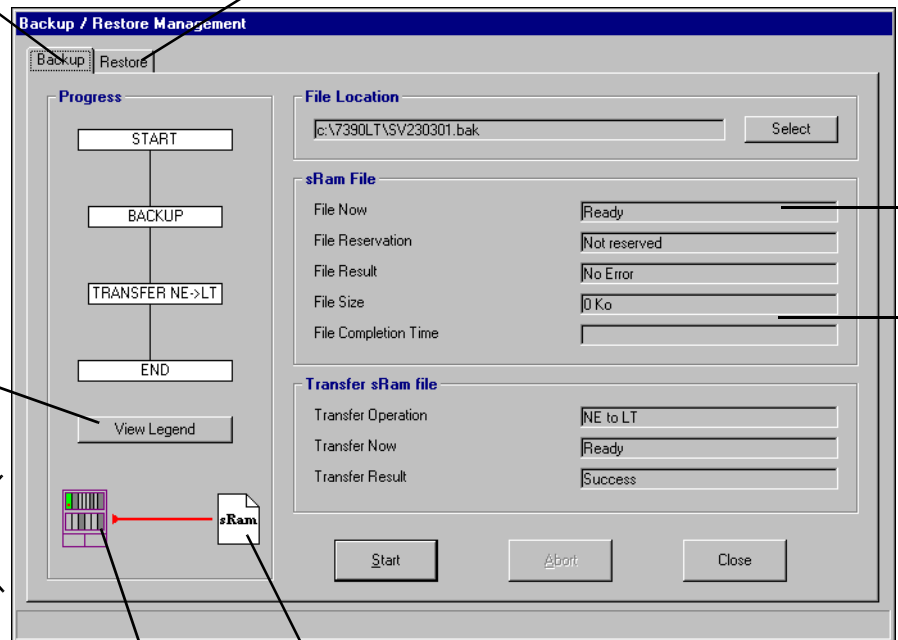
Phase animation

Depiction of the **transfer file**

Depiction of the **ANT board** containing the data

Part common to the two tabs; the file status may be:

- «ready» at the start and successful end of the process,
- «stopping» after the process has been manually interrupted,
- «running backup / restore» as process is underway (during which the animation runs)



4.14.2.1 Backing up a system configuration

The **backup** takes place in two phases: the **conversion** of the contents of the ANT memory into a file that can be transferred then the **transfer** of the configuration file to the LT database.

To access the backup management, click on the Backup tab of the **Backup / Restore Management** screen (see § 4.14.2 Backup / Restore).

Reservation status of the backup file:
«reserved / not reserved»: **backup can only run if «not reserved»**

1-Click here to **select the destination path** for the backup file and rename it (see screen below: **Enter the name of the File to be transferred by the agent**)

Current backup file path

Status of generated file: no error/no space/write error

Size of backup file

2-Click here to **run** the backup file to the LT

Click here to **stop** the file transfer to the LT

Click here to **exit** the Backup / Restore functions

Backup has terminated successfully once the **file result** field displays "no error", the **file size** is not zero and the **file status** is "ready".

- Change the transfer file name after clicking on the **Select** button of the previous screen:


1. Click on the arrow to select the **destination disk**

2. Open the **destination directory** by double-clicking on it

3. Click here to enter the backup **file name**

Note: The destination directory must be shared in NFS format: see NFS server configuration in A.2.6.3 – Configuring the NFS server.

4.14.2.2 Restoring a system configuration


IN THE BS DETAILS SCREEN, IF THE FIELD "NAME" IS EMPTY, YOU CAN RESTORE ANY BACKUP, OTHERWISE YOU CAN ONLY RESTORE BACKUP THAT CONTAINS THE SAME BS "NAME".

Restoration is carried out in two phases: the **transfer** of a configuration file from the LT database to the Agent, then the **restore configuration** to the ANT board (with conversion of the configuration file into exploitable data).

To access the restore management, click on the restore tab of the **Backup / Restore Management** screen (see § 4.14.2 Backup / Restore).

Current restore file path

Click here to **select the destination path** for the restore file and rename it (see screen below : **Enter the name of the file that the agent is to transfer**)

File result: no error/
no space/write error,
incoherent format,
variable not
positionned, partial
file

Click here to **run** file restoring of the system configuration data to the ANT board

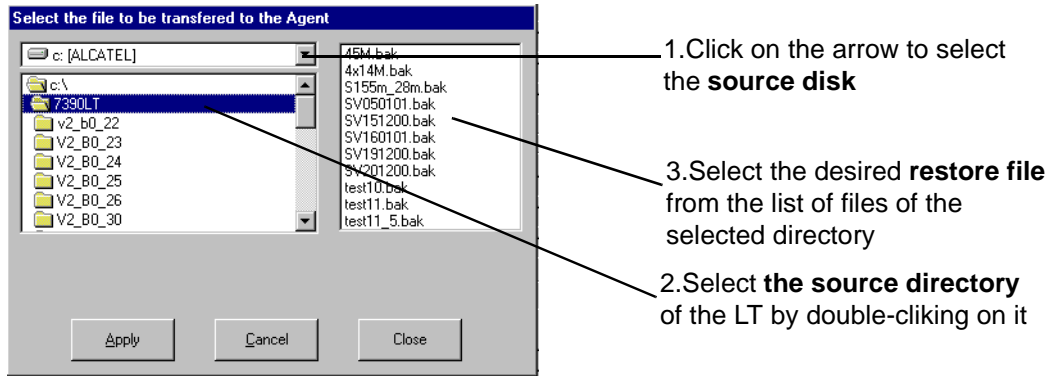
Click here to **stop** the file transfer to the LT

Click here to **exit** the Backup / Restore functions

Restoration has terminated successfully once the **file result** field displays "no error", the **file size** is not zero and the **file status** is "restore".

Note: Once restoration is complete, the configuration is then reintegrated into the system. The Agent reboots automatically with this new configuration; there is a break in the management link with the LT but the reconnection to the NE and recovery of data take place automatically.

- Change the transfer file name after clicking on the «Select» button of the previous screen:



4.14.3 Downloading



Downloading, mainly used during maintenance, or on first commissioning, replaces or upgrades the component software of the NE (BS + NTs).

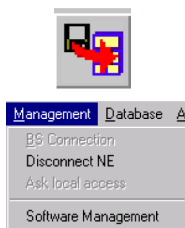
AMD boards must be configured with their radio settings prior to starting downloading. NE downloading must always come before any 7390 LT update if this update is included in the software upgrade.

During the download of a new software, the IP Traffic can be degraded to about 10^{-3} .

Downloading can be carried out via **Ethernet** (10 BT) or **ATM**.

On ATM, the max. bit rate authorised is **10 Mbps**.

To access the downloading function:

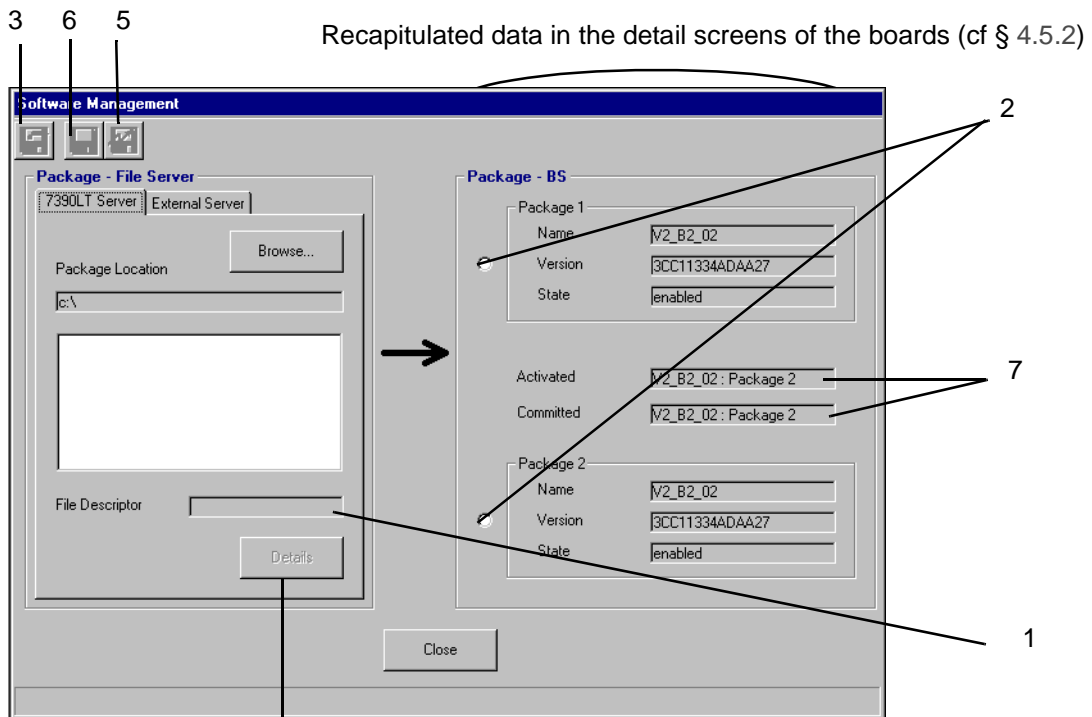


- click on the button (provided if it is active, see § 4.1.2.2 *Entry fields*) on the main menu button bar (shown here),

or else,

- open the **Management** pull-down menu and choose the item: **Software Management**.

- Software Package in the 7390LT server



Click here to access the **listing** for the selected file (cf § 4.14.3.3)

– Software Package in an external server

If a NFS server is defined (see § 4.14.1), when the LT detects a desynchronization between the two software packages, it will obtain the right software in that server.

3. 6. 5. Recapitulated data in the detail screens of the boards (cf § 4.5.2)

The screenshot shows the 'Software Management' window with two main panels: 'Package - File Server' and 'Package - BS'.
 - Callout 1 points to the 'File Descriptor' field in the 'Package - File Server' panel.
 - Callout 2 points to the 'Name' field of 'Package 1' in the 'Package - BS' panel.
 - Callout 3 points to the '7390LT Server' tab in the 'Package - File Server' panel.
 - Callout 4 points to the 'Server File IP Address' field in the 'Package - File Server' panel.
 - Callout 5 points to the 'External Server' tab in the 'Package - File Server' panel.
 - Callout 6 points to the 'Network Type' section in the 'Package - File Server' panel.
 - Callout 7 points to the 'Activated' and 'Committed' fields in the 'Package - BS' panel.
 - An arrow points from the 'Package - File Server' panel to the 'Package - BS' panel.

	<p>THE SOFTWARE DOWNLOADING DIRECTORY MUST BE IN THE SAME COMPUTER AS THE LT APPLICATION, MUST NOT CONTAIN NON STANDARD ASCII OR SPACE CHARACTERS AND MUST NOT BE RENAMED.</p>
--	---

4.14.3.1 Downloading steps

- **pre-requirement:** AMD boards should be configured (mandatory).

There are two possible cases in point, influencing how the downloading steps should proceed: i.e., whether or not the MIB versions (databases modelling the equipment) are different for the manager and for the agent. Once downloading is run, the system detects automatically any discrepancy between the MIB versions, and realigns where necessary.

Note: The **About 7390 LT** window gives the database version (see § 4.2.2 Accessing and running 7390 LT).

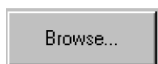
The downloading steps are as follows:

1. Select the **file** describing the software configuration (action in Software Management screen) (§ 4.14.3.2 Object and destination of the software to be imported),
2. Select the software **storage zone** on the BS (action in Software Management screen) (package 1 or 2),
3. **Load** the software (action in Software Management screen) (§ 4.14.3.4 Software import),
4. **Rendering MIB compatibility:** (in the case of divergent MIBs) (automatic in other screen) (§ 4.14.3.6 Rendering compatible the MIBs),
5. **Referencing of the software** (action in **Software Management** screen) (§ 4.14.3.7 Referencing software),
6. **Activate** the selected software configuration (action in Software Management screen) (§ 4.14.3.8 Activation of data),
7. **Updating** the statuses on the 7390 LT: wait for 10 minutes approximately (action in **Software Management** screen, § 4.14.3).
8. **Start again Loading** the same package on the other software storage zone (without activating nor referencing it) to enable automatic update of the new NTs coming in the network.

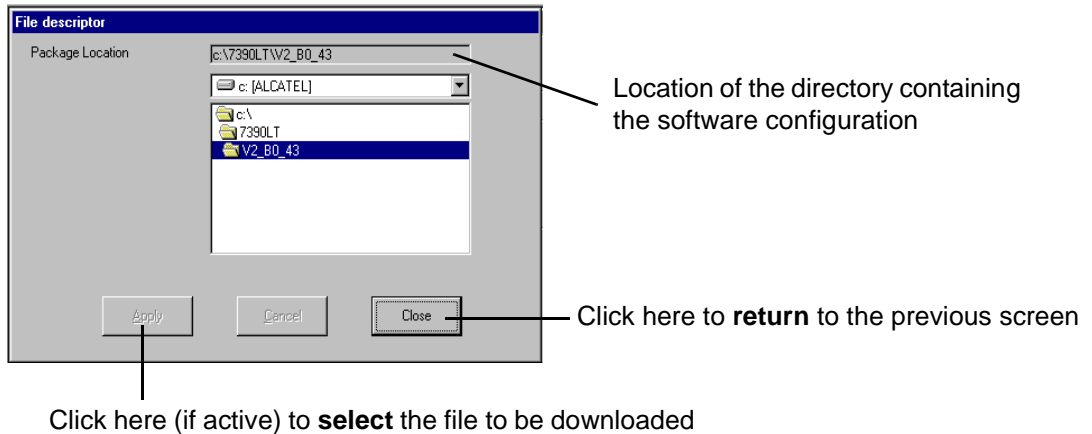
Note: Each software package must be individually exported via NFS Server (see A.2.6.2 – Installation of NFS server)

- NR 2.1 to NR 2.2a upgrade is described in § 7.3.12.2 Upgrading the equipment from release 2.1 / 2.2a to 2.2b
- Commissioning for the first time is described in § 7.3.13 First 7390NE software update
- NR 2.1 to NR 2.2b upgrade is described in § 7.3.12.2 Upgrading the equipment from release 2.1 / 2.2a to 2.2b
- NR 2.2a to NR 2.2b upgrade is described in §

4.14.3.2 Object and destination of the software to be imported

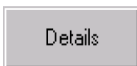


To **select** the software to be downloaded, click on the button shown here (see screen § 4.14.3 Downloading); the updated list of software is displayed; double click on the file to be imported, on the «Apply» button then on «Close».



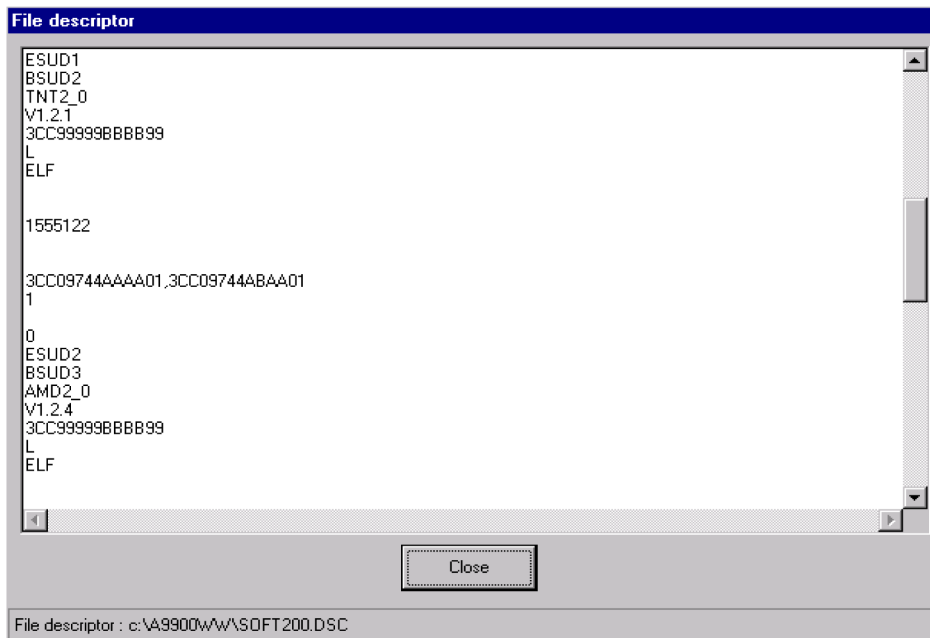
Back to the software management window, **select** the file then the destination package which is available (the one which activates the "Download" icon). see step 2 § 4.14.3 *Downloading*.

4.14.3.3 Detail of the software configuration file



The maintenance operator can choose **display** as a means of checking the content of the file describing the software configuration.

To **display** the content of the software configuration file, click on the button shown here (see screen in § 4.14.3 *Downloading*): the listing is displayed; then close the window with a click on the «Close» button.



4.14.3.4 Software import

To **load** the software to the boards:



Click on the «Download» button shown here (provided it is active) of the **Software Management** screen button bar.

Note: this button is activated once the selections described in the previous paragraph have been made.

A screen indicating the **progress** of the downloading is displayed:

Annotations for the screenshot:

- Status of downloading progress
- Number of boards downloaded
- Progress bars
- Number of NTs downloaded
- Number of NTs that could not be downloaded
- Number of NTs to be downloaded
- Accessible after manually interrupting («Abort» button) the download: click here (if active) to close the window
- Number of boards which have not been downloaded
- During download, click here (if active) to cancel the current step
- Click here to continue downloading and to display the download report (cf: § 4.14.3.5)(button active as soon as the BS side download is 100% complete)
- Number of boards to be downloaded

Step Status Legend	
	Step in progress
	Successfully done step
	Cancelled step
	Aborted on error step
	Not done step
	Unnecessary step
Close	

The sequencing of the download phases is permanently displayed, throughout the download. The sequence is presented on the left of the window, and features the following **color code**:

- **white**: step not carried out ;
- **white with gray writing**: step not required ;
- **green**: step underway ;
- **yellow**: step successfully completed ;
- **sky blue**: current step canceled ;
- **red**: step interrupted by error.

Note: During the download phase, it is forbidden to insert any board in the DBS.

Note: If NTs were to be inserted during downloading, their download statistics would not be updated.

Note: If the status DOWNLOAD becomes red because of a time out, it does not mean that the software import step was interrupted by error. The loading is still going on in the system. But the operator will have to start the software import again.

4.14.3.5 Downloading report

Once the downloading phase is over (see § 4.14.3.4 *Software import*), a report is provided detailing the software present for the different board types of the BS:

Name of downloaded software

Version of downloaded software

Status of downloaded software

Status

Package statistics

BS statistics

Board target: 2
Board target succeeded: 2
Board target failed: 0

NT statistics

Board target: 0
Board target succeeded: 0
Board target failed: 0

Quick search (cf: 4.1.2.4§)

Reminder of data (cf: 4.14.3.4§)

Type of boards of the DBS

Board_type	Name	Version	State
ANT	ant1A138	3CC10945AAAA51	enabled
	int1A138	3CC10947AAAA51	unknown
AMD	am21A138	3CC10949AAAA51	enabled
	am51A138	3CC10949ABAA51	unknown
	coe1A138	3CC11032AAAA51	unknown
	cox1A138	3CC11042AAAA51	unknown

Abort Migrate Close

Click here (if active) to **cancel** the rendering MIB compatibility, if the button is available at the end of the process

Click here to **migrate** the MIB if the button is still active at the end of the process: it requires the **rendering MIB compatibility step** (cf: 4.14.3.6§)

OR

Click here (if active) to **exit** the download function (terminated) and go to **referencing the software** (cf: 4.14.3.7§)

	IF MIB COMPATIBILITY IS CANCELLED, NE CONFIGURATION IS ENTIRELY LOST.
--	--

4.14.3.6 Rendering compatible the MIBs

	<p>"C:/A7390WW" CONVERSION DIRECTORY MUST BE EXPORTED IN READ / WRITE STATE TO THE NFS SERVER AND THE SOFTWARE REQUIRED FOR MIGRATION MUST BE INSTALLED</p>
--	--

This operation only takes place where there are different versions of the databases, and ensures that the common exchange base structures are compatible.

Transfer phase to LT from LT: transfer of data file to manager / to DBS

Backup phase: generation of data file

While in progress, click here (if active) to **cancel the current phase**

Progress of migration (the designation of each transfer phase is displayed under the relative progress bar)

Initial version of IM

Final version of IM

Accessible after manually interrupting («Abort» button) the download: click to exit the migration functions

Accessible at the end of the process («END» phase): click here to **exit** the download function (terminated) and go to **referencing the software** (cf: 4.14.3.7§)

Note: Movement between the phases: **Backup, NE->LT transfer, MIB Migration and LT->NE transfer** takes place automatically without having to click **Continue**.

The **Backup** phase is too rapid to view its progress in the "Backup Status" screen zone.

The phases: **NE->LT transfer** and **LT->NE transfer** may take a greater or lesser time depending on the link bit rate. Their progress is displayed in the "Transfer sRam file" zone.

The principle of these 3 steps is the same as for the Backup/Restore function: § 4.14.2.1 Backing up a system configuration.

The **MIB Migration** phase is quite a long operation that lasts around 30 minutes.

Migration is successfully terminated once the **migration result** displays "success".

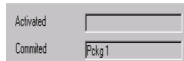
4.14.3.7 Referencing software

The committed software is activated by default when restarted; for the referencing of the software:



Select first of all the required storage zone, then, click on the «Referencing» button of the **Software Management** screen button bar shown here.

Note: This button is activated if the software status is "enabled".



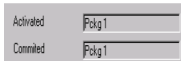
The "Committed" zone of the **Software Management** screen (§ 4.14.3 Downloading) is automatically filled.

4.14.3.8 Activation of data

To run the downloaded software:



Click on the «Activate» button of the **Software Management** screen button bar shown here.



The "Activated" zone of the **Software Management** screen (§ 4.14.3 Downloading) is automatically filled.

Note: Once the MIBs have been rendered compatible, the equipment (NE) reboots with the new IM version.

The link with the LT is broken. Reconnection to the NE and recovery of the data therefore requires a new version of the corresponding LT. For this, refer to the procedure described in A.2.2 – Installation Procedure CHANGING THE DESTINATION DIRECTORY of the program ("Change directory" button), so as not to overwrite the old version of the 7390 LT.

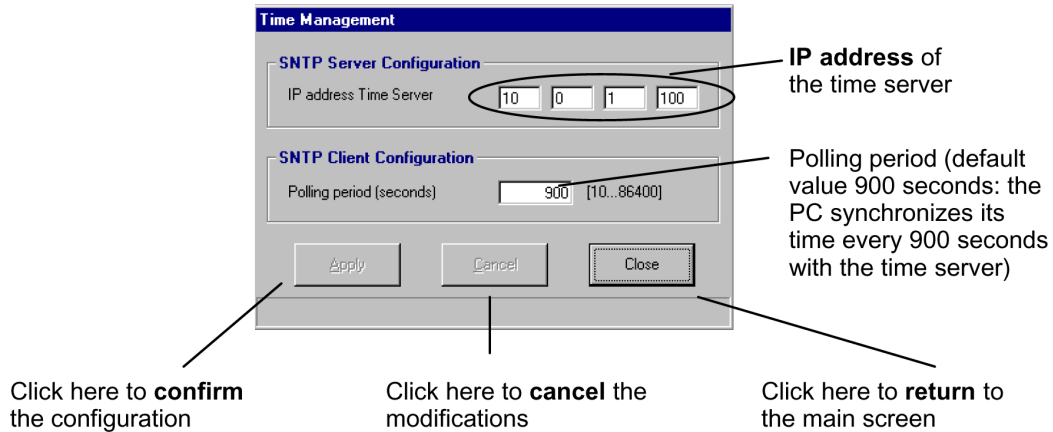
Note: Once the software is activated and referenced, do not forget to start again downloading the same software on the other software storage zone (without activating or referencing it) to re-create the NFS assembly point, so as the new NTs that come in the network can perform automatic download.

4.14.4 SNTP server configuration



- click on the button shown here (on the 7390LT main screen),
- or, open the Management pull-down menu and choose Time Management.

The following screen is displayed:



When the SNTP server IP address is set to 0.0.0.0, the SNTP client of the 7390NE is deactivated.

Otherwise the 7390NE SNTP client is activated and it tries to synchronize on this SNTP server IP address.

When the SNTP client is deactivated, you can set the BS time manually (see § 4.5.5).

Note: A time server loss alarm will be declared when connection to SNTP time server is lost and SNTP client activated. *PAGE INTENTIONALLY LEFT BLANK*



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