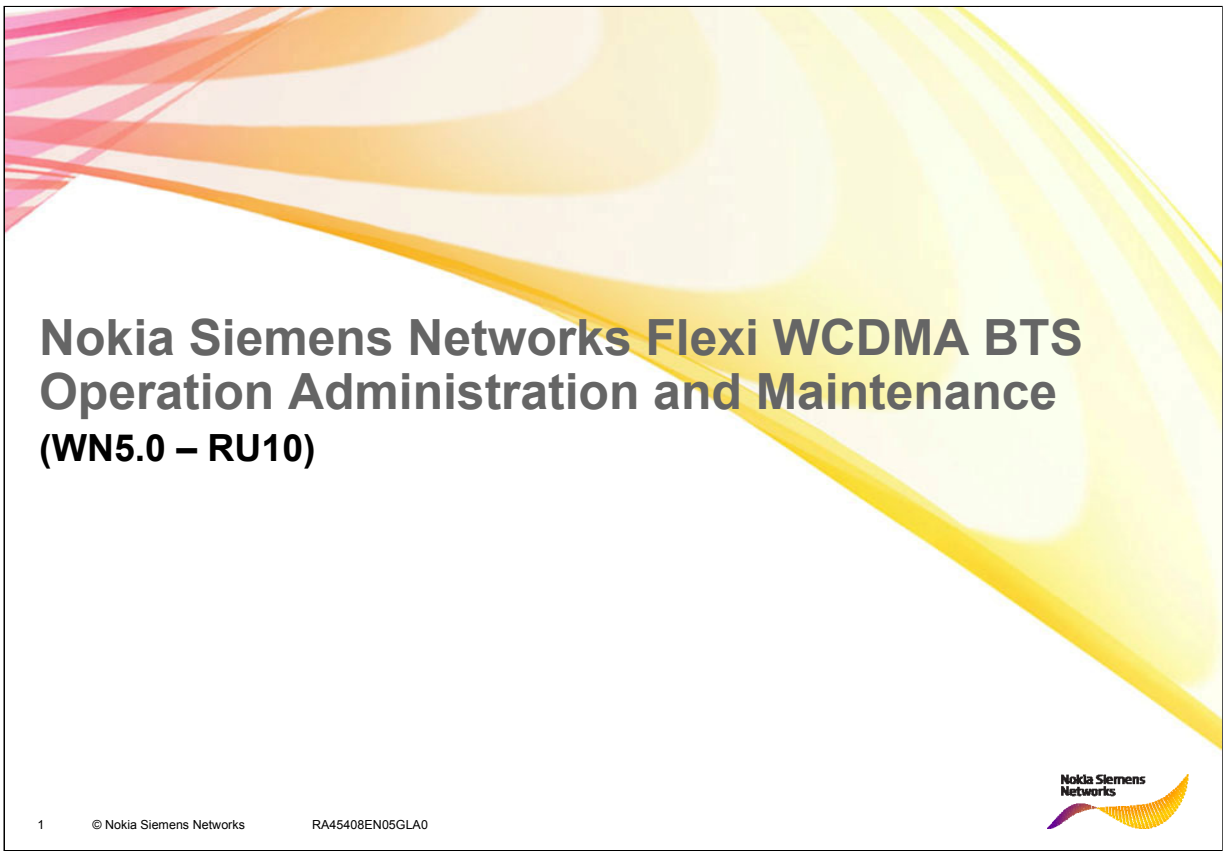
Nokia Siemens Networks Flexi WCDMA BTS Operation Administration and Maintenance
(WN5.0 – RU10)
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Nokia Siemens Networks Academy

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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:

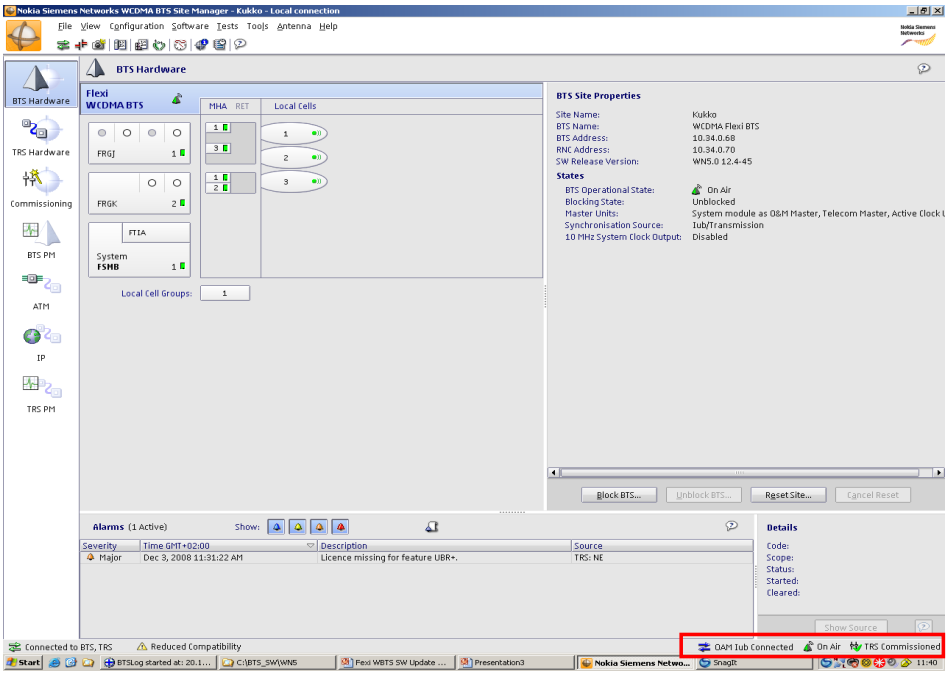
- Describe the operational functionality of the Nokia Siemens Networks Flexi WCDMA BTS
- Describe and demonstrate use of the administrative options available for Nokia Siemens Networks Flexi WCDMA BTS
- Describe and demonstrate use of maintenance options available for Nokia Siemens Networks Flexi WCDMA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

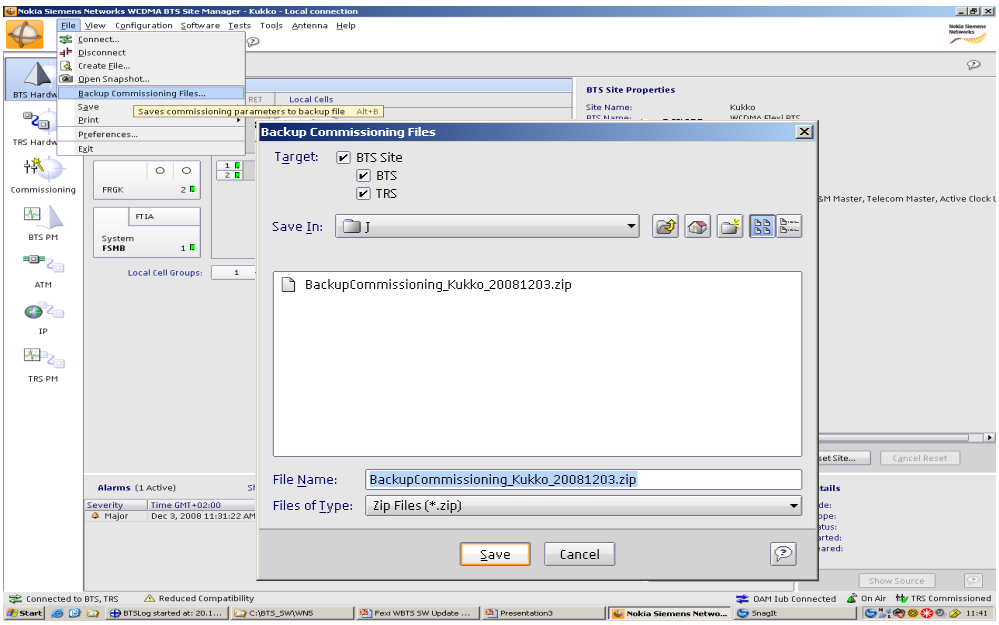
Operational Functionality



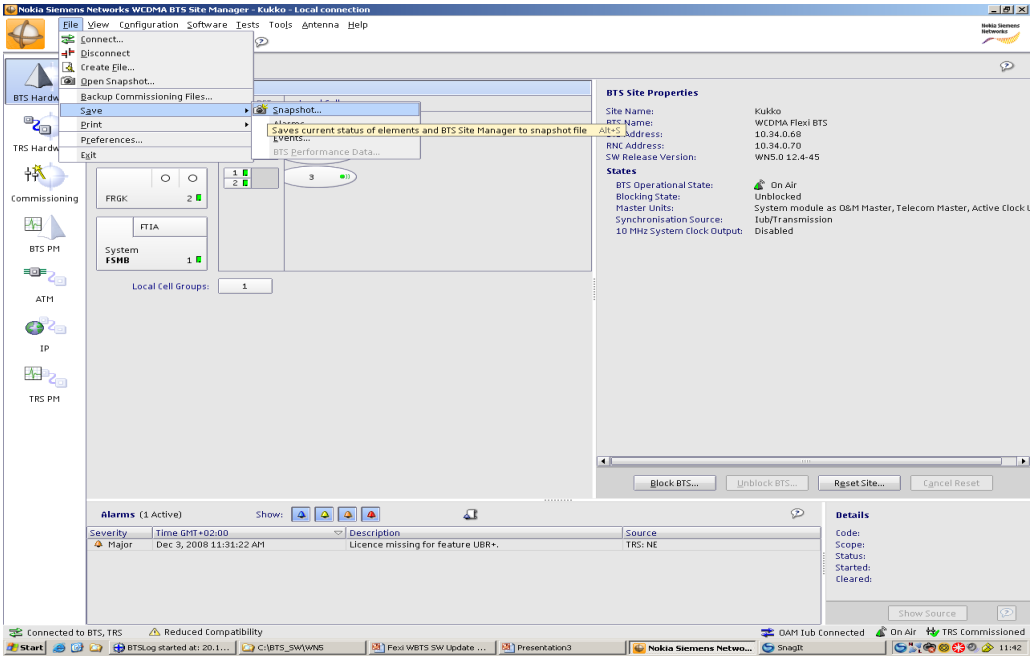
Administrative Options

- 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



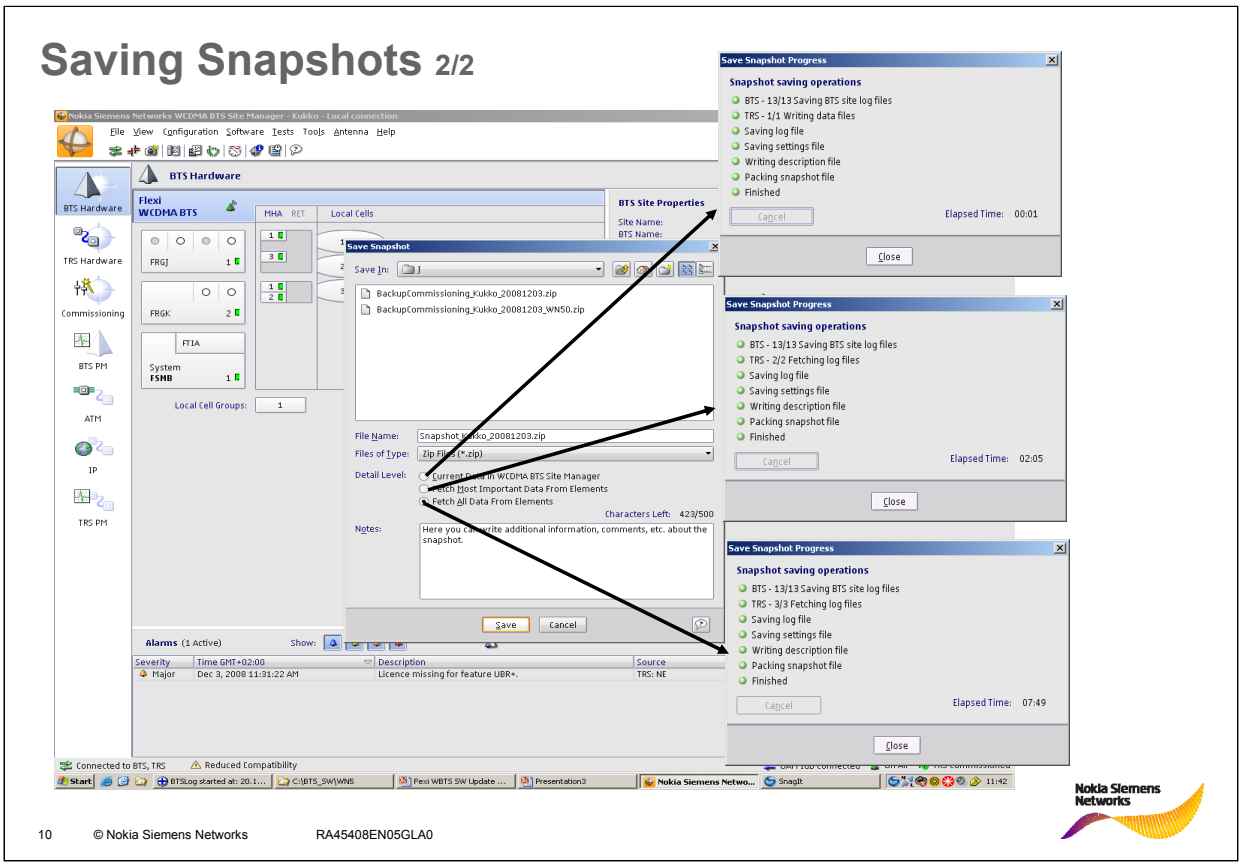
Saving Snapshot 1/2



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.



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.

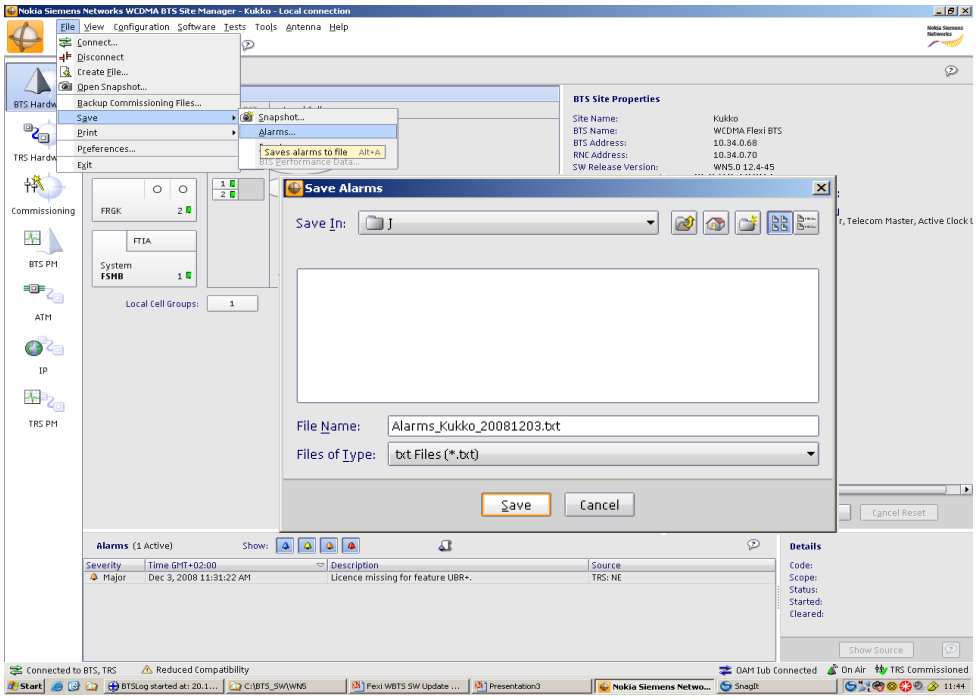
The default file name is Snapshot_<Site name>_<yyyymmdd>.xml. The default location is the folder where you have saved snapshot files previously or your default working folder (My Documents, for example).

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

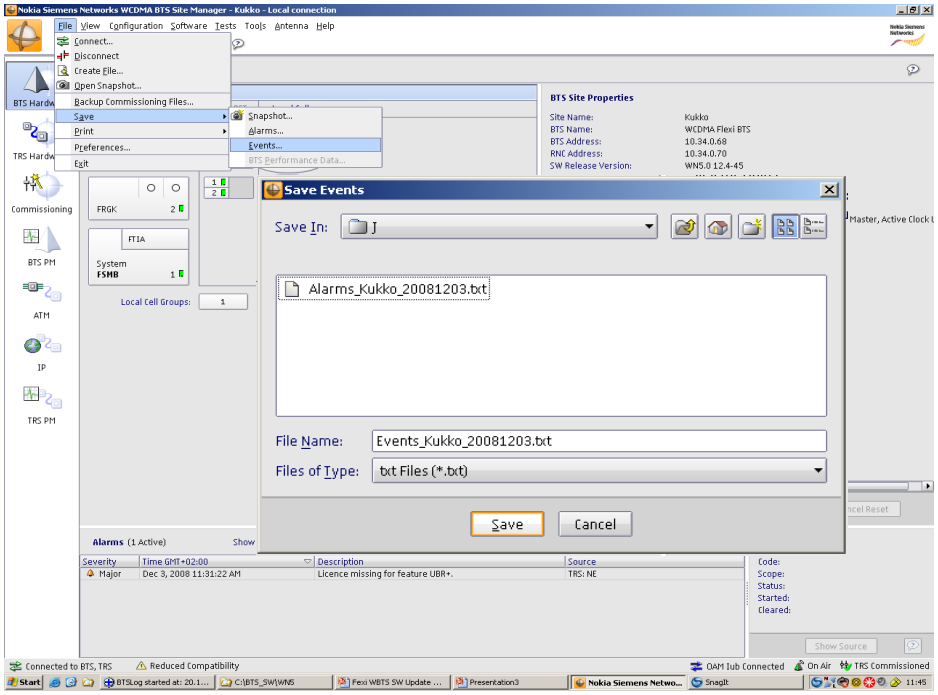
Enter the description of the situation when the snapshot was taken in the Notes field.

Click the Save button.

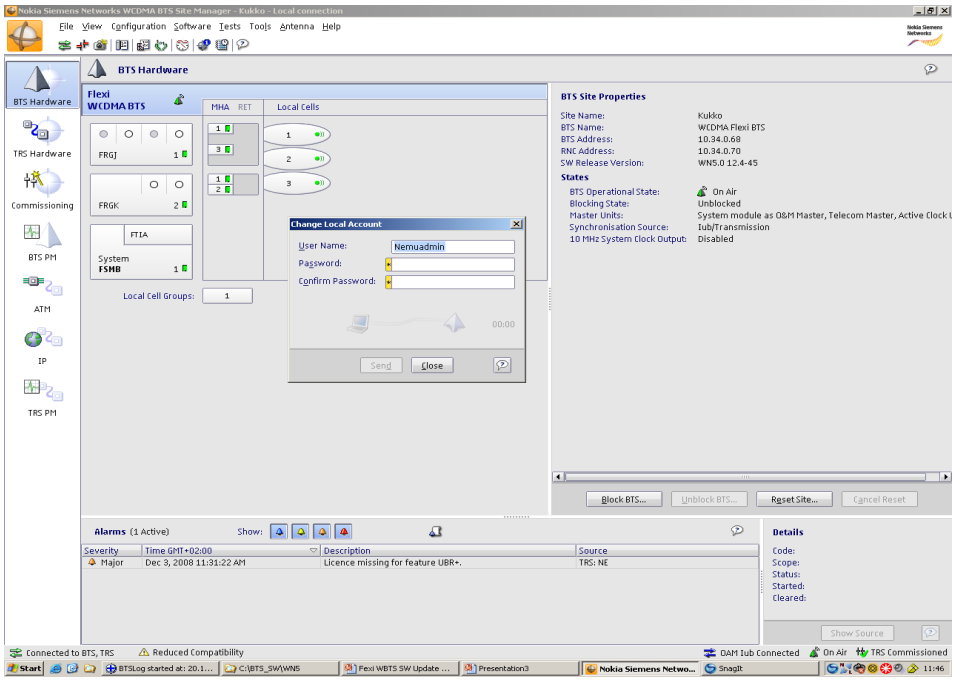
Saving BTS Alarm



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.

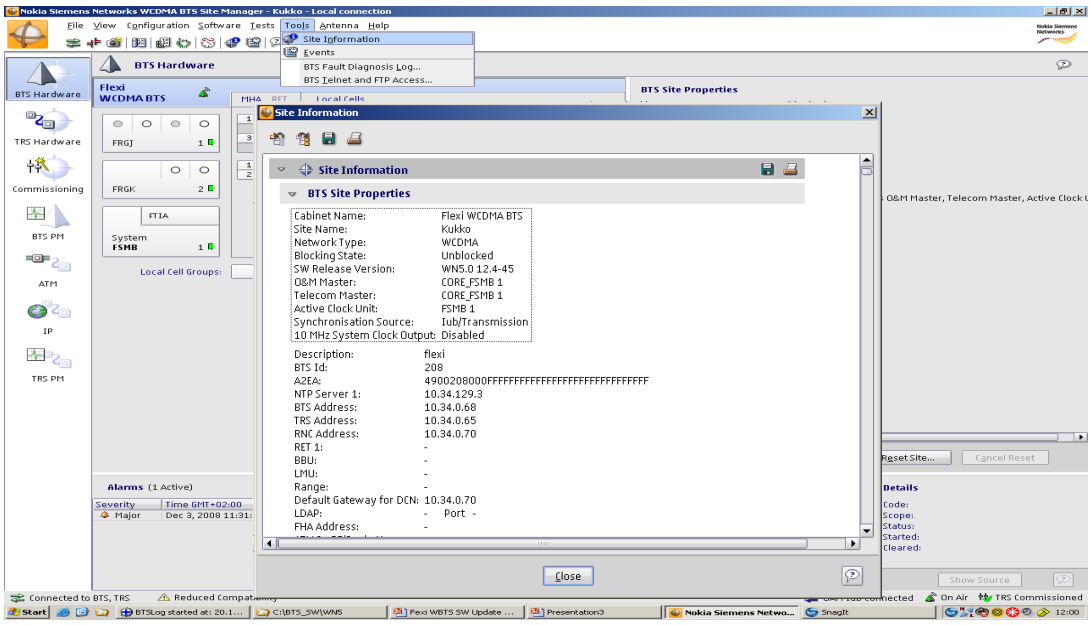
If the user authentication is enabled and you want to change the user name and/or password, enter the New User Name and/or New Password in the fields, and rewrite the new password in the Confirm New Password field if necessary. Click the Send button.

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

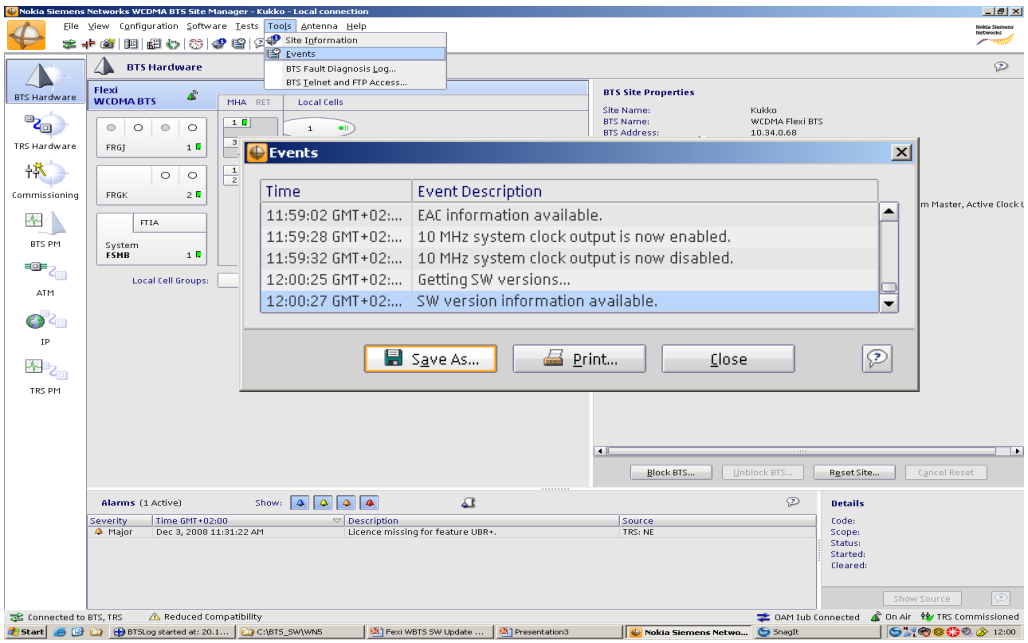
If you are disabling the user authentication, enter the Current User Name and Current Password in the fields, and click the Send button.

Click the Close button to close the dialog box.

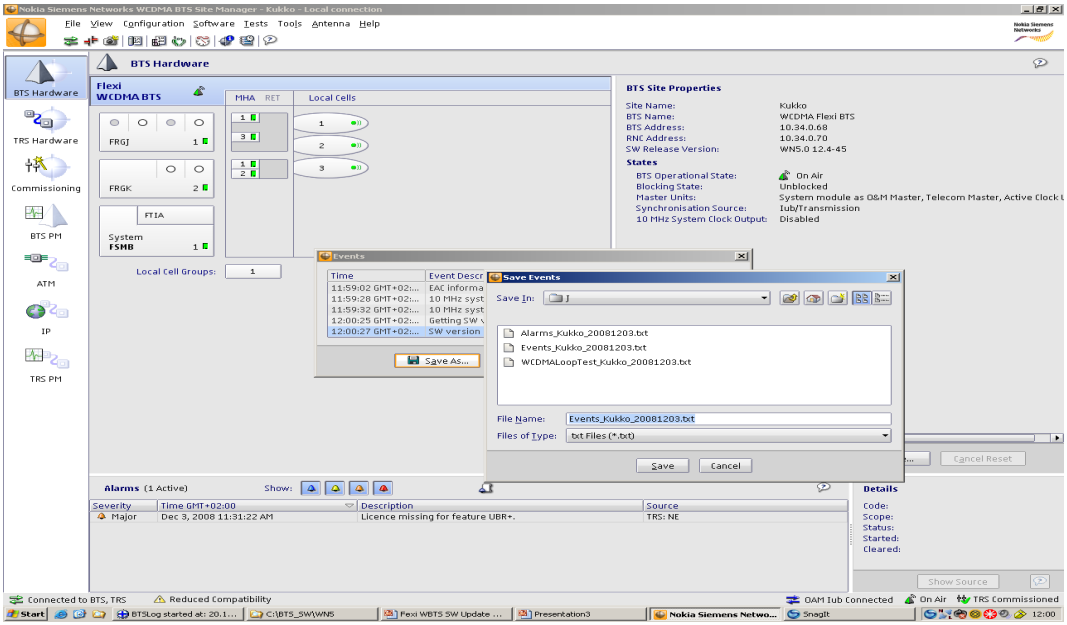
BTS Site Information



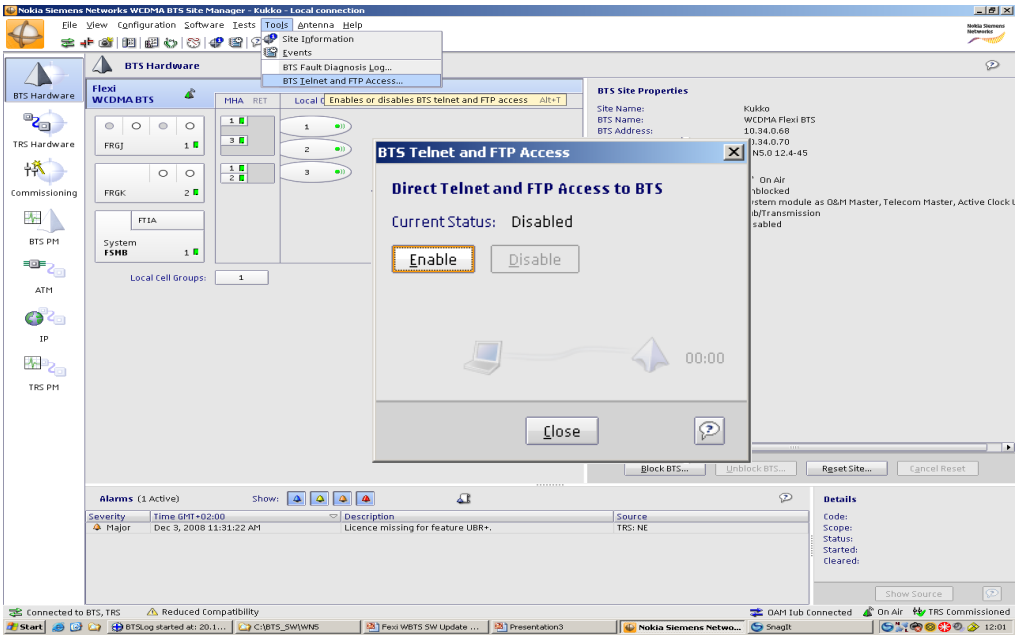
BTS Events



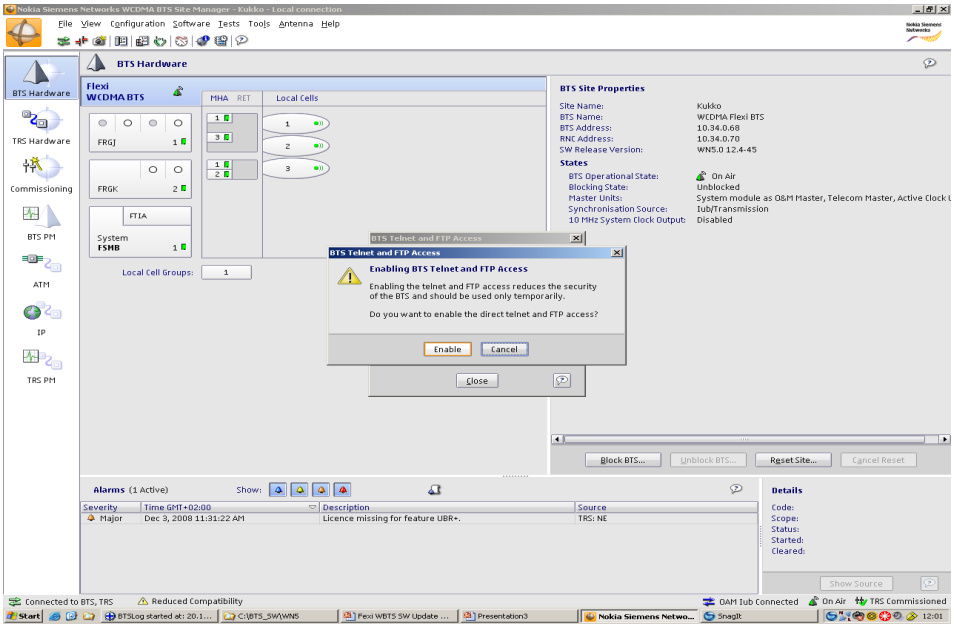
Saving BTS Events



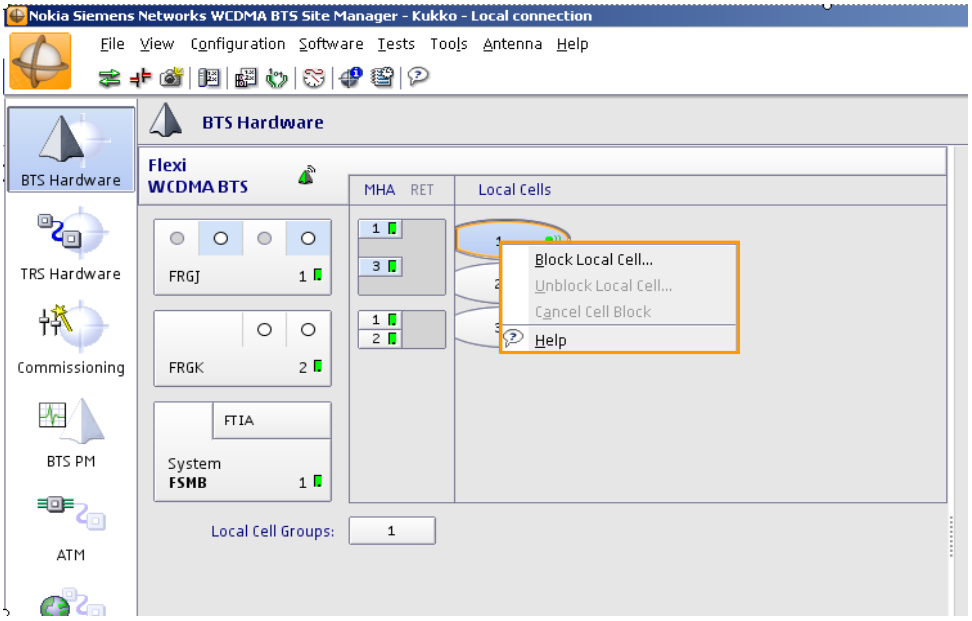
BTS Telnet and FTP Access 1/2



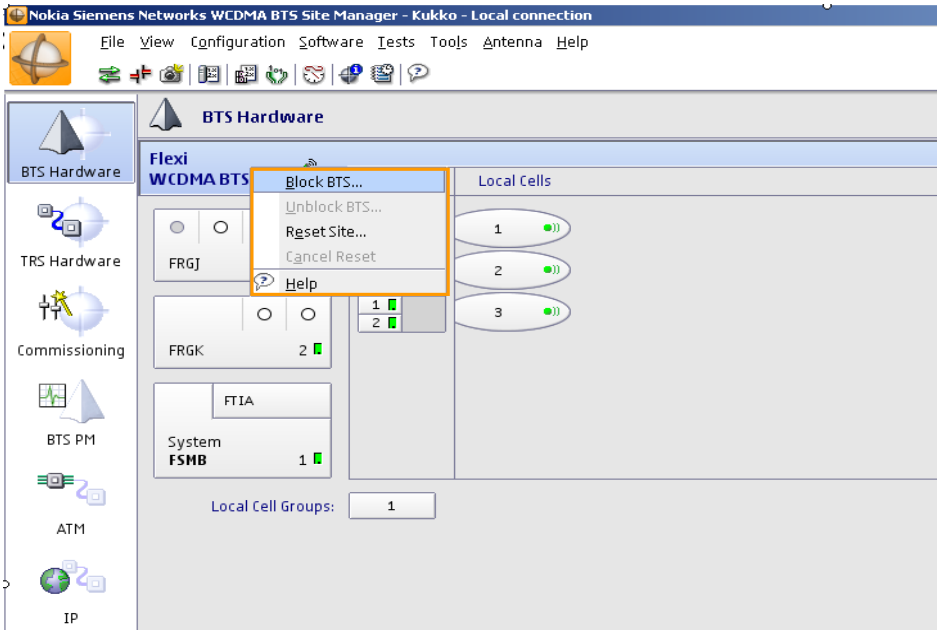
BTS Telnet and FTP Access 2/2



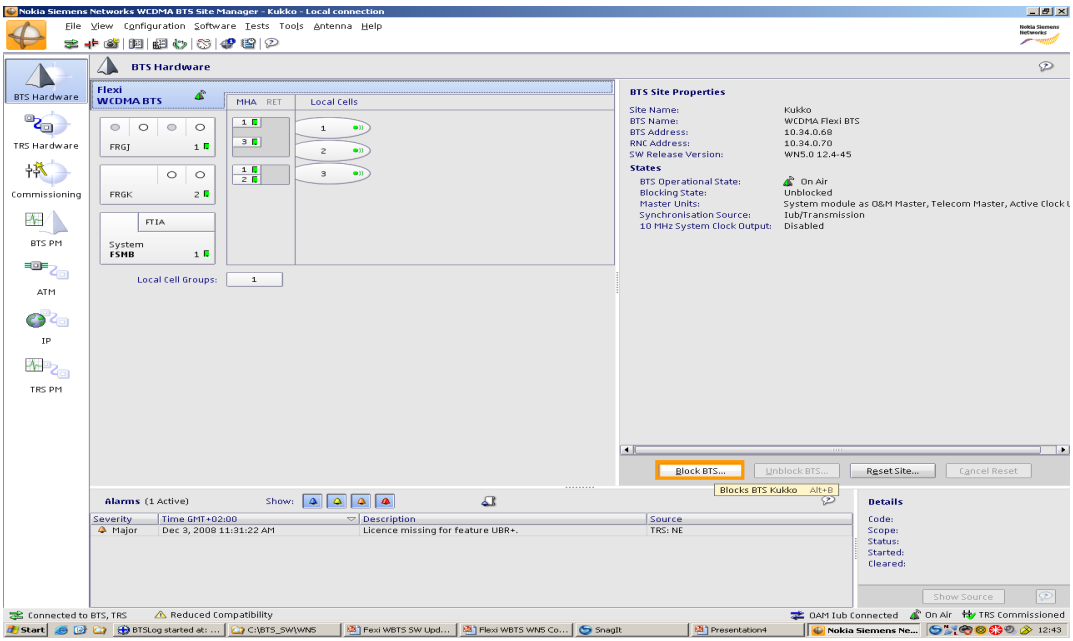
Block Local Cells



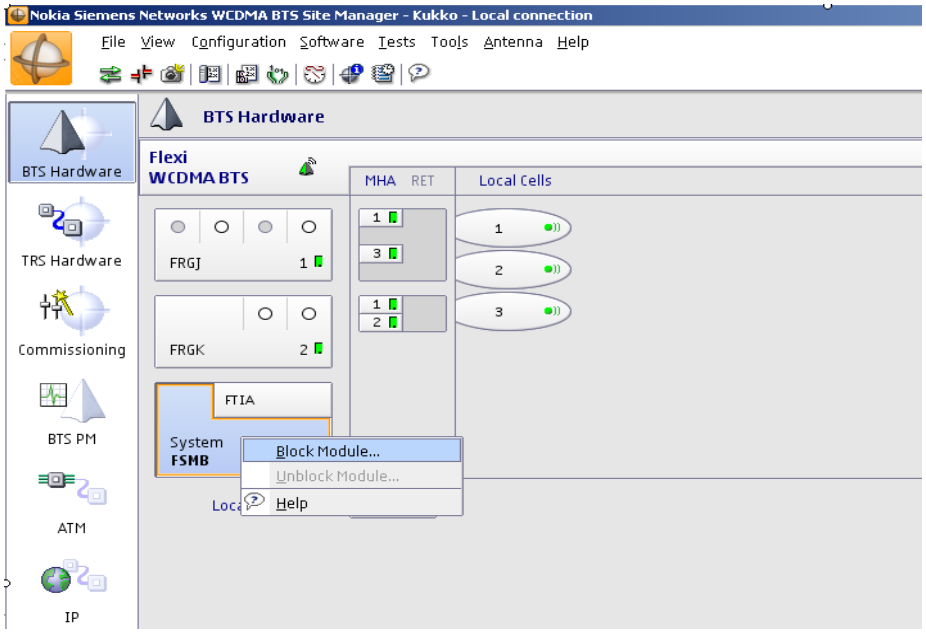
Block BTS 1/2



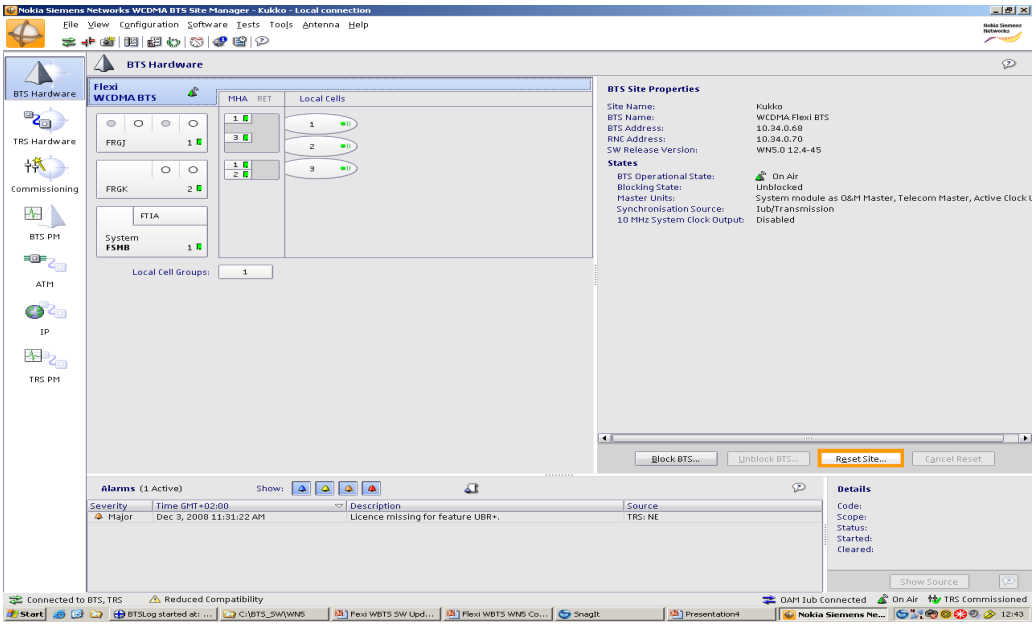
Block BTS 2/2



Block Module



Reset Site

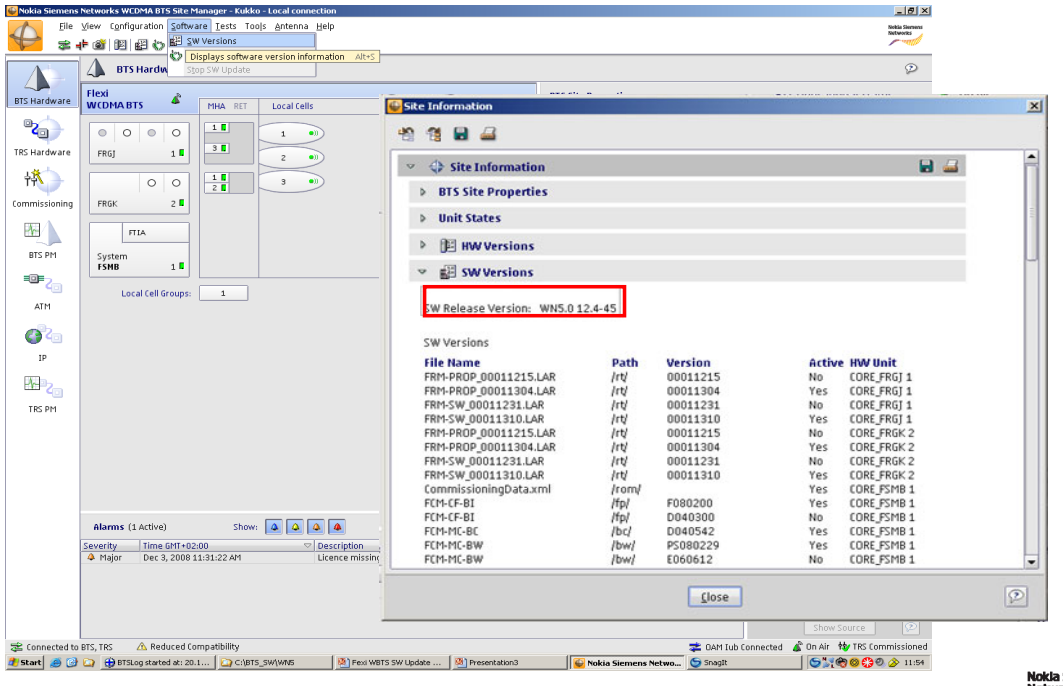

Nokia Siemens Networks WCDMA BTS Site Manager - Kukko - Local connection
File View Configuration Software Tests Tools Antenna Help
BTS Hardware
TRS Hardware
Commissioning
BTS PM
ATM
IP
TRS PM
Flexi WCDMA BTS
MHA RET
Local Cells
FRGJ
FRGK
FTIA
System FSMB
Local Cell Groups:
BTS Site Properties
Site Name: Kukko
BTS Name: WCDMA Flexi BTS
BTS Address: 10.34.0.68
RNC Address: 10.34.0.70
SW Release Version: WN5.0 12.4-45
States
BTS Operational State: On Air
Blocking State: Unblocked
Master Units: System module as O&M 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)
Show:
Severity
Time GMT+02:00
Description
Source
Major
Dec 3, 2008 11:31:22 AM
Licence missing for feature UBR+.
TRS: NE
Details
Code:
Scope:
Status:
Started:
Cleared:
Show Source
Connected to BTS, TRS
Reduced Compatibility
OAM Iub Connected
On Air
TRS Commissioned

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



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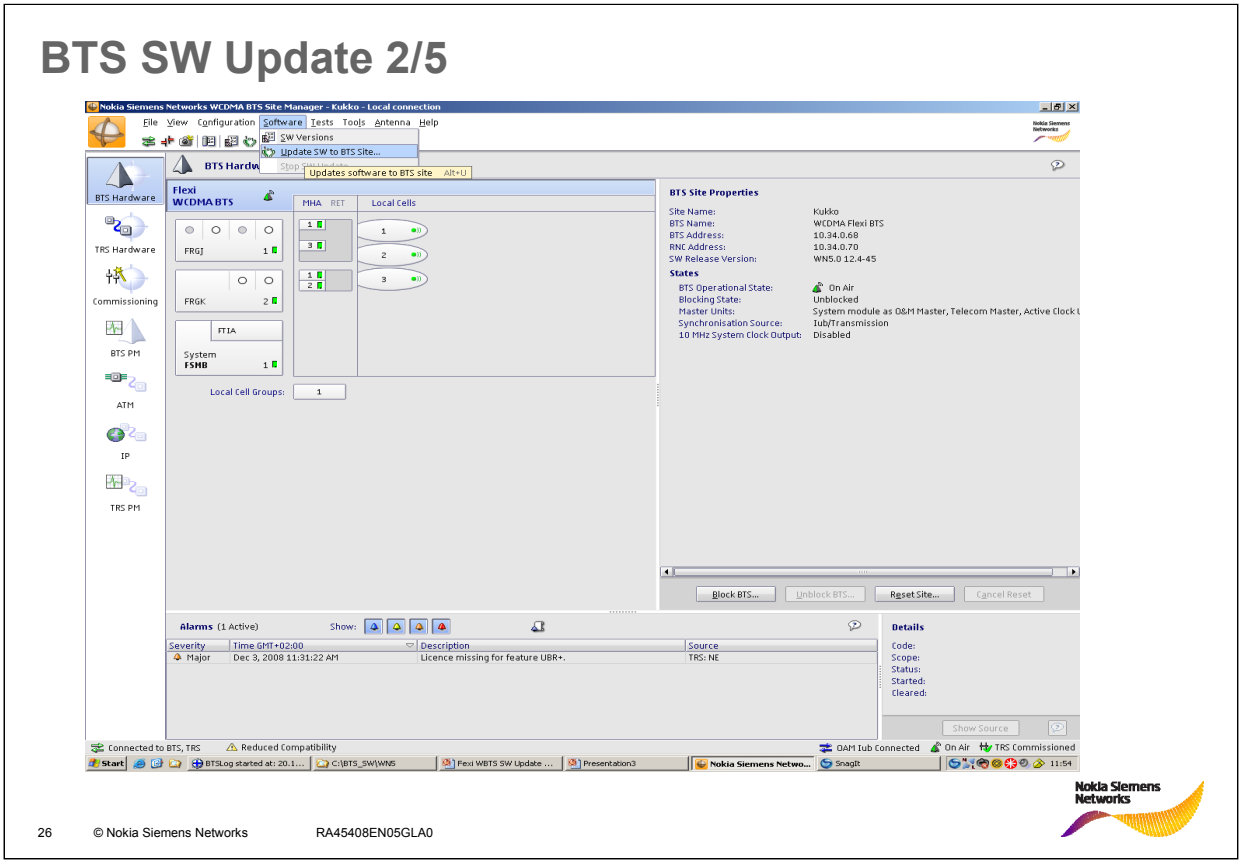
The SW Versions view shows the active SW Release Version.

In addition all SW files, in both the active and inactive bank are listed.



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

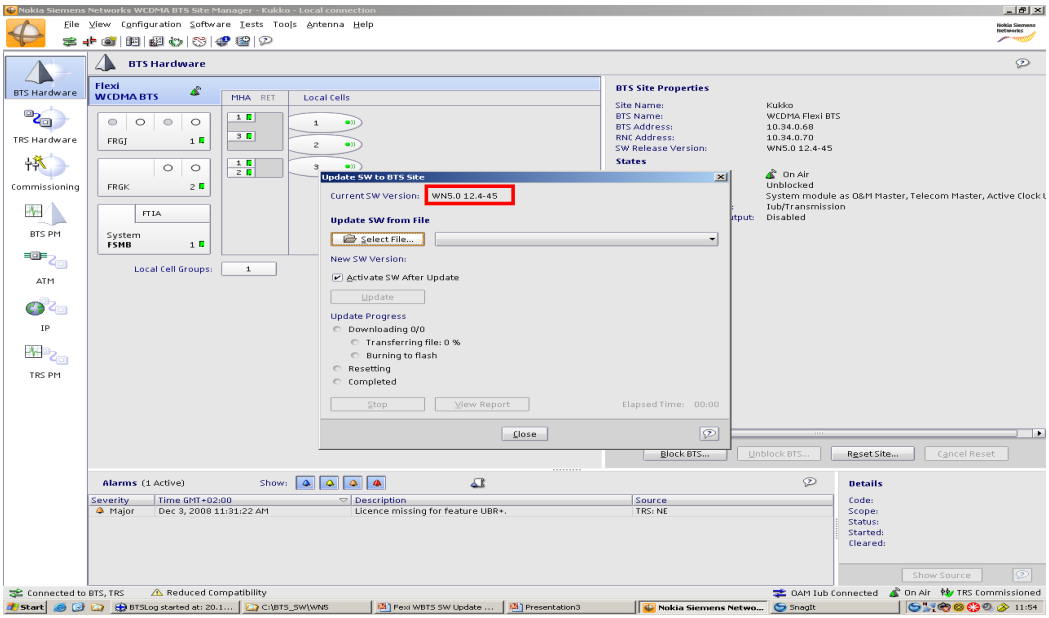
If the SW download fails, update the software again.

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

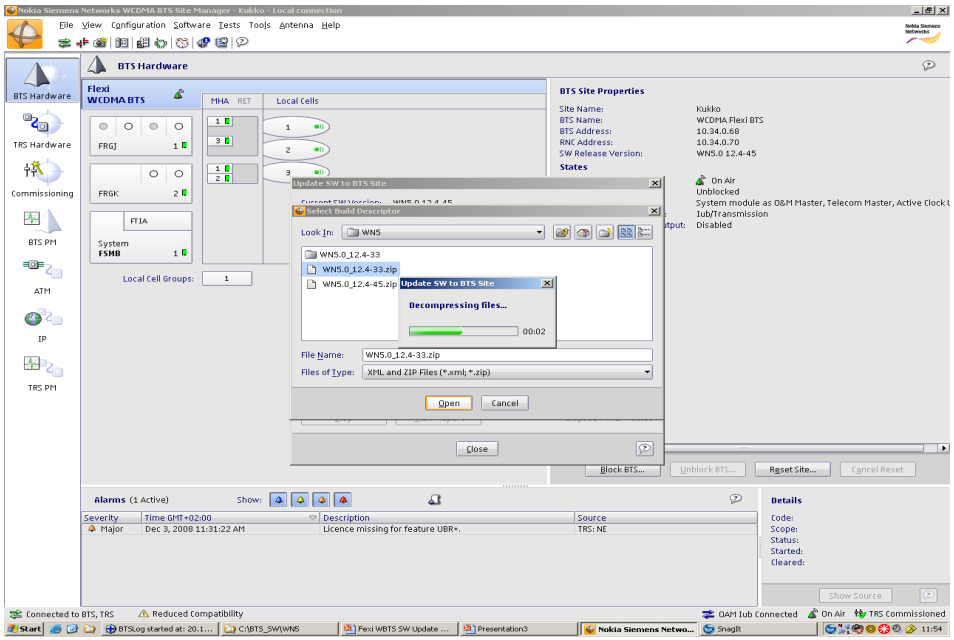
The Software Update Report dialog box opens.

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

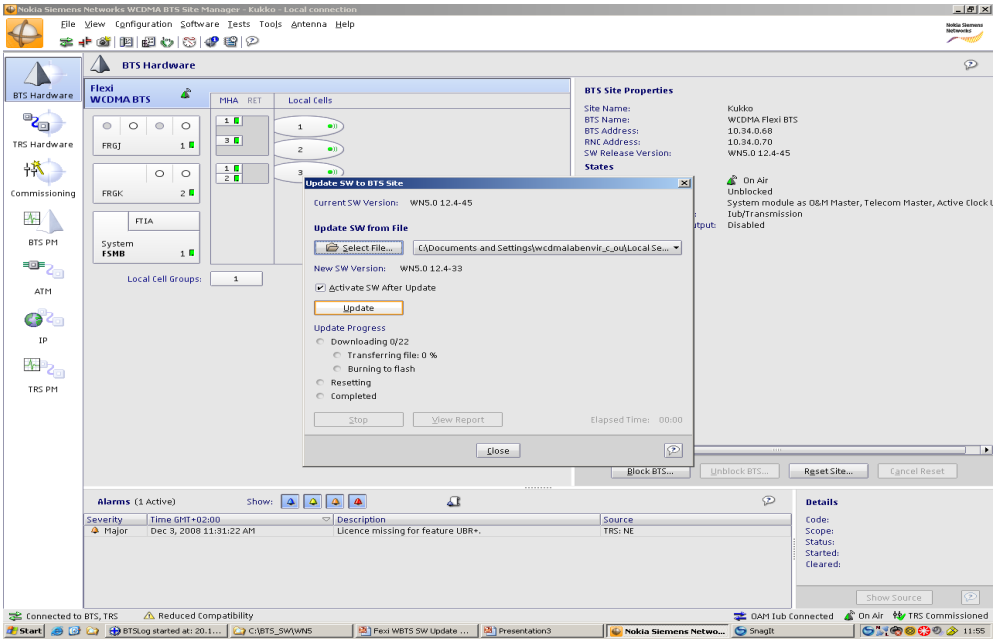
BTS SW Update 3/5



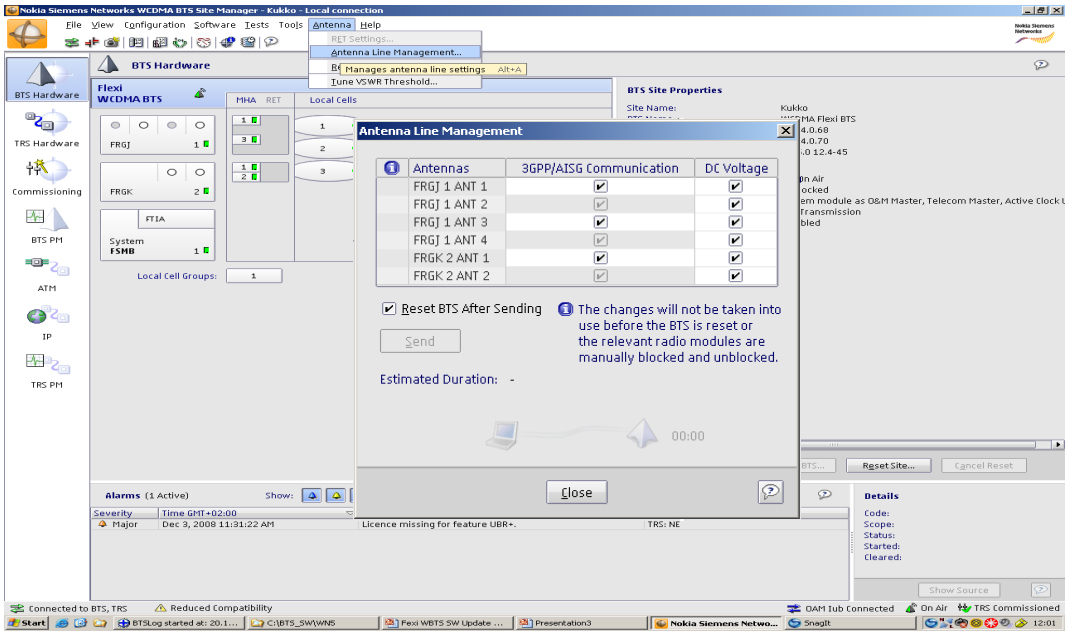
BTS SW Update 4/5



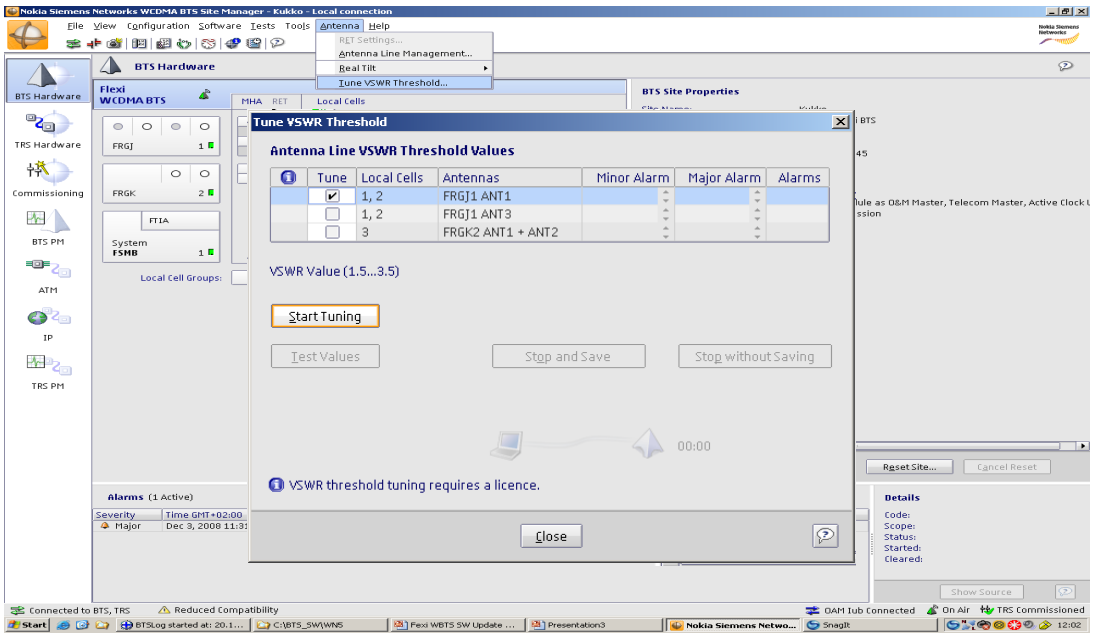
BTS SW Update 5/5



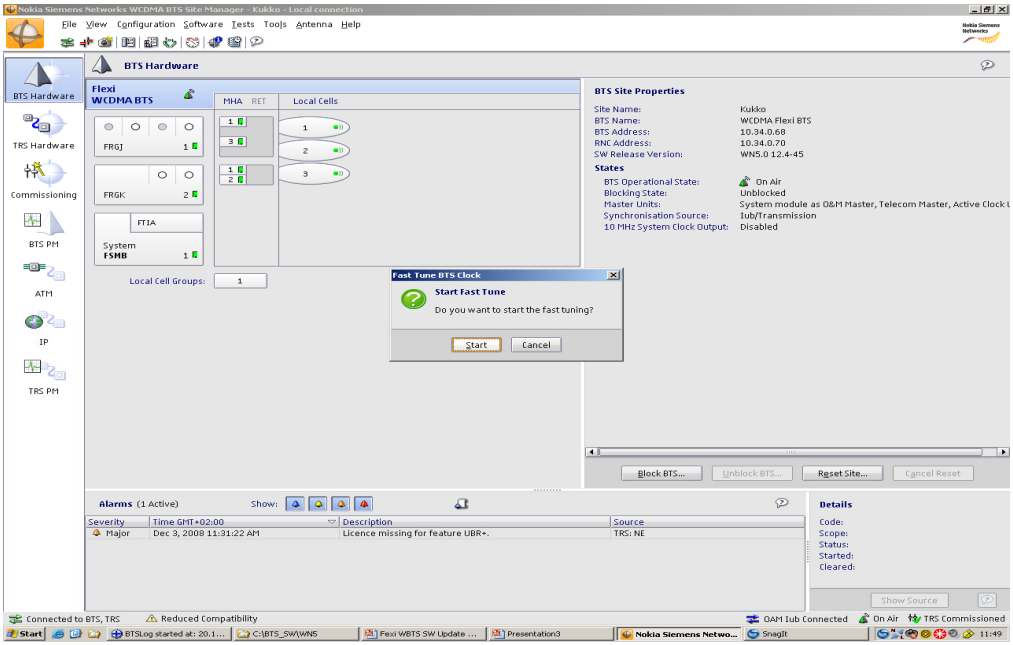
Antenna Line Management



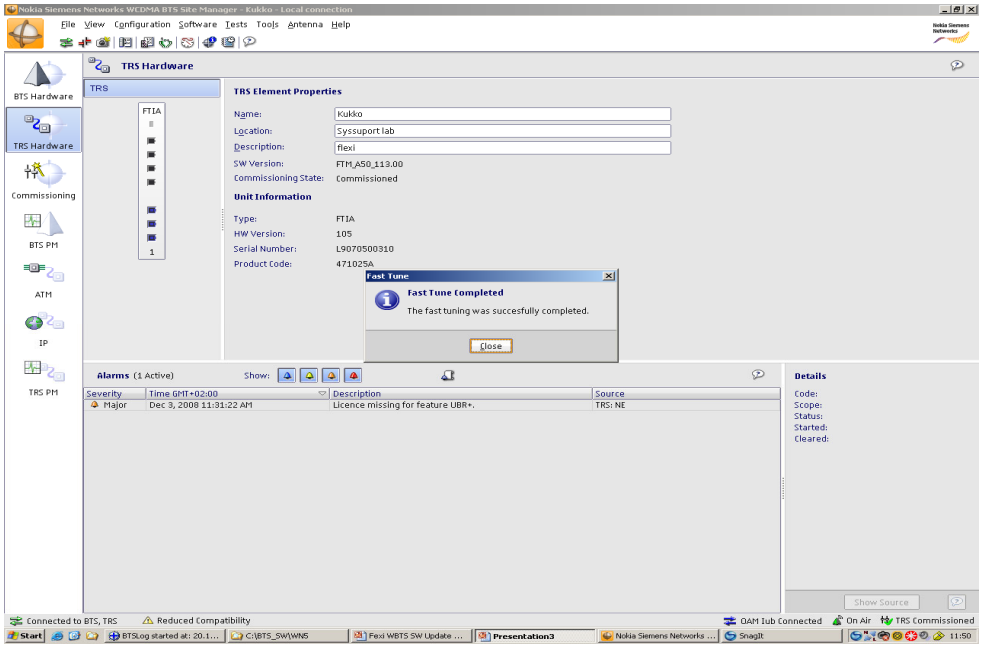
Tuning Antenna Line VSWR Threshold Value



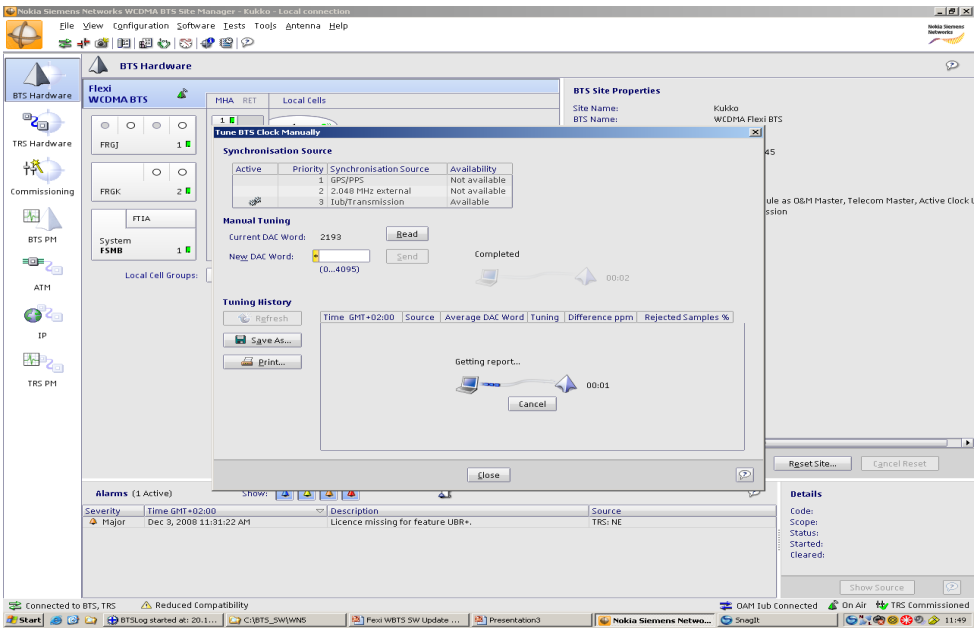
Fast Tune BTS Clock 1/2



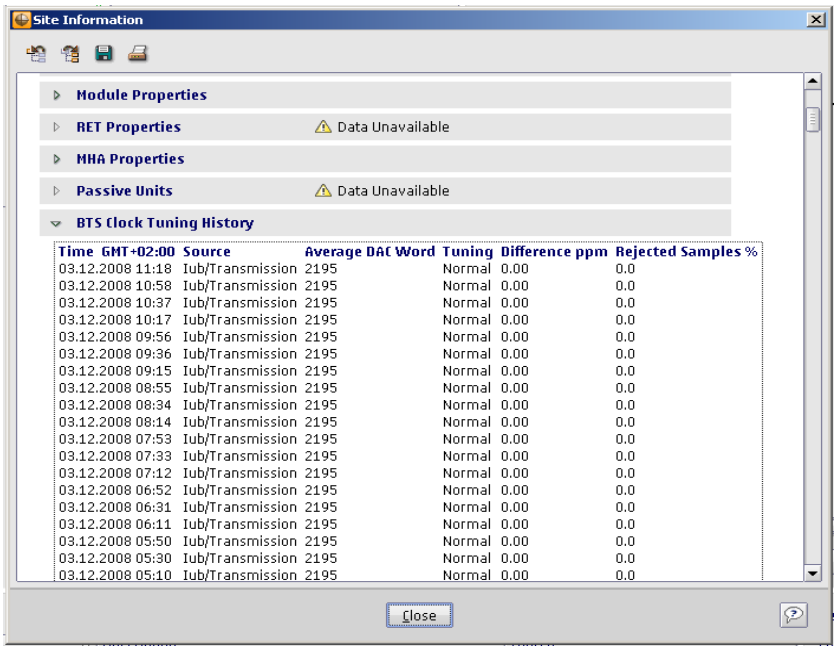
Fast Tune BTS Clock 2/2



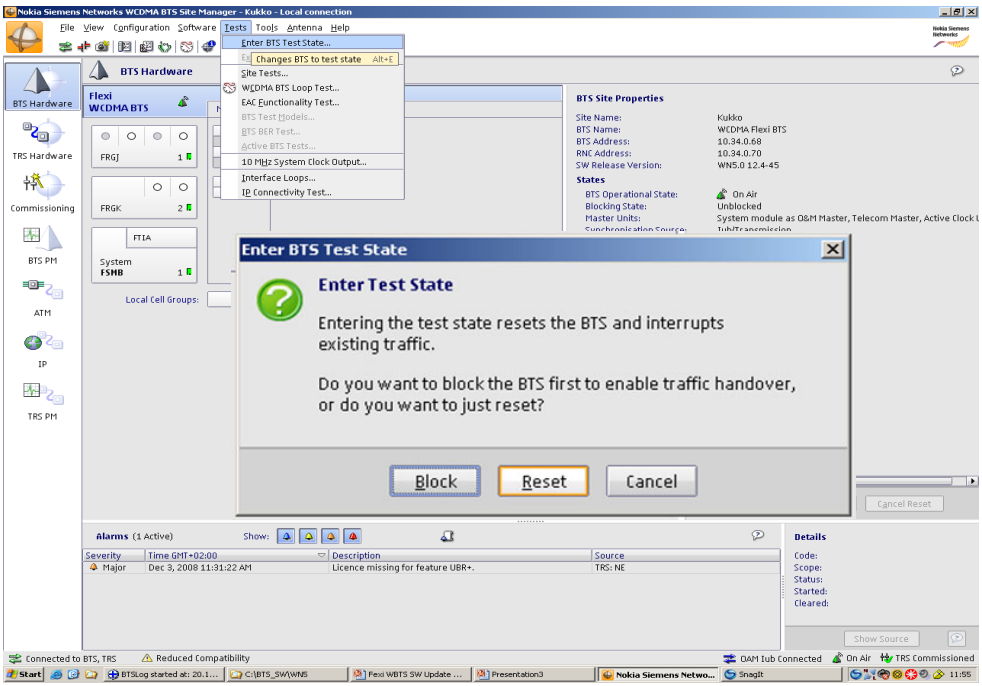
Tuning BTS Clock Manually



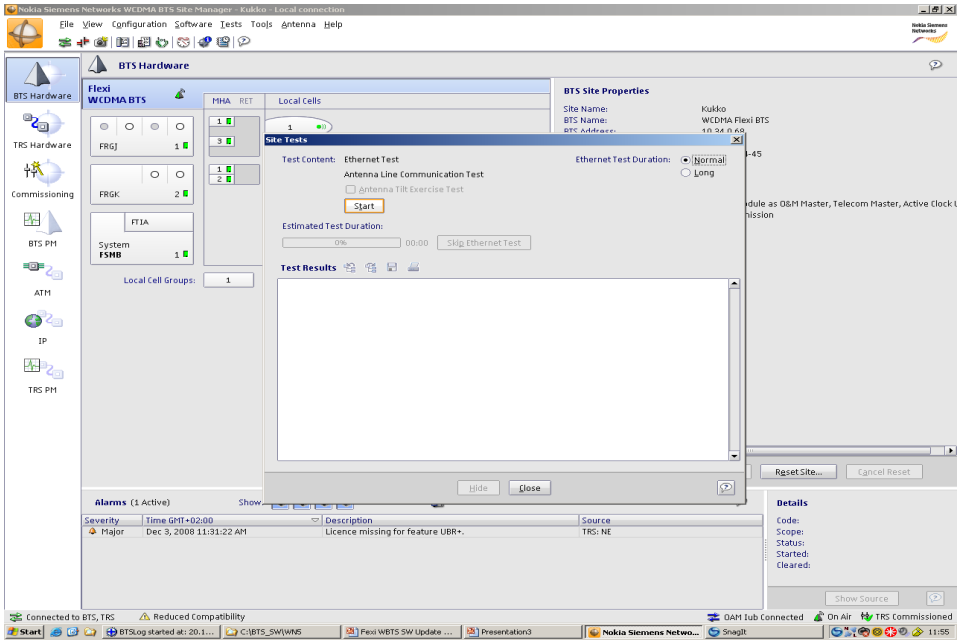
Site Information



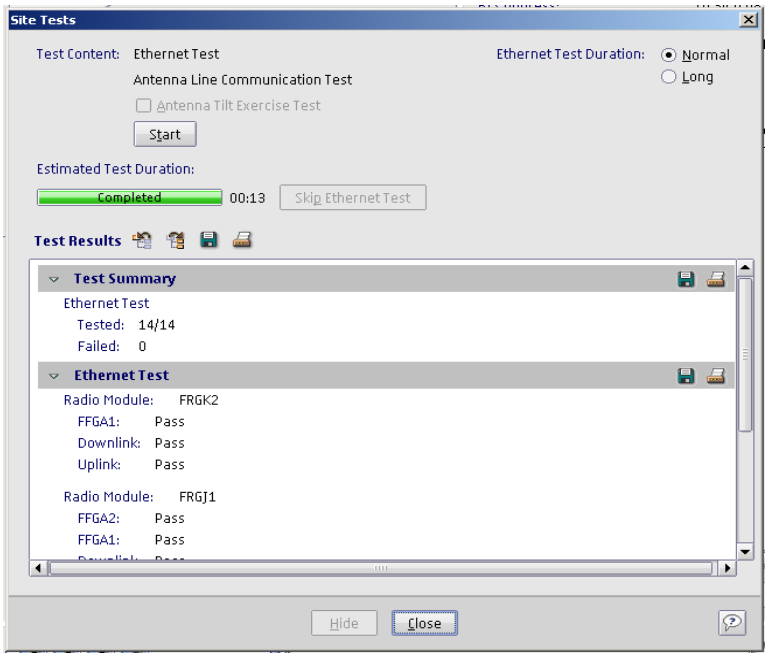
Tests


Nokia Siemens Networks WCDMA BTS Site Manager - Kukko - Local connection
File View Configuration Software Tests Tools Antenna Help
Enter BTS Test State...
Changes BTS to test state Alt+E
Site Tests...
WCDMA BTS Loop Test...
EAC Functionality Test...
BTS Test Models...
BTS BER Test...
Active BTS Tests...
10 MHz System Clock Output...
Interface Loops...
IP Connectivity Test...
BTS Hardware
TRS Hardware
Commissioning
BTS PM
ATM
IP
TRS PM
Flexi WCDMA BTS
FRGJ
FRGK
FTIA
System FSMB
Local Cell Groups:
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: WN5.0 12.4-45
States
BTS Operational State: On Air
Blocking State: Unblocked
Master Units: System module as O&M Master, Telecom Master, Active Clock
Enter BTS Test State
Enter Test State
Entering the test state resets the BTS and interrupts existing traffic.
Do you want to block the BTS first to enable traffic handover, or do you want to just reset?
Block
Reset
Cancel
Cancel Reset
Alarms (1 Active)
Show:
Severity
Time GMT+02:00
Description
Source
Major
Dec 3, 2008 11:31:22 AM
Licence missing for feature UBR+.
TRS: NE
Details
Code:
Scope:
Status:
Started:
Cleared:
Show Source
Connected to BTS, TRS
Reduced Compatibility
OAM Iub Connected
On Air
TRS Commissioned
Start
11:55

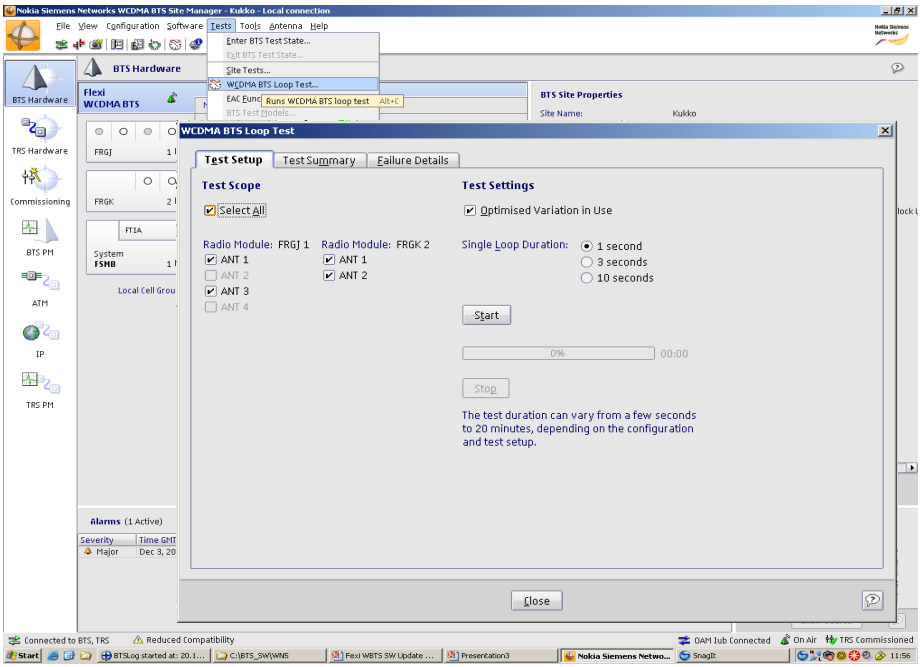
Site Test 1/2

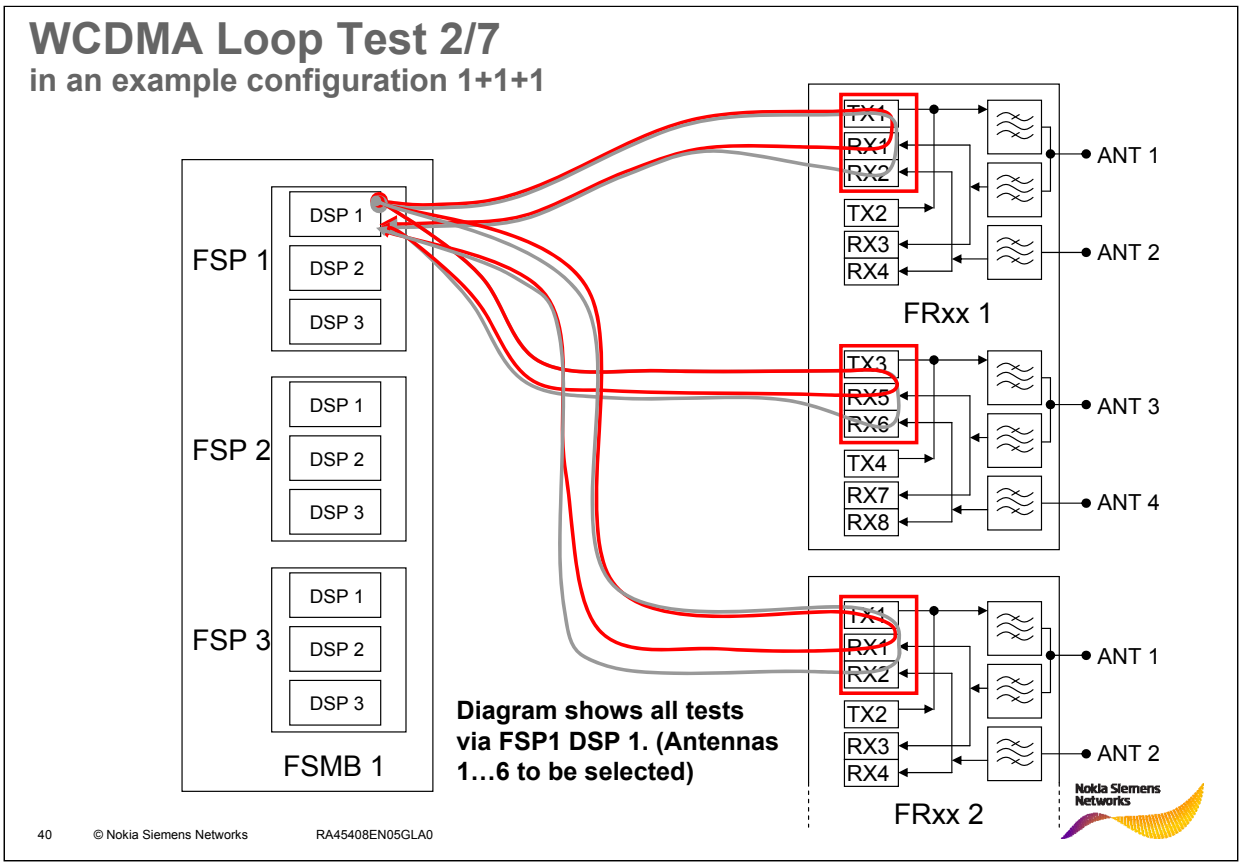

Nokia Siemens Networks WCDMA BTS Site Manager - Kukko - Local connection
File View Configuration Software Tests Tools Antenna Help
BTS Hardware
Flexi WCDMA BTS
MHA RET
Local Cells
BTS Site Properties
Site Name: Kukko
BTS Name: WCDMA Flexi BTS
Site Tests
Test Content: Ethernet Test
Antenna Line Communication Test
Antenna Tilt Exercise Test
Start
Estimated Test Duration:
Skip Ethernet Test
Ethernet Test Duration:
Normal
Long
Test Results
Hide
Close
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+.
TRS: NE
Details
Code:
Scope:
Status:
Started:
Cleared:
Show Source
Connected to BTS, TRS
Reduced Compatibility
OAM Iub Connected
On Air
TRS Commissioned

Site Test 2/2


Site Tests
Test Content: Ethernet Test
Antenna Line Communication Test
Antenna Tilt Exercise Test
Start
Ethernet Test Duration: Normal Long
Estimated Test Duration:
Completed 00:13
Skip Ethernet Test
Test Results
Test Summary
Ethernet Test
Tested: 14/14
Failed: 0
Ethernet Test
Radio Module: FRGK2
FFGA1: Pass
Downlink: Pass
Uplink: Pass
Radio Module: FRGJ1
FFGA2: Pass
FFGA1: Pass
Hide
Close

WCDMA Loop Test 1/7





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

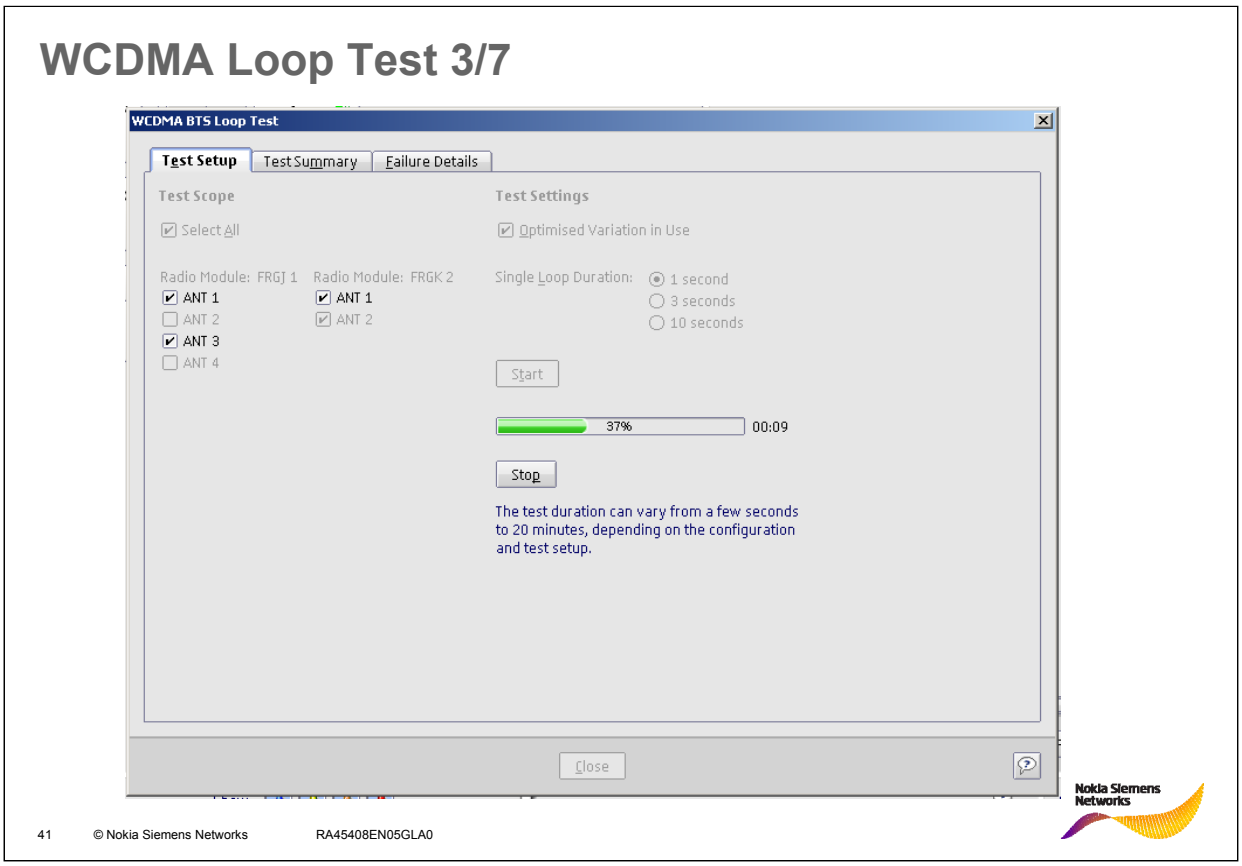
TX 1

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 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.

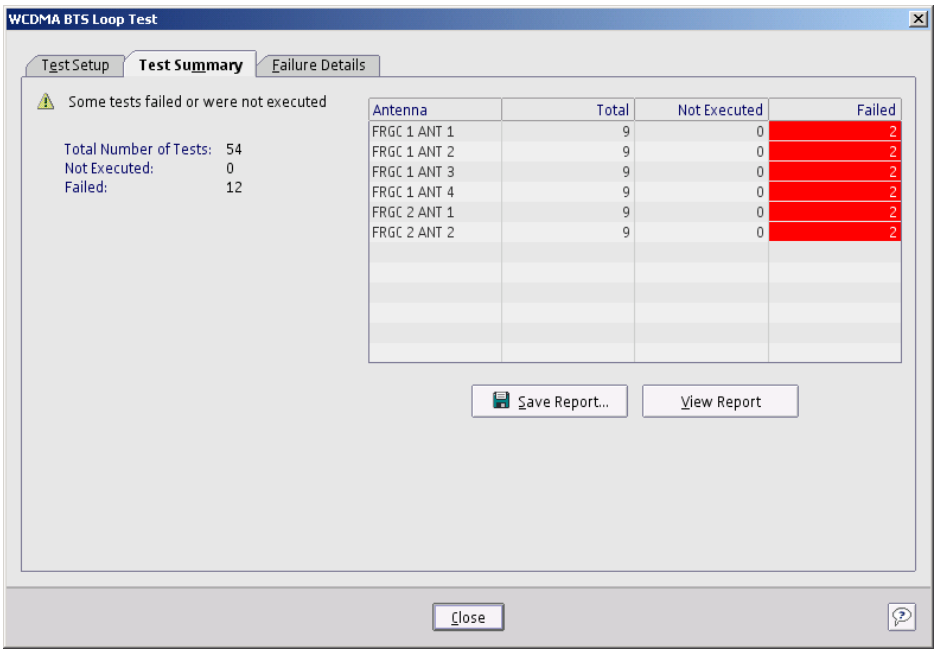
Start

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



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.

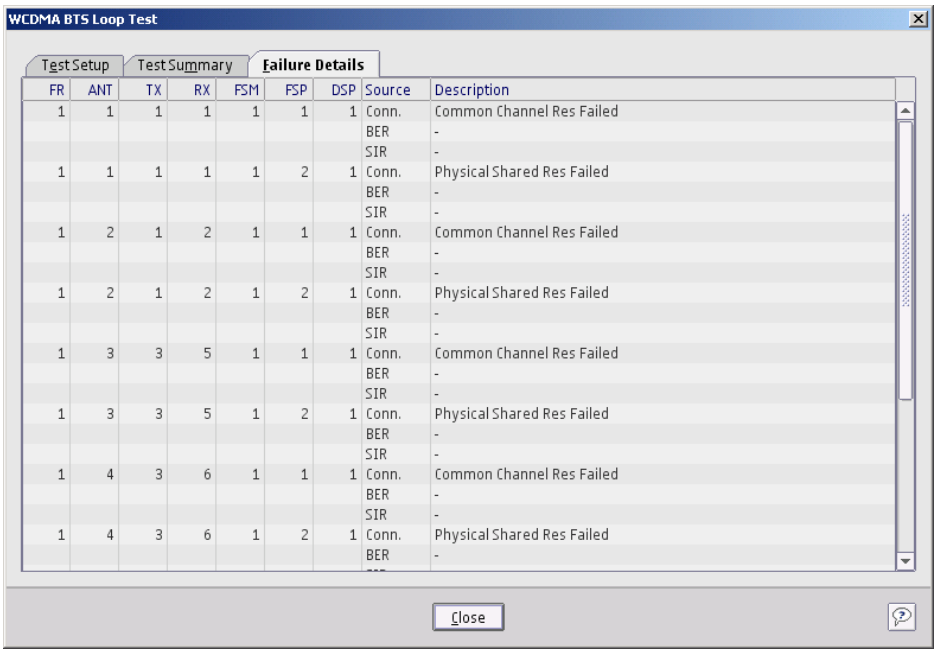
Failed

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

Save Report

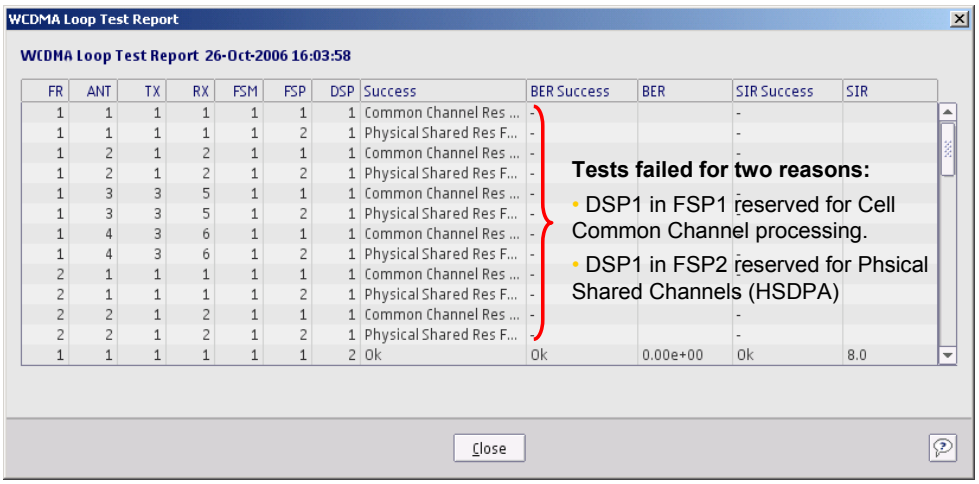
Click *Save Report* to save the test results. In the opened *Save WCDMA Loop Test Report* dialog box you can select whether you want to save the test results to an existing Commissioning Report or to a separate file. If you select the Existing Commissioning Report option, select the report file, and 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



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

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.

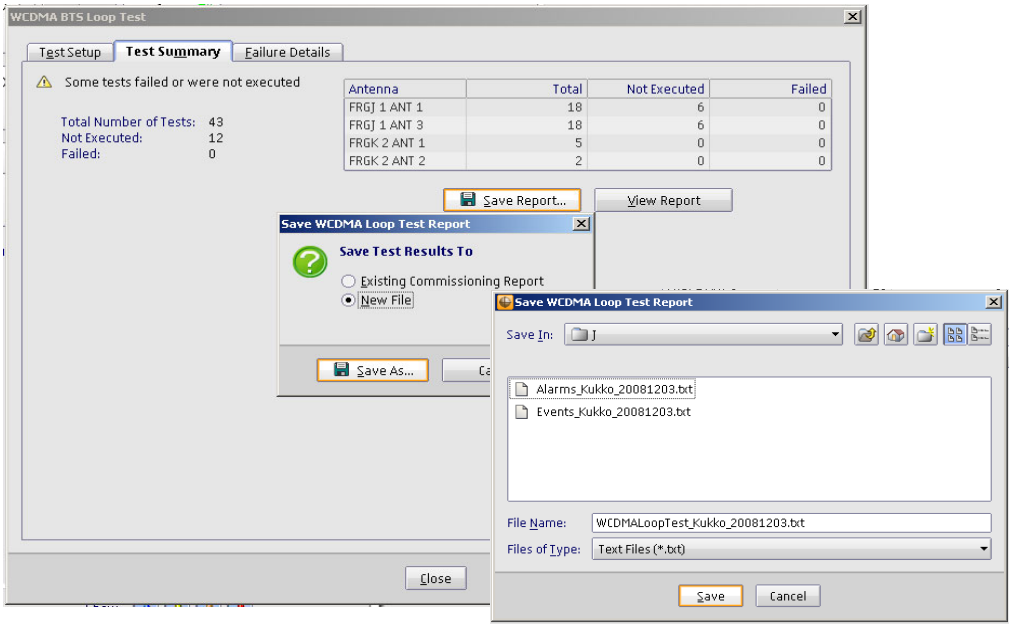
SIR

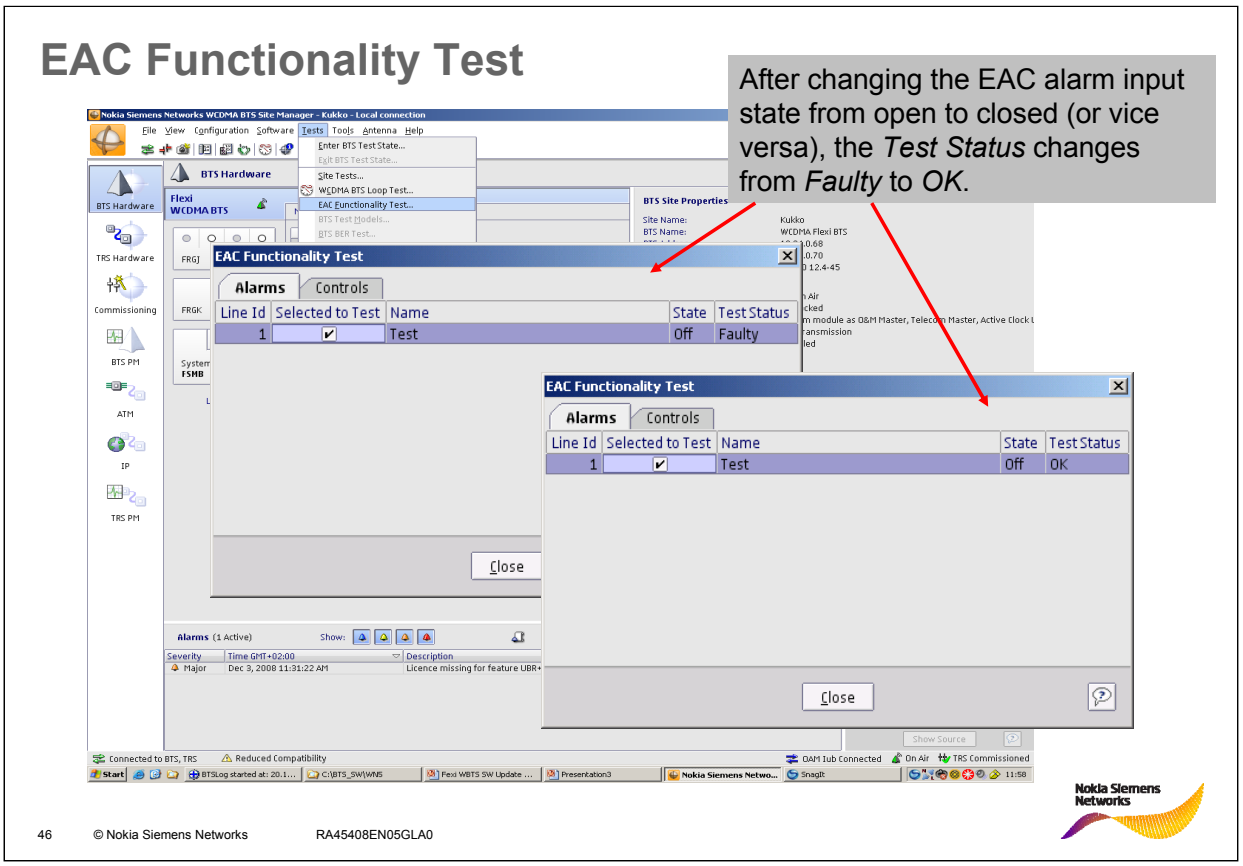
Shows the signal-to-interface-ratio (SIR) of uplink DPCH measured in the BTS receiver while testing the connection. The parameter is evaluated only if it was possible to capture the value during the test. Either the value is evaluated or not is indicated by the SIR Success/Failure parameter.

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





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'.

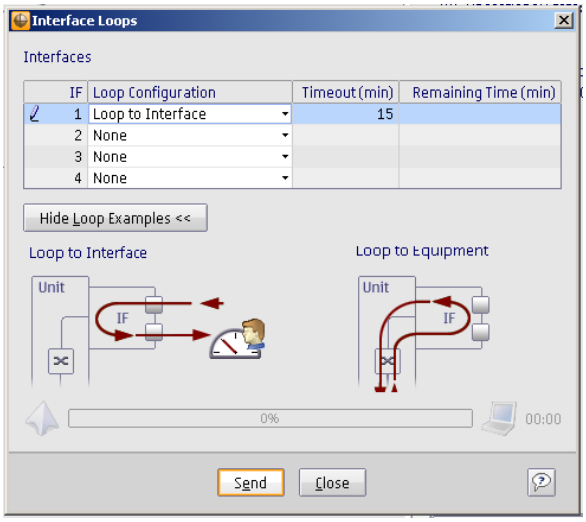
Line Id The *Line Id* column shows the identifier of the external alarm line. **Selected To Test** Select the check box in the *Selected To Test* column if you want to test the alarm. **Name** The *Name* column shows the name of the external alarm line. **State** The *State* column shows the alarm state (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