

Configuration Management Support for BSC using node MOM in ENM

File Description

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1 About This Document

OSS-RC uses Cellular Network Administration (CNA) and Base Station Management (BSM) applications to configure BSC nodes. In ENM, the BSC node has recently introduced a Managed Object Model (MOM). ENM supports configuration of this BSC data using ENM's Model-based CM Tools. These include, Import, ENM CLI, and Topology Browser. CM operations examples in this document are based on G18.Q4.2 MOM, for newer releases. Refer the BSC MOM in GRAN CPI for updated MOM structure

This document describes how to do some common use cases using this BSC MOM.



2 ENM Level Use Cases

2.1 Move Cell

For information on Move Cell, see Move Cell User Guide.

2.2 Move GSM RBS (DU Radionode Re-parenting)

This section provides the steps to move the RBS (BTS) from one BSC to another BSC including the cells connected to the RBS.

1. Define the new TG in target BSC using Bulk CM export data from source BSC.
 - a. For packet Abis over IP, MO's LBG, PSTU, SCGR, and SC need to be defined prior to define the TG.
 - b. For packet Abis over TDM, MO's SCGR and SC need to be defined prior to define the TG

For more information, refer 'BTS Level Use Cases' in 'BSC Model Based Configuration Management (12/198 17-APT 210 09)'.

2. Complete steps in the Move Cell User Guide, to move the cells connected to target BSC
3. Change the state of the new TG to deblocked state as outlined below
 - a. change the moAdmState to DEBLOCKED in G12TG MO.
4. Delete TG from source BSC.
 - a. For packet Abis over IP, MO's LBG, PSTU, SCGR, and SC need to be deleted after deletion of the TG.
 - b. For packet Abis over TDM, MO's SCGR and SC need to be deleted after deletion of the TG.

For more information, please refer 'BTS Level Use Cases' in 'BSC Model Based Configuration Management (12/198 17-APT 210 09)'.

2.3 Add RBS

For the addition of RBS steps, refer the 'BTS Level Use Case' section in 'BSC Model Based Configuration Management document (12/198 17-APT 210 09)'.



2.4 Add TRXC

This section describes how to add G12TRXC and child MO's G12Tx, G12Rx and G12Ts.

For more information on the model and mandatory attributes in these MO's, see 'Define G12 TG in Transmission Mode SCM' and 'Define G12 TG in Transmission Mode TDM' sections in the BSC Model Based Configuration Management.document (12/198 17-APT 210 09) in the GSM RAN CPI Library.

2.5 Remove TRXC

The following command is used to delete the TRXC

ENM CLI Syntax

```
&187;cmedit delete SubNetwork=ENM_BSC_NW,MeContext=BSC028,ManagedElement=BSC028,
BscFunction=1,BscM=1,Bts=1,G12Tg=40,G12Trxc=0 →
WARNING: Continuing in Preview Mode. Please confirm if you want to continue comm →
and execution
FDN : SubNetwork=ENM_BSC_NW,MeContext=BSC028,ManagedElement=BSC028,BscFunction=1 →
,BscM=1,Bts=1,G12Tg=40,G12Trxc=0 →
1 instance(s) will be deleted by this command.
&187;cmedit delete SubNetwork=ENM_BSC_NW,MeContext=BSC028,ManagedElement=BSC028, →
BscFunction=1,BscM=1,Bts=1,G12Tg=40,G12Trxc=0 --force →
SUCCESS FDN : SubNetwork=ENM_BSC_NW,MeContext=BSC028,ManagedElement=BSC028,BscFu →
nction=1,BscM=1,Bts=1,G12Tg=40,G12Trxc=0 →
1 instance(s) deleted
```

2.6 Connect Cell/Channel Group to TG

ENM CLI Syntax

```
&187;cmedit set SubNetwork=ENM_BSC_NW,MeContext=BSC028,ManagedElement=BSC028,Bsc →
Function=1,BscM=1,Bts=1,G12Tg=40 connectedChannelGroup=["SubNetwork=ENM_BSC_NW,M →
eContext=BSC028,ManagedElement=BSC028,BscFunction=1,BscM=1,GeranCellM=1,GeranCel →
l=CELL1,ChannelGroup=0"] →
SUCCESS FDN : SubNetwork=ENM_BSC_NW,MeContext=BSC028,ManagedElement=BSC028,BscFu →
nction=1,BscM=1,Bts=1,G12Tg=40 →
1 instance(s) updated
```

2.7 Disconnect Channel Group/Cell from TG

List of the preconditions which must apply before disconnection of TG from the channel group:



- Connected channel groups must be in state HALTED, please refer section 'Halt Internal GERAN Cell' in 'BSC Model Based Configuration Management document (12/198 17-APT 210 09)' to apply this condition.
- Cells which contain connected channel groups must not be connected to Radio Interface Recording. Please refer to the 'Radio X-ceiver Administration, Channel Group from Transceiver Group, Disconnect OPI (32/154 31-CRT 241 17)' to apply this condition.

ENM CLI Syntax

```
&187;cmedit set SubNetwork=ENM_BSC_NW,MeContext=BSC028,ManagedElement=BSC028,BscFunction=1,BscM=1,Bts=1,G12Tg=40 connectedChannelGroup=[] →  
SUCCESS FDN:SubNetwork=ENM_BSC_NW,MeContext=BSC028,ManagedElement=BSC028,BscFunction=1,BscM=1,Bts=1,G12Tg=40 →  
1 instance(s) updated
```



3 Formatting Examples

Here are some examples from the Node CLI Use Case doc showing ECLI format mapped to ENM formats (CLI and/or Bulk Import).

3.1 Define Internal GERAN Cell

This example shows how to define a new internal cell within a BSC. Only mandatory attributes are mentioned in this example.

Precondition: To define a cell global system type gSysType must be defined.

3.1.1 ECLI Syntax

```
>dn -m GeranCellM
ManagedElement=BSC109,BscFunction=1,BscM=1,GeranCellM=1

(GeranCellM=1)>configure
(config-GeranCellM=1)>GeranCell=ABC
(config-GeranCell=ABC)>cSysType=GSM900
(config-GeranCell=ABC)>commit

(IdleModeAndPagingBsc=1)>show
GeranCell=ABC
  cSysType=GSM900
  geranCellIndividual=810
  CapacityLock=1
  ChannelAllocAndOpt=1
  ChannelGroup=0
  Dtm=1
  Gprs=1
  HierarchicalCellStructure=1
  IdleModeAndPaging=1
  LchAvailSupervision=1
  Mobility=1
  MsQueuing=1
  PowerControl=1
  PowerSavings=1
  Security=1
  SmsCellBroadcast=1
  Son=1
```

All child MOs with default values of cell configuration is created automatically by the system. Channel group 0 is also created automatically for the cell during cell definition. These system defined MOs cannot be deleted by a user.

3.1.2 ENM CLI Syntax

Request

```
cmedit create SubNetwork=ENM_BSC_NW,MeContext=BSC166,ManagedElement=BSC166,BscFu
nction=1,BscM=1,GeranCellM=1,GeranCell=ABC geranCellId=ABC,cSysType=GSM900 →
```



Response

```
FDN : SubNetwork=ENM_BSC_NW,MeContext=BSC166,ManagedElement=BSC166,BscFunction=1 →  
      ,BscM=1,GeranCellM=1,GeranCell=ABC  
baListActive : null  
baListIdle : null  
bcc : null  
bcchNo : null  
bcchType : NCOMB  
cgi : null  
cSysType : GSM900  
dedicatedG12Trxc : null  
dedicatedG12Tx : null  
fnOffset : 0  
geranCellId : ABC  
irc : OFF  
ncc : null  
state : HALTED  
xRange : NO
```

```
1 instance(s) updated
```

3.2 CS Cell Page Activation

This example shows how to activate the functionality CS Cell Page in the BSC.

3.2.1 ECLI Syntax

```
>dn -m IdleModeAndPagingBsc  
ManagedElement=BSC109,BscFunction=1,BscM=1,Bsc=1,IdleModeAndPagingBsc=1  
  
(IdleModeAndPagingBsc=1)>configure  
(config-IdleModeAndPagingBsc=1)>csCellPage=ACTIVE  
(config-IdleModeAndPagingBsc=1)>commit  
  
(IdleModeAndPagingBsc=1)>show  
IdleModeAndPagingBsc=1  
csCellPage=ACTIVE
```

3.2.2 ENM CLI Syntax

Request

```
cmedit set SubNetwork=ENM_BSC_NW,MeContext=BSC028,ManagedElement=BSC028,BscFunc →  
tion=1,BscM=1,Bsc=1,IdleModeAndPagingBsc=1 csCellPage=ACTIVE
```

Response

```
SUCCESS FDN : SubNetwork=ENM_BSC_NW,MeContext=BSC028,ManagedElement=BSC028,BscFu →  
nction=1,BscM=1,Bsc=1,IdleModeAndPagingBsc=1
```

```
1 instance(s) updated
```



3.3 Configure Attributes for Cell Activation

3.3.1 ECLI Syntax

```

This example shows how to configure mandatory attributes required for cell activation. →
Configure mandatory attributes in GeranCell, PowerControlDownlink, PowerControlUplink, IdleModeAndPaging M0s. →
(GeranCell=ABC)>configure
(config-GeranCell=ABC)>bcc=0
(config-GeranCell=ABC)>ncc=6
(config-GeranCell=ABC)>cgi=262-80-1432-5
(config-GeranCell=ABC)>bcchNo=61
(config-GeranCell=ABC)>commit
(GeranCell=ABC)>show
GeranCell=ABC
  bcc=0
  bcchNo=61
  cgi="262-80-1432-5"
  cSysType=GSM900
  geranCellIndividual=169
  ncc=6
  CapacityLock=1
  ChannelAllocAndOpt=1
  ChannelGroup=0
  Dtm=1
  Gprs=1
  HierarchicalCellStructure=1
  IdleModeAndPaging=1
  LchAvailSupervision=1
  Mobility=1
  MsQueueing=1
  PowerControl=1
  PowerSavings=1
  Security=1
  SmsCellBroadcast=1
  Son=1

(GeranCell=ABC)>configure
(config-GeranCell=ABC)>PowerControl=1
(config-PowerControl=1)>PowerControlDownlink=1
(config-PowerControlDownlink=1)>bsPwrB=15
(config-PowerControlDownlink=1)>bsPwrT=15
(config-PowerControlDownlink=1)>commit
(PowerControlDownlink=1)>show
PowerControlDownlink=1
  bsPwrB=15
  bsPwrT=15
  qDesDownlinkAwb=40

(PowerControlDownlink=1)>configure
(config-PowerControlDownlink=1)>up
(config-PowerControl=1)>PowerControlUplink=1
(config-PowerControlUplink=1)>dtxU=USE
(config-PowerControlUplink=1)>commit
(PowerControlUplink=1)>show
PowerControlUplink=1
  cchPwr=39
  dtxU=USE
  msTxPwr=39
  qDesUplinkAwb=40
  ssDesUplinkAwb=92

(PowerControlUplink=1)>configure
(config-PowerControlUplink=1)>up
(config-PowerControl=1)>up
(config-GeranCell=ABC)>IdleModeAndPaging=1
(config-IdleModeAndPaging=1)>nccPerm=[0,1,2,3,4,5,6,7]
(config-IdleModeAndPaging=1)>commit
(IdleModeAndPaging=1)>show
IdleModeAndPaging=1
  nccPerm
    0
    1

```



```
2
3
4
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6
7
Each channel group of the cell which, needs to be activated must be connected to →
a TG and have at least one frequency defined. Channel group can be connected to →
G12Tg using g12Tg.connectedChannelGroup attribute or to G31Tg using g31Tg.conne →
ctedChannelGroup attribute. Corresponding TG MO must be defined before execution →
of this step.
>dn -m Bts
ManagedElement=BSC143,BscFunction=1,BscM=1,Bts=1
(Bts=1)>G12Tg=20
(G12Tg=20)>configure
(config-G12Tg=20)>connectedChannelGroup=ManagedElement=BSC143,BscFunction=1,BscM →
=1,GeranCellM=1,GeranCell=ABC,ChannelGroup=0
(config-G12Tg=20)>commit

(G12Tg=20)ManagedElement=BSC143,BscFunction=1,BscM=1,GeranCellM=1,GeranCell=ABC, →
ChannelGroup=0
(ChannelGroup=0)>configure
(config-ChannelGroup=0)>dchNo=[61,79,87,95,103,111]
(config-ChannelGroup=0)>commit
(ChannelGroup=0)>show
ChannelGroup=0
channelGroupIndividual=319
connectedG12Tg="ManagedElement=BSC143,BscFunction=1,BscM=1,Bts=1,G12Tg=20"
dchNo
 61
 111
 103
 95
 87
 79
eacPref=YES
eTchTn
 0
 1
 2
 3
 4
 5
 6
 7
exchannel group=OFF
hsn=46
tn7Bcch=EGPRS
tnBcch=EGPRS
```

Cell Activation

When all above attributes are configured it is possible to activate the cell.

```
(GeranCell=ABC)>configure
(config-GeranCell=ABC)>state=ACTIVE
(config-GeranCell=ABC)>commit
(GeranCell=ABC)>show
GeranCell=ABC
bcc=0
bcchNo=61
cgi="262-80-1432-5"
cSysType=GSM900
geranCellIndividual=169
ncc=6
state=ACTIVE
CapacityLock=1
ChannelAllocAndOpt=1
ChannelGroup=0
Dtm=1
Gprs=1
HierarchicalCellStructure=1
IdleModeAndPaging=1
LchAvailSupervision=1
Mobility=1
```



```
MsQueuing=1
PowerControl=1
PowerSavings=1
Security=1
SmsCellBroadcast=1
Son=1
```

All channel groups belonging to this cell are automatically activated during cell activation. To activate a specific channel group in the cell use state attribute in ChannelGroup MO.

3.3.2

ENM Bulk Import File using Ericsson Dynamic File Format (EDFF)

The following is a working example of an import file that can be imported and used to configure attributes for cell activation in EDFF format.

Note: 3GPP file format is also supported.

Import File example

```
# Configure mandatory attributes in GeranCell, PowerControlDownlink, PowerControlUplink, IdleModeAndPaging MOs. →
set
FDN : ManagedElement=BSC143,BscFunction=1,BscM=1,GeranCellM=1,GeranCell=ABC
bcc : 0
ncc : 6
cgi : 262-80-1432-5
bcchNo : 61

set
FDN : ManagedElement=BSC143,BscFunction=1,BscM=1,GeranCellM=1,GeranCell=ABC,PowerControl=1,PowerControlDownlink=1 →
bsPwrB : 15
bsPwrT : 15

set
FDN : ManagedElement=BSC143,BscFunction=1,BscM=1,GeranCellM=1,GeranCell=ABC,PowerControl=1,PowerControlUplink=1 →
dtxU : USE

set
FDN : ManagedElement=BSC143,BscFunction=1,BscM=1,GeranCellM=1,GeranCell=ABC,IdleModeAndPaging=1 →
nccPerm : [0,1,2,3,4,5,6,7]

# Each channel group of the cell which, needs to be activated must be connected →
# to a TG and have at least one frequency defined. →
# Channel group can be connected to G12Tg using g12Tg.connectedChannelGroup attribute →
# or to G31Tg using g31Tg.connectedChannelGroup attribute. →
# Corresponding TG MO must be defined before execution of this step. →

set
FDN : ManagedElement=BSC143,BscFunction=1,BscM=1,Bts=1,G12Tg=21 →
connectedChannelGroup : "ManagedElement=BSC143,BscFunction=1,BscM=1,GeranCellM=1, →
,GeranCell=ABC,ChannelGroup=0"

set
FDN : ManagedElement=BSC143,BscFunction=1,BscM=1,GeranCellM=1,GeranCell=ABC,ChannelGroup=0 →
dchNo : [61,79,87,95,103,111]

# Cell Activation
set
FDN : ManagedElement=BSC143,BscFunction=1,BscM=1,GeranCellM=1,GeranCell=ABC →
state : ACTIVE
```



Reference List

- [1] *Move Cell User Guide*,
Available in the ENM CPI library.
- [2] *BSC Model Based Configuration Management User Guide*
12/198 17-APT 210 09
Available in GSM RAN CPI Library.
- [3] *OM to MML mapping document*,
1/001 21-CXA 113 13/1
Available in GSM RAN CPI Library.
- [4] *CNA Parameter to MOM Mapping*
1/198 18-CNA 4032 977
Available in GSM RAN CPI Library.