GSM BSC G18.43

CXP 104 0082

Release Notes

Abstract

The intention of the release notes is to supply both internal and external customers with information about the contents of the delivery. This information should be used as a reference for software and hardware revisions, changes, contents, and references to other documents where greater detail is required. The purpose is not to duplicate information but to flag important information and where possible reference other documents that need to be studied to ensure successful implementation of the package.

Contents

1 Executive Summary

This document contains package specific information to be used when performing a Remote Application System replacement to GSM BSC G18.43 and description of changes referring to the maintenance area. The information shall be used together with the Network Impact Reports applicable for appropriate upgrade paths (see ref [2]).

2 Revision History

Table 1 Document Revision History

Revision	Date	Changes
A	2018-10-31	G18.43 package release
B	2018-11-02	Revised G18.43 package release

3 Reason for Revision

CXP 104 0082 R1A

G18.43 package release.

Implemented:

- improvements and minor fixes in new revision R1A003

Package name in OSS-RC:

GSM_BSC_G18.43_CXP_104_0082_R1A003

4 Release Information

4.1 One Track General Information

4.1.1 New Functionality Handling and Maintenance in One Track packages

Introduction of One Track release strategy in GSM changes the way of delivering new features as well as delivering solutions to the problems reported in TRs.

New features and corrections in One Track Releases are delivered on quarterly basis.

Solutions to TRs are no longer delivered in form of corrections in the dedicated Maintenance Packages per release. Solution is coded and delivered in the first upcoming quarterly release.

Packages are revised to address the problems discovered within the upgrade procedures and upgrade code.

One Track packages are available both for customers willing to upgrade nodes with new functionality and with maintenance subscriptions.

4.2 SW Identity

Package product no: CXP 104 0082

Application System (AS) product no: AXE 105 07/A63

Trouble Report written on this upgrade package should be registered with use of the product numbers above.

4.3 GSM Fast BSC SW Upgrade

Fast BSC SW upgrade package provides faster method of executing of all upgrade stages.

The main scope of introduction of GSM Fast BSC SW Upgrade package the is to automate and to speed up the BSC upgrade process by simplifying user interaction and bringing it to minimum, keeping the required control. The GSM Fast BSC SW Upgrade is supported on the APG43 Linux (APG34L), provides automation of the BSC upgrade process and requires minimal manual intervention, apart from the upgrade initiation and optional pop-ups.

The GSM Fast BSC SW Upgrade procedure is executed on the APG43L but initiated in OSS-RC.

AP command *"swmgr"* must be added to the list of allowed commands in OSS system to enable proper upgrade execution. See also Section 5.2.5.

The following improvements are introduced:

- Reduced dependency on bandwidth and quality of the link between BSC and OSS-RC (main upgrade scripts are moved to APG)
- Automation towards the SW correctness on all BSCs
- Automation towards pre-post upgrade validation of SW, HW, state configuration data and device status
- Reduction of user interaction (scripts are self-contained and require no user interaction except initiation)
- Initiation and monitoring is performed in OSS-RC
- Upgrade Path Independency (DT-method CP Upgrade), see Section 6.2.5.1

Note: It is recommended to check periodically for the latest package of the release.

Using the latest package gives following advantages:

- minimizes probability to face the known issue
- speed up troubleshooting activities
- improves stability

4.3.1 Revised Upgrade packages

One Track Upgrade packages are improved and revised to address the problems discovered within the upgrade procedure or with the upgrade package.

The Upgrade Package might be revised in following cases:

- upgrade issue is identified in customer network and stopping the upgrade
- correction of identified upgrade issue significantly improves upgrade experience

- feedback received show that improvement would significantly reduce costs of the upgrade

There is no separate message sent to spread information that next version any package is available.

Note: The BSC product included in the package is not subject of any changes in course of revising package.

It is strongly recommended to double check if the latest available revision of the package is used for the upgrade.

4.3.2 GSM Fast BSC SW Upgrade – DT-Method

The CP upgrade handles the DT-method of the CP and RP upgrade. See Section 6.2.5.1 and GSM Fast BSC SW Upgrade, User Guide, ref. [8] for details.

4.3.3 OSS-RC Support

The OSS-RC and SMO remain supported. The OSS-RC SW Upgrade by using the SMO is described in the OSS-RC CPI, see ref [3].

4.4 SW Content

4.4.1 Solutions implemented and provided by the package

The solutions implemented and provided by this package are listed in the Package Content file, GSM_BSC_G18.43_PCO.pdf (1/109 47- CXP 104 0082 Uen Rev. A).

4.5 Product Revision Information

4.5.1 ACDC Tool

ACDC product number and revision	Package product number and revision
CXC174_1317_R4A	acdc-CXC174_1317_1_R4A

4.5.2 EPB1, EvoET board Firmware

Applicable for EvoC 8230, EvoC 8200

Firmware SW	Image product number and revision	Product number and revision
EVOET	CXP1100002_R5A04	CXC1060354_R5A04
EPB1	CXP1100003_R6C01	CXC1060331_R5C01

4.5.3 SMX, PFM3200

Applicable for EvoC 8230

SW	Package product number and revision	Module product number and revision
SMXB	CXP9060185_R1J	CXC1372126_1_R342A04
PFM3200 FAN HOD	CXP9024734_R3H	CXC1380052_R3H
PFM3200 FAN LOD	CXP9024733_R3H	CXC1380051_R3H

SCX, PFM2400

Applicable for EvoC 8200/EvoC 8100

SW	Package product number and revision	Module product number and revision
SCXB	CXP9021997_R4AY	CXC1732063_R5BD02
PFM-POW-HOD	-	CXC1530007/2_R12A
PFM-FAN-HOD	-	CXC1530006/2_R7A

CMX
Applicable for EvoC 8200

SW	Package product number and revision	Module product number and revision
CMXB3	CXP9027553_R2H	CXC1372063_1_R34A04

4.5.4 Middleware

PES DUMP product number and revision	CP HW product number and revision
CXP_902_0627_R15A01	CXP_906_0329_R1A10

4.5.5 Software MAU (MAUS)
Applicable for EvoC 8230

CP HW product number and revision	CP MAU-Software product number and revision
CXP_906_0329_R1A10	CXC_106_0387_R1A03

4.5.6 APTCMM Package (APMML, BSC Model and BSCOAMSA modules)

Package product number and revision	APMML Module product number and revision	BSCM Module product number and revision	BSCOAMSA product number and revision
CXP2040001_1 R18A633	CXC1740164_1 R15A01	CXC1740643_1 R15A01	CXC1741216_1 R7A01

4.5.7 BSC-AP NWI-E Alarm Handler

SW	Package product number and revision	Module product number and revision
BSC- AP NWIE AH	CXP9031834_R5A01	CXC1462060_R5A01

4.6 Changed Functionality (Maintenance Area)

4.6.1 Implemented solutions

Enhanced handling of MCS AUTHORITY USER TABLE and USER GROUP TABLE data.
(Ref. HX16546)

Modified DTQSP command replicator.
(Ref. HX16644)

A interface selector removed from RMMSGRESET in RMHAIUL.
(Ref. HX17787)

The replicator for TPTIP command was modified.
(Ref. HX25976)

SAE Replicator is modified to set correct SAE 500 value in block RXOBL.
(Ref. HX26622)

SILENTCALLDET is activated after activation of AoIP.
(Ref. HX28654)

4.6.2 Additional information

For further information, see the Network Impact Reports in the CPI (see ref [2]).

4.7 Parameters and Counters (Maintenance Area)

The STS counter ONESLOTUPGRADE from OT CELLGPRS4 may show decreased value.
(Ref. HX11965)

4.7.1 Additional information

For further information, see the Network Impact Reports in the CPI (see ref [2]).

5 System Level

5.1 Applicable HW Configurations

CP:

EvoC 8230 (APZ 212 60F)

EvoC 8200 (APZ 212 60F/APZ 212 60C)

EvoC 8100 (APZ 212 60C)

HD BSC (APZ 212 60F/APZ 212 60C/APZ 212 55)

APG:

APG43L

APG43L/2

APG43L/3

5.2 APG43L/3 Dependencies and Requirements

5.2.1 APG

APG43L

APG43L 3.5.1 or higher is the minimum APG level before the BSC upgrade.

It is recommended to always update the APG to the latest SW level before starting the BSC Upgrade.

After BSC Upgrade, APG SW restore must not be performed to the version earlier than APG43L 3.5.

5.2.2 APG LOG Directory Access

To access logs directory on APG, root access is needed.

5.2.3 User Definitions on APG

The setup of NE users for Linux based APGs is described in the OSS document “OSS-RC APG43L Setup”, see ref [1].

5.2.4 BSC IP Network Interface and BSC-AP NWI-E Alarm Handler SW dependency

BSC-AP NWI-E AH CXP9031834 R5A01 included in the package requires NWI-E ExtremeOS 16.2.3.5 patch1-3 or later.

Note: NWI-E Alarm Handler is not applicable for EvoC 8230.

5.2.5 OSS-RC command table

The OSS-RC command table must include the following commands:

- **`swmgr`**
- **`createUpgradePackage`**
  (if APG 43L SW level is 3.5.0 or higher)
- **`removeSoftwareVersion`**
  (if APG 43L SW level is 3.5.0 or higher)

The operator should check if the AP commands mentioned above exist in OSS-RC/TSS before starting the upgrade procedure. If the commands are not present in OSS-RC/TSS, they should be added manually.

5.2.5.1 Adding `swmgr`, `createUpgradePackage` and `removeSoftwareVersion` commands to OSS-RC system (TSS)

Starting from OSS-RC O17B, `swmgr` command is added by default, no action is needed.

If OSS-RC version is older than O17B the **`swmgr`** command has to be added. The same action shall be taken for the `createUpgradePackage` and `removeSoftwareVersion` commands if the APG 43L SW level is 3.5.0 or higher and they are not present in the OSS-RC.

In order to add the new AP command to OSS system/TSS the operator shall perform the following steps:

1. Login to OSS-RC admin server as a user root
2. Add the `swmgr`, `createUpgradePackage` and `removeSoftwareVersion` by using the following commands:

```
activityAdmin -create swmgr AXE -taubType MML_CMD
activitySetAdmin -add AXESET_AP AXE -activity swmgr
```

If APG 43L SW level is 3.5.0 or higher:

```
activityAdmin -create createUpgradePackage AXE -taubType MML_CMD
activitySetAdmin -add AXESET_AP AXE -activity createUpgradePackage

activityAdmin -create removeSoftwareVersion AXE -taubType MML_CMD
activitySetAdmin -add AXESET_AP AXE -activity removeSoftwareVersion
```

3. Verify if the commands are added:

```
activityAdmin -list | grep swmgr
```

If APG 43L SW level is 3.5.0 or higher:

```
activityAdmin -list | grep createUpgradePackage
activityAdmin -list | grep removeSoftwareVersion
```

4. The following example printout shall be observed if the swmgr or other commands are properly added:

```
activityAdmin -list | grep swmgr
swmgr              AXE                MML_CMD
```

5.2.6 BSC IP Network Interface

The BSC IP Network Interface switches must be defined in OSS-RC as nodes and associated to the BSC they are connected to. Otherwise none of the scripts in the Upgrade package will work.

It is mandatory to configure BSC IP Network Interface switches according to the latest upgrade package.

The required upgrade package for BSC IP Network Interface is bundled with this BSC Upgrade package in the same container file in SW Gateway.

5.2.7 Successful Pre-Health Check is mandatory before CP Upgrade

5.2.7.1 General

The health check will be performed automatically by the script included in the Fast BSC SW Upgrade package and can be chosen during job configuration in SMO, see ref. [8]. The chapter contains also general information regarding the successful Pre-Health Check.

It is strongly recommended to execute Pre-Health Check first time well in advance (~1 week) of planned CP Upgrade in order to correct stopping problems.

Pre-Health Check should be run (or repeated) on the same day as planned CP upgrade to ensure that the node is in good condition.

CP Upgrade will not be possible unless a successful Pre-Health Check has been executed. There may also be other problems on the node that must be solved before the CP Upgrade.

The report from Pre-Health Check shall always be analyzed and appropriate actions taken.

BSC configuration must not be changed between the last successful Pre-Health Check prior CP Upgrade. Information collected during Pre-Health Check is used by CP Upgrade. Configuration changes may cause upgrade failure or faulty configuration on the new release.

5.2.8 Hardware check

Detection of unsupported Hardware will result in unsuccessful Pre-Health Check.

Following **Hardware** in unsupported starting from **G18.Q1:**

- BSC LAN Switch Extreme Summit 48si

HD BSC:

- Transcoders: TRA R6/R6B

Unsupported hardware (restrictions present already in previous releases)**:**

EvoC BSC:

- SCXB2

HD BSC:

- PGWB
- APZ 212 33/33C
- APG40C/2 and APG40C/4
- TRA R5 boards
- No GS10/12 hardware
- RPG2
- RPP/6, RPP/5, RPP/4
- M334B (NNRP5) hardware
- DLNB (NNRP4) hardware

RBS:

- RBS200

Hardware:

- APZ A1 ALARMs not present
- CPT interface fault ALARM not present
- RP in state AB or BUSY
- group switch unit not in state CBL or ABL
- group switch does not show

5.2.9 Licenses check

- missing or incorrect values of licenses or HW activation codes
- The licenses for mandatory Capacity Locks must exist
- The licenses for mandatory Legacy features must exist
- RRUS cascading licenses must be checked

5.2.10 Interface check

Sigtran:

- No remote IP address in state NOT ACTIVE
- No SCTP association in state ASSOCWAITESTABL
- No destination in state UNAVA

Abis:

Status of Abis connections will be saved for comparison

- Iur-g interface support must removed

5.2.11 Configuration check

Following requirements must be fulfilled:

- The BSC IP Network Interfaces have a valid configuration
- The APG has a supported SW level
- multiple versions of RGRLCPR SW units removed

EvoC8200:

- No RP SW loaded with undefined EM when CM less than 16 and CNO less than 600
- CMX boards installed in all magazines

RBS 6000:

- For 'Dual DUG Sharing (R)RUS' and legacy 'Dual TX RRUS' configurations, the collocated MCTR parameters MINFREQ and MAXFREQ must be set within their bandwidth capability

5.2.12 File related checks

Following requirements must be met:

- enough space in APG file system
- enough space in CP file system for automatic dump save
- BTS SW loaded on BTSs must be present in BTSVOLUMESW in cp file system on APG
- Command log file RELCMDHDF exists
- Correct authority settings in the APG
- EvoC 8200/EvoC 8100: SCX board is not in status *"uninit"*, *"idle"* or *"passDeg"*

5.2.13 Market Adaptations check

Following Market Adaptations must not be present:

- M-024
- M-037
- M-070
- M-095
- M-318

Following Market Adaptations must be removed or deactivated:

- M-023
- M-034
- M-266 for base level lower than G17.Q4/G16B IP-A5
- M-278 must not be present on the node or must be deactivated
- M-291
- M-296
- M-282 for base level below G16B IP-A3/CP-A2
- M-331 for base level G16B IP-A3/CP-A2 or G16B IP-A2/CP-A1
- M-335 for base level G16B IP-A3/CP-A2
- M-336 for base level below G16B IP-A2/CP-A1
- M-369
- M-374 for base level G17.Q4/G16B IP-A5 or G16B IP-A3/CP-A2

5.2.13.1 M-217 'Prioritize CS Paging at CCCH Congestion' Information

When Market Adaptation M-217 'Prioritize CS Paging at CCCH Congestion' is present and active on the node with the base level, the manual actions shall be performed if the provided functionality needs to be kept on the target level.

Please refer to ‘GSM BSC One Track Known Problem File’ document (section “M-217 'Prioritize CS Paging at CCCH Congestion' functionality continuity”), ref [5].

Market Adaptation M-217 is not applicable on the target level and it is covered by the feature ‘Enhanced Page Handling’ in BTS instead.

5.3 CPI Library

The Customer Product Information (CPI) for this release is available in the CPI library as described in the table below.

Note: Later R-states of CPI libraries may exist.

Library Name	Product Number
GSM BSC G18.Q4	EN/LZN 718 0314
GSM RAN G18.Q4	EN/LZN 719 0039

6 Upgrade

6.1 Upgrade Path

The lowest supported CP base levels for upgrade to G18.43 are:

- G18.Q3
- G18.Q2
- G18.Q1
- G17.Q4 (G16B IP-A5)
- G17.Q3 (G16B IP-A4)

6.2 Upgrade Information

6.2.1 GRAN Upgrade order

For information see Network Impact Reports ref [2].

6.2.2 BSC Upgrade order

Order of the upgrade is crucial for preservation of backward compatibility

Following should be upgraded to the required minimum SW level before:

- APG
- BSC IP Network Interface

Following order of the BSC preserves backward compatibility:

- Pre Health Check
- EPB1
- EVOET
- SMX or SCX
- CMX
- CP Upgrade – Middleware
- CP Upgrade – CP SW, RP SW
- CP Upgrade – APTCMM package Upgrade (APMML, BSC Model and BSCOAMSA modules)
- BSC-AP NWI-E AH
- PFM FW Upgrade
- Post Health Check
- Verify Upgrade

Note: It's not required to complete the whole upgrade during one Maintenance Window. Remaining stages may be completed in next Maintenance Window.

Note: Fallback should be considered only for the ongoing phase.

Note: Fallback should not be considered if upgrade steps may be proceeded manually.

6.2.3 EPB1 and EVOET board Upgrade

6.2.3.1 EPB1 Firmware upgrade

The purpose of the EPB1 upgrade is to upgrade the firmware running on EPB1 board and ensure compatibility with RP OS.

The separate EPB1 upgrade will attempt to upgrade all applicable boards (Plug-In Units), even if RPs located on a PIU are blocked to ensure upgrade of all defined HW equipment.

Upgrade script will not automatically de-block RPs in state AB.
Upgrade script will not automatically de-block RPs in state MB.

It is recommended to execute the EPB1 Firmware upgrade before maintenance window but outside peak traffic hours.

This upgrade must be executed before the CP upgrade.

Note: EPB1 Upgrade is applicable for EvoC 8230 and EvoC 8200.

6.2.3.2 EVOET Upgrade

The purpose of the EVOET upgrade is to upgrade the firmware running on EVOET board and ensure compatibility with RP OS.

Intermediate version of RP OS might be installed in order to prevent service impact.

The separate EVOET upgrade will attempt to upgrade all applicable boards, even if RPs are blocked to ensure upgrade of all defined HW equipment.

Upgrade script will not automatically de-block RPs in state AB.
Upgrade script will not automatically de-block RPs in state MB.

This upgrade must be executed before the CP upgrade.

Note: EVOET Upgrade is applicable for EvoC 8230 and Evo C8200.

6.2.4 Functional Boards SW (FBSW) Upgrade

6.2.4.1 SMX and PFM Upgrade

The purpose of the SMX SW upgrade is to upgrade the switching parts and ensure interface compatibility of the interfaces with installed Hardware present in the magazine.

Depending on customer IP Network configuration, if switch over of O&M interfaces is not fast enough, mml sessions could be disconnected.
Power Fan Module is upgraded if applicable.

Note: SMX Upgrade is applicable for EvoC 8230

6.2.4.2 SCX and PFM Upgrade

The purpose of the Functional Board SW upgrade is to upgrade the switching parts and ensure interface compatibility with installed Hardware present in the magazines.
Power Fan Module is upgraded if applicable.

This upgrade must be executed before the CP upgrade.

Note: SCX Upgrade is applicable for EvoC 8200 and EvoC 8100.

6.2.4.3 CMX Upgrade

The purpose of the Functional Board SW upgrade is to upgrade the switching parts and ensure interface compatibility with installed Hardware present in the magazines.

Note: CMX Upgrade is applicable for EvoC 8200.

6.2.5 CP Upgrade

The purpose of the CP upgrade is to upgrade the middleware, CP SW and RP SW and transfer the exchange data.

Last step consist of loading the APTCMM package (containing the APMML, BSC Model and BSCOMSA modules) to enable functionality for ENM support.

The CP upgrade handles the DT replication method (DT—method) of the CP and RP upgrade.

Middleware upgrade is performed for both CP boards and consists of CP HW firmware upgrade PLEX Engine (PES) upgrade. MAUB FW and RPBI-S FW is upgraded if applicable. Middleware upgrade execution is strictly dependent on the upgrade path and performed when the version in base and target level differs.

Middleware upgrade must be concluded before the CP SW and RP SW upgrade.

The CP and the RP SW upgrade is performed together with a transfer of exchange data. Transfer is executed with use of DT-method.

See Section 6.2.5.1 and GSM Fast BSC SW Upgrade, User Guide, ref. [8] for details.

The last stage within the CP Upgrade is loading the APTCMM package containing the APMML, BSC Model and BSCOAMSA modules. Installation requires COM service restart which results in mml sessions disconnection. See Section 6.2.5.4 for details.

6.2.5.1 Data Transcript Upgrade Method (DT-method)

The transfer of exchange data from the existing system to the new system is performed by means of configuration data replication. The configuration data is obtained from printouts collected at the start of the upgrade package installation. Commands are generated into DT file; the run-time data is not handled.

The execution of replication is performed in parts and consists of:

- DT command file loading on the reference dump loaded on StandBy
- DT command file remaining specific parts loading on Executive side, after successful side-switch

To secure successful replication DT file is structured and commands are executed in a strict order. The Installation Report is generated to facilitate verification of replication. See GSM Fast BSC SW Upgrade, User Guide, ref. [8] for details.

Note: DT is generated in advance to limit CP separation time to execution of DT on StandBy side during the CP Upgrade . Changes made to the BSC configuration after the configuration data is collected and generated will result in such changes not being transferred.

Note: DT-method secures path independency and is applicable for the BSC with APG 43I, APG43/2 and APG43/3 HW.

Note: DT-method upgrade procedure execution time may be longer on the

BSC nodes with the APG43L (GEP1) hardware.

6.2.5.1.1 DT-method CP Upgrade Procedure

The transfer of exchange data from the existing system to the new system is performed by using Function Change according to the side switch method (method 2).

DT-method CP upgrade execution consists of the following steps:

1. MW Upgrade
2. Reference dump Load on StandBy
3. Execution of Data Transcript on StandBy
4. Side switch (FCSWI)
5. Execution of remaining Data transcript on switched in dump on Executive side
6. Bringing the CP in parallel

6.2.5.2 Popup before activating new SW (side switch)

There is a possibility to perform additional manual actions before the side switch is performed.

The additional pop-up implemented as check-box in Job Parameters '**`Popup before activating new SW (side switch)'`** should be "checked" when starting OSS Job if manual actions are required by the user.

After execution of exchange data transfer the pop-up will appear asking user to perform all required manual actions. Upgrade is continued and side-switch performed when user confirm completion of manual activities by pressing '**APPLY**' button.

6.2.5.3 Software MAU (MAUS) upgrade

MAUS upgrade consist of the installation of MAUS on each AP node and each CP board.

Both steps are executed and is performed along with Middleware upgrade.

MAUS upgrade is applicable only for EvoC 8230 nodes

6.2.5.4 APTCMM (APT Configuration Mediation Module) package Upgrade - GSM generic configuration management support in ENM

GSM generic configuration management support in ENM provides a BSC Model Based Configuration Management functionality needed to manage BSC nodes using ENM tools for configuration management and using Ericsson Command-Line Interface (ECLI).

Software consists of APMML, BSC Model and BSCOAMSA modules. Files are bound with CP dump.

- Small and medium BSC size (up to 250000 MOs, which is roughly 900 cells) is supported for APG43/2 and APG43/3 HW. That configuration can be managed by this feature using ECLI.
- Very small BSC size (up to 50000 MOs, which is roughly 200 cells) is supported for APG43 HW. That configuration can be managed using ENM tools

See the Operational Instruction for details: ref [11].

6.2.5.5 Market Adaptations and Upgrade SW Level Dependency

Note: All Market Adaptations and licenses need to be checked if they are available after the Upgrade in order to eliminate any errors of new process as soon as possible.

Starting from the G17.Q3 release, Market Adaptations licenses handling in ELIS is changed when the upgrade is done between releases. The Market Adaptations ordering procedure in ECP/One and Verdi is modified. Due to the changes, it is no longer needed to reorder Market Adaptations for new release if Market Adaptations were ordered for G16B or newer release. The already ordered Market Adaptation will remain available in ELIS and Software Gateway. The licenses are persistent.

Before the upgrade the LKF in ELIS must be re-generated and updated on the node. FlexibleTo Upgrade method is not available with the GSM Fast BSC SW Upgrade package.

In case of Market Adaptation activated according to OPI only (no MA package needed), already activated Market Adaptation on old release using OPI will be also activated after the upgrade on new release. No re-activation is needed in this case.

For the MAs installed for the first time the license must be ordered prior to the MA activation on new release.

Note: For additional information, please refer to: GSM BSC Market

Adaptations OneTrack – User Guide, see Reference [9].
The BSC Product Customization (bsc.product.customization@ericsson.com) shall be contacted regarding the MA activation-related questions.

6.2.5.6 Loading of Market Adaptations on CP-SB side

If the Market Adaptation is to be loaded on separated CP-SB before the new CP software level switch in, the check-box in Job Parameters '**`Popup before activating new SW (side switch)'`** should be "checked" when starting OSS Job.

All required actions shall be performed before pressing the '**APPLY'** button which starts the script execution.

6.2.6 BSC-AP NWI-E Alarm Handler SW Information

BSC-AP NWI-E AH software upgrade is performed by the OPS script as a part of the upgrade package. Upgrade of the software is divided into two parts. Installation of the software on the APG and configuration of the traps on both NWI-E switches. Loading is executed on OSS-RC towards APG.

NWI-E configuration is executed on OSS-RC towards each NWI-E.

Changing the BSC–AP NWI-E AH SW can be also performed manually by using the OPI, see ref [4].

6.2.6.1 BSC-AP NWI-E Alarm Handler

6.2.6.2 Background

During the installation of BSC-AP NWI-E AH and the BSC IP Network Interface switches will be configured to send alarms via APG instead of OSS-RC. This is only valid for NWI-E switches.

6.2.6.3 Custom Defined Trap Receivers

When BSC-AP NWI-E AH is installed and the configuration of the switches is finished, all custom defined trap receivers are removed. If the customer has defined own trap receivers, they must be redefined on the switches.

6.2.6.4 Manual Configuration

If the automated configuration update was not successful, a manual update of the NWI-E switches configuration has to be executed. There are different set of commands to be executed on the switches depending if switch is connected towards the A- or B-side of the APG.

See instruction in appendix, section 9.1.

6.3 Implementation Information

6.3.1 GSM Fast BSC SW Upgrade package structure

The GSM Fast BSC SW Upgrade package is included inside the OPS container tar.gz file. The file contains the triggering scripts automatically performing the rest of downloading procedure in SMO.

6.3.2 GSM Fast BSC SW Upgrade Load Activities

For the details regarding GSM Fast BSC SW Upgrade Load refer to [8].

6.3.3 GSM Fast BSC SW Upgrade OSS-RC Operation

Starting the GSM Fast BSC SW Upgrade procedure in SMO is similar to the standard upgrade procedure, see ref. [8].

If loading of the Market Adaptations or other actions are planned during the upgrade see also section 6.2.5.5.

6.3.4 Upgrade Report and Log files

The report and log files are available after the GSM Fast BSC SW Upgrade procedure. The UPGRADE_REPORT contains the status written by all executed scripts: start time, stop time, information and warnings. The APG log directory for command `swmgr` includes detailed logs from execution.
To access logs directory on APG, root access is needed.

- The file UPGRADE_REPORT is located in the `<SMO File Store>/Software/AXE/<Package Name>/LOG/<NE name>/` directory.

- The APG log directory for command `swmgr` (detailed logs from execution) is located in the `/data/ext/swmgr/<package_name>/LOG` APG directory. Every activity has its own directory in the given directory where command log and report log are stored. Access to the folder requires 'root' credentials.

- The `dt_ex.cmd` command file for DT-method upgrade, Installation Report and XML printouts files are located in the `/data/ext/swmgr/<package_name>/LOG/DT` APG directory.

- The DT-method upgrade logs are located in: `/data/ext/swmgr/<package_name>/LOG/DT/REP_*.log` APG directory.

All mentioned logs are zipped and copied to SMO package directory on OSS in case of any script failure or successful script finish.

6.3.5 Exception Handling

The log report with errors is generated in case of an unsuccessful upgrade. The information is added to the log report if scripts crash due to an exception. The LOG files are located in the dedicated folders. All mentioned logs are zipped and copied to SMO package directory on OSS in case of any script failure or successful script finish.

6.3.5.1 Automatic CSR Data Collection in APG

In order to simplify and automate process of collecting data Automatic CSR Data Collection Tool has been introduced. The information collected by the ACDC tool shall be enclosed to CSR/TR. The collection scripts are executed directly on APG.

The tool can be used in the ‘Direct collection’ and ‘Event driven’ modes.

The ACDC use can be executed by troubleshooting user when connected on troubleshooting port. Options supported by ACDC depend on the installed version. See ref [10].

6.3.5.1.1 ACDC Tool Installation

The ACDC is automatically transferred to APG during the download stage of the GSM Fast BSC Upgrade procedure.

The ACDC installation package is available also as a Stand-alone package and can be downloaded for installation from Software Gateway. See also the Quick Guide available on **PLM pages**.

6.3.5.2 DT-method Exceptions Logs

List of the commands from DT execution that were not executed due to system specific features and limitations, and are not crucial for BSC functioning, signed with "WARNING", and in case of upgrade failure - commands that were not executed but are crucial for BSC functioning, signed with "ERROR" can be found in the dedicated log files. The report files can be separated into the file containing general WARNING list, file containing the errors (if exist) and the upgrade summary (log) file, depending on the upgrade procedure result. For the specific path see section 0.

6.3.5.3 General WARNING list

The general WARNING list is a set of commands which can output WARNING during the DT-method upgrade procedure. This list is used for the informative reasons and has no impact on the upgrade process. For the specific path see section 0.

6.3.5.4 GSM Fast BSC SW Upgrade Fallback and Rollback Overview

If the planned upgrade activities can't be completed within Maintenance Window no fallback is required, e.g. in case the CP upgrade fails and can't be executed there is no need to perform a fallback for the previous board upgrades (EPB1, EvoET, SCXB, CMXB).

For the EPB1, EvoET, SMXB, SCXB and CMXB Upgrade the fallback is not automated. Fallback should not be considered as the first option in case of problems during the upgrade.

The Middleware upgrade is provided with a limited automated Fallback functionality. Fallback should not be considered as the first option in case of problems during the upgrade.

CP and RP upgrade is provided with automated Fallback functionality. CP, RP and Middleware Fallback is triggered in case of any issues during CP upgrade execution and is automated.

In case rollback decision is taken after successful upgrade, only CP backup should be restored as first option after collecting DCG.

6.3.5.4.1 Rollback

Rollback, to revert software to the old release when upgrade is completed new release operational, is not supported by the upgrade package.

6.3.5.4.2 Middleware and CP Fallback

The CP upgrade automatic fallback is included in Python scripts for phases before the side switch. In case of any failure during CP and RP upgrade execution, fallback is triggered with following actions:

- Bring CP back in parallel operation

If problem is experienced during upgrade in order to limit the total impact on service it's recommended to fix the issue instead of performing fallback.

The rollback execution in the later phases requires manual actions of the operator.

6.3.5.4.2.1 Middleware Fallback

Limited automatic Middleware fallback is included together with CP fallback.

In case of any failure during Middleware fallback, manual actions are required to revert to previous Middleware version.

If the upgrade fails on the first CP board middleware upgrade, instruction is presented to the user. In order to limit the impact on service due to board specific issues it is recommended to attempt upgrade manually before performing fallback.

If the upgrade fails on the second CP board middleware upgrade, there is no automatic fallback present. In order to limit the impact on service due to board specific issues it's recommended to re-attempt upgrade manually instead of performing fallback.

Instructions with commands and steps to follow in order to return BSC to working state are presented to the user when upgrade discovers node specific issues.

In case of CP fallback the Middleware will not be reverted back to base level.

6.3.5.4.2.1.1 MAUS (Software MAintenance Unit) Fallback

MAUS automatic fallback is included in Python scripts together with CP fallback.

6.3.5.4.3 EPB1 and EVOET Fallback

EPB1 and EovET board fallback is not automated.

In order to limit the impact on service due to single HW unit problem experienced during upgrade it's recommended to fix the issue instead of performing fallback.

The manual actions of the operator are required to perform fallback. Please refer to the 'GSM BSC One Track Known Problem File' document for more information on needed actions, ref [5].

In case of any problems, please refer to OPI Function Change, Externally Retrieved Regional Firmware, Change 2/154 31-CNZ 212 388 Uen, ref [7].

6.3.5.4.4 Functional Board SW Fallback SMXB, SCXB and CMXB

SMXB, SCXB and CMXB Functional Boards fallback is not automated.

In order to limit the impact on service due to single HW unit problem

experienced during upgrade it's recommended to fix the issue instead of performing fallback.

The manual actions from the operator are required. Please refer to the 'GSM BSC One Track Known Problem File' document for more information on needed actions, ref [5].

In case of any problems, please refer to OPI Load Module, Upgrade 2/154 31-CNZ 251 027/6 Uen, see reference [6].

6.3.6 Difference after Upgrade Regarding STS

The STS counters definition files are loaded on the CP Reference dump. When the CP SW is upgraded, the applicable STS counters definitions will be loaded into STS automatically.

This may result in a differences discovered in a comparison of the printouts from the `stmotls` command executed before and after the CP upgrade.

7 Abbreviations

AB	Automatically Blocked
ABL	Automatically Blocked
ACDC	Automatic CSR Data Collection
ADA	Automatic RP Application Distribution and Redistribution
AGW	A-Interface Gateway
APG	Adjunct Processor Group
APTCMM	APT Configuration Mediation Module
BSC	Base Station Controller
BSC-AP	BSC Application Package
BTS	Base Transceiver Station
BW	Bandwidth
CMM	Configuration Mediation Module
CP	Central Processor
CP-A	Communication Processor Assembly
CPHW	CP Hardware
CPI	Customer Product Information
CPT	Central Processor Test
CPUB	Central Processor Unit Board
CSR	Customer Support Request
CTH	Combined Traffic Handler
DCG	Data Collection Guideline
DIP	Digital Path
DT	Data Transcript
EC	Emergency Correction
EM	Extension Module
EQM	Equipment Number
EPB1	Evo Processor Board, generation 1
EVOET	Evolved ET
ET	Exchange Terminal
EX	Executive Side
GS	Group Switch
GSM	Global System for Mobile communication
HC	Health Check
HW	Hard Ware
IP	Internet Protocol
IP-A	Intermediate Package-Assembly
IPNA	Inter-Platform Network Adaptor
IPS	IP Supervision
MBL	Manual Blocked
MAU	Maintenance Unit
MAUS	MAU-Software
MCPA	Multi Carrier Power Amplifier
MW	Middleware
NA	Not Applicable
NE	Network Element

NNRP	Network Node Renewal Processor
OSS	Operations Support System
OT	Object Type
PES	PLEX engine sub system
PIU	Plug-In Unit
PFM	Power and Fan Module
PGW	Packet Data Network Gateway
PGWB	Packet Gateway Board
RAN	Radio Access Network
RBS	Radio Base Station
RP	Regional Processor
RPB-E	Regional Processor Bus-Ethernet
RPB-S	Regional Processor Bus-Serial
SCXB	System Control (X) switch
SCPA	Single Carrier Power Amplifier
SCTP	Stream Control Transmission Protocol
SMO	Software Management Organizer
SNT	Switching Network Terminal
STS	Statistics and Traffic Measurements Subsystem
SW	Software
SWR	Software Record
TCH	Traffic Channel
TG	Transceiver Group
TRA	Transcoder and Rate Adaptor
TRH	Transceiver Handler
TSS	Telecom Security Services
TRX	Transceiver
UIL	User Interaction Level
WO	Working

8 References

[1] 3/1531-AOM 901 092 Uen
OSS-RC APG43L Setup

[2] 1/109 48-HSC 103 12/31 Uen
GSM RAN G18.Q4 Network Impact Report

[3] 1553-APR 901 0135 Uen
SMO, Software Management Organizer, User Guide

[4] 6/154 31-ANZ 222 50/5 Uen
AP, SW Upgrade, Execute

[5] 2/1540-500/FCP 130 7999 Uen
GSM BSC One Track Known Problem File

[6] 2/154 31-CNZ 251 027/6 Uen
Load Module, Upgrade

[7] 2/154 31-CNZ 212 388 Uen
Function Change, Externally Retrieved Regional Firmware, Change

[8] 5/198 17-AXE 105 07 Uen
GSM Fast BSC SW Upgrade, User Guide

[9] 198 10-500/FCP 130 7999 Uen
GSM BSC Market Adaptations OneTrack

[10] 19817-CXC 173 9947 Uen
Data Collection Guideline, Base Station Controller, Ericsson GSM System

[11] 15/154 31-CNZ 218 1161/6 Uen
Function Change, Configuration Mediation Module, Initiate

9 Appendix

9.1 Manual Configuration of the NWI-E switches

If the scripted configuration during the installation was not successful, a manual update of the NWI-E switches has to be done. There are different commands for the switches connected to the APG A- or B-side. In this instruction the switches are named A-switch or B-switch.

Login to the switch

Save the current configuration to a file. Run command
```
# save configuration before_alh_config
```
Answer "y" to the first question, but "n" to the next question.

Run the following commands to update the A-switch. If a Warning is given answer “y” to execute the command.

```
# configure vlan BSC_Inner add secondary-ipaddress
192.168.169.253 255.255.255.0
# configure snmpv3 add group "v1v2cNotifyGroup" user
"v1v2cNotifyUser1" sec-model snmpv2c
# configure snmpv3 add community "v1v2cNotifyComm1" name
"public" user "v1v2cNotifyUser1"
# configure snmpv3 delete target-addr all
# configure snmpv3 add target-addr v1v2cNotifyTAddr1
param v1v2cNotifyParam1 ipaddress 192.168.169.1
transport-port 10162 tag-list informs
# configure snmpv3 add target-addr v1v2cNotifyTAddr2
param v1v2cNotifyParam1 ipaddress 192.168.169.2
transport-port 10162 tag-list informs
# configure snmpv3 add target-params "v1v2cNotifyParam1"
user "v1v2cNotifyUser1" mp-model snmpv2c sec-model
snmpv2c sec-level noauth
# configure snmpv3 add notify informs tag informs type
inform
# create access-list IPNB_block " source-address
192.168.170.0/24 ;" " deny  ;" application "Cli"
# configure access-list add IPNB_block after nodhcp ports
9 ingress
# save configuration
```
Answer “y” to the last command.

Run the following commands to update the B-switch. If a Warning is given, answer “y” to execute the command.

```
# configure vlan BSC_Inner add secondary-ipaddress
192.168.170.253 255.255.255.0
# configure snmpv3 add group "v1v2cNotifyGroup" user
"v1v2cNotifyUser1" sec-model snmpv2c
# configure snmpv3 add community "v1v2cNotifyComm1" name
"public" user "v1v2cNotifyUser1"
# configure snmpv3 delete target-addr all
# configure snmpv3 add target-addr v1v2cNotifyTAddr1
param v1v2cNotifyParam1 ipaddress 192.168.170.1
transport-port 10162 tag-list informs
# configure snmpv3 add target-addr v1v2cNotifyTAddr2
param v1v2cNotifyParam1 ipaddress 192.168.170.2
transport-port 10162 tag-list informs
# configure snmpv3 add target-params "v1v2cNotifyParam1"
user "v1v2cNotifyUser1" mp-model snmpv2c sec-model
snmpv2c sec-level noauth
# configure snmpv3 add notify informs tag informs type
inform
# create access-list IPNA_block " source-address
192.168.169.0/24 ;" " deny  ;" application "Cli"
# configure access-list add IPNA_block after nodhcp ports
9 ingress
# save configuration
```

Answer “y” to the last command.