

## Installation Instructions

Product Family: Base Stations  
Product: Flexi Multiradio BTS LTE  
Release: FL16 2.0

Approval date: 29-Apr-2016



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## Contact

Contact your local Nokia Solutions and Networks support

## Summary of changes:

29-Apr-2016	1.0	Approved version
13-Jun-2016	2.0	Added chapter 6.3.2 <i>Inter eNB Carrier Aggregation features compatibility</i>

## 1 PURPOSE

The purpose of this document is to describe the actions needed for installing and or upgrading this Release Delivery into the customer's network. It contains common Operator Hints that have to taken in account during and after installation/upgrade.

## 2 OVERVIEW

This document covers Installation Instruction Flexi Multiradio BTS LTE (eNB). Standard installation instructions are available in the Customer Documentation library accessible through NOLS [1] at: Nokia Long Term Evolution Information Center [4]

It is required to carefully study content of the library and follow on detailed procedures described in the documents. It will be specified in this document which instruction should be used for installation of certain entity, all exceptions from base procedure will be listed in this document. During the execution of the procedure user will be asked to stop following the official Customer Documentation and execute steps mentioned here. How to access Customer Documentation is described in point 2.1.

### 2.1 Other Relevant Installation Instructions

All LTE Customer Documentation, including standard installation procedures, is accessible through NOLS [1] in the section "Product Information Center" [Nokia Long Term Evolution Product Information Center](#) [4]

It is very important to check if new Change Deliveries are available – they may contain newer version of the documents.

## 3 PREPARATIONS

1. Hardware used for the installation should be integrated according to the hardware installation guide and all necessary cabling should be already done. Necessary documents can be found in the section "Install and commission" in the Customer Documentation library

- For the Flexi Multiradio BTS LTE reference documents are named "Installing Flexi Multiradio BTS LTE..." [2]

2. To enable usage of SON features some preparation steps must be taken. It is described in Customer Documentation library in section "Functional Area Description-Operability-Configuration Management-SON management" chapter 4 "Functional description for SON management" [5].

## 4 MAKING A SAFE COPY OF THE ACTIVE PACKAGE

N/A

## 5 SW DOWNLOADING INSTRUCTIONS

The software for the released products is available in [NOLS](#).

- **Flexi Multiradio BTS LTE:**  
[https://online.networks.nokia.com/SWD/?access\\_key=MTE5MzEx](https://online.networks.nokia.com/SWD/?access_key=MTE5MzEx)

Software Item	Software File Name	SHA1 check sum
BTS Site Manager FSME	BTS Site Manager (ltesdkroot)_FL15A_BTSSM_0000 _000164_000000.zip	669798F3FB66F3390D6E9AABFDDF 9310E46DD085

Software Item	Software File Name	SHA1 check sum
BTS Site Manager FSMF	BTS Site Manager (ltesdkroot)_FL16_BTSSM_0000_000191_000000.zip	0E5FD11DF9384FB18F4A2165FB59 A2C51129DB23
eNB	FL16_ENB_0000_001308_00000 0_release_BTSSM_downloadable .zip	47EF21286B306B7E030FFD755135 A1380FA34D2E
Golden SCF	Golden Config 2016-04-26-FL16- ENB-1288-onwards.zip	5A134A37674BF2A43DD9F3255288 8DC125C29EF2

After downloading the software it is important to generate SHA1 checksum for files and compare it with the one provided in the Summary of Corrections and Enhancements document, this will ensure that the files were not corrupted during downloading.

- **Service Package for NetAct**  
[https://online.networks.nokia.com/SWD/?access\\_key=MTE5MzEx](https://online.networks.nokia.com/SWD/?access_key=MTE5MzEx)

Software Item	Software File Name	SHA1 check sum
NetAct 16.2+SP381+PPValidator059-2*	netact-PPValidator059-2-disc1.iso	4CCFE26720F019F296DF9 530EF6FF2C48E7FB2B4

\*- please refer to *FL16 2.0 SEM Validator59\_2 Installation Instructions* document for more details  
If change for parameters *maxGbrDL* and *maxGbrUL* is needed, after the installation steps from *FL16 2.0 Metadata fix for LNBTS maxGbrDL and maxGbrUL* document should be applied

After downloading the software it is important to generate SHA1 checksum for files and compare it with the one provided in the Summary of Corrections and Enhancements document, this will ensure that the files were not corrupted during downloading.

## 6 SPECIAL CONDITIONS

### 6.1 Flexi Multiradio BTS LTE

**FHCA 472169A.103 product (FPGA) should be used in max. 2\*20W DL power.** This firmware must only be used under the following conditions: 20W mode -40 to +50 degrees.

Symmetrical **power setting IN FRGP** can be use for example: WCDMA 10W + LTE 10W  
Asymmetrical power setting in WCDMA-LTE (WCDMA power different than in LTE) is not supported by FRGP.A RF Module, except for:

- WCDMA 15W + LTE 30W @ 10MHz
- WCDMA 15W + LTE 45W @ 15MHz

### 6.2 RF-Sharing

#### 6.2.1 LTE-GSM RF Sharing (EX)

LTE-GSM RF-Sharing		Status for FL16
RG40	EX5_2	NC
RG40	EX5_2 1.0	NC
RG40	EX5_2 1.1	NC
RG40	EX5_2 2.0	NC

RG40	EX5_2 3.0	NC
RG40	EX16 1.0	Rec.
RG40	EX16 2.0	Rel.

Rec. SW combination recommended  
 Rel. SW combination released  
 NC not compatible

## 6.2.2 LTE-GSM RF Sharing (GF)

LTE-GSM RF-Sharing		Status for FL16
RG40	GF1 1.0	NC
RG40	GF1 1.1	NC
RG40	GF16(GF1 2.0.0)	Rel.
RG40	GF16 1.0(GF1 2.1.0)	Rec.

Rec. SW combination recommended  
 Rel. SW combination released  
 NC not compatible

## 6.2.3 WCDMA-LTE RF Sharing

WCDMA-LTE RF Sharing		Status for FL16
RU50 EP1	WN9.1 1.0	NC
RU50 EP1	WN9.1 2.0	NC
RU50 EP1	WN9.1 3.0	NC
RU50 EP1	WN9.1 4.0	Rec.
WCDMA16	WBTS16	NC
WCDMA16	WBTS16 1.0	Rel.
WCDMA16	WBTS16 2.0	Rel.

Rec. SW combination recommended  
 Rel. SW combination released  
 NC not compatible

Tested upgrade paths:  
 WN9.1 4.0 / FL16 1.0 -> WN9.1 4.0 / FL16 2.0  
 WN9.1 4.0 / RL70 0.2.7 -> WN9.1 4.0 / FL16 2.0

## 6.3 COMPATIBILITY MATRIX

### 6.3.1 Flexi Multiradio BTS LTE

SW delivery	Flexi Multiradio BTS LTE	BTSSM	LTE iOMS	NetAct	
				Delivery/Release	BTSSM in NetAct
FL16 P8/C5	FL16_ENB_0000_001035_100080 FL15A_ENB_0107_001198_000027	FL16_BTSSM_000_000178_000002	R_GOMS7_1.8.1.0 Corr38	NetAct16.2	FL16_BTSSM_000_000173_000000

FL16 1.0	FL16_ENB_0000_001169_00 0000 FL15A_ENB_0107_001471_0 00000	FL16_BTSSM_0 000_000186_00 0000	R_GOMS7_1.8.1 .0 Corr40	NetAct16.2 + SP381	FL16_BTSSM_0 000_000186_00 0000
FL16 2.0	FL16_ENB_0000_001308_00 0000 FL15A_ENB_0107_001577_0 00000	FL16_BTSSM_0 000_000191_00 0000 FL15A_BTSSM_0 0000_000164_0 00000	R_GOMS7_1.8.1 .0 Corr41	NetAct16.2 + SP381 + PPValidator059_2	FL16_BTSSM_0 000_000191_00 0000 FL15A_BTSSM_0 0000_000164_0 00000

### 6.3.2 Inter eNB Carrier Aggregation features compatibility

FL16 2.0 is not compatible with any of the TD-LTE releases in terms of Inter-eNB Carrier Aggregation features (LTE2180, LTE2316, LTE2270).

## 7 DATA MIGRATION

N/A

## 8 RELEASE DELIVERY UPGRADE INSTRUCTIONS

### 8.1 First installation and commissioning

The commissioning procedure of the Flexi Multiradio BTS LTE is described in the document "Commissioning Flexi Multiradio BTS LTE" [3].  
Please be aware that BTS Site Manager shall be updated before the BTS SW.

### 8.2 Project upgrade

System upgrade is described in customer documentation "LTE System Upgrade" [7].

### 8.3 Supported Update/Upgrade Paths

#### Factory SW

- **RL30**  
LN3.0\_ENB\_1103\_771\_02 -> LN7.0\_ENB\_1407\_581\_74 (RL70 2.1) ->  
FL16\_ENB\_0000\_001308\_000000\*
- **FDSW 1.0**  
FDSW1.0\_RP\_FD1405\_310\_00 -> RL70\_ENB\_1407\_585\_04 ->  
FL16\_ENB\_0000\_001308\_000000\*
- **FDSW 1.1**  
FDSW1.0\_RP\_FD1405\_317\_00 -> FL16\_ENB\_0000\_001308\_000000

#### RL60

- **RL60 3.1**  
LN6.0\_ENB\_1311\_907\_18 -> LN7.0\_ENB\_1407\_586\_17 (RL70 2.3) ->  
FL16\_ENB\_0000\_001308\_000000\*

#### RL70

- **RL70 P8/C5**  
LN7.0\_ENB\_1407\_555\_05 -> FL16\_ENB\_0000\_001308\_000000
- **RL70 0.2**  
LN7.0\_ENB\_1407\_557\_36 -> FL16\_ENB\_0000\_001308\_000000

- **RL70 0.2.7**  
LN7.0\_ENB\_1407\_559\_06 -> FL16\_ENB\_0000\_001308\_000000
- **RL70 1.0**  
LN7.0\_ENB\_1407\_563\_13 -> FL16\_ENB\_0000\_001308\_000000
- **RL70 1.1**  
LN7.0\_ENB\_1407\_570\_77 -> FL16\_ENB\_0000\_001308\_000000
- **RL70 2.2**  
LN7.0\_ENB\_1407\_585\_04 -> FL16\_ENB\_0000\_001308\_000000
- **RL70 2.3.1**  
LN7.0\_ENB\_1407\_586\_18 -> FL16\_ENB\_0000\_001308\_000000

#### **FDD-LTE15A**

- **FDD-LTE15A C5/P8**  
FL15A\_ENB\_0107\_001193\_000007 -> FL16\_ENB\_0000\_001308\_000000
- **FDD-LTE15A 0.1.2**  
FL15A\_ENB\_0107\_001197\_000011 -> FL16\_ENB\_0000\_001308\_000000
- **FDD-LTE15A 0.2**  
FL15A\_ENB\_0107\_001198\_000027 -> FL16\_ENB\_0000\_001308\_000000
- **FDD-LTE15A 1.1**  
FL15A\_ENB\_0107\_001552\_000000 -> FL16\_ENB\_0000\_001308\_000000

#### **FDD-LTE16**

- **FDD-LTE16 P8/C5**  
FL16\_ENB\_0000\_001035\_100080 -> FL16\_ENB\_0000\_001308\_000000
- **FDD-LTE16 1.0**  
FL16\_ENB\_0000\_001169\_000000 -> FL16\_ENB\_0000\_001308\_000000

\*- two step installation is required

## **8.4 Cases when SW update is not allowed**

SW update is not allowed in case:

- there is ongoing Radio unit reset,
- there is ongoing BTS reset,
- RF unit is blocked or being blocked.

## **8.5 HW configuration changes**

HW configuration changes should not be done during SW upgrade as this may lead to inconsistencies in the internal configuration files. Changes in configurations should either be executed before SW upgrade or after SW upgrade. In case the changes have been executed before SW upgrade a SW fallback will keep the configuration changes. In case the configuration change will be done directly after SW upgrade and then a SW fallback will be initiated, the changed configuration may lead to start up problems with former SW. Reason would be that the internal configuration file of pre-upgrade will be used and this may not match the changed configuration.

## **8.6 CM Upload must be executed after eNB upgrade in case Automatic Synchronization with NetAct is not enabled**

After the upgrade of an eNB is executed a CM Upload with CM Operation Manager must be executed to synchronize the eNB database with NetAct in case Automatic Synchronization with NetAct is not enabled.



## 8.7 Project upgrade from Factory Delivered Software to FL16

With factory build FDSW 1.1 (FDSW1.0\_RP\_FD1405\_317\_00) update to signed SW during auto configuration is working.

In case an older factory SW is present on the hardware (like FDSW 1.0 or older) following workaround is recommended.

Update software in two steps:

1. Update from factory SW to intermediate unsigned SW like any RL70 load:  
LN7.0\_ENB\_1407\_555\_05 and later
2. Update from the RL70 (unsigned) load to FL16 target load

Note: eNB SW builds are signed in FL16 in general

## 8.8 Wrong security configuration after SW upgrade (reference: NA05894966)

In some rare and random conditions during SW update or upgrade, it may happen that encfs (Encrypted File System) mounting fails. This then causes that security information and certificates stored on this filesystem are lost. They are then automatically reverted back to the previously available ones from previous SW activation. If they are not the same it can possibly leads to communication issues with affected eNBs. Technical Support Note [TS-BTS-SW-0072](#) provides information on this issue and how to use dedicated tool to identify and repair affected eNB's.

## 8.9 SON

SON is a set of features which enables operator to configure base station by connecting it to the network. To enable usage of SON facilities some preparation steps must be taken. It is described in Customer Documentation library in section "Functional Area Description-Operability-Configuration Management-SON management" chapter 4 "SON management" [5]. Descriptions and hints about SON feature usage can be found also in Customer Documentation for iSON Manager.

# 9 GENERAL OPERATOR HINTS

## 9.1 Cells in faulty state after the change of antennaRoundTripDelay

BTS Commissioning reconfiguration with change of the value of RTT delay (*antennaRoundTripDelay*) does not required BTS reset. However there is a need to reset BBU units. Such reset causes following cells behavior:

- After sending the commissioning, cells fall to "Faulty" state.
- After about 2 minutes, the cells state is changed to "Integrated".
- After about one more minute, the cells state is changed to "On Air".

## 9.2 Up to 3 Resets executed on FSMF Upgrade

After upgrade of FSMF from RL70 to FL15A up to 3 resets are executed.

First reset is ApplicationReset.

A second reset is necessary, because there is firmware update and this needs a reset.

A third reset will be executed when the domain-id is changed.

This results in an outage of about 10 minutes.

## 9.3 Redirection to ultraFDD supported only

Redirection is only supported to ultraFDD. There is no feature 'Redirection to ultraTDD'. Nevertheless the value 'ultraTDD' can be selected in instances of the managed object classes REDRT, MORED and MODRED.

Please do not set parameter redirRAT to 'ultraTDD' in REDRT, MORED and MODRED otherwise the related cell will not provide service and the alarm 'Cell configuration data distribution failed' will be reported after upgrade.

## 9.4 Juniper SEC-GW

If eNB trust chain has a different Root CA, it is necessary to install as Trust Anchor in the GW not only the eNB RootCA but also the complete eNB trust chain including all intermediate CAs.

## 9.5 Checkpoint SEC-GW

Operation mode: Round robin for Ethernet interface on Checkpoint should be avoided as packet loss is observed with this setting in R&D Lab. Recommended setting for Ethernet interface operation mode configuration at Checkpoint to be set to LACP (802.3ad) .

IKEv1:

To work with IKEv1 one need to choose exclusively “IKEv1 only” mode in community level on CP.

IKEv1:

Multi tunnel configuration: Not released

(Restriction for multi tunnel configurations due to CP offering of traffic selector of 0.0.0.0/0 0.0.0.0/0 (universal tunnel) and so no IPSec SA established.)

Multi Layer Certificates:

Multi Layer Certificates operation with Checkpoint is not released by Nokia Security organization.

## 9.6 Auto Connection and VLAN Scan Optimization

Cisco Interoperability for improved eNB AutoConnection Feature.

The SON feature has been improved to be faster. In case of using VLANs at the transport configuration a VLAN scan functionality has been introduced with FL15A SW. This feature will inspect all incoming packets to detect the VLAN IDs in use. Since this process speeds up the switching time between sending DHCP DISCOVER messages as plain frames and sending VLAN tagged messages, a change at the access router/switch has to be made if it is a Cisco device. By default a physical interface on Cisco is set to support “DTP – Dynamic Trunking Protocol” which is a proprietary protocol. If this is enabled it will try to detect configured trunks on the next hop once the port is up. It will block the VLAN IF to be up for 30sec. This will cause the DHCP negotiation to fail. According to Cisco’s documentation this feature should be turned off if the next hop is not a Cisco product.

Therefore configuration of the physical interface at Cisco router/switches should be as following:

----- Example -----

```
TT_Cisco#sh run int gi 3/11
Building configuration...
```

```
Current configuration : 273 bytes
!
interface GigabitEthernet3/11
description Gi 3/11 Temp AutoConnection
switchport
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 201
switchport mode trunk
switchport nonegotiate
logging event link-status
spanning-tree portfast trunk
end
```

## 9.7 LTE497 Smart Admission Control: Avoid GBR admission in empty cells fail

When 'Enhanced AC and GBR services' are activated, i.e. if 'actEnhAcandGbrServices' equals 'true', it is highly recommended to configure 'gbrCongHandling' to 'I2andI3'. If it not configured like this, GBR admission in empty cells may fail.

## 9.8 IPSec: MTU size in OMS, CA Server and LDAP Server needs to be reduced to 1400 Bytes

IPSec requires add. IP overhead. In case the default MTU size of 1500 Bytes is used, the IPSec Gateway needs to fragment the IP packets before encrypting is done. Some applications are setting the 'don't fragment' bit, which is prohibiting the fragmentation, but in this case the IP packets are dropped and not transferred at all. In order to avoid this the MTU size of **OMS, CA Server and LDAP Server** shall be limited.

For OMS:

```
fsipnet ethiface modify eth0 node CLA-0 mtu 1400
fsipnet ethiface modify eth1 node CLA-0 mtu 1400
fsipnet bond modify bond0 node CLA-0 mtu 1400
```

## 9.9 IPSec PROTECT / BYPASS Policies Definition

For the configuration of IPSec policies in the eNB, the following rule needs to be considered. In case of several matching IPsec policies, the policy rule which shall be applied needs to have a lower number than the other matching policy. The lowest number of several matching policies is applied first.

For example, if a wide-ranging PROTECT policy is defined (e.g. ANY-TO-ANY) and a dedicated traffic type shall bypass the IPSec tunnel, than the BYPASS policy needs to be configured with a lower 'Policy Order Number' than the protect policy.

## 9.10 ICMP Rate Limiting

In order to avoid a system outage due to DoS attacks (ICMP flood) the ingress and egress ICMP packet rates are limited. Only a burst of 8 ICMP\_ECHO\_REQUESTS / ICMP\_ECHO\_REPLY are allowed. If e.g. more than 8 ICMP\_ECHO\_REQUESTS are sent in a burst, eNB will only reply to the first 8. This is applicable for the eNB interface address(es) (Ethernet and VLAN).

## 9.11 LTE574 IP Transport Network Measurements: Configuration of the UDP Port number of the TWAMP Responder

Currently, the UDP port of the TWAMP Reflector can be freely configured in the range from 0 to 65535, with a default value of 5000. Free configuration of this parameter requires special care, since the entries may conflict with port numbers which are already assigned to other applications. E.g. the port numbers 0 ... 1023 and 5001 ... 5010 are reserved and must not be used for the TWAMP responder function. Currently, the system does not support a complete check of the configured TWAMP responder port number against all other port numbers used in the system.

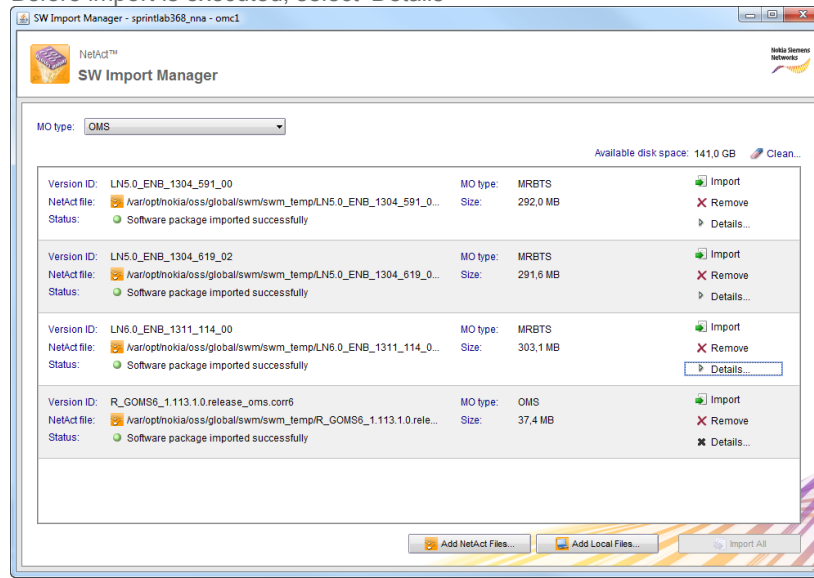
To avoid conflicts between the TWAMP UDP port number and other port numbers, it is recommended to always use the default value of 5000. It has been found that the flexibility in configuring the port number does not provide a real benefit, and using a fixed value eliminates the possibility of misconfigurations.

## 9.12 BTS Site Manager: Date/Time in Transmission Alarms is misleading

Date/time included in fault name of transmission alarms is misleading in BTS Site Manager. Same issue is correctly displayed in NetAct Alarm Monitor.

## 9.13 Import new MRBTS SW to NetAct

When a new MRBTS SW is imported to NetAct SW Archive the 'Version ID' and the 'Package name' should be set to the SW release version. By default the file name of the SW is entered. If the default name is used an automatic fallback via NE-triggered-SW-update wouldn't work: Before import is executed, select 'Details'



And enter in the fields 'Version ID' and 'Package name' the SW release version e.g. LN6.0\_ENB\_1311\_114\_00 as shown as example in the picture above and below.

The screenshot shows the 'SW Import Form' window. It contains the following fields and values:

- MO details:**
  - MO type: MRBTS
  - Releases: All
  - MO vendor: NSN
  - Subtypes: All
- Software details:**
  - Version ID: 0\_ENB\_1311\_114\_00
  - Package name: 0\_ENB\_1311\_114\_00
  - System release: (empty)
  - Experimental SW: ☒ No
  - Major version: (empty)
  - Minor version: (empty)
  - Maintenance version: (empty)
  - Build number: (empty)
  - Release date: (empty)
  - Description: (empty text area)
  - Lifecycle status: New
  - SW classification: UPDATE
  - Package size: 303,1 MB
  - Other designator: (empty)
  - Operating system: (empty)
- Checksums:**
  - SHA1: (empty)
  - MD5: (empty)

Buttons at the bottom include 'Save' and 'Close'.

## 9.14 Automatic Synchronization with NetAct after upgrade of eNB

By default the feature LTE954 'Intelligent Configuration Synchronization' is disabled in NetAct.

If it is disabled data synchronization via CM Upload of NetAct must be executed manually after upgrade (the same way as it was in previous releases).

If it is enabled the automatic upload of the configuration data is not started immediately after upgrade, it is started after a configurable time interval. Furthermore there are situations when it is necessary to perform manually the data synchronization after upgrade even the feature is enabled. This can happen when the establishment of the OAM connection takes a long time, but the startup of the eNB is very quick, e.g. when eNB is configured with only one cell and OAM connection with IPSEC. If after upgrade the configuration data synchronization state is empty the eNB must be manually synchronized with NetAct.

For more information about the configuration of the feature LTE954 'Intelligent Configuration Synchronization' please refer to the documentation of LTE954.

## 9.15 LTE523 Multi-layered Certificate Authorities: Manual key and certificate commissioning

Manual key and certificate commissioning: BTS and eNB does not support slash '/' as subject name element separator.

## 9.16 BTS booted due to TRS power on reset during FSMF upgrade

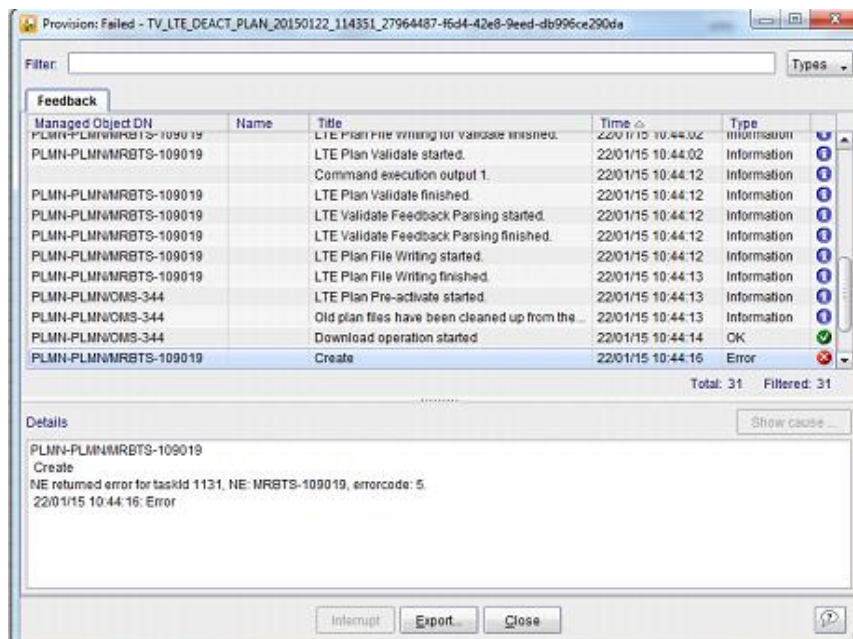
When FSMF upgrade requires FPGA version upgrade, during activation of new software, an additional power on reset occur after FPGA firmware update. Because of this reset, after software upgrade, BTS booted alarm due to TRS power on reset alarm will observed. Alarm can be ignored in this case.

## 9.17 RF Sharing: Upgrade

Unless otherwise stated, it is recommended to first upgrade the master technology (i.e. LTE) as the SW management of Radio Modules in RF sharing is done via the master System Module only.

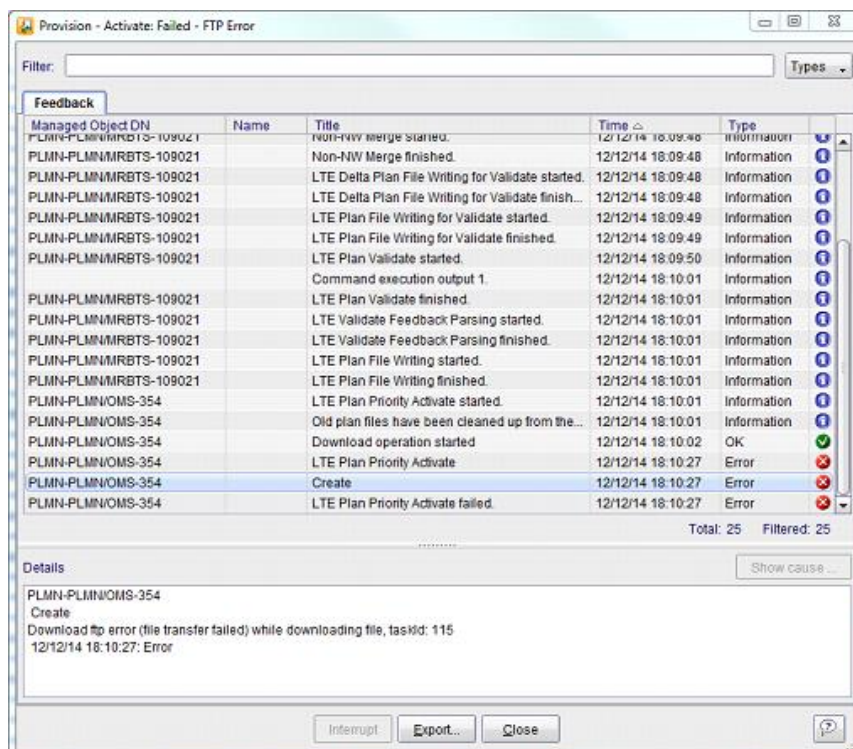
## 9.18 RF Sharing: Errors in provisioning

### 1. Provisioning Failed with errorcode 5:



**Solution:** Upload of eNB or iOMS is needed from CM Operation Manager.

## 2. Provisioning Failed with ftp error:



**Solution:** IP of DNS Server on iOMS is not correct. It should be NetAct node3 address.



## 9.19 Recommendations for RF Sharing WCDMA-LTE dual band configurations

- During FSMF rollout 3G SM optIf4 should be connected to 4G FSMF optIf6 for sync  
Advantage: No change of sync port during upgrade to dual band configuration
- Install FBBC during FSMF rollout  
Advantage: No additional power off/on reset during upgrade from single band RF sharing

## 9.20 RF Sharing WCDMA-LTE Synchronization without LTE1710 Sync Hub direct forward

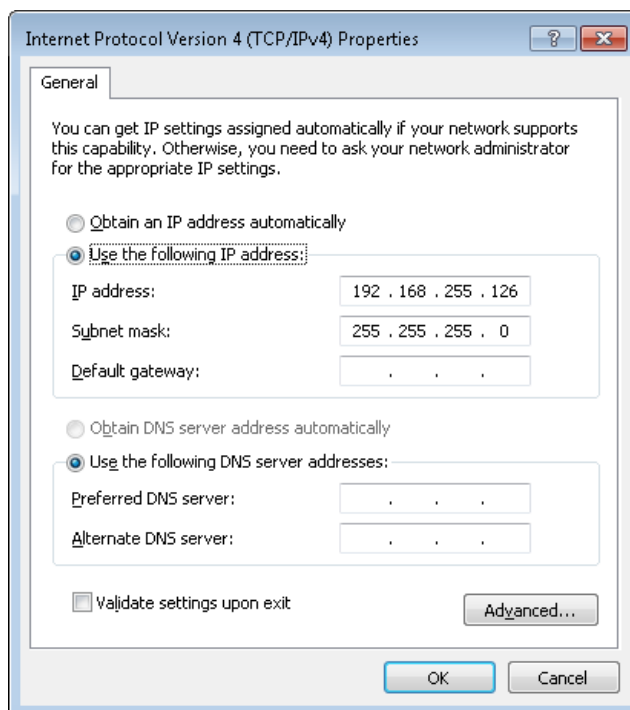
- Clock source switching from OCXO to clock received from RP3-01, when operating as an extension system module or as a synchronization slave system module.
- At slave system module, the setting about the sync is not necessary. Synchronization will be fixed to master system module.
- If system module is synchronized to master system module, Site manager will display the synchronization source as "Other BTS".

## 9.21 RF sharing WCDMA-LTE with FSMF used for the LTE side

**LTE side:**

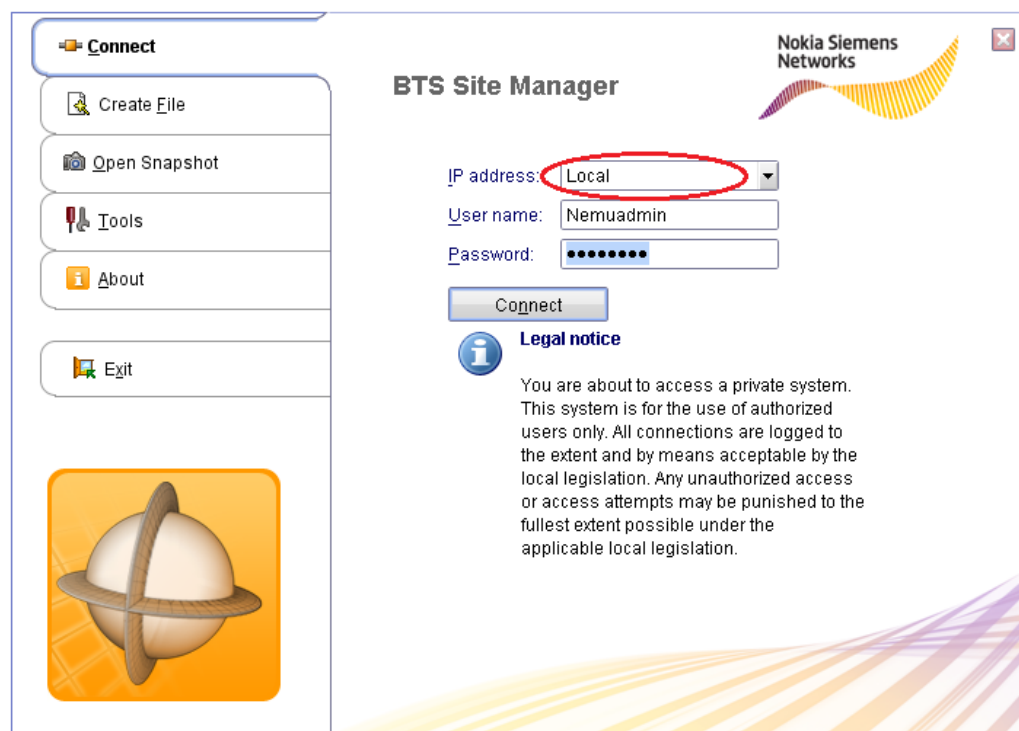
**Local Maintenance Terminal (LMT) of the LTE eNB:**

Set the IP address of the LMT PC to 192.168.255.126/24.

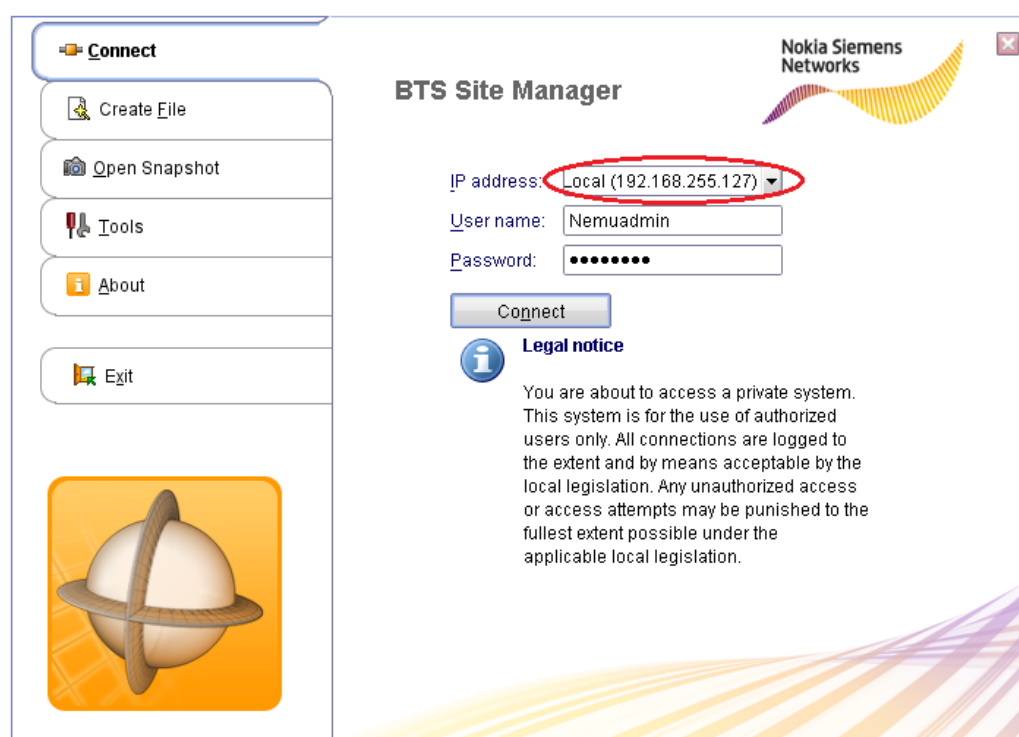


**LTE BTS Site Manager:**

It is possible to use local or remote IP addresses to login to the LTE eNB with BTS Site Manager. In case of using the local IP address, for a standalone LTE eNB choose the option "Local":



For an LTE eNB running in RF sharing WCDMA-LTE configuration, choose “Local (192.168.255.127)”:



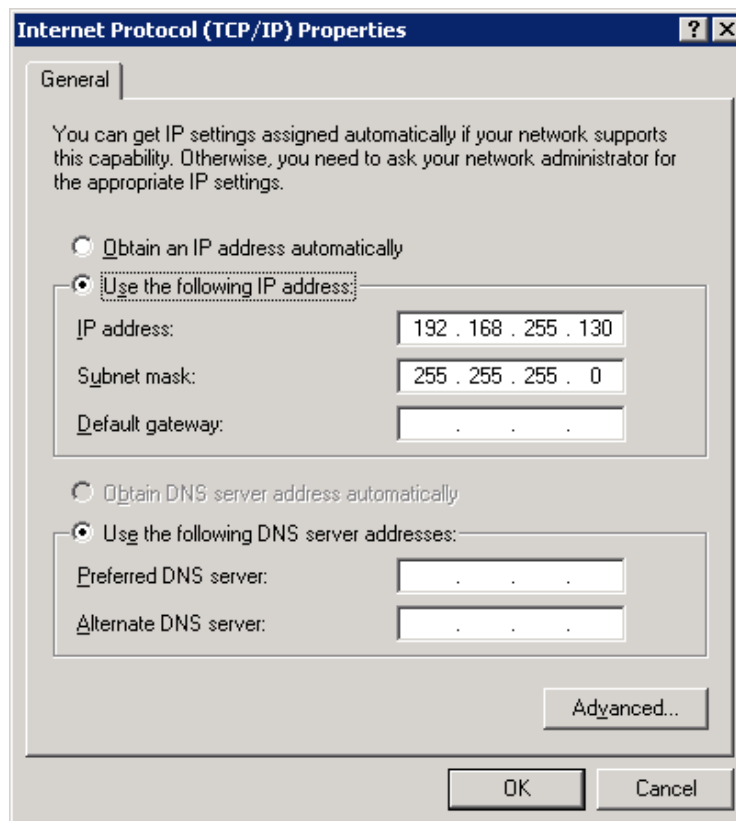


After enabling or disabling RF sharing for the LTE eNB, please restart the BTS Site Manager with the correct option.  
Alternatively the remote IP address of the LTE eNB can be used.

## WCDMA side:

### Local Maintenance Terminal (LMT) of the LTE eNB:

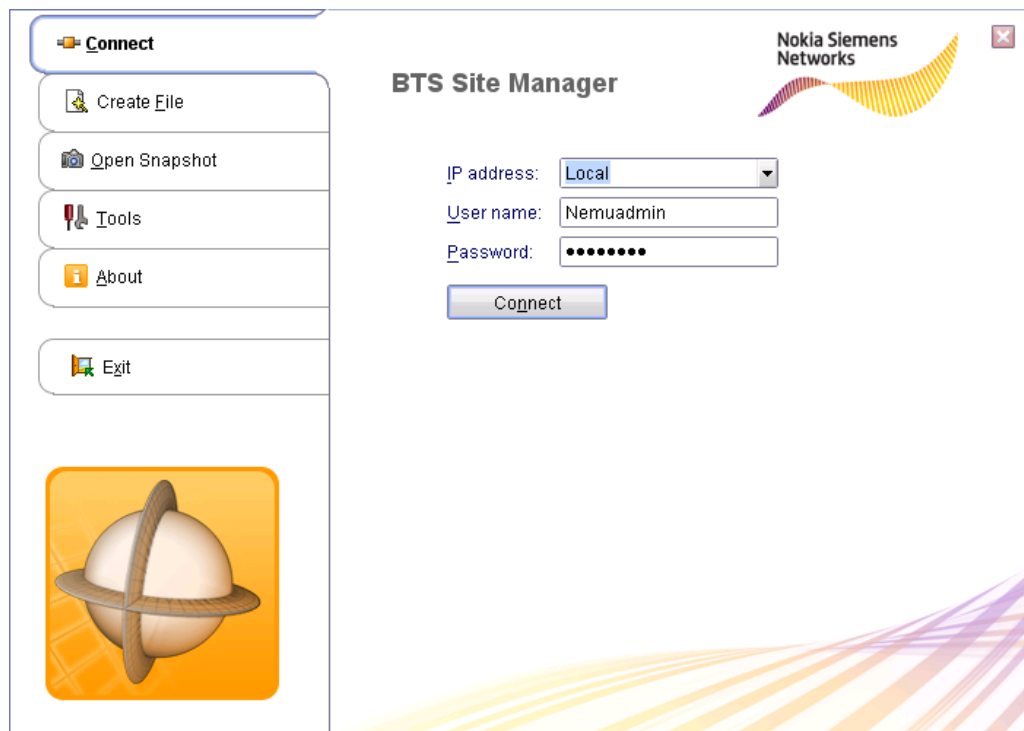
Set the IP address of the LMT PC to 192.168.255.130/24.



## WCDMA BTS Site Manager:

It is possible to login with local or remote IP addresses to the WCDMA BTS with BTS Site Manager. Use the option Local, or the remote IP address of the BTS.

For example, using the option Local:



## 9.22 Do not configure WCDMA-LTE RF sharing in use if shared BTS site does not contain WCDMA system module

If WCDMA system module does not exist AND if WCDMA-LTE RF sharing has been taken into use then BTS remains in initializing state because WCDMA system module is fixedly synchronization master in WCDMA-LTE RF sharing and if it does not exist then BTS remains in initializing state. Initializing state in BTS SW prevents reconfiguration commissioning from BTSSM

Workaround:

If this accidentally happens it is possible to commission BTS to the synchronization master mode via NetAct, because Flexi Radio auto-detection is not required, when commissioned via NetAct.

## 9.23 Change of RX level calculation procedure for Vegas and Reno RF Variants

With FL15A SW RX level calculation procedure has been changed for Vegas FXEB, FXDB, FXCB, FXFC and Reno FHEB, FHDB, FRPK RF variants.

Instead of using power scaling factor values hardcoded in BPF file Scaling factor as sent by Radio Module is used in System Module for the RX level calculation.

Impact on network performance: Modification of scaling factor are visible in change of KPI trends for RSSI PUCCH/PUSCH (up-to +-3dB) and mostly – but depending on settings for UL Power Control – additionally in Power Head Room Reporting from UE, UL SINR, UL HARQ Retransmission.

## 9.24 Supported PRACH Configuration index values

**Cell bandwidths 5.0 MHz, 10 MHz, 15 MHz and 20 MHz (dlChBw)**

Supported PRACH Configuration index values are:

PRACH format 0: 3...8

PRACH format 1: 19...24

**Cell bandwidths 1.4 MHz and 3 MHz (dlChBw)**

Supported PRACH Configuration index values are:

PRACH format 0: 3, 4, 5  
PRACH format 1: 19, 20, 21

## 10 CHECKING OF THE PACKAGE CONSISTENCY

After downloading the software it is important to generate SH1 checksum for files and compare it with the one provided in the Summary of Corrections and Enhancements document, this will ensure that the files were not corrupted during downloading.

In order to check the package consistency after Flexi Multiradio BTS LTE SW update, please ensure that the procedure "Update SW to BTS site" is terminating successfully.

## 11 FALLBACK

### 11.1 No Configuration changes during SW upgrade

HW configuration changes should not be done during SW upgrade as this may lead to inconsistencies in the internal configuration files. Changes in configurations should either be executed before SW upgrade or after SW upgrade. In case the changes have been executed before SW upgrade a SW fallback will keep the configuration changes. In case the configuration change will be done directly after SW upgrade and then a SW fallback will be initiated, the changed configuration may lead to start-up problems with former SW. Reason would be that the internal configuration file of pre-upgrade will be used and this may not match the changed configuration.

For new HW that was not supported by previous SW (i.e. FBBC extension board) the HW changes and configuration have to be done after SW upgrade. Those changes must be revoked before fallback otherwise the previous SW may not work.

### 11.2 ALDs may not be detected after rollback to LN7.0 2.0 SW or to previous LN7.0 SW

It is possible that after software rollback from FL16 to LN7.0 2.0 SW or previous LN7.0 SW, ALDs (i.e. MHA, RET) are not detected. The radio block and unblock operation has to be performed in order to restore full functionality.  
Problem is solved from LN7.0 2.1 SW onwards.

### 11.3 Rollback to LN7.0 releases

When a rollback to LN7.0 SW releases is needed, it should be executed using the "Rollback to Passive SW" button only. This is valid for FSM Rel. 2 and Rel. 3.  
For more information on details and restrictions, refer to the TSN: [TS-BTS-SW-0042](#).

## 12 APPENDICES / REFERENCES

[1] NOLS - Nokia Online Services log in link: <https://online.portal.nsn.com>

[2]

- "Installing Flexi Multiradio 10 Base Station for Stack, Wall, and Pole Configurations"
- "Installing Flexi Multiradio BTS LTE Modules for Stack, Wall, and Pole Configurations"
- "Installing Flexi Multiradio Base Station and Flexi Multiradio 10 Base Station Modules in Cabinets"
- "Installing Flexi Multiradio Base Station and Flexi Multiradio 10 Base Station Optional Items"
- "Installing Flexi Cabinet for Outdoor (FCOA)"
- "Installing Flexi Cabinet for Indoor (FCIA)"
- "Cabling Flexi Multiradio 10 Base Station"
- "Cabling Flexi Multiradio BTS LTE"
- "Installing and Cabling Flexi Zone Micro BTS"

[3]

- "Commissioning Flexi Multiradio BTS LTE"
- "Commissioning Flexi Zone Micro BTS LTE"

- [4] LTE Radio Access, Rel. FDD-LTE16, Operating Documentation
- [6] "Upgrading from LTE OMS15A or LTE OMS 7.0 to LTE OMS16"
- [7] "LTE System Upgrade"
- [8] "Installing and Commissioning LTE OMS"

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