

4.5.1 – Base Station Supervision

To **Start or Stop the supervision** of the Base Station:



Click on the icon to **start** the supervision of the Base Station.



Click on the icon to **stop** the supervision of the Base Station.

BS supervised means that the agent sends to the manager all the events related to the Base station.

When the **BS is supervised** the «*Start BS Supervision*» button is disabled.

When the **BS is not supervised** the «*Stop BS Supervision*» button is disabled and a red message in the status bar indicates to the operator that the equipment is not supervised. Besides, not supervised status implies that no action can be performed on the BS from the LT manager. Therefore, if the BS is not supervised then no alarm is sent to the BS element. So, not supervision state implies alarms not allowed (the «*Allow BS Alarms*» button is disabled).

To **Allow or Inhibit the alarms** of the Base Station:



Click on the icon to **allow** receiving the alarms of the Base Station.



Click on the icon to **inhibit** receiving the alarms of the Base Station.

BS Alarms allowed means that all the alarms present in the BS equipment will be reported to the LT manager.

When the **BS alarms are allowed**, the «*Allow BS Alarms*» button is disabled.

When the **BS alarms are inhibited**, the «*Inhibit BS alarms*» button is disabled. Moreover, all the status led boards in the BS appears in grey colour to indicate that it is unknown if the boards have or do not have alarms present.

4.5.2 – General parameters

The left side of the **BS Details** screen shows the **characteristics** and associated **states**:

Characteristics

Eqpt ID	1
Name	
Type	7390DB
Version	2.2b
Ethernet IP Address	155.132.136.86
ATM IP Address	0.0.0.0
Location	
Time last update	09/02/2001 16:20:34
ASAP	ASAP BS
Polarization Type	Cross-Polarization

States

Operational	Enabled
Administrative	Unlocked
Supervision	Supervised
Alarm	Allowed

Identification No.: 1 for the BS

BS name: click to enter the BS name: it will appear in the title bar

BS manufacturer No.

BS version No.

IP address of BS access via 10 BT Eth port

IP address of BS access via ATM port

BS Location: click to enter the town or geographical sector where the BS is located

Last BS time setting (cf. § 4.5.5 –) (by default date displayed is 01/01/1970 at

Name of the alarms **correspondence base:** cf. § 4.10.2 –

BS Polarization type

Operational state (enabled/disabled): indicates the technical availability status of the equipment with respect to service provision

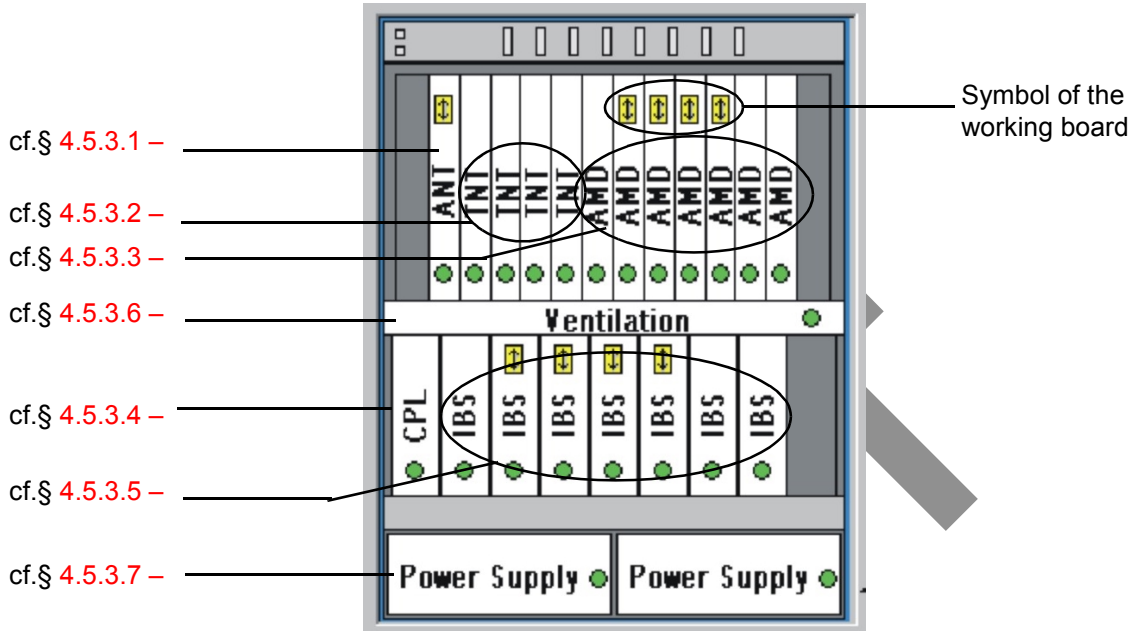
Administrative state unlocked for the BS: indicates whether locked or unlocked for modification at the network management level

Supervision state supervised for the BS

Alarm report state (only authorized values appear in the system)

4.5.3 – DBS

The central part of the **BS details** screen shows the rack and its sub-assemblies as detected by the 7390 LT:



On the **BS Detail** screen button bar:

Click on... To.....



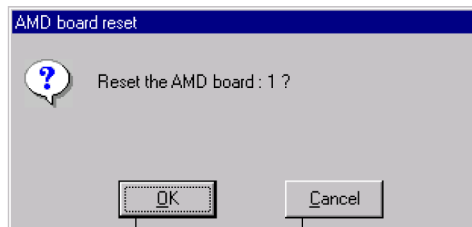
...**access the details** of a selected sub-assembly (or **double-click** directly on one of the sub-assemblies)



...**delete** a selected sub-assembly



...**reset** a selected board.
A confirmation screen is displayed:



Click here to **confirm** reset of the selected board.

Click here to **cancel** the reset request for the selected board.

Symbols on the equipment representations:

- **green spot:** no alarm is detected;
- **colored spot** (other than green): alarm detected: the color displayed corresponds to the most critical alarm level (cf. § 4.10.1.2 – *Alarms color code*);
- **white board:** board physically present in the rack;
- **gray board:** board physically removed but still present in the system management.

Number of equipments in the rack:

Equipment designation	Maximum number of equipments managed by the system in 2.2b	Maximum number of equipments that can be included in the BS
ANT board	2	2
TNT board	4	4
AMD board	8	8
CPL board	1	1
IBS board	8	8
Power Supply Unit	2	2
Ventilation subrack	1	1

4.5.3.1 – ANT board screen

ANT (ATM Network Termination): ATM interface board.



Board family ID No.

Board slot No.

Board type.

Click on this tab to display the screen relating to the hardware part of the board

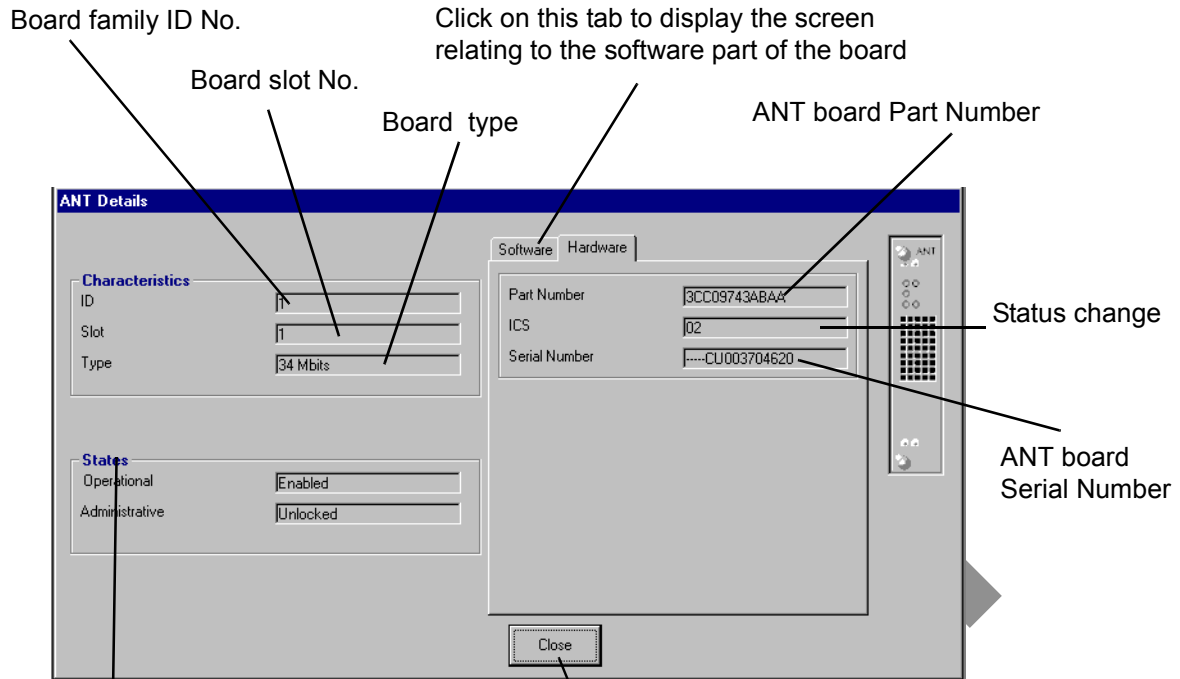
Name of ANT integrated software

State of ANT integrated software

Board states: only these two states are defined for the boards: cf. § 4.5.1

Fields completed after downloading: cf. § 4.14.3

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



Board family ID No.

Board slot No.

Board type

Click on this tab to display the screen relating to the software part of the board

ANT board Part Number

Status change

ANT board Serial Number

Board states: only these two states are defined for the boards: cf. § 4.5.1

Click here to return to the BS Details screen

DRAFT

4.5.3.2 – TNT board screen

TNT (TDM Network Termination): board providing the leased line service (E1, X21, T1, CES).



Click here to display the screen relating to the **TNT board ports wording configuration** (cf. following screen)

Click on this tab to display the screen relating to the **hardware** part of the board

Select the **Input type** used to supply the TNT board: either via the **TDM network** or via the **ATM network**

Name of TNT integrated software

State of TNT integrated software

cf. § 4.5.3.1 –

Parameters link with the circuit emulation mode

cf. § 4.5.3.1 –

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

Fields completed after downloading: cf. § 4.14.3

Note: This screen can be modified only if the **ATM** type Input/Output is ticked off.



Click here to enter the TNT board **port labels**

Index	Type	User Label	Operational State
1	G704		Enabled
2	G703		Disabled
3	G704		Enabled
4	G704		Disabled
5	G703		Disabled
6	G703		Disabled
7	E1		Disabled
8	E1		Disabled
9	E1		Disabled
10	E1		Disabled
11	E1		Disabled
12	E1		Disabled
13	E1		Disabled
14	E1		Disabled
15	E1		Disabled
16	E1		Disabled

Buttons: Apply, Cancel, Close

Operational state of the port:
Enabled/Disabled
(cf. § 4.11.1 -)

Port number

Click here to **apply** the label modifications

Click here to **cancel** the label modifications

Click here to **close** the screen

4.5.3.3 – AMD board screen

AMD (ATM MODEM) : ATM modulator demolulator board.

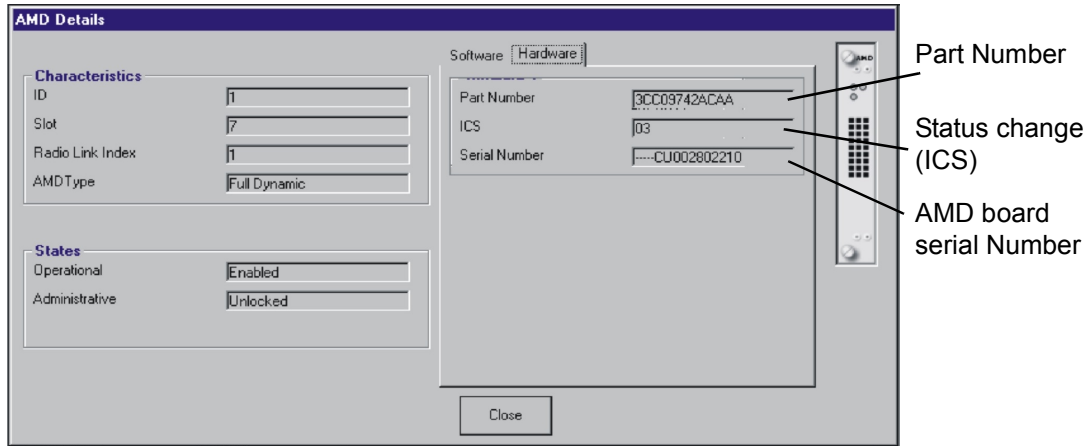


AMD Details	
<p>Characteristics</p> <p>ID: <input type="text" value="1"/></p> <p>Slot: <input type="text" value="7"/></p> <p>Radio Link Index: <input type="text" value="1"/></p> <p>AMDTtype: <input type="text" value="Full Dynamic"/></p>	
<p>States</p> <p>Operational: <input type="text" value="Enabled"/></p> <p>Administrative: <input type="text" value="Unlocked"/></p>	
<p>Software Hardware</p> <p>Software 1</p> <p>Name: <input type="text" value="3CC10949ACAA71"/></p> <p>State: <input type="text" value="enabled"/></p> <p>Activated software: <input type="text" value="3CC10949ACAA71"/></p> <p>Committed software: <input type="text" value="3CC10949ACAA71"/></p> <p>Software 2</p> <p>Name: <input type="text" value="3CC10949ACAA66"/></p> <p>State: <input type="text" value="unknown"/></p>	
<p>Close</p>	

No. of radio sector covered by the board

Type of the AMD board

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

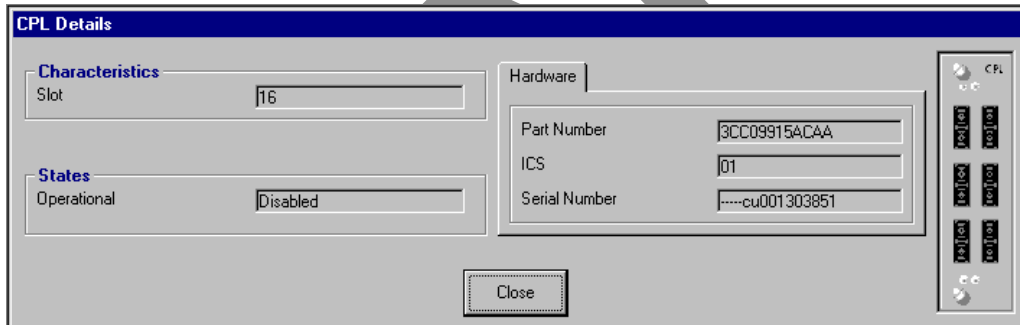


4.5.3.4 – CPL board screen

CPL (Coupler): network interface coupler board.



For the items on this screen, refer to the description of the ANT board (§ 4.5.3.1 – ANT board screen).



4.5.3.5 – IBS board screen

IBS: (Intermediate frequency **B**ase **S**tation): IF board.



For the items on this screen, refer to the description of the ANT board (§ 4.5.3.1 – ANT board screen).

This IBS belongs to the Radio Group indicated, previously configured by the manager

Alcatel code

The LT manages two tables called ORU table and OTU table that contain all the possible 90 number and their corresponding RF/IF Down/Up start values, so these values are obtained from these tables. The values of the tables are given by system team and they can change or evolve

cf. § 4.5.3.1

Every IBS can manage two Radio Units (two OTU, two ORU or one OTU and one ORU, one per port

OTU/ORU cable attenuation is the transmission/reception attenuation owing to the cable (It is valued by default at 11 dB for the transmitter and at 0 dB for the receiver. Those values can be tuned by 0.1 dB step from 0 - 27 dB (Tx) and 0 - 24 dB (Rx)

4.5.3.6 – Ventilation

Number of ventilation slot

Part Number

Status change

Ventilation serial Number

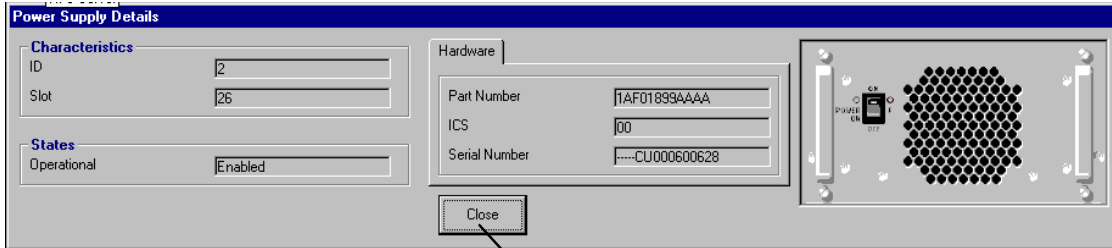
Operational state: enabled/disabled

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

4.5.3.7 – PSU

PSU : Power Supply Unit.

For the items on this screen, refer to the description of the ANT board (§ 4.5.3.1 – ANT board screen)



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

4.5.4 – Clock synchronization parameters



To access the **synchronization** parameters, click on the button shown here (in the button bar of the **BS Details** screen).

This involves defining the setup rules for the synchronization sources used.

There is one default synchronization source (internal oscillator) and **six configurable sources**: ATM, external clock and the four TNT boards. The TNT boards have 16 ports and 4 can be used as synchronization ports: these are ports **1, 5, 9 and 13**.

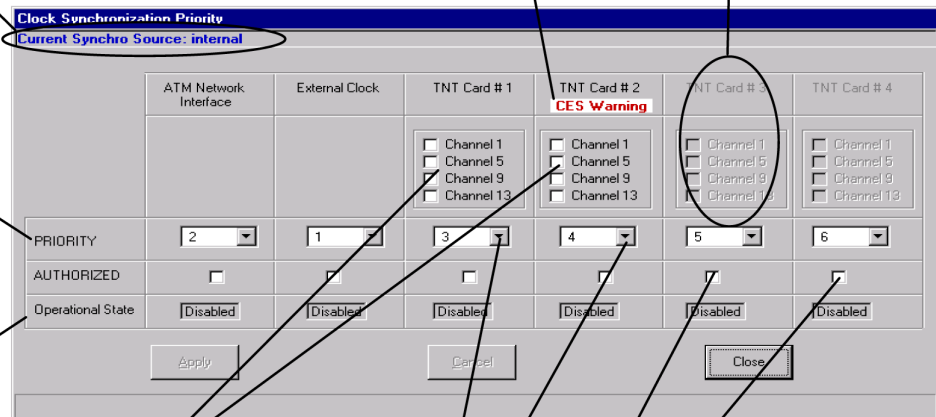
The message indicates the **synchronization source currently** used (chosen automatically by the system from the source configurations shown below).

Warning linked to the circuit emulation service (see note below).

Grayed out – unavailable

Priority of the synchronization sources: see *Priority principle* below

Operational state of sources



1. On each of the boards, choose the **reserved channels** to act as **potential** synchronization sources.

2. Allocate to each sub-assembly an **order of priority number** (chosen from pull-down list).

3. Check to boxes to **enable/ disable** the synchronization sources.

– Priority principle:

- the **order of priority** numbers take precedence, followed by the **channel numbers**, in increasing order of appearance;
- an **order number** must be **single** (one specific number per sub-assembly);
- order number **one** is for the **highest level of priority**.

Note: Two sources cannot be assigned the same order of priority (the «Apply» button is not available).

Note: In the screen shown in the above example, the warning message under **TNT card N°2** is displayed because the type of input for the TNT 2 card has been set to ATM (see § 4.5.3.2 – TNT board screen), this board is thus in Circuit Emulation mode.

4.5.5 – Sending time to the Agent

	ONLY USE THIS UPDATE FUNCTION IF THE SNTP SERVER IS NOT ENABLED: SEE § 4.13.3.
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This function allows to update time of the SNMP agent with the LT Windows Operating System (OS) time. It is specially necessary at the first installation, to initialize the time of the system or, when there is a big drift of the NE time in regards to that of the local PC (where the 7390 LT is running): see events log § 4.8 – NE management.



To synchronize the time of the agent, click on the button of the **BS Details** screen button bar (see § 4.5 – Base Station Supervision) shown here.

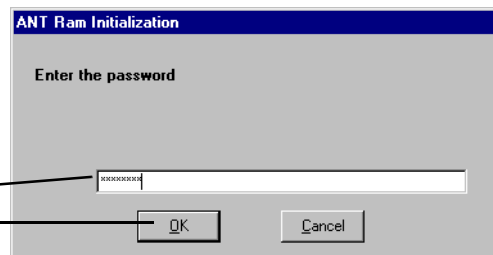
4.5.6 – Memory initialization

	THIS FUNCTION, RESERVED TO MAINTENANCE OR FIRST START UP OF BASE STATION, WILL DELETE THE CURRENT CONFIGURATION
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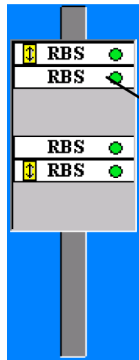
This function allows memory initialization by the SNMP agent located in ANT board.

Operator has to enter the password (Alcatel 7390), then to click on **OK** to validate this password and start the memory initialization.

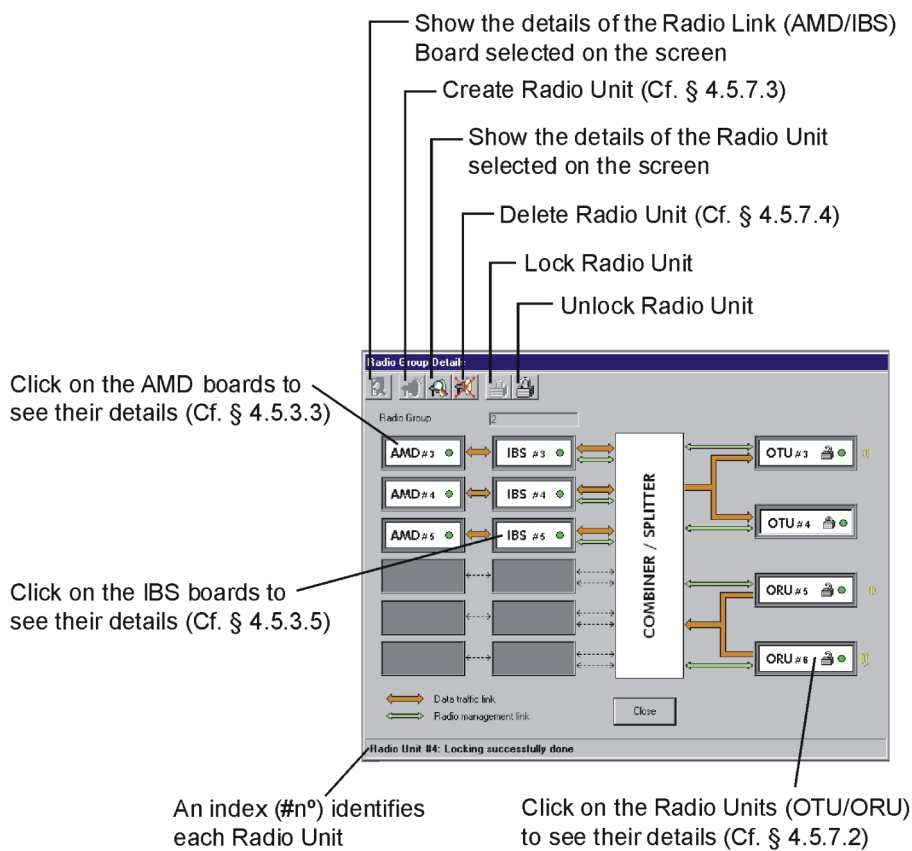


4.5.7 – X-Pol RBS

4.5.7.1 – Radio group screen



On the right of the BS supervision screen are all the X-Pol RBSs associated with the **Double-click** on the **RBS** whose **details** you require, in order to display the following screen:



It is possible to have up to eight Radio Links and seven Radio Groups. A Radio Group is composed of a maximum of two OTU, two ORU and 6 AMD/IBS boards.

When a Radio Unit is active and unlocked, it is displayed through a yellow wave (going out for the OTU or going inside for the ORU)

A green point means that there is not any alarm; red point means that the unit has some alarm.

Data traffic link shows the traffic flow through the radio link.

Radio management link shows the signalling or management messages traffic between the BS and its Radio Units.

4.5.7.2 – Radio Unit screen



To see the details of a Radio Unit, select it, and click on the button shown here (Radio Group Details button bar). You can also obtain the details by double-clicking on the Radio Unit in the screen.

This **IBS board** manages the Radio Unit. Radio Units only can be managed by an IBS belonging to the same Radio Group

The Radio Unit is managed through this **IBS port** (every IBS has two ports)

Radio Unit Details

Characteristics	
ID	1
Radio Unit User Label	OTU - IBS#1 Port#1
Radio Unit Type	OTU
Manager IBS Board	1
Manager IBS Port	1
Radio Group	1

States	
Operational State	Enabled
Administrative State	Unlocked

Hardware	
Part Number	90456801
ICS	00
Serial Number	993646261

Cf. § 4.5.3.1

Click here to **take into account** the modifications

Click here to **cancel** the modifications

Click here to close the window and **to return** to the **BS details** screen

4.5.7.3 – Radio Unit Creation



To create a Radio Unit, click on the button shown here (Radio Group Details button bar).

Click here to **select the type** of Radio Unit: OTU or ORU

Cf. § 4.5.7.2

Click here to **apply** the Radio Group creation

Click here to **cancel** the Radio Group creation

Click here to **return** to the Radio Group Details screen

4.5.7.4 – Lock Radio Unit



Obligation to click the button for Lock Radio Unit.

4.5.7.5 – Delete Radio Unit



To delete a Radio Unit, click on the button shown here (Radio Group Details button bar).

The following window is displayed:

Click here to **confirm** Radio Unit deletion

Click here to **cancel** the Radio Unit deletion request

4.5.8 – Redundancy Radio capability

4.5.8.1 – Principle

Redundancy of the A7390 system corresponds to a **1+1** configuration and works in the "**cold redundancy**" mode. That means for **one active** entity, there is **one stand-by** entity and when the active entity has failed, the **switch over** to the stand-by entity provokes a **temporary service cut**.

Redundancy applies to the management part (ANT board).

4.5.8.2 – Access to redundancy state display



To access **consultation of the system redundancy state**, click on the icon shown here, that is in the button bar of the **BS Details** screen (§ 4.5 – *Base Station Supervision*).

The screen below is displayed:

Operational state of the entities
(enable / disable) See § 4.5.3.1
– (ANT)

Availability state of the entity (on
line / off duty / failed / not installed)

Redundancy

ANT Boards

Operational State

ANT 1

Enabled

Operational State

ANT 2

Enabled

Availability Status

On line

Availability Status

Off duty

Close

Redundancy on the **management** part (ANT board)

Click here to **close** this consultation window and return to the **BS Details** screen

Note: The place of the boards into the DBS is directly linked to their role in redundancy (see § 4.5.8.3 *Board and location in the cabinet according to their role in redundancy*).

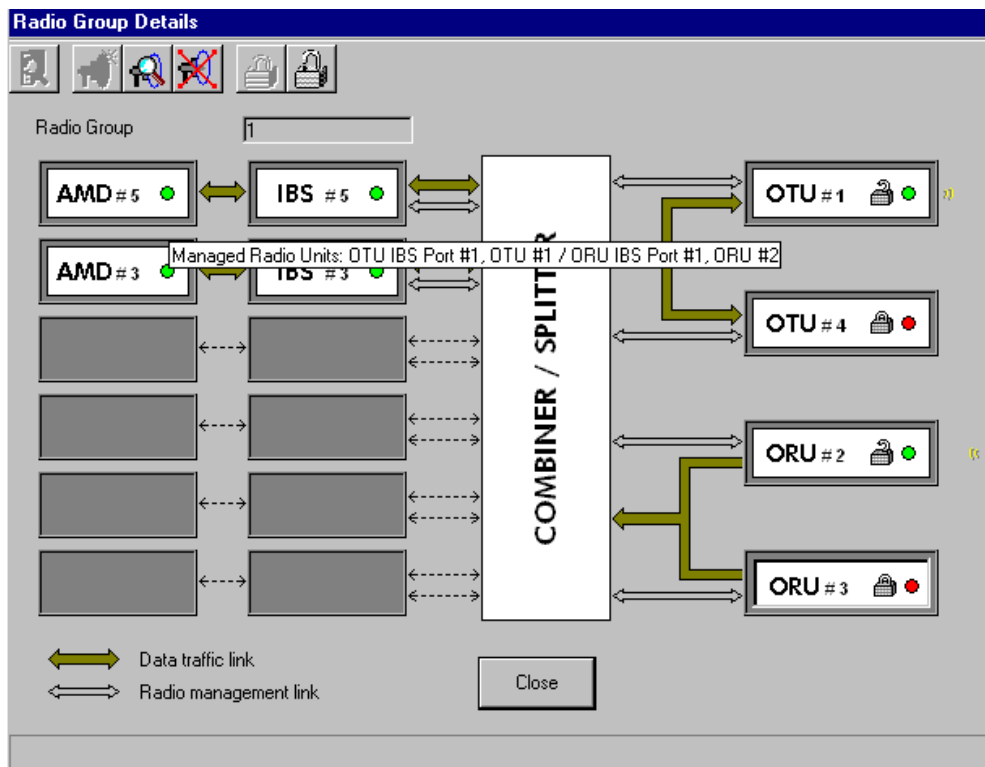
Note: The disponibility state on line corresponds to an active entity.

We could create a new Radio Unit with other carrier (see § 4.5.7.3 – Screen Radio Unit Creation)

The management of the second pair must be manager by a porteur different from the first pair.

The second radio is supervisor with the other IBS.

We can verification with the mouse on the radio management



It is necessary to position the mouse on the connection «Radio Manager Link» which we have in the screen.

4.6 – NT Supervision

The system manages 100 NTs maximum per BS, with 31 NTs maximum per upstream for 28 MHz channelization and 15 NTs for 14 MHz. The NT Supervision automatically begins as soon as the NE is connected.

To access the list of declared NTs associated with the BS:

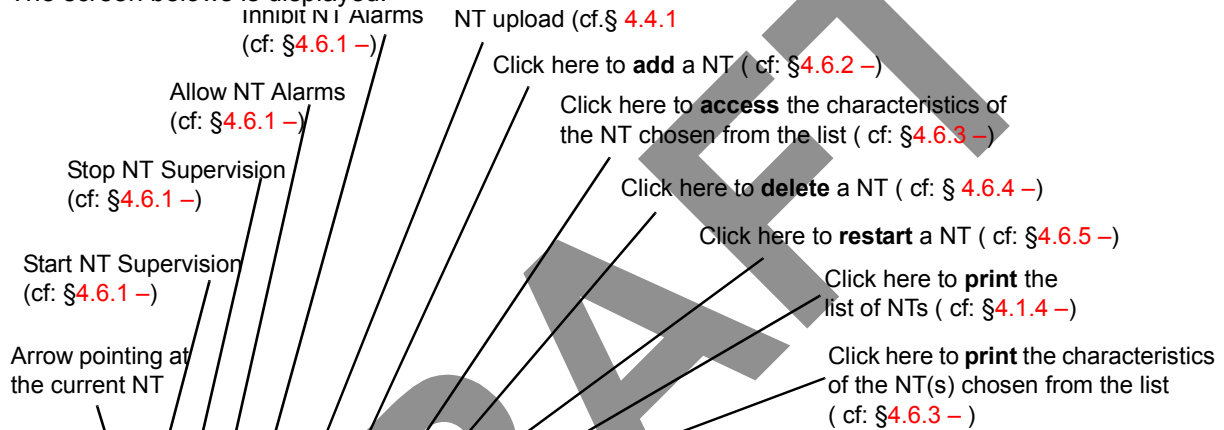


click on the third button of the main menu button bar,

or else,

open the **Management** pull-down menu and choose the item: **View NT List**.

The screen below is displayed:



Ept ID	Name	Terminal Station	Radio Link	Upstream	Type	Operational State	Administrative State	Supervision State	Alarms State
2	NT2 (RL#1_US#1)	0	1	1	NCA001	Enabled	Unlocked	Supervised	Allowed
3	NT3 (RL#1_US#1)	0	1	1	NCD001	Enabled	Unlocked	Supervised	Allowed
4	NT4 (RL#1_US#2)	0	1	2	NCA001	Enabled	Unlocked	Supervised	Allowed
5	NT5 (RL#1_US#3)	0	1	3	NCA001	Enabled	Unlocked	Supervised	Allowed
6	NT6 (RL#1_US#4)	0	1	4	NCA001	Enabled	Unlocked	Supervised	Allowed

ID No. of NTs: from 2 to 100

Names of NTs (cf: § 4.6.2 -)

TS Link (cf: § 4.6.2)

Radio Link and upstream associated with NTs: (cf: § 4.6.2 -)

Type of NTs : automatic entered after input of NTs in the network

Operational, administrative and supervision states of the NTs

Alarm report state

Note: The "ID" column displays the color of the most critical alarm for the NT concerned.

Note: The number of NTs present in the list corresponds to the "number of NTs" displayed permanently on the main screen status bar (cf. § 4.1.2.6 – Title, menu, button and status message bars).

Note: Remember that it is possible to access a given NT rapidly from the list of all NTs via the sort and search functions (cf. § 4.1.2.4 – Sorting and searching in a list).

4.6.1 – NT Supervision

To **Start or Stop the supervision** of the NT:



Click on the icon to **start** the supervision of the NT.



Click on the icon to **stop** the supervision of the NT.

NT supervised means that the system sends to the manager all the events corresponding to that NT.

A given NT can be supervised only if the **BS** is supervised.

When a **NT is supervised**, the "Start NT Supervision" button is disabled.

When the **NT is not supervised** the "Stop NT Supervision" button is disabled. Then, no action can be applied over it, so all the "Apply" buttons are disabled. Therefore it implies that the alarms on this NT are not allowed (the "Allow NT Alarms" button is disabled).

To **Allow or Inhibit the alarms** of the NT:



Click on the icon to **allow** receiving the alarms of the NT.



Click on the icon to **inhibit** receiving the alarms of the NT.

NT Alarms allowed means that all the alarms present in the NT equipment will be reported to the LT manager.

Allowing or inhibiting alarms on NTs have to be done one by one. It is not possible to allow or inhibit alarms in all the NTs by one action.

When the **NT alarms are allowed**, the "Allow NT Alarms" button is disabled.

When the **NT alarms are inhibited**, the "Inhibit NT Alarms" button is disabled. When the alarms are inhibited on a given NT, the NT appears grey in the NT list screen to indicate that it is unknown if the NT has or does not have any alarm present.

4.6.2 – Declaring a new NT



To add an NT, click on the button shown here (on the NT screen button bar).
An input screen is displayed:

Click in the **fields** to enter the various information (described below)

Click on the **arrows** to display the list, then select:

- the radio sector (radio link),
- the upstream,
- the list of NT ASAP table (cf. 4.10.2 –)

Mandatory NT characteristics to be entered	Optional NT characteristics to be entered
<p>Serial number (of NT): see data supplied by planner and warning below</p> <p>Radio link: corresponding radio sector from 1 to 4.</p> <p>Upstream: Connected upstream number, from 1 to 4</p>	<p>Name (of NT): by default displays NT#<i>Eqt Index</i></p> <p>Terminal Station link: numerical entry supplied by the planner.</p> <p>Location: town or geographical sector.</p> <p>ASAP: name of alarms correspondence base.</p>
	<p>When entering the Serial Number noted on the label, respect the above syntax: "----CU-serial number" (without space between characters).</p>
	<p>If several NTs are on same RT, the same Upstream must be declared for all NTs.</p>

4.6.3 – NT Details

To access the characteristics of an NT:



- **click** on the button shown here (NT screen button bar),
or else,
- **double-click** directly on a line from the list of NTs.

A global screen is displayed in which (under **Characteristics**) the majority of the items in the § 4.6.2 – *Declaring a new NT* are to be found:

Click on this button to **substitute the NT serial number**: cf.§ 4.6.6

Click on this button to **print the characteristics** of the NT that are displayed in this screen

The screenshot shows the 'NT Detail' window with the following fields and sections:

- Characteristics:**
 - Eqpt ID: 2
 - Name: NT2 (RL#1, US#1)
 - Type: NCA002
 - Version: 2.2
 - Radio link: 1
 - Upstream: 1
 - Vendor Name: ALCATEL
 - Terminal Station: 0
 - Location: [empty]
 - ASAP: ASAP NT default
- States:**
 - Operational: Enabled
 - Administrative: Unlocked
 - Supervision: Supervised
 - Alarm: Allowed
- Buttons:** Apply, Cancel, Close
- Port Table:**

Port	Type	User Label	Operational State
1	Ethernet		Enabled
2	Ethernet		Enabled
3	X21		Enabled
4	G704		Enabled
- Navigation:** Tabs for NTs, Software, Hardware. A large arrow points to the 'NTs' tab.

Will be **automatically** filled in after declaration of the NTs

Will be automatically filled in after the NTs enter the network

Click on this tab to display the **ports** characteristics

Click on the arrow to choose the ASAP table you want to assign to the NT (cf.4.10.2 –)

Click on this tab to display the **hardware** characteristics

Click on this tab to display the **software** characteristics

1. NT ports:

Ports **index**

Ports **type**

Click on the fields to enter the **NT ports label**

Ports **state**

Port	2 E1/2T1	1 E1 and X21
3	G703-1	X21
4	G703-2	G703-1

2. NT software:

Name of the software of the first storage zone

State of the software of the first storage zone

Name of the activated software

Name of the software to be activated automatically after reset

Second software storage zone

Note: Software names are the same except in the case of download.

3. NT hardware:

Click on this tab to return to the NT **ports configuration**

Click on this tab to return to the NT **software**

Reference number of the mother board

Status indication of the mother board

Serial number of the mother board

Reference number of the daughter board

Status indication of the daughter board

Serial number of the daughter board

4.6.4 – NT deletion

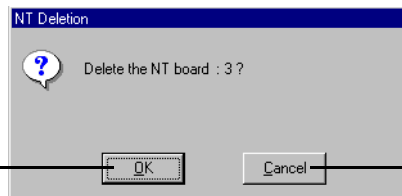
To delete an NT :



- **click** on the NT in the list
- **click** on the button shown here (NT screen button bar).

A confirmation screen is displayed :

Click here to **confirm**
NT deletion



Click here to **cancel**
the NTdeletion request

Note: You have to delete all cross-connections before deleting the NT.

4.6.5 – NT reset

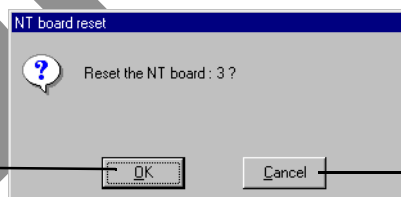
To reset an NT:



- **click** on the NT in the list
- **click** on the button shown here (NT screen button bar).

A confirmation screen is displayed:

Click here to **confirm**
NT reset



Click here to **cancel**
the NTdeletion request

4.6.6 – NT substitution



To substitute an NT, **click** on the button shown here (NT Details button bar).

The following screen is displayed:

NT **identification** number

Current **serial number**

Click here and enter the **new serial number**

Click here to **apply** the NT substitution. After this step the following confirmation screen is displayed.

Click here to **cancel** the NT substitution

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

Click here to **confirm** the NT substitution

Click here to **cancel** the NT substitution

The NT substitution will be effective the first time when the "old" NT will have left the network. Then, the NT with the new serial number will be authorized to enter the network.

4.7 – Radio supervision and parameters

4.7.1 – Radio configuration



To access the supervision and parameters of the **Radio** link, click on the button shown here (**BS** screen button bar)

The **Radio Configuration** screen is displayed and presents the radio **characteristics**.

The screen displays as many "Radio link # ..." tabs as there are radio links in the system (8 maximum).

Click on the arrow to select the **bandwidth**: 14/4 Us*3.5, 28/4 Us*7 MHz (by default: not configured)

No. of the **AMD** board associated with the sector

Click here to enter the **central frequencies** of the **upstream** (reception) and **downstream** (emission) channels (see radio scheduler)

The screenshot shows the 'Radio Configuration' window for 'Radio Link # 3'. It is divided into several sections:

- Characteristics:** AMD Board Associated (5), Channelization (14/4Us*3.5), Encryption Activation (No), Radio Group (1), OTU Manager Reference (90-4568-01-0), Downstream Central Frequency (GHz) (28), Upstream Central Frequency (GHz) (27.5), (Radio frequency step : 250 KHz), and ORU Manager Reference (90-4567-01-0).
- Radio Power Tuning:** Transmission Power (dBm) (17) and Rx Gain (dB) (40).
- Downstream:** Operational State (Enabled) and Administrative State (Unlocked).
- Upstream Channels:** Four upstream channels are listed, each with Operational State (Enabled), Administrative State (Unlocked), Dynamic Traffic Authorized (No), and Nb NT Upstream (3). Each channel has an 'Upstream Activate' checkbox checked.

Annotations on the screenshot include:

- An arrow pointing to the 'AMD Board Associated' field with the text: 'No. of the **AMD** board associated with the sector'.
- An arrow pointing to the 'Upstream Central Frequency (GHz)' field with the text: 'Click here to enter the **central frequencies** of the **upstream** (reception) and **downstream** (emission) channels (see radio scheduler)'.
- An arrow pointing to the 'Encryption Activation' field with the text: 'Encryption activation: No'.
- An arrow pointing to the 'Apply' button with the text: 'Click here to **apply** the modifications'.
- An arrow pointing to the 'Cancel' button with the text: 'Click here to **cancel** the modifications'.
- An arrow pointing to the 'Close' button with the text: 'Click here to **activate** the upstream.'
- An arrow pointing to the 'Nb NT Upstream' field with the text: 'Progression bar representing the **number of NTs** connected to the upstream channel N° 3'.
- An arrow pointing to the 'Close' button with the text: 'Click here to **return** to the BS details screen'.

Note 1: To change a bandwidth, refer to § 7.3.6 – *Change of channelling*.

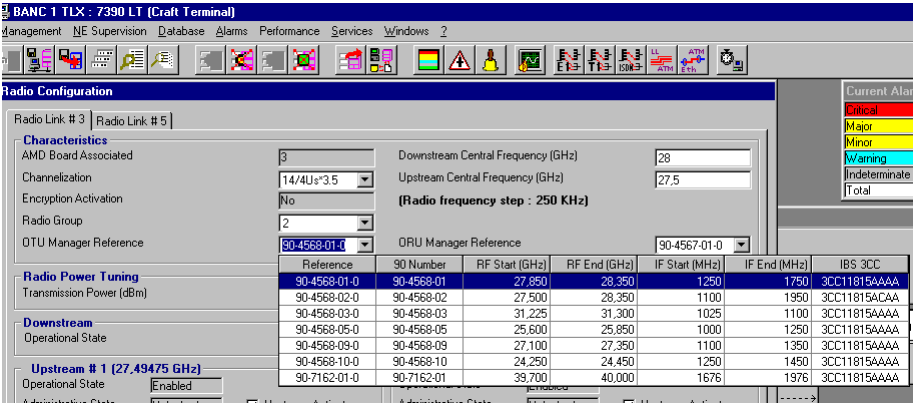
Note 2: Encryption: the data of service are systematically encoded, the management data are not encoded.

Note 3: NT number: move the mouse pointer onto a progression bar and a tooltip displays the ratio between the number of declared NTs and the max. number of managed NTs for a given channel.

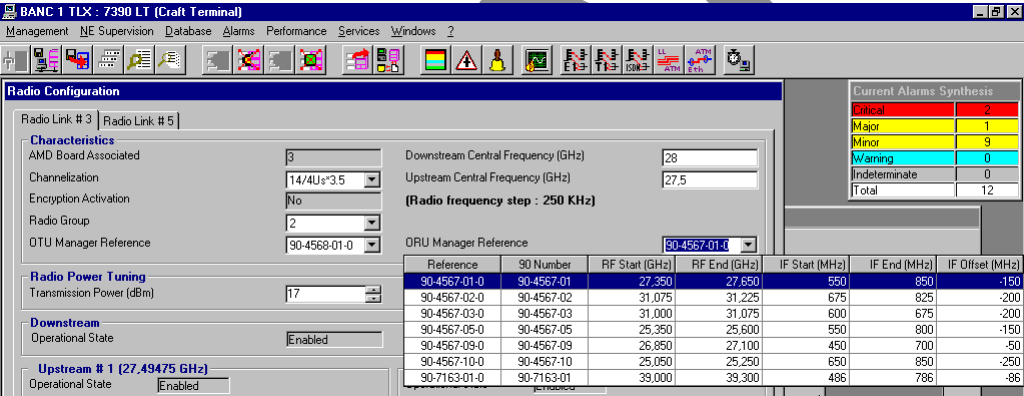
Note 4: As long as there is data traffic on the upstream, you cannot deactivate it.

IF YOU WANT TO CREATE AN IP SERVICE ON AN NT, THE UPSTREAM USED BY THIS NT MUST BE CONFIGURED. CF. § 1..

1. Define the channelization click on the button (14/4 Us*3.5 or 28/4 Us*7 MHz).
2. Define the downstream central frequency.
3. Define the upstream central frequency.
4. Define the frequency of X-Pol Tx (OTU).



5. Define the frequency of X-Pol Rx (ORU).



6. Define the Transmission Power dBm (+17 dBm) with the step of 1 dB.
7. Define the Rx gain dB (-40 dB) with the step of 1 dB.
8. Click for upstream validate.
9. Click on «apply» to take into account the configuration.

4.7.2 – Dynamic Traffic Configuration



To access the configuration of the IP data traffic, click on the button shown here (**BS Details** screen button bar).

The **Dynamic Traffic Configuration** screen is displayed:

Maximum bandwidth compatible with the ATM link

Minimum free ATM bandwidth needed to use dynamic traffic

Progression bar representing the configured bandwidth used by the radio on the ATM maximum bandwidth

Click here to enter Yes to allow or No to forbid dynamic IP traffic (cf: notes below)

Click here to apply the modifications

Click here to cancel the modifications

Click here to return to the BS Details screen

Radio Link	Upstream	Bandwidth (MHz)	Upstream Activate	Dynamic Traffic
1	1	7	Yes	Yes
1	2	7	Yes	Yes
1	3	7	Yes	Yes
1	4	7	Yes	Yes
2	1	7	No	No
2	2	7	No	No
2	3	7	No	No
2	4	7	No	No

Note: You can only **activate dynamic services** (Dynamic Traffic: Yes) if the **upstream is activated** (Upstream: Yes).
(Cf. § 4.7.1 – Radio configuration.)

Note: The authorization facility for Dynamic IP Traffic on any upstream is provided in order to avoid overloading of the ATM interface: the air bandwidth available to data traffic should never exceed the bandwidth available on the ATM interface ("Maximum Bandwidth" u "Configured Bandwidth").

Note: The system controls the configured bandwidth according to the maximum bandwidth of the ATM interface and according to the overbooking configuration.

Services	Unit	Cell/s
Static IP	66.5 Kbps	157
Circuit Emulation (CES)	2 Mb/s (E1)	5447
	1.5 Mb/s (T1)	4107
Dynamic IP	66.5 Kbps	157

4.7.3 – On-demand Service management

4.7.3.1 – Introduction

Radio resources management consists of distributing system resources, for each upstream and downstream channel of each radio link, according to customer services to be created. Customer services are available according to two types of radio traffic: **dynamic** (dynamic IP) and static (leased lines, static IP).

The bit rate available for each radio channel is given by the bandwidth defined in the **Radio Configuration** screen (see § 4.7.1 – *Radio configuration*).

Radio resources management is carried out according to two operating principles (that can be jointly implemented): system **self-management** (default configuration) and **pre-configuration** (carried out by the operator).

	STATIC SERVICES CONFIGURATION MAY CAUSE DYNAMIC IP SERVICES TO BE SHUT DOWN
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- System self-management:
In this case, the system **automatically** manages **the radio part** according to the following principles:
 - by default, overbooking limit is 1. That means no overbooking is allowed.
 - CAG = Guaranteed MCR.
 - RRM Devices Enabled = Policing.

Note: *Circuit emulation always requires a leased line. Radio resources are implicitly dedicated to circuit emulation via the leased line.*

4.7.3.2 – Access to the radio pre-configuration



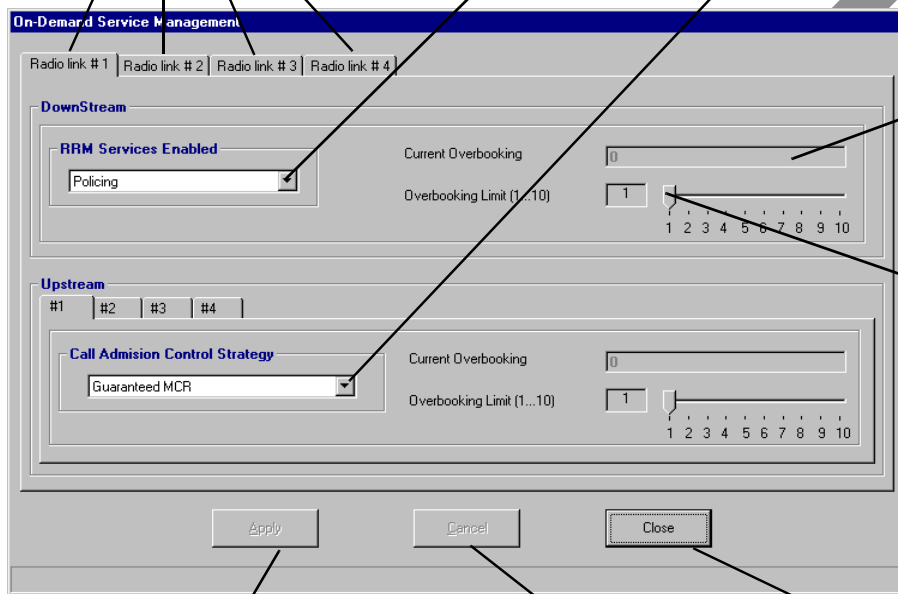
To access **on-demand services** management and proceed with **radio** pre-configuration, click on the button shown here (in the button bar of the **BS Details** screen).

Click on these tabs to configure the other channels

Click on the arrow to enable **Service of RRM**. Policing or No Policing

Click here to select the strategy of **Call Admission Control**: Degraded MCR allowed or Guarranteed MCR - (See below)

Current Overbooking (Downstream or Upstream) for the selected radio-link- (See below)



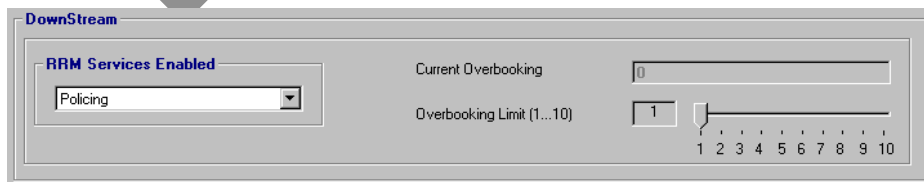
Attribute configurable from the manager that **confines the possible overbooking (Us/Ds)** to this value for the selected radio-link

Click here to take into account the **system on-demand services allocation**

Click here to **cancel** the on-demand services management modifications

Click here to **exit** the on-demand services management window

– Downstream channels

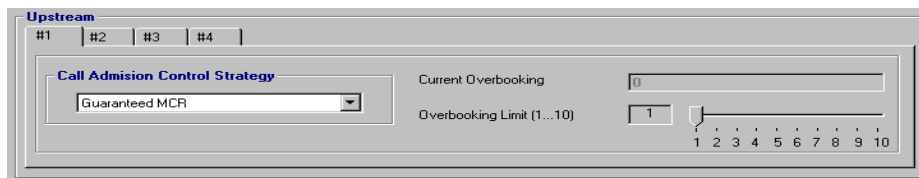


Policing: is a buffer management function that implements intelligent discard mechanisms to prevent buffer overflows.

Overbooking:

- limit = 0 means that overbooking has no sense because in this upstream dynamic traffic is not allowed,

- limit = 1 means no overbooking is allowed,
- limit > 1 means it is possible to use more bandwidth than the physical one.
- **Upstream channels**



Call Admission Control Strategy:

- **Guaranteed MCR**, allows the CAC to deny connection to an RRM port if the current sum of the connected RRM ports does not allow to accept the new RRM port without exceeding the dynamic resources.

Degraded MCR allowed:

- allows the CAC to accept every connection request. In this case, congestion event may happen and the RRM scheduler will need to degrade the MCR contract parameter of each connected RRM port, up to its "maximum degraded MCR".

4.7.4 – Bandwidth allocation

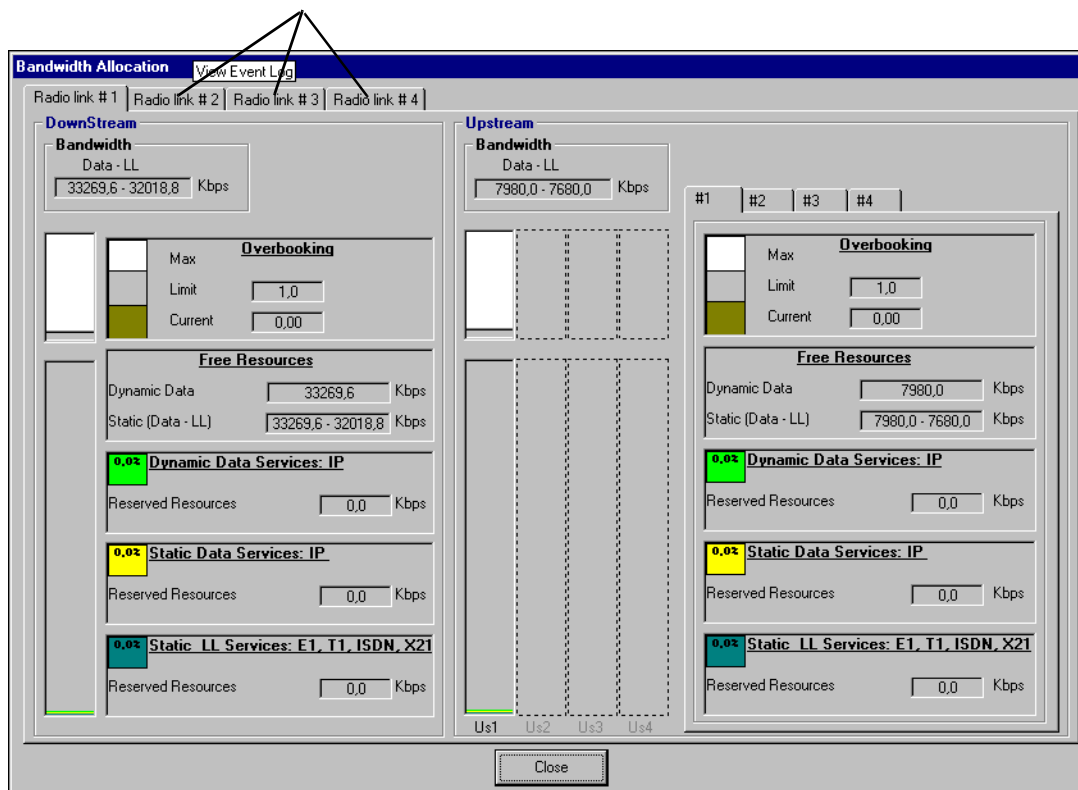
The 7390LT offers the capacity to display radio resources reserved for traffic and therefore potentially available to create customer services.



To **view** reserved **radio** resources, click on the button shown here (**SB Details** screen toolbar).

Nota: *The system always runs in self management mode, but pre-configuration is possible to avoid shutdown during static service creation; thus the system automatically returns to self management mode if the capabilities are exceeded*

Click on these tabs to display the radio resources of the other channels



Meaning of the colors used to show the different parts of the bandwidth:

The **blue** zone represents the bit rate allocated to **leased lines (LL)** type services.

The **yellow** zone represents the bit rate allocated to **static IP (IPstat)** type services.


The **light grey** zone represents the proportion of bit rate still **available** to create new **static services (FreeS)** without disturbing the dynamic zone.

The **dark grey** zone represents the proportion of bit rate still **available** to create new **dynamic services (FreeD)**.

The **green** zone represents the bit rate allocated to the **dynamic IP (IPdyn)** type services, as the physical limit of the system reserved to the dynamic services has not been reached ($OF < 1$).

Once the bandwidth is filled, (maximum bit rate authorized by the system's physical limits), the zone is displayed in **orange** to warn the operator of the risk of dynamic service unavailability.

When the bit rate allocated to the dynamic services exceeds the booking factor limit (OFL), the zone changes to **red**.

	<p>IF THE ZONE IS ORANGE, CHECK THAT SIZE OF THE REMAINING DYNAMIC ZONE IS GREATER THAN THE LARGER DYNAMIC CROSS-CONNECTION</p> <p>IF IT'S NOT THE CASE THIS CONNECTION WILL BE UNAVAILABLE</p>
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The whole **bandwidth** is represented on a scale from **0 to 100%**.

It is divided into three zones: the **static LL zone**, the **static IP zone** and the **dynamic IP zone**.