



Nokia Siemens Networks Flexi WCDMA BTS Operation Administration and Maintenance (WN5.0 – RU10)

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Flexi WCDMA BTS Operation Administration and Maintenance



Learning Element Objectives

After completing this Learning Element, the participant will be able to:

Theory / Practical:

- Describe the operational functionality of the Nokia Siemens Networks Flexi WCDMA BTS
- Describe and demonstrate use of the administrative options available for Nokia Siemens Networks Flexi WCDMA BTS
- Describe and demonstrate use of maintenance options available for Nokia Siemens Networks Flexi WCDMA BTS

Operational Functionality

The Flexi WBTS can be seen as operational, if:

- **OAM IUB** is **connected**
- Operational state is **On Air** and
 - All Local Cells states are: **Operational**
- **TRS** is **Commissioned**
- All **IUB links**
 - **CNBAP**
 - **DNBAP**
 - **OAM**
 - **SAAL2** are **connected**
- **WCDMA BTS Loop Test** has run successfully.
- Test calls are successful
- The BTS is free of unexpected alarms
- Remote Management (RNC / NetAct) is working.



Operational Functionality

BTS Hardware

TRG Hardware

Commissioning

BTS PM

ATM

IP

TRG PM

Flexi WCDMA BTS

PRG1

PRG2

PTIA

FSHB

1

2

1

Local Cells

1

2

3

1

2

3

Local Cell Groups

1

BTS Site Properties

Site Name: Kukko

BTS Name: WCDMA Flexi BTS

BTS Address: 10.34.0.68

RNC Address: 10.34.0.70

SW Release Version: WNS.0 12.4-45

States

BTS Operational State: On Air

Blocking State: Unblocked

Master Units: System module as GSM Master, Telecom Master, Active Clock

Synchronisation Source: Iub/Transmission

10 MHz System Clock Output: Disabled

Block BTS...

Unblock BTS...

Reset Site...

Cancel Reset

Alarms (1 Active)

Severity

Time GMT+02:00

Description

Source

Major

Dec 3, 2008 11:31:22 AM

Licence missing for feature UBR+

TRG: NE

Details

Code:

Scope:

Status:

Started:

Cleared:

Show Source

Connected to BTS, TRG

Reduced Compatibility

Start

BTSLog started at: 20.1...

C:\BTS_SW\WNS

Flexi WCDMA SW Update ...

Presentation3

Nokia Siemens Netwo...

Snagit

OAM Tsub Connected

On Air

TRG Commissioned

11:40

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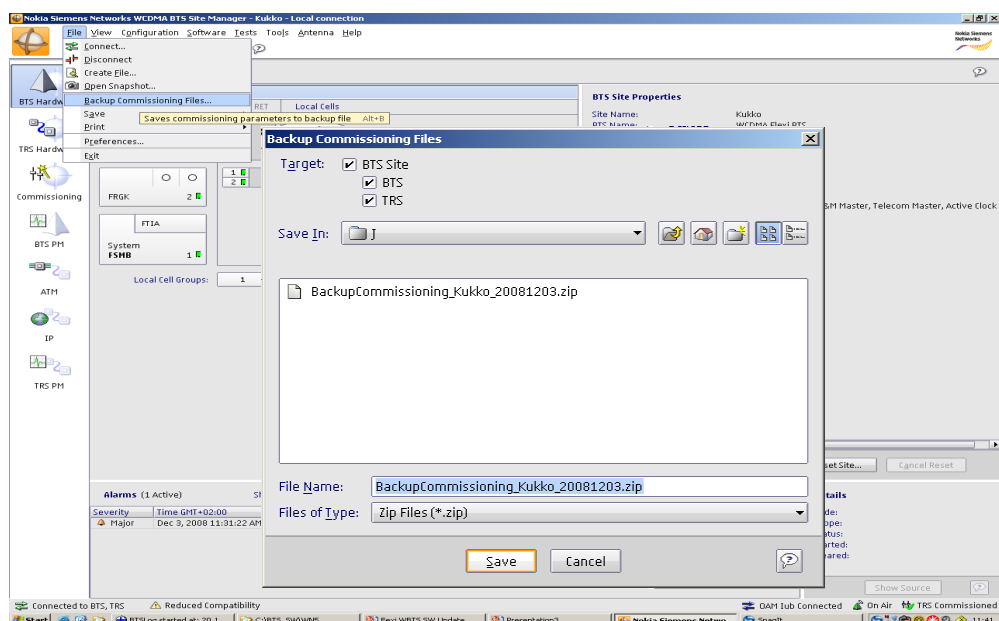
6

Administrative Options

- Saving Commissioning Backup File
- Saving Snapshots
- Saving BTS alarm and events
- BTS User Authentication
- BTS Site Information
- BTS Events
- BTS FTP/Telnet Access
- Blocking Cells, BTS, Modules and Reset Site

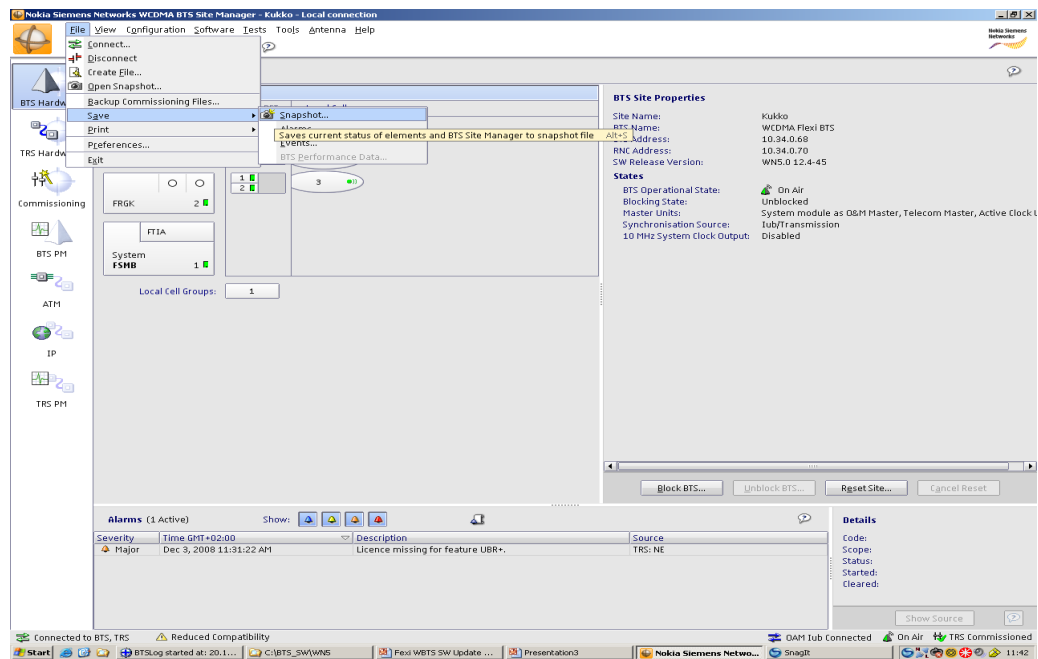


Saving Commissioning Backup File





Saving Snapshot 1/2



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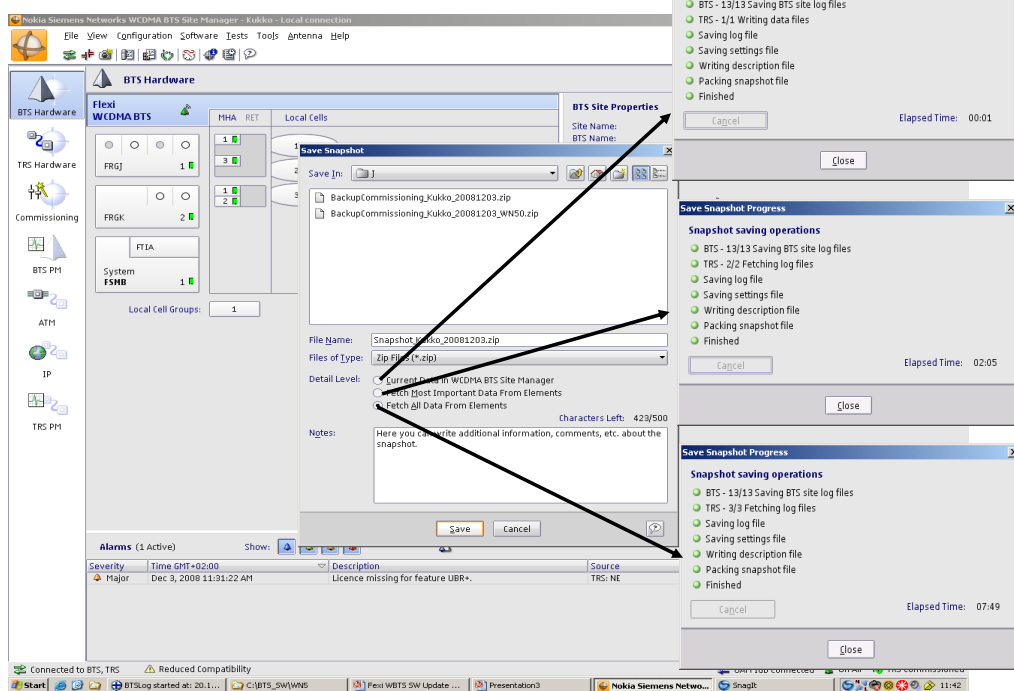


Saving snapshot file

Purpose

You can save a snapshot file that can be used for troubleshooting. The snapshot file can be saved in the connected mode and it contains the current status of elements and Nokia WCDMA BTS Site Manager: used HW configuration, logs, alarms, HW and SW version information, for example.

Saving Snapshots 2/2



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Steps

Choose File → Save As → Snapshot to open the Save Snapshot dialog box.

Enter the filename and define the location for the file to be saved.

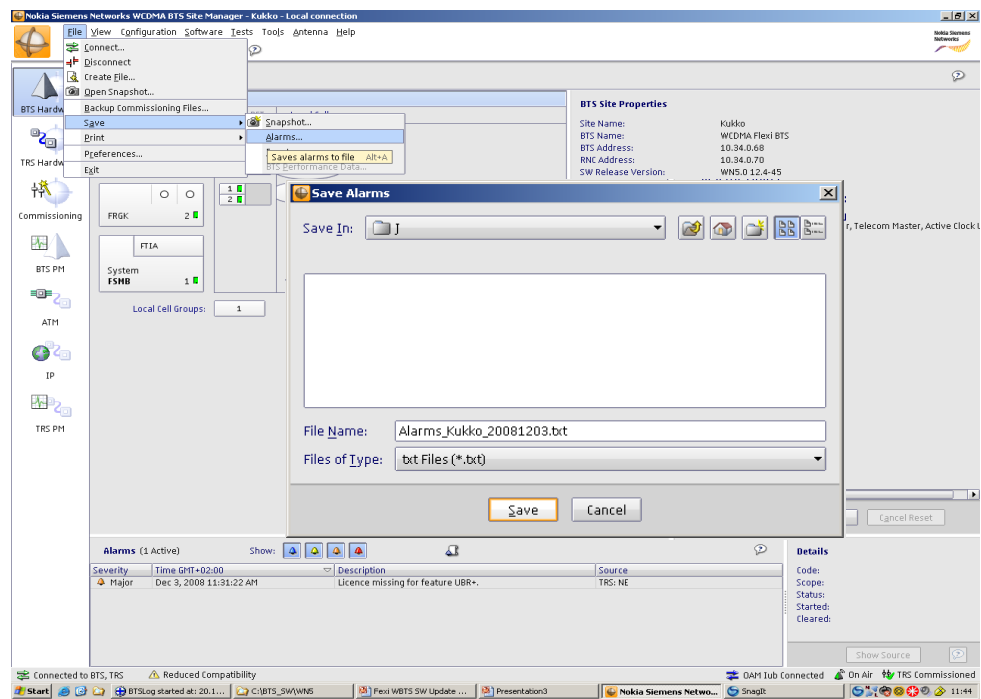
The default file name is Snapshot_<Site name>_<yyyymmdd>.xml. The default location is the folder where you have saved snapshot files previously or your default working folder (My Documents, for example).

Select the Detail Level, that is, the amount of information to be saved in the snapshot file.

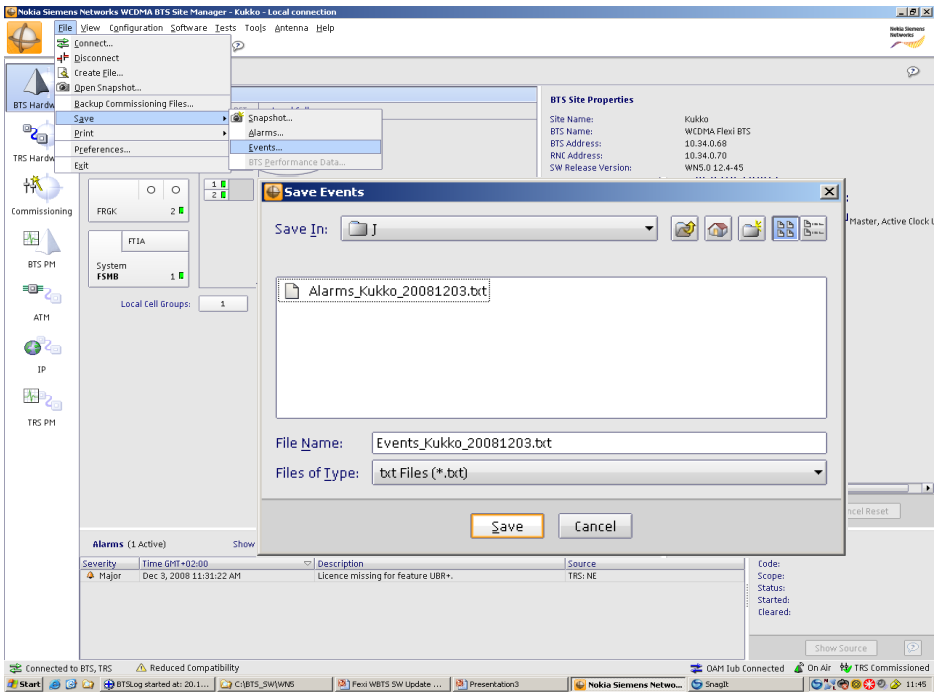
Enter the description of the situation when the snapshot was taken in the Notes field.

Click the Save button.

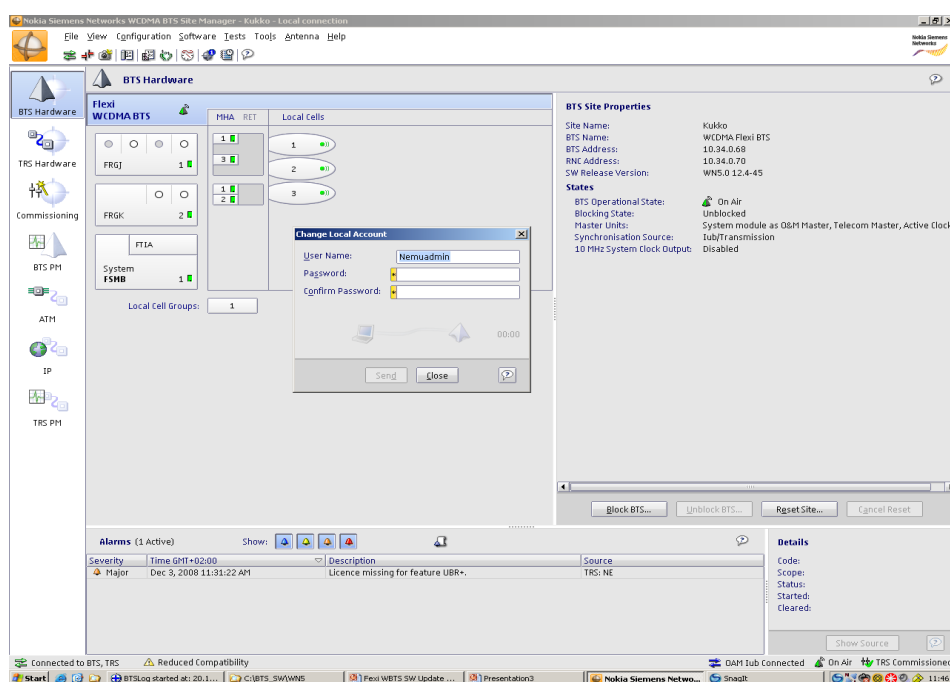
Saving BTS Alarm



Saving BTS Events



BTS User Authentication



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Defining user authentication

Purpose

User authentication is used to restrict illegal access to the BTS. You can enable, change or disable the super user account in the User Authentication dialog box.

Steps

Choose the Configuration → User Authentication menu item to open the User Authentication dialog box.

Select the Authentication In Use check box if you want the user authentication to be used, or clear the check box if you want to disable the user authentication.

If you are enabling the user authentication, enter the New User Name and New Password in the fields, and rewrite the new password in the Confirm New Password field. Click the Send button.

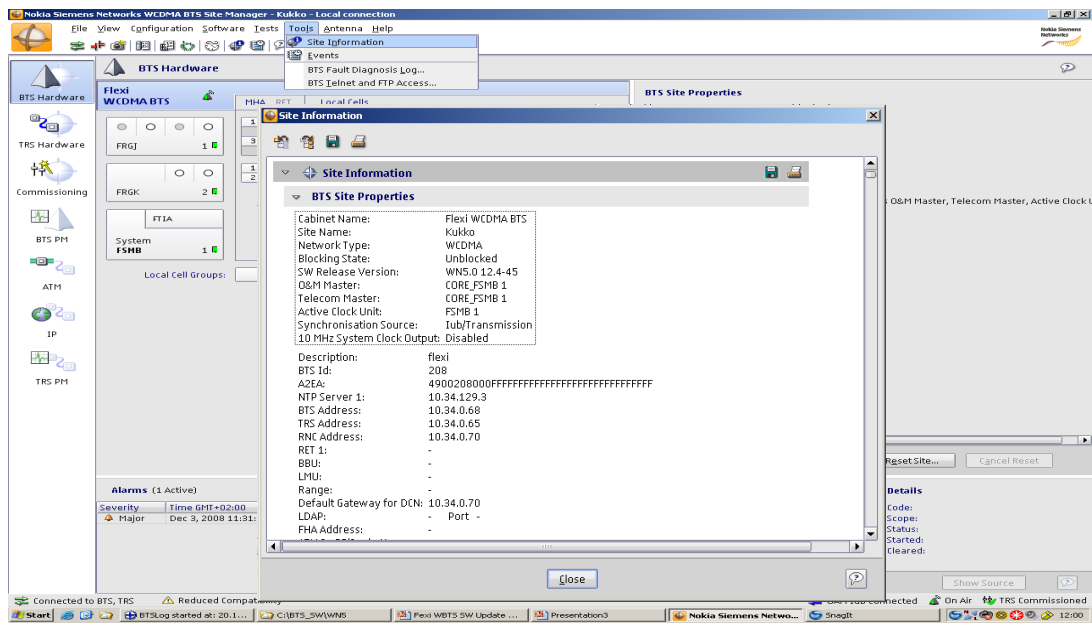
If the user authentication is enabled and you want to change the user name and/or password, enter the New User Name and/or New Password in the fields, and rewrite the new password in the Confirm New Password field if necessary. Click the Send button.

If you want to modify the user name only, you can leave the New Password and Confirm New Password fields empty.

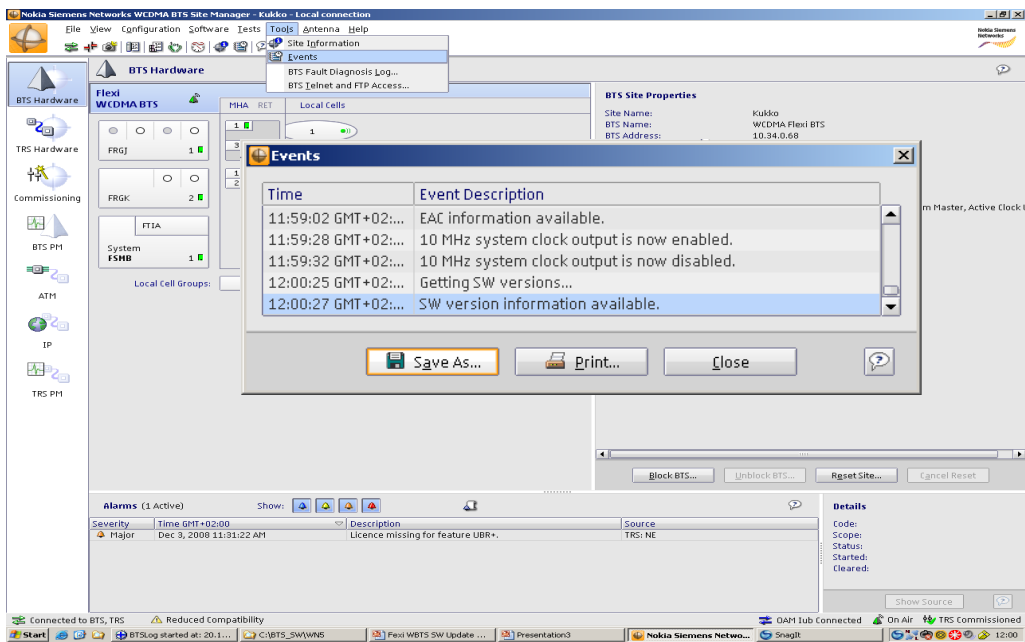
If you are disabling the user authentication, enter the Current User Name and Current Password in the fields, and click the Send button.

Click the Close button to close the dialog box.

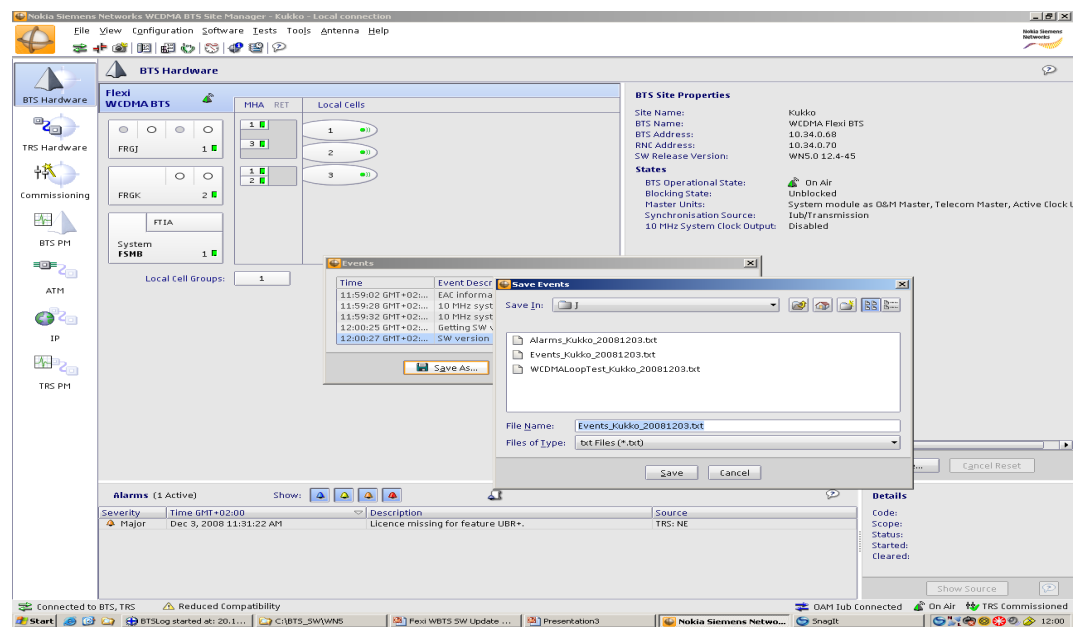
BTS Site Information



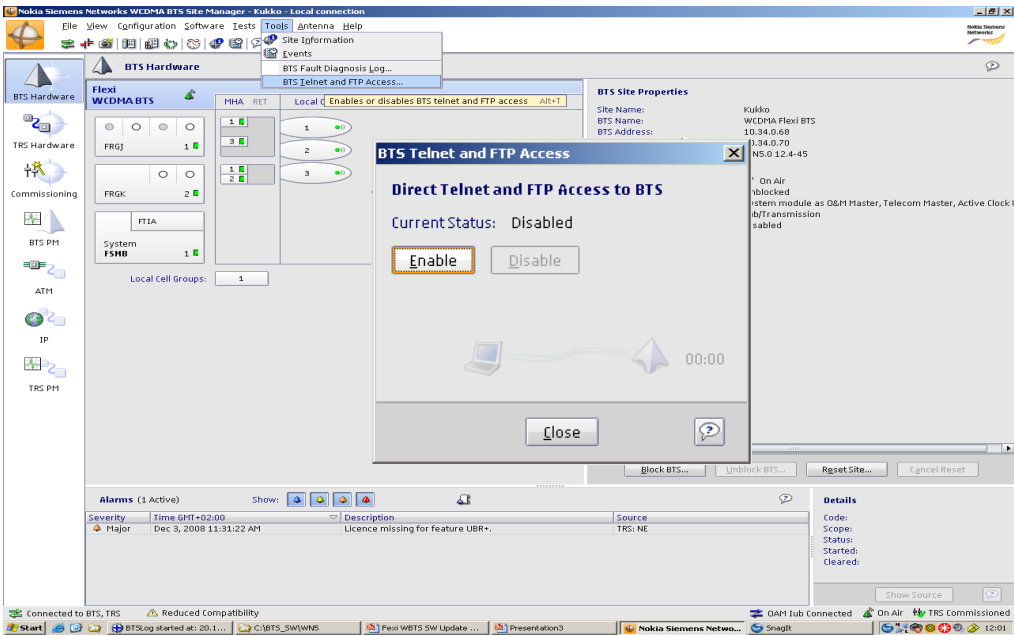
BTS Events



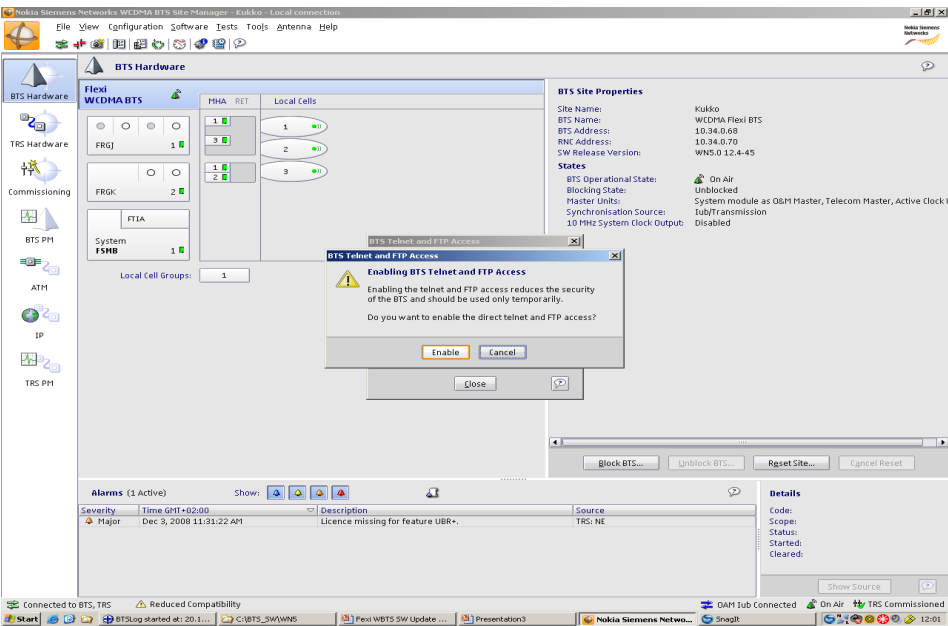
Saving BTS Events



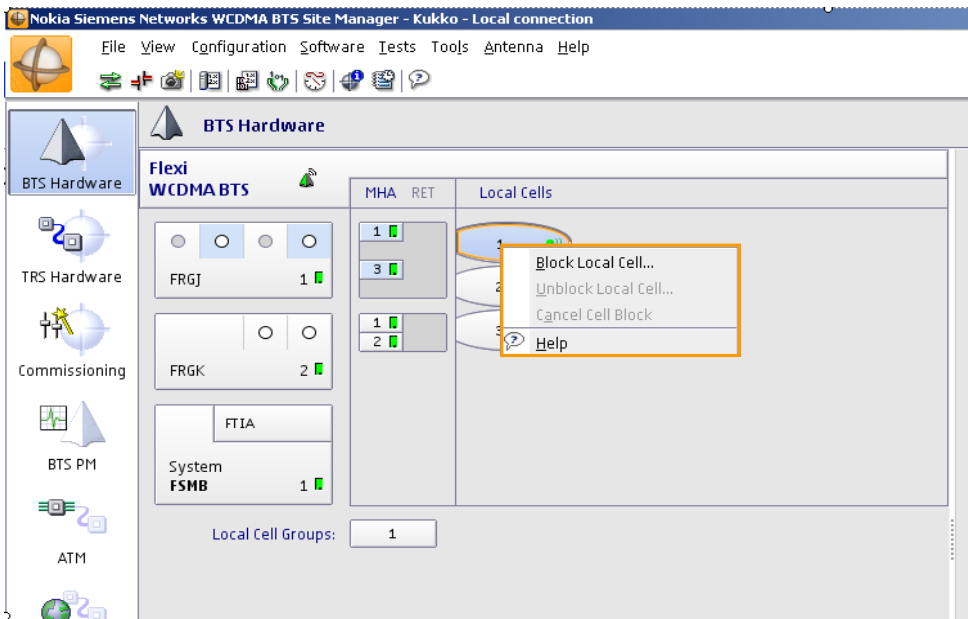
BTS Telnet and FTP Access 1/2



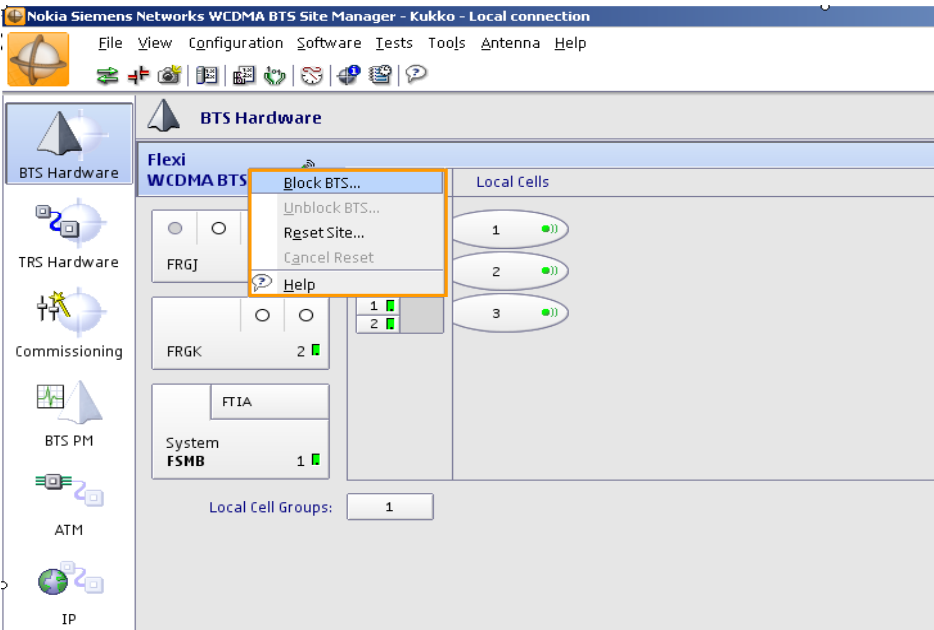
BTS Telnet and FTP Access 2/2



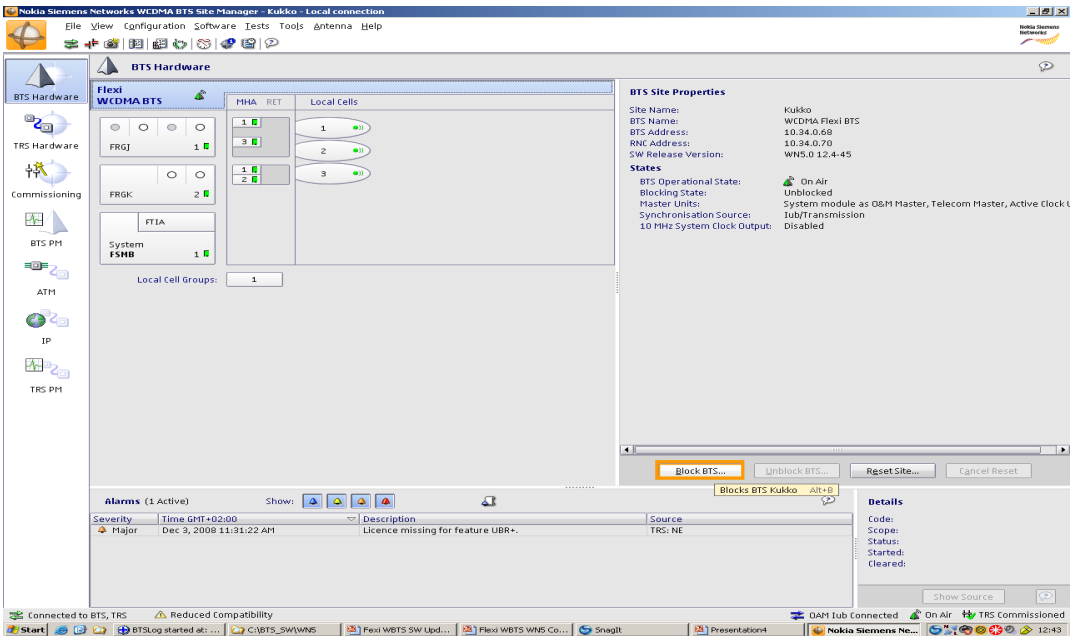
Block Local Cells



Block BTS 1/2



Block BTS 2/2



Block Module

Nokia Siemens Networks WCDMA BTS Site Manager - Kukko - Local connection

File View Configuration Software Tests Tools Antenna Help

BTS Hardware

Flexi WCDMA BTS

	MHA	RET	Local Cells
FRGJ 1	1		1
	3		2
FRGK 2	1		3
	2		

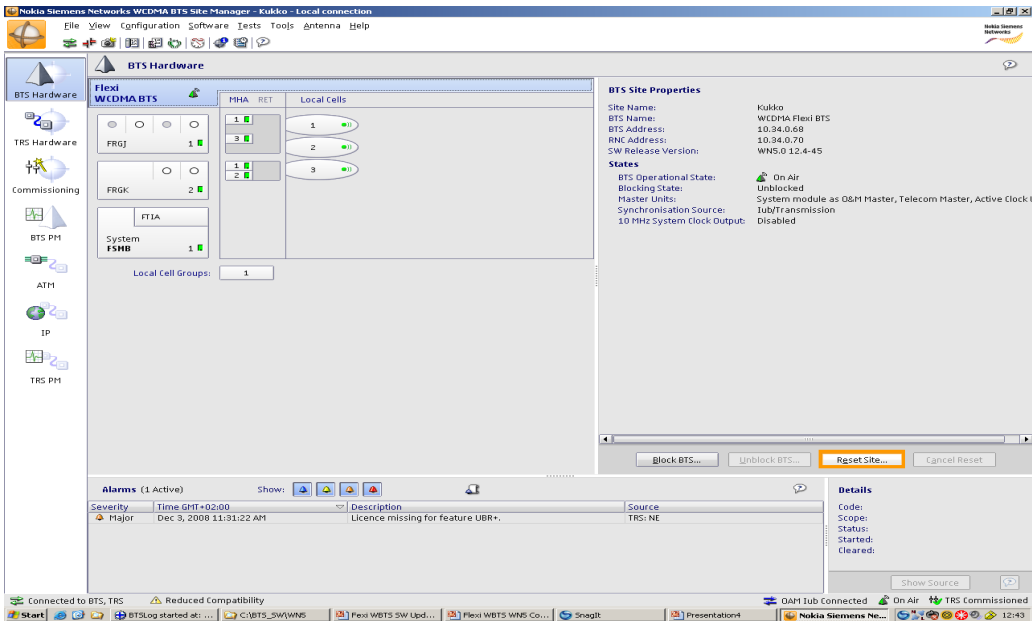
FTIA

System FSMB

Block Module...
Unblock Module...
Help

Loc?

Reset Site



The screenshot displays the Nokia Siemens Networks WCDMA BTS Site Manager interface for a site named 'Kukko'. The main window is titled 'BTS Hardware' and shows a tree view on the left with categories like BTS Hardware, TRS Hardware, Commissioning, BTS PH, ATM, IP, and TRS PH. The central pane shows the 'Flexi WCDMA BTS' configuration, including a table for 'Local Cells' with columns 'MHA', 'RET', and 'Local Cells'. The 'Local Cells' column lists cells 1, 2, and 3. The 'BTS Site Properties' pane on the right shows details for the 'Kukko' site, including Site Name, BTS Name, BTS Address, RNC Address, SW Release Version, and States. The 'States' section indicates the BTS is 'On Air' and 'Unlocked'. At the bottom of the interface, there is a 'Block BTS...' button, an 'Unblock BTS...' button, and a 'Reset Site...' button, which is highlighted in orange. Below these buttons is an 'Alarms' section showing one active alarm: 'Licence missing for feature UBR+'. The status bar at the bottom indicates 'Connected to BTS, TRS' and 'Reduced Compatibility'.

Maintenance Options

BTS SW version check / update

Antenna Line Management

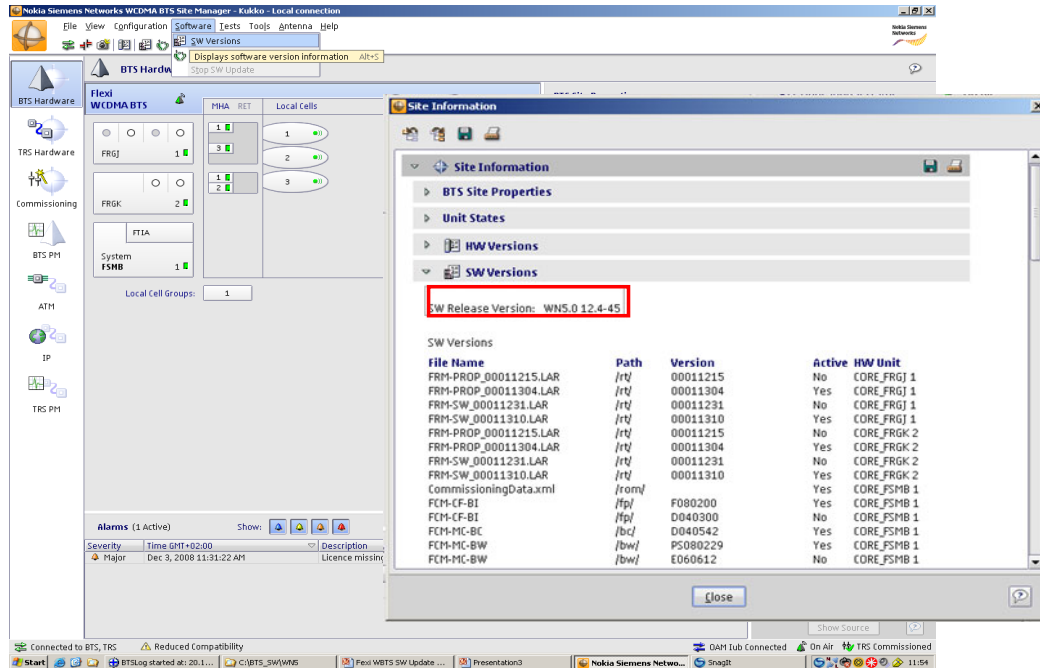
Tuning Antenna Line VSWR Threshold Value

BTS Clock Fast Tune

Tests

- Site Tests... (Ethernet Test)
- WCDMA Loop Test
- EAC Functionality Test
- Transmission Interface Loops
- IP Connectivity Test

BTS SW Versions 1/5



The screenshot shows the 'Site Information' window with the 'SW Versions' tab selected. The 'SW Release Version' is highlighted in a red box as 'WNS.0 12.4-45'. Below this, a table lists the SW versions for the site.

File Name	Path	Version	Active	HW Unit
FRM-PROP_00011215.LAR	/rt/	00011215	No	CORE_FRGJ 1
FRM-PROP_00011304.LAR	/rt/	00011304	Yes	CORE_FRGJ 1
FRM-SW_00011231.LAR	/rt/	00011231	No	CORE_FRGJ 1
FRM-SW_00011310.LAR	/rt/	00011310	Yes	CORE_FRGJ 1
FRM-PROP_00011215.LAR	/rt/	00011215	No	CORE_FRGK 2
FRM-PROP_00011304.LAR	/rt/	00011304	Yes	CORE_FRGK 2
FRM-SW_00011231.LAR	/rt/	00011231	No	CORE_FRGK 2
FRM-SW_00011310.LAR	/rt/	00011310	Yes	CORE_FRGK 2
CommissioningData.xml	/rom/		Yes	CORE_FSMB 1
FCM-CF-BI	/fp/	F080200	Yes	CORE_FSMB 1
FCM-CF-BI	/fp/	D040300	No	CORE_FSMB 1
FCM-MC-BI	/bc/	D040542	Yes	CORE_FSMB 1
FCM-MC-BW	/bw/	P5080229	Yes	CORE_FSMB 1
FCM-MC-BW	/bw/	E060612	No	CORE_FSMB 1

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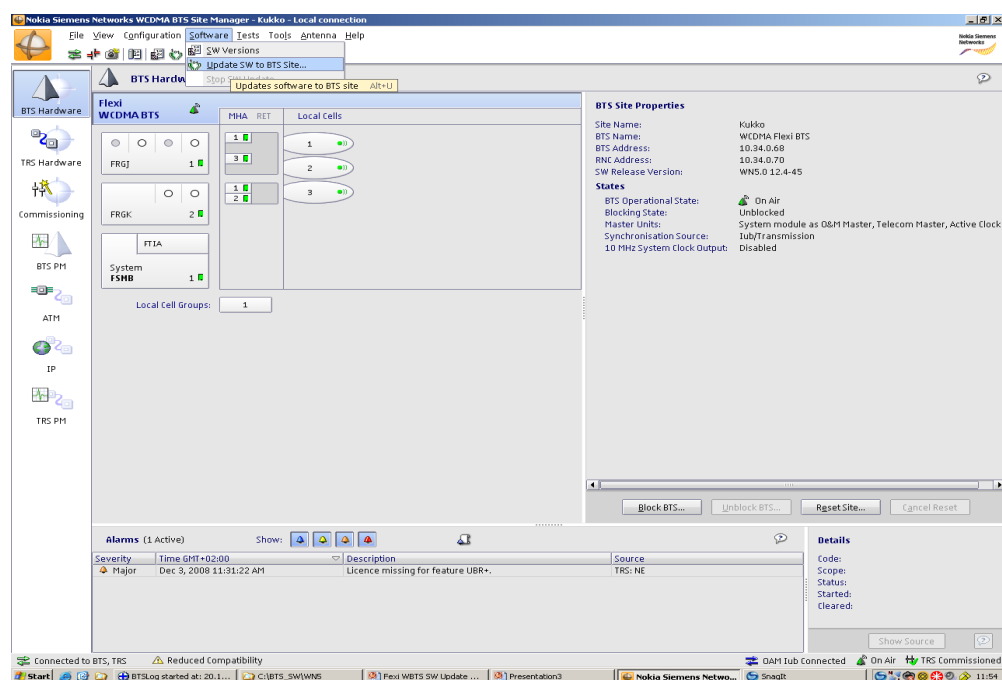
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The SW Versions view shows the active SW Release Version.
In addition all SW files, in both the active and inactive bank are listed.



BTS SW Update 2/5



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Updating BTS site software

Purpose

In the [Update SW to BTS Site](#) dialog box you can update new software to the BTS site. This procedure does not download those application files existing in the BTS or TRS that have the same version information. You can view the current SW versions in the [Site Information](#) dialog box by choosing the *Software* → *SW Versions* menu item.

Note

If the BTS site has connection to the NetAct, the NetAct will manage the BTS and TRS SW (that is, checks the SW version and, if it is different than the SW in the NetAct database, downloads new SW to the BTS site).

Steps

Choose the *Software* → *Update SW to BTS Site* menu item to open the *Update SW to BTS Site* dialog box.

Click the *Select File* button to locate the master file containing the new software.

The *Select Build Descriptor* dialog box opens.

Locate and select the master file (TargetBD.xml), and click the *Open* button.

The *Select Build Descriptor* dialog box closes and the new SW version is displayed in the *Update SW to BTS Site* dialog box.

Select the *Activate SW After Update* check box to enable the activation of the new software in accordance with SW updating.

Note

If you do not want to activate the new software at the same time with updating it, you can leave the option unchecked, and the SW is downloaded to the BTS site in the background only. To activate the SW later with *Activate SW After Update* selected, you have to perform the SW update again.

Click the *Update* button.

SW download takes about 20 minutes. The *Update Progress* steps show the transfer status of files.

Wait for the SW update complete notification. If the *Activate SW After Update* check box was selected, the SW will be activated and the site will be reset.

Note

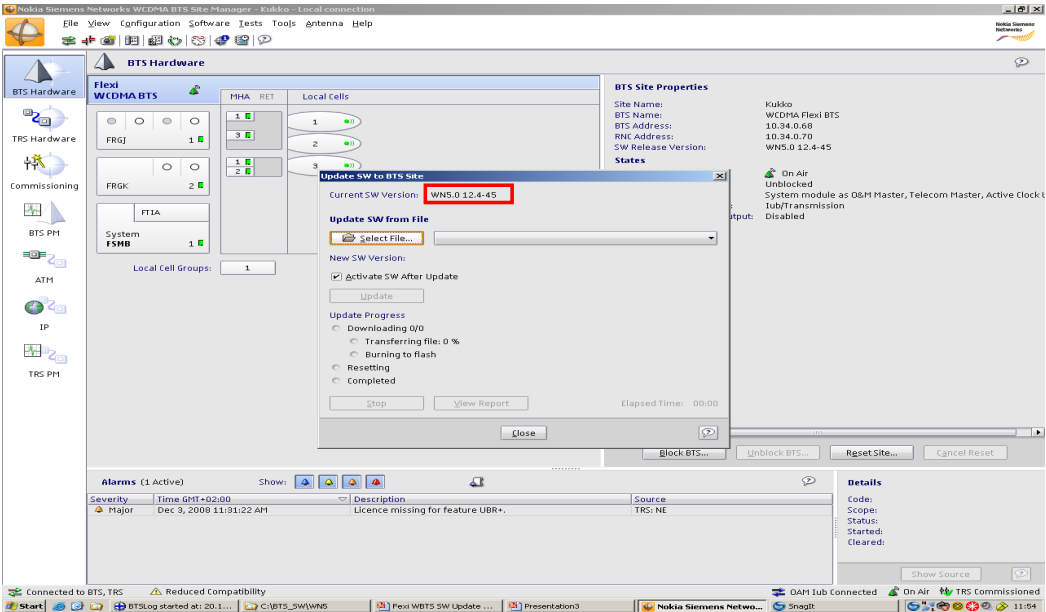
If the SW download fails, update the software again.

If you want to view information on the SW download, click the *View Report* button.

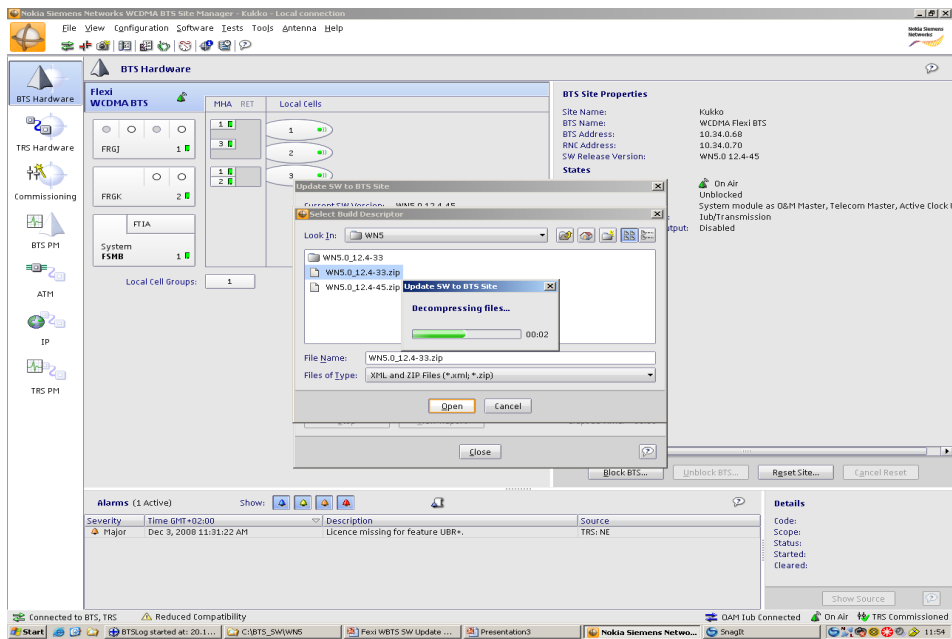
The [Software Update Report](#) dialog box opens.

Click the *Close* button to close the *Update SW to BTS Site* dialog box.

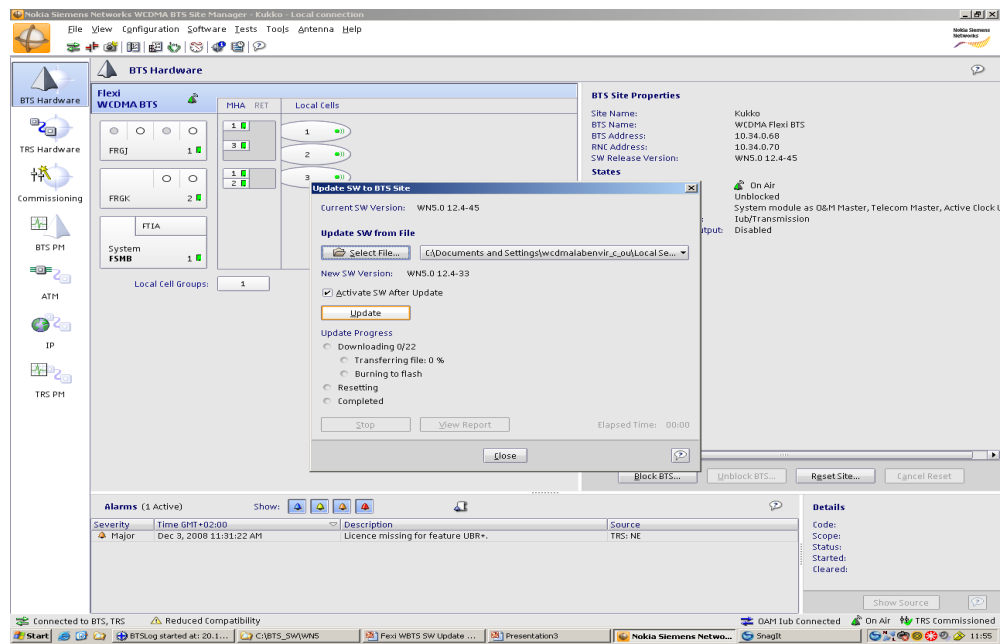
BTS SW Update 3/5



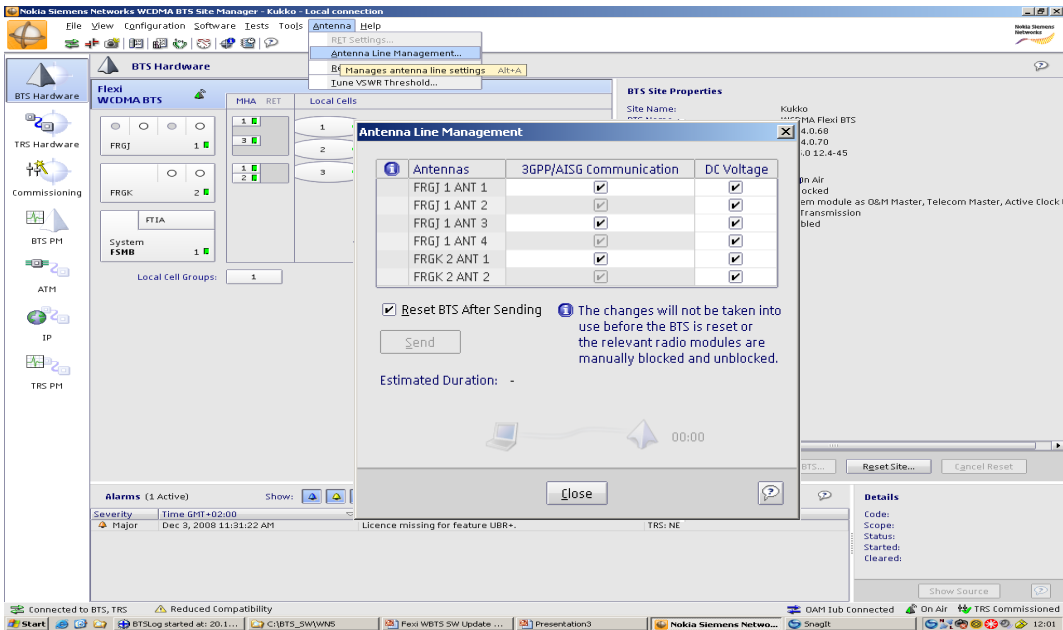
BTS SW Update 4/5



BTS SW Update 5/5



Antenna Line Management



The screenshot shows the 'Antenna Line Management' dialog box in the Nokia Siemens Networks WCDMA BTS Site Manager. The dialog box has a title bar and a menu bar. The main area contains a table with columns 'Antennas', '3GPP/AISG Communication', and 'DC Voltage'. The table lists six antennas: FRGJ 1 ANT 1, FRGJ 1 ANT 2, FRGJ 1 ANT 3, FRGJ 1 ANT 4, FRGK 2 ANT 1, and FRGK 2 ANT 2. All '3GPP/AISG Communication' and 'DC Voltage' checkboxes are checked. Below the table, there is a checkbox for 'Reset BTS After Sending' which is checked, and a 'Send' button. A message states: 'The changes will not be taken into use before the BTS is reset or the relevant radio modules are manually blocked and unblocked.' The 'Estimated Duration' is shown as '-'. At the bottom of the dialog box are 'Close' and 'Help' buttons. The background shows the 'BTS Hardware' and 'BTS Site Properties' windows.

Antennas	3GPP/AISG Communication	DC Voltage
FRGJ 1 ANT 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FRGJ 1 ANT 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FRGJ 1 ANT 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FRGJ 1 ANT 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FRGK 2 ANT 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FRGK 2 ANT 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Tuning Antenna Line VSWR Threshold Value

Nokia Siemens Networks WCDMA BTS Manager - Eulko - Local connection

File View Configuration Software Tests Tools Antenna Help

Antenna Settings...
Antenna Line Management...
Real Tilt
Tune VSWR Threshold...

BTS Hardware

Flexi WCDMA BTS

MHA RET Local Cells

BTS Site Properties

Antenna Line VSWR Threshold Values

Tune	Local Cells	Antennas	Minor Alarm	Major Alarm	Alarms
<input checked="" type="checkbox"/>	1, 2	FRG1 ANT1			
<input type="checkbox"/>	1, 2	FRG1 ANT3			
<input type="checkbox"/>	3	FRG2 ANT1 + ANT2			

VSWR Value (1.5...3.5)

Start Tuning

Test Values

Stop and Save

Stop without Saving

00:00

VSWR threshold tuning requires a licence.

Close

Alarms (1 Active)

Severity	Time GMT+02:00
Major	Dec 3, 2008 11:31

Reset Site... Cancel Reset

Details

Code:
Scope:
Status:
Started:
Cleared:

Show Source

Connected to BTS, TRS Reduced Compatibility

Start

C:\BTS_SW\WMS

Flexi WCDMA SW Update ...

Presentation3

Nokia Siemens Networks

OAM Hub Connected

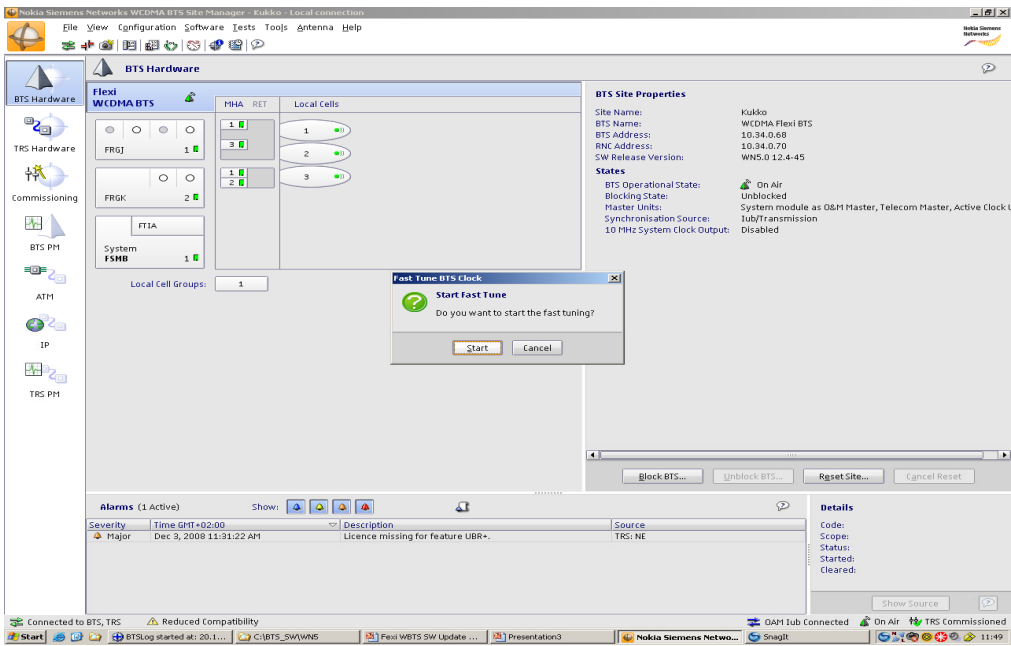
On Air

TRS Commissioned

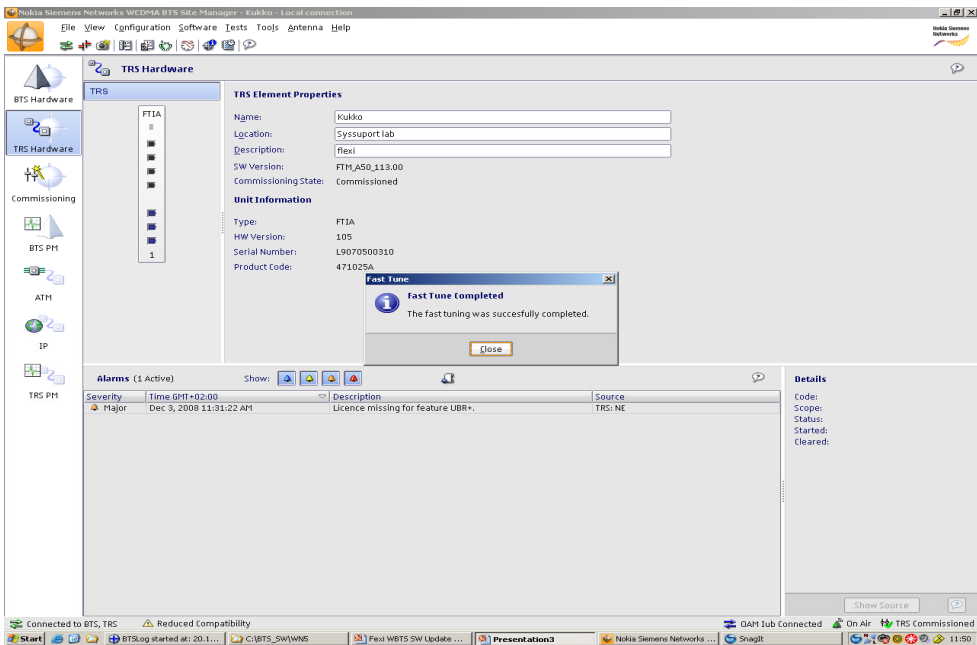
Snagit

12:02

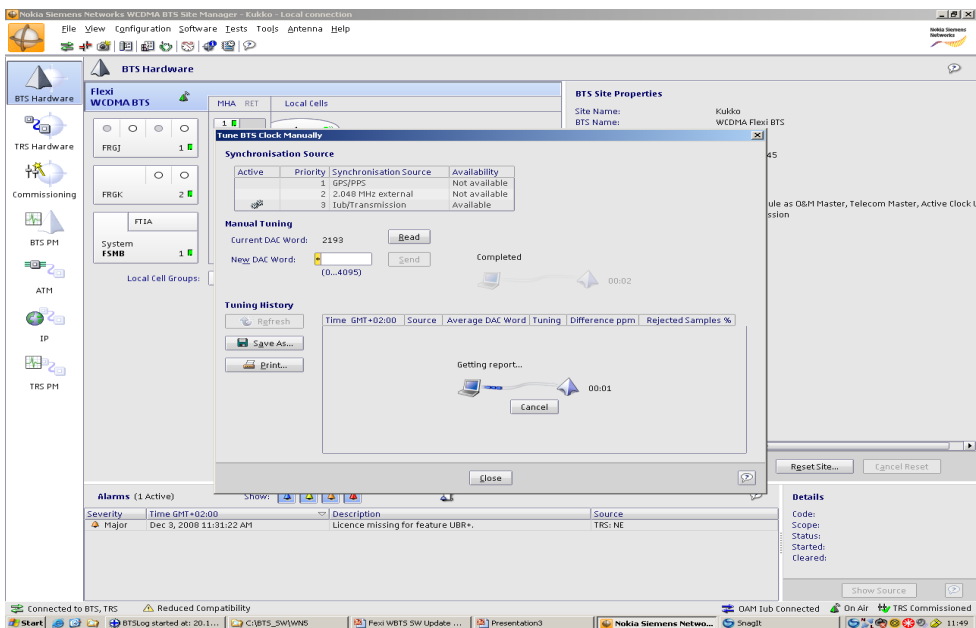
Fast Tune BTS Clock 1/2



Fast Tune BTS Clock 2/2



Tuning BTS Clock Manually



Site Information

Site Information

Module Properties

RET Properties Data Unavailable

MHA Properties

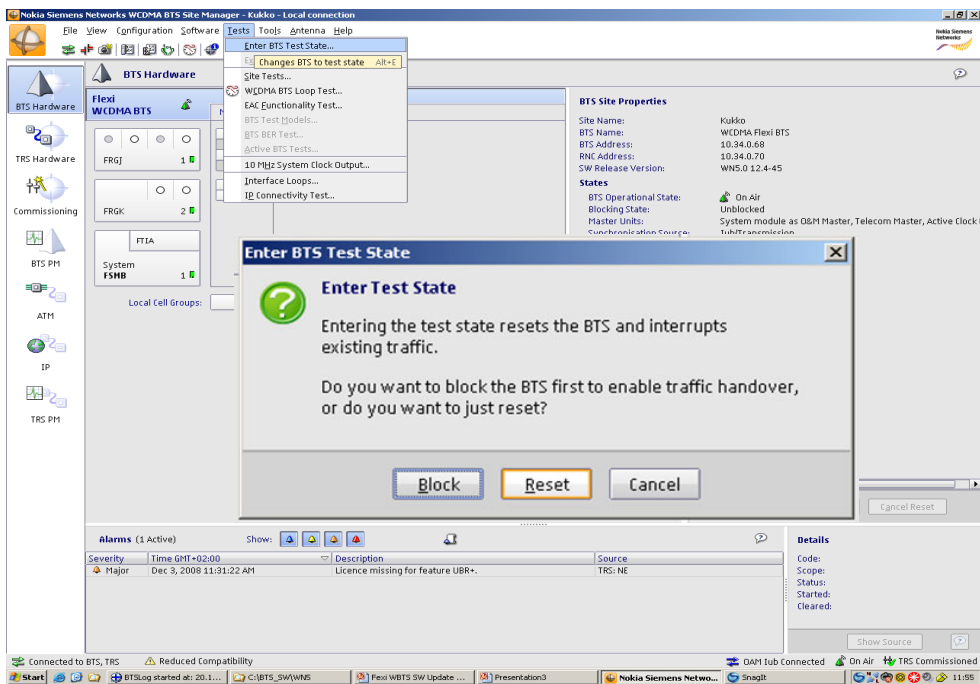
Passive Units Data Unavailable

BTS Clock Tuning History

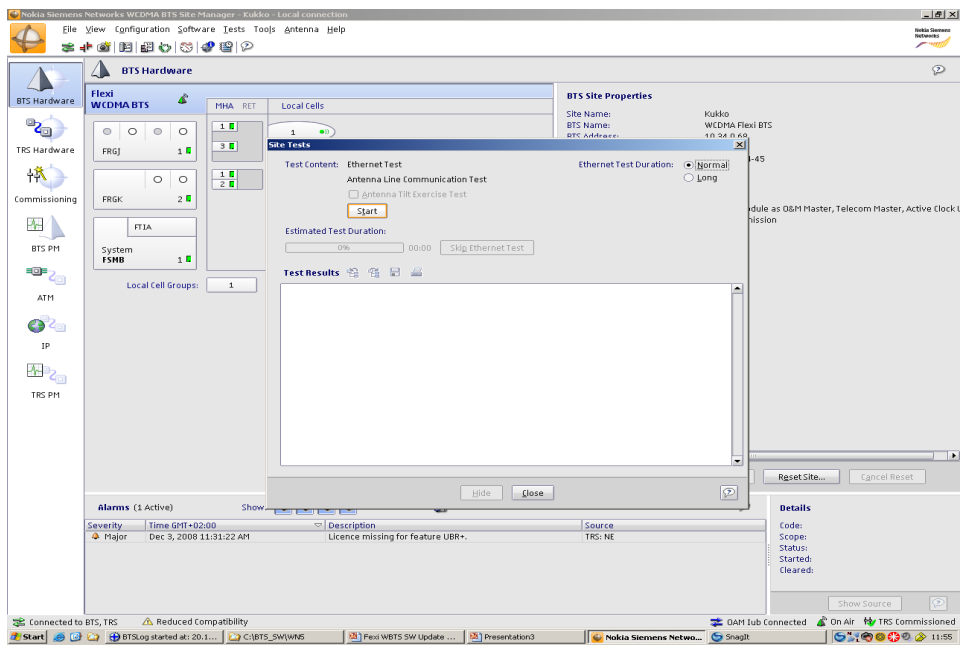
Time	GMT+02:00	Source	Average DAC Word	Tuning	Difference ppm	Rejected Samples %
03.12.2008	11:18	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	10:58	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	10:37	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	10:17	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	09:56	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	09:36	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	09:15	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	08:55	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	08:34	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	08:14	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	07:53	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	07:33	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	07:12	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	06:52	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	06:31	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	06:11	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	05:50	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	05:30	Iub/Transmission	2195	Normal	0.00	0.0
03.12.2008	05:10	Iub/Transmission	2195	Normal	0.00	0.0

Close

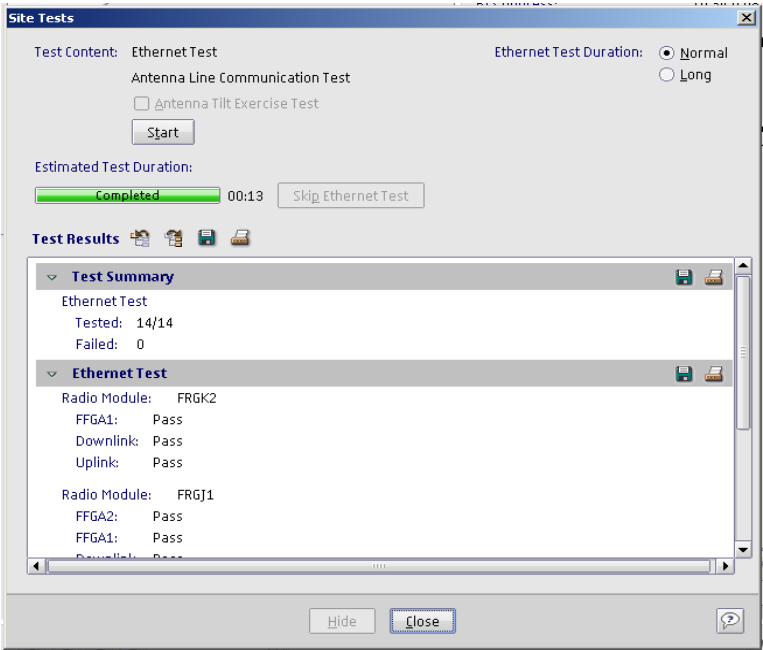
Tests



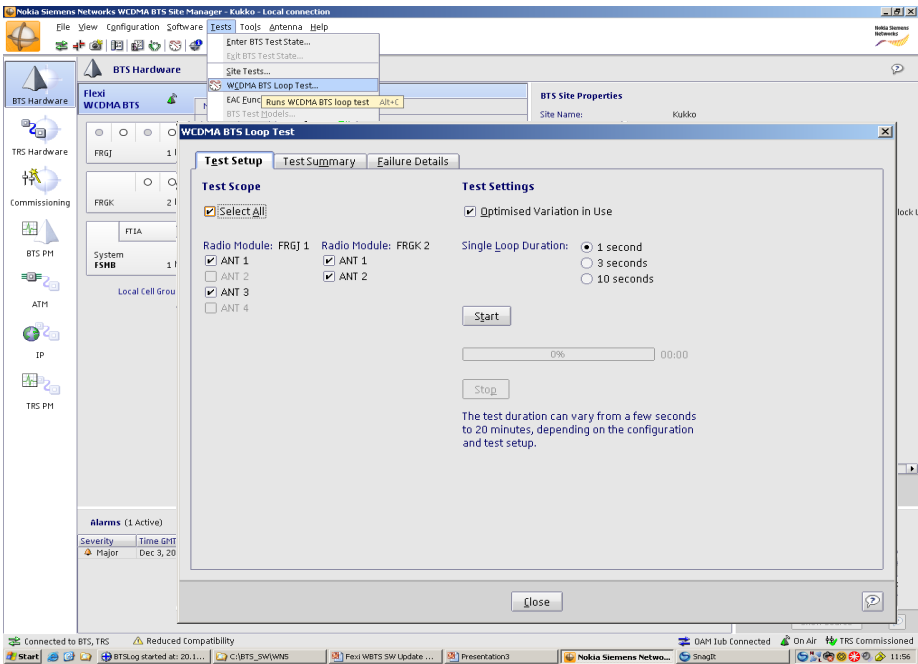
Site Test 1/2



Site Test 2/2

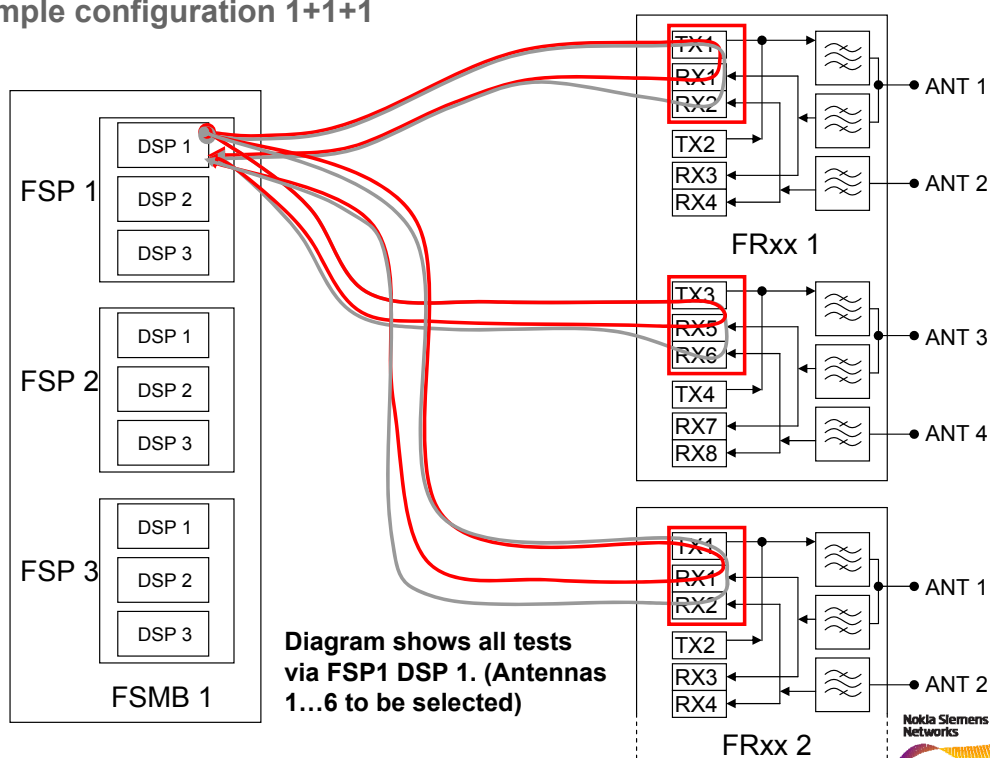


WCDMA Loop Test 1/7



WCDMA Loop Test 2/7

in an example configuration 1+1+1



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Selection of tests is done by selecting antennas (see next page).

Example: Selection of **Antenna 1 only** will suppose the following components for the test:

FSP 1, DSP 1...3

FSP 2, DSP 1...3

FSP 3, DSP 1...3

TX 1

TX 2 (not tested in 1+1+1)

RX 1

RX 3 (not tested in 1+1+1)

Total number of tests can be calculated from No. of DSPs x no. of RXs (belonging to the configuration and connected to the selected antenna(s)).



WCDMA Loop Test 3/7

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WCDMA BTS Loop Test - Test Setup

Choosing the *Tests* → *WCDMA BTS Loop Test* menu item or clicking the *Test* button in the [Commissioning - Site Testing](#) page opens the WCDMA BTS Loop Test dialog box, where you can test internal connections of the BTS. The dialog box contains three tabs: *Test Setup*, [Test Summary](#) and [Failure Details](#).

The WCDMA loop test can be performed to verify commissioning, integration or reconfiguration, or to find a cause for a problem. **The test can be run when the operational state of the BTS is 'On Air', 'Integrated to RAN' or 'Test dedicated'.**

In the *Test Setup* tab you can select which units to run the test with and how many test sequences (duration for a single loop) to run.

Test Scope

Select the *Select All* check box if you want to test all antenna connectors, or select the appropriate check boxes to test the antenna connectors for radio modules individually.

Single Loop Duration

Select the *Single Loop Duration* by clicking the appropriate option: 1 second (default), 3 seconds or 10 seconds.

Start

Click *Start* to begin the test sequences. The progress bar shows the progress of the ongoing tests.

Stop

Click *Stop* if you want to stop the test.



WCDMA Loop Test 4/7 Test Summary

Antenna	Total	Not Executed	Failed
FRGC 1 ANT 1	9	0	2
FRGC 1 ANT 2	9	0	2
FRGC 1 ANT 3	9	0	2
FRGC 1 ANT 4	9	0	2
FRGC 2 ANT 1	9	0	2
FRGC 2 ANT 2	9	0	2

Buttons: Save Report..., View Report, Close

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WCDMA BTS Loop Test - Test Summary

Choosing the *Tests* → *WCDMA BTS Loop Test* menu item or clicking the *Test* button in the [Commissioning - Site Testing](#) page opens the WCDMA BTS Loop Test dialog box containing three tabs: [Test Setup](#), [Test Summary](#) and [Failure Details](#).

The *Test Summary* tab opens automatically when the WCDMA BTS loop tests are finished or stopped successfully in the *Test Setup* tab. The tab displays the results of the completed loop tests.

Tests passed/Some tests failed or were not executed

Shows the result of the tests after the loop test execution is finished. If all executed tests in the test scope are passed, the icon and the text *Tests passed* is displayed. If some tests in the test scope were failed or not executed, the icon and the text *Some tests failed or were not executed* is displayed.

Total Number of Tests

Shows the total number of the executed tests.

Not Executed

Shows the total number of the tests that could not be executed.

Failed

Shows the total number of the tests that failed.

Summary table

The table shows the result of the completed tests for each antenna connector.

Antenna

The *Antenna* column shows the identification information of the tested antenna connector.

Total

The *Total* column shows the number of elementary tests the antenna connector was included in.

Not Executed

The *Not Executed* column shows the number of tests that were tried through the antenna connector but could not be executed.

Failed

The *Failed* column shows the number of tests that failed through the antenna connector.

Save Report

Click *Save Report* to save the test results. In the opened *Save WCDMA Loop Test Report* dialog box you can select whether you want to save the test results to an existing Commissioning Report or to a separate file. If you select the Existing Commissioning Report option, select the report file, and the results will be added to the end of the selected file. If you select the New File option, define the file name and the location for the file. The default file name is *WCDMALoopTest_<Site name>_<yyyymmdd>.txt*. The default location is the folder where you have saved the previous test result files or your default working folder (My Documents, for example).

WCDMA Loop Test 5/7 Failure Details

WCDMA BTS Loop Test									
Test Setup		Test Summary			Failure Details				
FR	ANT	TX	RX	FSM	FSP	DSP	Source	Description	
1	1	1	1	1	1	1	Conn.	Common Channel Res Failed	
							BER	-	
							SIR	-	
1	1	1	1	1	2	1	Conn.	Physical Shared Res Failed	
							BER	-	
							SIR	-	
1	2	1	2	1	1	1	Conn.	Common Channel Res Failed	
							BER	-	
							SIR	-	
1	2	1	2	1	2	1	Conn.	Physical Shared Res Failed	
							BER	-	
							SIR	-	
1	3	3	5	1	1	1	Conn.	Common Channel Res Failed	
							BER	-	
							SIR	-	
1	3	3	5	1	2	1	Conn.	Physical Shared Res Failed	
							BER	-	
							SIR	-	
1	4	3	6	1	1	1	Conn.	Common Channel Res Failed	
							BER	-	
							SIR	-	
1	4	3	6	1	2	1	Conn.	Physical Shared Res Failed	
							BER	-	



WCDMA Loop Test 6/7 Test Report

WCDMA Loop Test Report											
WCDMA Loop Test Report 26-Oct-2006 16:03:58											
FR	ANT	TX	RX	FSM	FSP	DSP	Success	BER Success	BER	SIR Success	SIR
1	1	1	1	1	1	1	Common Channel Res ...	-	-	-	-
1	1	1	1	1	2	1	Physical Shared Res F...	-	-	-	-
1	2	1	2	1	1	1	Common Channel Res ...	-	-	-	-
1	2	1	2	1	2	1	Physical Shared Res F...	-	-	-	-
1	3	3	5	1	1	1	Common Channel Res ...	-	-	-	-
1	3	3	5	1	2	1	Physical Shared Res F...	-	-	-	-
1	4	3	6	1	1	1	Common Channel Res ...	-	-	-	-
1	4	3	6	1	2	1	Physical Shared Res F...	-	-	-	-
2	1	1	1	1	1	1	Common Channel Res ...	-	-	-	-
2	1	1	1	1	2	1	Physical Shared Res F...	-	-	-	-
2	2	1	2	1	1	1	Common Channel Res ...	-	-	-	-
2	2	1	2	1	2	1	Physical Shared Res F...	-	-	-	-
1	1	1	1	1	1	2	Ok	Ok	0.00e+00	Ok	8.0

Tests failed for two reasons:

- DSP1 in FSP1 reserved for Cell Common Channel processing.
- DSP1 in FSP2 reserved for Physical Shared Channels (HSDPA)

WCDMA Loop Test Report

Clicking the *View Report* button in the [WCDMA BTS Loop Test - Test Summary](#) tab dialog box opens the WCDMA Loop Test Report dialog box displaying the tested loops by modules and the results of the WCDMA loop test.

The FR, ANT, TX, RX, FSM, FSP and DSP columns show the identifiers for radio modules (FR, ANT, TX subunit and RX subunit) and the system module (FSM, FSP subunit and DSP subunit).

Success

Indicates if running the elementary test for the connection was done without a problem or not. If some error occurred, the nature of the failure is shown. Only one failure indication is shown per connection at a time. The latest one is shown if multiple errors occur.

BER

Shows the BER value measured during the test for the connection. The BER value is expressed as a ratio of incorrect bits to correct bits. The parameter is evaluated only if it was possible to capture the value during the test. Either the parameter is evaluated or not is indicated by the BER Success/Failure parameter.

BER success

Indicates if BER/BLER was successfully evaluated for the connection. If the values are not valid, the failure is indicated.

SIR

Shows the signal-to-interface-ratio (SIR) of uplink DPCH measured in the BTS receiver while testing the connection. The parameter is evaluated only if it was possible to capture the value during the test. Either the value is evaluated or not is indicated by the SIR Success/Failure parameter.

SIR success

Indicates if SIR was successfully evaluated or not. If the value is not valid, the failure reason is shown. The SIR measurement implementation in BTS will provide the SIR value ranging from -11dB to 20dB in 0.5dB steps. The minimum required SIR is 2.0dB. If the measured SIR value is below minimum, SIR Success/Failure in the report displays 'Not Passed'.

WCDMA Loop Test 7/7

Saving Test Report

WCDMA BTS Loop Test

Test Setup

Test Summary

Failure Details

⚠ Some tests failed or were not executed

Total Number of Tests: 43

Not Executed: 12

Failed: 0

Antenna	Total	Not Executed	Failed
FRGJ 1 ANT 1	18	6	0
FRGJ 1 ANT 3	18	6	0
FRGK 2 ANT 1	5	0	0
FRGK 2 ANT 2	2	0	0

Save Report...

View Report

Save WCDMA Loop Test Report

?

Save Test Results To

☐ Existing Commissioning Report

☒ New File

Save As...

Cancel

Save WCDMA Loop Test Report

Save In:

Alarms_Kukko_20081203.txt

Events_Kukko_20081203.txt

File Name: WCDMALoopTest_Kukko_20081203.txt

Files of Type: Text Files (*.txt)

Save

Cancel



EAC Functionality Test

After changing the EAC alarm input state from open to closed (or vice versa), the *Test Status* changes from *Faulty* to *OK*.

The screenshot shows the 'EAC Functionality Test' dialog box with the 'Alarms' tab selected. The table below represents the data shown in the dialog:

Line Id	Selected to Test	Name	State	Test Status
1	<input checked="" type="checkbox"/>	Test	Off	Faulty

The second dialog box shows the same table after the test is completed successfully:

Line Id	Selected to Test	Name	State	Test Status
1	<input checked="" type="checkbox"/>	Test	Off	OK

EAC Functionality Test

Choosing the *Tests* → *EAC Functionality Test* menu item or clicking the *Test* button in the **Commissioning - Site Testing** page opens this dialog box, where you can test the functionality of the External Alarms and Controls (EAC) for the commissioned BTS.

This dialog box contains two tabs: *Alarms* and *Controls*.

Alarms

In the *Alarms* tab you can test external alarm lines by selecting the check box in the *Selected To Test* column. The *Test Status* is changed to 'Faulty'. Change the state of the supervised external device. After the state change notification is received from the BTS, the new state is displayed in the *State* column and the *Test Status* is changed to 'OK'.

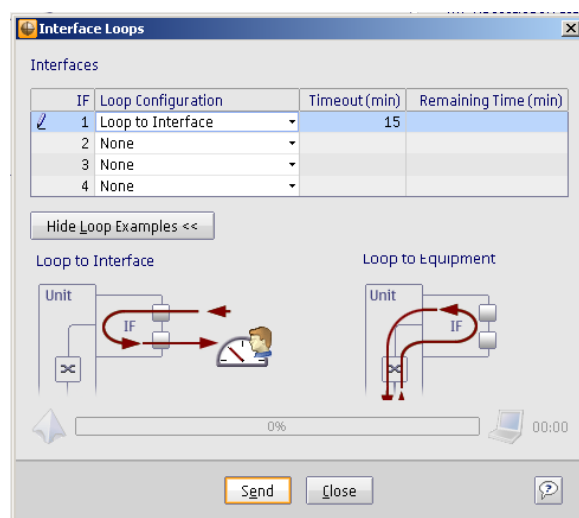
Line Id The *Line Id* column shows the identifier of the external alarm line. **Selected To Test** Select the check box in the *Selected To Test* column if you want to test the alarm. **Name** The *Name* column shows the name of the external alarm line. **State** The *State* column shows the alarm state (On or Off). **Test Status** The *Test Status* column shows the test status (Not tested, Faulty or OK). **Controls**

In the *Controls* tab you can test the external control lines. Change the state of the output line in the *State* column. After the BTS has changed the state of the external control line, check the state of the supervised external device, and change the *Test Status*.

Line Id The *Line Id* column shows the identifier of the external control line. **Name** The *Name* column shows the name of the external control line. **State** Change the state of the external control line by selecting *On* or *Off* from the list in the *State* column. **Test Status** Change the test status according to the state of the external control line by selecting *Not tested*, *Faulty* or *OK* from the list in the *Line Id* column.

Transmission Interface Loops

Loop to Interface is used to test the transmission path from far end to the BTS's transmission interface. A test generator is needed at the far end side (e.g. RNC)



Loop to Equipment is used to test:

- the transmission path and the Cross Connect functionality (**not supported by Flexi TRS**) from far end to the BTS's transmission interface. A test generator is needed at the far end side (e.g. RNC).
- The existence of IUB termination in the BTS. In case there is no RNC connected, the loop would bring the IUB channels to "connected" state in the BTS.

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Configuring interface loops in TRS

Purpose

In the [Interface Loops](#) dialog box you can test the physical layer functionality and internal functionality of the TRS. Typically an external signal generator is used at the other end of the physical connection that generates traffic, and traffic is looped back to the generator that can measure traffic and detect CRC errors and lost packets, for example. Also the equipment internal performance monitoring notices errors in the traffic.

The following loopbacks can be configured on PDH interfaces:

Loop to interface - the incoming signal is looped back to the output in the interface

Loop to equipment - the outgoing signal is looped back to the equipment in the interface.

Before you start

Connect an external measurement equipment in the TRS.

Steps

Choose the Tests → Interface Loops menu item or click the Interface Loops button in the TRS Hardware - Unit Properties view to open the Interface Loops dialog box.

Select the loop configuration from the list in the Loop Configuration column: Loop to Interface or Loop to Equipment.

Enter the time period after which the loopback stops automatically in the Timeout (min) column.

Click the Send button to activate the loop on the unit.

Click the Close button to close the dialog box.

IP Connectivity Test

