MENU

Change Note Forms

Id: CXM7.0 MP1.0
Product Family: Base Stations
Product: MetroSite EDGE BTS
Release: CXM7.0

MENU

GSM/EDGE BTS

CN-id: 1830CNESPE07

Title:
Calls are possible on a GSM TRX, which is locally blocked, after STIRC enable/disable.

Version of the SW-build:
CXM7.0 MP1.0

Valid for Product(s):
MetroSite EDGE BTS

References:
10161ESPE06

Reason for the Change Note:

Original problem:
If STIRC is enabled for the 1st sector in a Non hopping 2+2 GSM MetroSite BTS configuration. Alarm "7606 TRX FAULTY: Non EDGE TRX device type used accidentally in Edge Capable Mode" is reported for TRX 1. TRX 1 goes into BL-TRX at BSC. Alarm "7603 BTS FAULTY: Non EDGE TRX device type used accidentally in Edge Capable Mode" is reported after some time. 1st sector and BCCH TRX are in BL-BTS state at BSC. BCCH transmission is stopped.

When the non BCCH TRX (TRX1) is blocked from BTS manager the BCCH transmission starts for around 20 seconds and then stops - this is the expected behaviour.

When STIRC is disabled from the 1st sector TRX 1 remains in local block state and TRX 2 comes up in working state. Alarms related to STIRC are cancelled. However the locally blocked TRX 1 is in WO state at the BSC and calls are then allocated to that TRX.

Description of the fault:
If STIRC is enabled for a non-EDGE sector and any of the TRX are locally blocked then the TRX will not retain its state after alarm is disabled.

Related feature / functionality:
STIRC

Dependency on configuration:
This is seen only in GSM TRX used incorrectly for STIRC which is only supported by EDGE HW.

Workaround:
Lock from the BSC instead of using local block.

Description of the correction:
Local blocking alarm is resent to BSC so that the TRX remains in its state.

Effects on operator:
Alarm handling is corrected

Corrected Fault Reports:

10161ESPE06 : Calls are possible on GSM TRX, which is locally blocked, after STIRC enable/disable.

Modified components:

tah_othm

CX7_MP1.0_OM_PR10161ESPE06_PR8469ESPE07_BL002

Testing Instructions for the change

Pre-requirements:

1. All test cases should be performed using BSC SW S14 unless otherwise stated.
2. Use ZEQM command to enable/disable STIRC.

Test execution:
Test steps to reproduce the problem

Input to Reproduce the Problem	Expected Output
Configure the site as per the test case.	The site is in supervisory state with no unexpected alarms present at BSC and MMI except for “7801: MMI CONNECTED TO BASE STATION: Local MMI connected
Enable STIRC in first sector.	Alarm "7606 TRX FAULTY: Non EDGE TRX device type used accidentally in EDGE Capable Mode" is reported for TRX 1. TRX 1 goes into BL-TRX at BSC. And Alarm "7603 BTS FAULTY: Non EDGE TRX device type used accidentally in EDGE Capable Mode" is reported after some time. BTS and BCCH TRX are in BL-BTS state at BSC.
Block the non BCCH TRX (TRX1) from BTS manager.	Alarm “7208: Local Block” is sent to BSC. Alarm "7606 TRX FAULTY: Non EDGE TRX device type used accidentally in EDGE Capable Mode" and Alarm "7603 BTS FAULTY: Non EDGE TRX device type used accidentally in EDGE Capable Mode" are cancelled. Alarm “7606 TRX FAULTY: Non EDGE TRX device type used accidentally in EDGE Capable Mode" is reported for TRX 2.
Disable STIRC in first sector.	TRX 1 remains in local block state but is shown in supervisory state at BSC. TRX 2 comes to working state at BTS Manager and BSC.
Make calls in first sector.	Calls are successful and terminating on TRX1.

Case Ref	BTS Configuration	BTS SW
PR10161ESPE06_PR8469ESPE07.01	2+2 GSM/MetroSite Sector 1 : TRX1 + TRX2(BCCH) Sector 2 : TRX3 +TRX4(BCCH)	CXM7.0

Test steps to verify the correction

Input to Verify the Problem	Expected Output
Configure the site as per the test case.	The site is in supervisory state with no unexpected alarms present at BSC and MMI except for “7801: MMI CONNECTED TO BASE STATION: Local MMI connected
Enable STIRC in first sector.	Alarm "7606 TRX FAULTY: Non EDGE TRX device type used accidentally in EDGE Capable Mode" is reported for TRX 1. TRX 1 goes into BL-TRX at BSC. And Alarm "7603 BTS FAULTY: Non EDGE TRX device type used accidentally in EDGE Capable Mode" is reported after some time. BTS and BCCH TRX are in BL-BTS state at BSC.
Block the non BCCH TRX (TRX1) from BTS manager.	Alarm “7208: Local Block” is sent to BSC. Alarm "7606 TRX FAULTY: Non EDGE TRX device type used accidentally in EDGE Capable Mode" and Alarm "7603 BTS FAULTY: Non EDGE TRX device type used accidentally in EDGE Capable Mode" are cancelled. Alarm “7606 TRX FAULTY: Non EDGE TRX device type used accidentally in EDGE Capable Mode" is reported for TRX 2.
Disable STIRC in the first sector.	TRX 1 remains in local block state at BTS manager and BL_TRX at BSC. TRX 2 comes up in working state on BTS and supervisory state at BSC.
Make calls in the first sector.	Calls are successful and terminating on BCCH TRX not on TRX 1.

Case Ref	BTS Configuration	BTS SW
PR10161ESPE06_PR8469ESPE07.02	2+2 GSM/MetroSite Sector 1 : TRX1 + TRX2(BCCH) Sector 2 : TRX3 + TRX4(BCCH)	CXM7.0 MP1.0

Unexpected results:
Locally blocked TRX comes to working state after STIRC is disabled from GSM sector.

GSM/EDGE BTS

CN-id: 1831CNESPE07

Title:
After SW upgrade; Unable to perform TRX test on the MetroSite

Version of the SW-build:

CXM7.0 MP1.0

Valid for Product(s):
MetroSite EDGE BTS

References:
10620ESPE06, NA04202512

Reason for the Change Note:

Original problem:
After the BTS SW is upgraded from CXM4.1 CD4.0 to CXM5.0 CD4.0 occasionally the TRX test from the BSC for GMSK fails if STIRC is enabled. The same TRX test works with CXM4.1 CD4.0.

The TRX test functions correctly with CXM5 CD4.0 if the STIRC feature is not used. The test functions correctly with CXM4.1 CD4.0.

Description of the fault:
When both STIRC and RDIV are enabled then the TRX loop test fails.

How end user/operator could detect the problem:
With RDIV and STIRC ON run the loop test from the BSC.

Related feature / functionality:
STIRC

Dependency on configuration:
STIRC & RDIV

Workaround:
None

Description of the correction:
A correction is added to modify the diversity of the TRX corresponding to STIRC & RDIV for AIR1 & AIR3 loops

Effects on operator:
The TRX loop test will pass

Corrected Fault Reports:
10620ESPE06 : After SW upgrade

Modified components:

Tommcomm

glo_test

CX7_MP1.0_OM_PR10620ESPE06_BL002CX7_MP1.0_OM_PR10620ESPE06_BL002

Testing Instructions for the change

This pronto was not reproducible in the Lab environment. So no verification test cases have been identified.

Unexpected results:
TRX test are still not being executed in MetroSite after SW Upgrade.

GSM/EDGE BTS

CN-id: 1838CNESPE07

Title:
Repeated TAC in AHS calls when A-bis link is disturbed on GSM hardware

Version of the SW-build:
CXM7.0 MP1.0

Valid for Product(s):
MetroSite EDGE BTS

References:
3035C01

Reason for the Change Note:

Original problem:
A high number of Time Alignment Commands (15-20) are seen when the Abis link is disconnected for short durations (between 300-900ms). The issue is seen only with Non EDGE TRX HW.

Description of the fault:
A fault in the BTS SW allows repeated time alignment commands to be sent by the BTS for initial TA

Related feature / functionality:
Time alignment

Dependency on configuration:
GSM HW

Description of the correction:
The TAC algorithm is corrected.

How end user/operator could detect the problem:
Examination of GPA traces.

Corrected Fault Reports:
3035C01 : Repeated TAC in AHS calls when A-bis link is disturbed on GSM hardware

Modified components:
ch_up_tr

ch_dl_tr

CX_GEN:CX7MP1_NEDSP_B001_BL02CX_GEN:CX7MP1_NEDSP_B001_BL02

Change effects:

Effects on end-user
Speech quality is improved.

Effects on Operator
MOS scores are better and lower customer complaints.

Testing Instructions for the change

1. All test cases should be performed using BSC SW S14 unless otherwise stated.
2. Use default BSC/BTS parameters unless otherwise stated

Test execution:

Test steps to reproduce the problem

Input to Reproduce the Problem	**Expected Output**
Configure the site as given in test case	The site is in supervisory state with no unexpected alarms present at BSC as well as at MMI except for "7801: MMI CONNECTED TO BASE STATION: Local MMI connected
Make an AHS call and during the call, break the Abis link for very short duration (between 300-900ms). By using the Abis breaker. Record the Abis traces.	Numbers of TAC(Time Alignment command) are very high (close to 25+).

Case Ref	BTS Configuration	BTS SW
PR 3035C01.02	1 OMNI GSM /Metro site	CXM7.0

Test steps to verify the correction

Input to verify the Problem	**Expected Output**
Configure the site as given in test case.	The site is in supervisory state with no unexpected alarms present at BSC as well as at MMI except for "7801: MMI CONNECTED TO BASE STATION: Local MMI connected
Make an AHS call and during the call, break the Abis link for very short duration (between 300-900ms). By using the Abis breaker. Record the Abis traces.	Call is successful Numbers of TAC(Time Alignment command)are not high and DL codec is moved to next lower codec before sending the large Time Alignment command (n*500us) in uplink.

Case Ref	BTS Configuration	BTS SW
PR 3035C01.04	1 Omni GSM/ Metro site	CXM7 MP1.0

Input to verify the Problem	**Expected Output**
Configure the site as given in test case, also make Ultra and metro site neighbour to each other.	The site is in supervisory state with no unexpected alarms present at BSC as well as at MMI except for "7801: MMI CONNECTED TO BASE STATION: Local MMI connected
Make multiple AHS calls on both sites for 24 hours.	Calls are successful

Case Ref	BTS Configuration	BTS SW
PR 3035C01.05	1 Omni GSM/ Metro site	CXM7.0 MP1.0

Unexpected results:
Repeated TAC is still shown in AHS calls when A-bis link is disturbed on GSM hardware

GSM/EDGE BTS

CN-id: 1863CNESPE07

Title:
MOS value is lower in Ater interface

Version of the SW-build:
CXM7.0 MP1.0

Valid for Product(s):
MetroSite EDGE BTS

References:
11386ESPE07, NA04511287, NA04539154

Reason for the Change Note:

Original problem:
Poor PESQ MOS P.862.1 Scores have been seen for Normal non-TFO HR calls using the MetroSite BTS

Description of the fault:
The BTS sends too frequent time alignment requests and because of this the MOS score is degraded.

Related feature / functionality:
Time Alignment

How end user/operator could detect the problem:
During MOS testing

Dependency on configuration:
HR codec

Workaround:
None

Description of the correction:
The BTS SW is modified so that the time alignment request is enhanced; the timer is changed if MGW is used.

Effects on end-user:
Improved speech quality

Effects on operator:
Improved MOS scores

NB: There were two issues reported, MOS degradation and TCH drop due to remote transcoder alarm (RTA).

The MOS issue is resolved in BTS SW; however, the RTA is an issue still under investigation by MGW support.

Corrected Fault Reports:

11386ESPE07 : Poor PESQ MOS P.862.1 Scores have been observed for Normal non-TFO HR calls in MetroSite BTS
NA04511287 : MOS value is lower in Ater interface
NA04539154 : Bad FER and SQI on HR usage in BSC, even the call gets good RxQuality and C/I

Modified components:

ch_cons

ch_up_tr

ch_dl_tr

CX_GEN: CX_GEN: CX_GEN:

Testing Instructions for the change

Pre-requirements:

1. Ater is connected to the MGW**.**
2. MGW 2G TFO feature should be disabled at the MGW.
3. AMR is disabled for the test sector.

Test execution:

Test steps to reproduce the problem

Input to Reproduce the Problem	**Expected Output**	
Make HR call in the test sector and remain on going.	Call is successful	
A-bis interface is monitored for the uplink compound time alignment requests.	Compound TA requests in the uplink TRAU frames are sent after every 2-3 frames.	
Disconnect the call	Call gets disconnected.	
Case Ref.	BCF Configuration	BTS SW
PR 11386ESPE07.01	Any, EDGE MetroSite	CXM7.0 MP1.0

Test steps to verify the correction

Input to Verify the correction	**Expected Output**	
Configure the site as given in test case.	The site is in supervisory state with no active alarms present at BSC as well as at MMI except for “7801: MMI CONNECTED TO BASE STATION: Local MMI connected	
Make HR calls on all the timeslots (on both sub channels) of all the TRX in the test sector and remain on going.	All calls are successful	
In A-bis interface TRAU frames are monitored for initial TA between BTS and transcoder.	BTS requests TA in uplink only after receiving valid frames in the downlink. There are no repeated TA requests in the subsequent uplink TRAU frame. Time alignment is complete within 2-3 uplink TA requests	
A-bis interface is monitored for the uplink compound time alignment requests.	Once a compound TA request is sent in the uplink, the next request if required is sent only after receiving the next 20 TRAU frames.	
Trigger a handover(s) to the second BTS and monitor target channel TRAU frames for the time alignment.	Handover(s) is (are) successful. BTS requests TA in uplink only after receiving valid frames in the downlink. There are no repeated TA requests in the subsequent uplink TRAU frame. Time alignment is complete within 2-3 uplink TA requests	
Disconnect all calls	All calls get disconnected.	
Case Ref.	BCF Configuration	BTS SW
PR 11386ESPE07.02	2+2, EDGE MetroSite	CXM7.0 MP1.0

Input to Verify the correction	Expected Output	
Configure the site as given in test case.	The site is in supervisory state with no active alarms present at BSC as well as at MMI except for “7801: MMI CONNECTED TO BASE STATION: Local MMI connected	
Make HR calls on all the timeslots (on both sub channels) of one TRX in test sector and remain on going.	All calls are successful	
In A-bis interface TRAU frames are monitored for initial TA between BTS and transcoder.	BTS requests TA in uplink only after receiving valid frames in the downlink. There are no repeated TA requests in the subsequent uplink TRAU frame. Time alignment is complete within 2-3 uplink TA requests	
A-bis interface is monitored for the uplink compound time alignment requests.	Once a compound TA request is sent in the uplink, the next request if required is sent only after receiving the next 20 TRAU frames.	
Break the Abis link for very short duration (between 300-900ms) using the Abis breaker. Analyse TRAU frames at A-bis.	All calls remain ongoing. When A-bis is re-connected then after receiving downlink speech frame, BTS requests TA (if required) in uplink TRAU frames Time alignment is complete within 2-3 uplink TA requests	
Disconnect all calls	All calls get disconnected.	
Case Ref.	BCF Configuration	BTS SW
PR 11386ESPE07.03	Any, EDGE MetroSite	CXM7.0 MP1.0

Input to Verify the correction	Expected Output	
Configure the site as given in test case.	The site is in supervisory state with no active alarms present at BSC as well as at MMI except for “7801: MMI CONNECTED TO BASE STATION: Local MMI connected	
Make HR calls on all the timeslots (on both sub channels) of one TRX in test sector and remain on going.	All calls are successful	
In A-bis interface TRAU frames are monitored for initial TA between BTS and transcoder.	BTS requests TA in uplink only after receiving valid frames in the downlink. There are no repeated TA requests in the subsequent uplink TRAU frame. Time alignment is complete within 2-3 uplink TA requests	
A-bis interface is monitored for the uplink compound time alignment requests.	Once a compound TA request is sent in the uplink, the next request if required is sent only after receiving the next 20 TRAU frames.	
Insert the delay of 4ms from data channel simulator in both uplink and downlink direction and analyse the uplink TRAU frames.	TRAU frames are delayed by 4ms in both the directions but the value of TAF must contain ' No change in frame timing' during the time of delay introduced.	
Disconnect all calls	All calls get disconnected.	
Case Ref.	BCF Configuration	BTS SW
PR 11386ESPE07.04	Any, EDGE MetroSite	CX7.0 MP1.0

NB: In this case problem is common to MetroSite and to UltraSite; therefore testing was performed for the UltraSite only.

Unexpected results:

Compound TA requests in the uplink TRAU frames are sent after every 2-3 frames.

GSM/EDGE BTS

CN-id: 3133CNESPE06

Title:
MetroSite BTS not passing transmission alarms

Version of the SW-build:
CXM7.0 MP1.0

Valid for Product(s):
MetroSite EDGE BTS

References:
11752ESPE06, NA04439425,

Reason for the Change Note:

Original problem
Supervisory Substations (SSS) are being used to collect external alarms from Radio Access sites. Originally these were being supervised (i.e. BTS polling) by Talk family base stations using their Q1 connections. When one of these Talk sites was replaced by an UltraSite the alarms were no longer transferred to the BSC. A remote session confirmed that the external alarms were active at the SSS, but that these could not be seen locally at the UltraSite using BTS Manager, or at the BSC.

Originally this problem was seen with an UltraSite EDGE BTS but because of the similar design the issue is also possible for MetroSite EDGE BTS.

Description of the fault
For TMS devices (legacy Q1 equipments), active alarms on any FE other than FE0 are never reported to BSC or BTS Manager although the alarms are seen when a remote connection through the BSC is established to the TMS device.

How end user/operator could detect the problem:
Whenever a TMS device is connected to the MetroSite, active alarms on any FE other than FE0 are not reported at BSC or BTS Manager.

Related feature / functionality
Q1 polling for TMS devices.

Dependency on configuration:
The problem is reported only on legacy Q1 equipments which support TMS protocol.

Workaround
None.

Description of the correction
A new command answer for legacy Q1 equipments has been added. The status command is now sent for TMS devices and depending on the response, all the FEs are now checked.

Effects on operator:
Active alarms on any FE other than FE0 are now seen and at the BSC or BTS Manager.

Corrected Fault Reports:

11752ESPE06 : MetroSite BTS not passing transmission alarms

Modified components:

bc_q1pol

bc_qdl

bc_exfun

q1mcom

glo_test

CX7_MP1.0_OM_PR11752ESPE06_BL002CX7_MP1.0_OM_PR11752ESPE06_BL002CX7_MP1.0_OM_PR11752ESPE06_BL002CX7_MP1.0_OM_PR11752ESPE06_BL002CX7_MP1.0_OM_PR11752ESPE06_BL002

Testing Instructions for the change

Test execution:

Test steps to reproduce the problem

Input to Reproduce the Problem	Expected Output
Configure the site as stated in the test case and Connect MI port of SSS device to the Q1 port of BTS.	The site is in supervisory state with no active alarms present at BSC as well as at MMI except for “7801: MMI CONNECTED TO BASE STATION: Local MMI connected”
Add the SSS device as a new TRE to the poll list of BSC by using the following MML commands: ZQWA:BCF=XX:TRE=Y:ZZZ:; ZZZ is Q1address of the SSS device set using bit hammer.	SSS is added in the poll list of BSC which can be verified by following MML command: ZQWL:BCF=XX;
At SSS, trigger an alarm on FE by sliding a jumper over the input pin and the neighbouring ground pin (in the centre row of the connector).	Active alarms can be seen on the SSS via a remote session from BSC.
Check the status of alarm generated in the step above at BTS manager and BSC.	For FE0: Alarm is reported at the BSC and at the BTS manager. FEs apart from FE0: No Alarm is reported at the BSC and at the BTS manager.
At SSS, cancel the alarm generated in step 3, by bringing the jumper back to the original position.	Alarm cancel can be seen on the SSS via a remote session from BSC.
Check the status of alarm cancelled in the step above at BTS manager and BSC.	For FE0: Alarm cancel is reported at the BSC and at the BTS manager. FEs apart from FE0: No Alarm cancel is reported at the BSC and at the BTS manager
Repeat the above 4 steps for all FEs of the SSS	As mentioned in the above 4 steps

Case Ref	BTS Configuration	BTS SW
PR 11752ESPE06.01	Any MetroSite	CXM5.0

Test steps to verify the correction

Input to verify the correction	Expected Output
Configure the site as stated in the test case and Connect MI port of SSS device to the Q1 port of BTS.	The site is in supervisory state with no active alarms present at BSC as well as at MMI except for “7801: MMI CONNECTED TO BASE STATION: Local MMI connected”
Add the SSS device as a new TRE to the poll list of BSC by using the following MML commands: ZQWA:BCF=XX:TRE=Y:ZZZ:; ZZZ is Q1address of the SSS device set using bit hammer.	SSS is added in the poll list of BSC which can be verified by following MML command: ZQWL:BCF=XX;
At SSS, trigger multiple alarms on any 5 FEs by sliding a jumper over the input pin and the neighbouring ground pins (in the centre row of the connector).	Active alarms can be seen on the SSS via a remote session from BSC.
Check the status of alarms generated in the step above at BTS manager and BSC.	Alarms are reported at the BSC and at the BTS manager.
At SSS, cancel the alarms generated in step 3, by bringing the jumper back to the original position.	Alarm cancels can be seen on the SSS via a remote session from BSC.
Check the status of alarms cancelled in the step above at BTS manager and BSC.	Alarms are cancelled at the BSC and at the BTS manager.
Repeat the above 4 steps to cover all FEs.	As mentioned in the above 4 steps

Case Ref	BTS Configuration	BTS SW
PR 11752ESPE06.02	Any MetroSite	CXM7.0 MP1.0

Input to verify the correction	Expected Output
Configure the site as stated in the test case and Connect MI port of SSS device to the Q1 port of BTS.	The site is in supervisory state with no active alarms present at BSC as well as at MMI except for “7801: MMI CONNECTED TO BASE STATION: Local MMI connected”
Add the SSS device as a new TRE to the poll list of BSC by using the following MML commands: ZQWA:BCF=XX:TRE=Y:ZZZ:; ZZZ is Q1address of the SSS device set using bit hammer.	SSS is added in the poll list of BSC which can be verified by following MML command: ZQWL:BCF=XX;
Give a BCF restart to the MetroSite and during the same time, At SSS, trigger multiple alarms on any 5 FEs by sliding a jumper over the input pin and the neighbouring ground pins (in the centre row of the connector).	Active alarms can be seen on the SSS via a remote session from BSC.
After the BCF has been reset, check the status of alarms generated in the step above at BTS manager and BSC	Alarms are reported at the BSC and at the BTS manager.
At SSS, cancel the alarms generated in step 3, by bringing the jumper back to the original position.	Alarm cancels can be seen on the SSS via a remote session from BSC.
Check the status of alarms cancelled in the step above at BTS manager and BSC.	Alarms are cancelled at the BSC and at the BTS manager.
Repeat the above 4 steps to cover all FEs.	As mentioned in the above 4 steps

Case Ref	BTS Configuration	BTS SW
PR 11752ESPE06.03	Any MetroSite	CXM7.0 MP1.0

Input to verify the correction	Expected Output
Configure the site as stated in the test case and Connect Q1_1 port of Metro Hub device to the Q1 port of BTS.	The site is in supervisory state with no active alarms present at BSC as well as at MMI except for “7801: MMI CONNECTED TO BASE STATION: Local MMI connected”
Add the Metro Hub device as a new TRE to the poll list of BSC by using the following MML commands: ZQWA:BCF=XX:TRE=Y:ZZZ:; ZZZ is an unreserved Q1 address.	Metro Hub is added in the poll list of BSC which can be verified by following MML command: ZQWL:BCF=XX;
At Metro Hub, trigger an alarm on FE by breaking a loop between the Tx and Rx ports of the SB that is activated in the LIF settings	Active alarms can be seen on the Metro Hub via a remote session from BSC.
Check the status of alarm generated in the step above at BTS manager and BSC.	Alarm is reported at the BSC and at the BTS manager.
At Metro Hub, cancel the alarm generated in step 3, by looping Tx and Rx on the SB.	Alarm cancel can be seen on the SSS via a remote session from BSC.
Check the status of alarm cancelled in the step above at BTS manager and BSC.	Alarm is cancelled at the BSC and at the BTS manager.
Repeat the above 4 steps for all SBs of all the FEs.	As mentioned in the above 4 steps

Case Ref	BTS Configuration	BTS SW
PR 11752ESPE06.04	Any MetroSite	CXM7.0 MP1.0

Unexpected results:
MetroSite BTS is still not passing transmission alarms

GSM/EDGE BTS

CN-id: 3192CNESPE06

Title:
Cannot make a call on the second MetroSite in the chain following a BTS SW upgrade

Version of the SW-build:
CXM7.0 MP1.0

Valid for Product(s):
MetroSite EDGE BTS

References:
NA04543929

Reason for the Change Note:

Original problem
Two chained MetroSite EDGE BTS are upgraded from CXM4.1 CD4.0 to CXM6 CD2.0 sometimes the second BTS in chain will stop to transmitting BCCH. Ongoing calls remain connected; however, no new calls can be originated. Only BTS alarm 7725 “Traffic Channel Activation Failure” is raised.

How end user/operator could detect the problem
When new calls are made on the second MetroSite in chain, it is no longer possible.

Description of the fault
BCCH transmission is active for the TRX from which the alarm originates for less than 10 seconds.

Dependency on configuration
The problem is seen only on the second MetroSite in a chain

Description of the correction
The function to start the BCCH transmission was called even when the timer had expired. The function call has been modified.

Effects on end-user
After sometime (2 to 24 hours), new calls are no longer possible on the second MetroSite in the chain although old calls are still ongoing

Effects on operator
Loss of capacity

Corrected Fault Reports:
NA04543929 cannot make a call on the second MetroSite in the chain following a BTS SW upgrade

Modified components:
tah_hand

CX7_MP1.0_OM_PRNA04543929_BL001

Testing Instructions for the change

Test execution:

Test steps to reproduce the problem

Input to Reproduce the Problem	Expected Output
Configure the site as stated in the test case with Previous BTS SW.	The site is in supervisory state with no active alarms present at BSC as well as at MMI
Activate New BTS SW from BSC.	The site is in supervisory state with New BTS SW.
Make both CS and PS calls on every sector and leave them running for entire test duration.	Both CS and PS calls are successful in each sector.
Check the alarms on the site	Alarm “7603” is reported for very short time span of less than 10 second.
Make new calls on slave sectors after 1-24 hours.	New calls both CS and PS are not successful on slave sector, previous CS calls on slave sector are not affected but PS calls get disconnected after some time. Alarm 7725 TRAFFIC CHANNEL ACTIVATION FAILURE. Is Reported.

Case Ref.	BCF Configuration	Previous BTS SW	New BTS SW
PR NA04543929.01	MetroSite Chain (2:Cabinets) :1(ETRX1)+1(ETRX3)+1(ETRX5)+1(ETRX7)	CXM4.1 CD4.0	CXM6 CD2.0

Test steps to verify the correction

Input to Verify the Correction	Expected Output
Configure the site as stated in the test case with Previous BTS SW.	The site is in supervisory state with no active alarms present at BSC as well as at MMI
Download and activate New BTS SW from BSC.	The site is in supervisory state with New BTS SW.
Make both CS and PS calls on every sector and leave them running for entire test duration.	Both CS and PS calls are successful in each sector.
Check the alarms on the site	No unwanted alarms are reported.
Make new calls on slave sectors after 24 hours.	New calls both CS and PS are successful on slave sector; previous CS and PS calls on slave sector are not affected.

Case Ref.	BCF Configuration	Previous BTS SW	New BTS SW
PR NA04543929.02	MetroSite Chain (2:Cabinets) :1(ETRX1)+1(ETRX3)+1(ETRX5)+1(ETRX7)	CXM4.1 CD4.0	CXM7 MP1.0

Input to Verify the Correction	Expected Output
Configure the site as stated in the test case	The site is in supervisory state with no active alarms present at BSC as well as at MMI
Make Calls on every TRX.	All calls are successful.
Block the LAPD link of the slave TRX and Unblock it after the time as per the test case from BSC. Plug in the Spectrum Analyser and monitor the BCCH frequency	For Case3: BCCH transmission is not stopped. For Case 4: BCCH transmission is First stopped (within 10-15 seconds) and then restarted after the TRX comes to working state.
Make new calls in the Slave Sector	All calls are successful.

Case Ref.	BCF Configuration	BTS SW	Time
PR NA04543929.03	MetroSite Chain (2:Cabinets) :1(ETRX1)+1(ETRX3)+1(ETRX5)+1(ETRX7)	CXM7 MP1.0	Time < 10 sec
PR NA04543929.04	MetroSite Chain (2:Cabinets) :1(ETRX1)+1(ETRX3)+1(ETRX5)+1(ETRX7)	CXM7 MP1.0	Time > 60 sec

Unexpected results:

CS and PS are not successful on the slave sector while previous CS calls on slave sector are not affected but the PS calls get disconnected after some time. In addition the alarm 7725 TRAFFIC CHANNEL ACTIVATION FAILURE is reported.

CN-id: 3193CNESPE06

Title:
Voice quality issues on several BSCs after new BTS sw load

Version of the SW-build:
CXM7.0 MP1.0

Valid for Product(s):
MetroSite EDGE BTS

References:
NA04538392, NA04571961, NA04577966

Reason for the Change Note:

Original problem
Some customers have complained of audio muting problems during Mobile Originating (MOC) to Mobile Terminating Calls (MTC) using certain mobile models. MOC is made and end-user begins talking, when there is a pause in the conversation and speech starts again, end-user will hear a 5 to 10 second muting. Problem can be heard in both directions MOC/MOT. Problem is observed after CXM6 CD1.0 activation, on 850MHz or 1900MHz band with UL DTX active and AMR HR only.

Description of the fault
Some mobiles incorrectly start sending speech without first sending Onset message to BTS.

Related feature / functionality
AMR HR & UL DTX

Dependency on configuration
None

Workaround
Disable UL DTX usage or use CXM6 base level BTS SW.

Description of the correction
DTX algorithm is changed so that if two or more simultaneous good speech blocks are observed in the UL then the speech path is enabled without the need to receive Onset block.

Effects on end-user
End users will experience 5 to 10 second muting periods which will be heard throughout the conversation.

Effects on operator
Reduced customer complaints

Corrected Fault Reports:

NA04538392 : Voice quality issues on several BSCs after new BTS sw load
NA04571961 : Mute Calls

Modified components:

ch_dec_t

ch_vars

ch_cons

CX_GEN:CX7MP1_EDSP_B001_BL03CX_GEN:CX7MP1_EDSP_B001_BL03CX_GEN:CX7MP1_EDSP_B001_BL03

Testing Instructions for the change

All test cases should be performed using BSC SW S14 unless otherwise stated.

Various Parameters are used for Intercell handover control as mentioned below.

BTS 1 and BTS2 are made adjacent cells to each other by the commands ZEAC: BTS=<BTS 1>: INDEX=0: ABTS=<BTS 2>; and ZEAC: BTS=<BTS 2>: INDEX=0: ABTS=<BTS 1>;

Handover parameters are set according to the following commands
ZEAM: BTS=<BTS 1/BTS2>: INDEX=0::: PMRG=-24,QMRG=-24,LMRG=-24;

To disable Intracell handover for both the BTSs
ZEHG: BTS=<BTS 1/BTS2>: EIC=N, EIH=N;

To set minimum interval between successful and unsuccessful handovers for the BTSs
ZEHG: BTS=<BTS 1/BTS2>: MIH=<time in sec>, MIU=<time in sec>;

Test execution:
Test steps to reproduce the problem

Input to Reproduce the Problem	Expected Output
Configure the site as stated in the test case.	The site is in supervisory state with no active alarms other than “7801: Local MMI connected to Base Station
Enable AHS codecs and set UL DTX as ON for the sector.	Codecs are set as per test case and UL DTX is ON.
Make an AHS call on a TRX using MOTO Razr V3x phones and play one audio speech file at MOC end for 30 minutes.	Call is established successfully and speech is heard at MTC end clearly.
Listen the sound at the MTC end. Use an Abis Play back tool (W Play) to confirm the mute.	A mute for some time is observed after 5-10 minutes while speech was there at MOC end. Mute is observed successfully in this tool.
Disconnect the call.	Call gets disconnected successfully.

Case Ref	BTS Configuration	BTS SW	AHS codec in the BTS
PR NA04538392.01	4 Omni	CXM6 CD1.0	4.75 ,5.9 & 7.4

Input to Reproduce the Problem	Expected Output
Configure the site as stated in the test case.	The site is in supervisory state with no active alarms other than “7801: Local MMI connected to Base Station
Enable AHS codecs and set UL DTX as ON for both the sectors. Define each of the two sectors as a neighbour of the other and set the handover parameters using	Codecs are set as per test case and UL DTX is ON. Neighbours are defined successfully.
Make an AHS call in first sector to an MS locked in second sector using MOTO Razr V3x phones. Trigger a to and fro handover between two sectors and play one audio speech file at MOC end for 30 minutes.	Call is established successfully Handovers started and speech is heard at MTC end clearly.
Listen the sound at the MTC end. Use an Abis Play back tool(W Play) to confirm the mute.	A mute for some time is observed after 5-10 minutes while speech was there at MOC end. Mute is observed successfully in this tool.
Disconnect the call.	Call gets disconnected successfully.

Case Ref	BTS Configuration	BTS SW	AHS codec in the BTS
PR NA04538392.02	2+2	CXM6.0 CD1.0	4.75 ,5.9 & 7.4

Input to Reproduce the Problem	Expected Output
Configure the site as stated in the test case.	The site is in supervisory state with no active alarms other than “7801: Local MMI connected to Base Station
Set UL DTX as ON for both the sectors. Define each of the two sectors as a neighbour of the other and set the handover parameters using	UL DTX is ON. Neighbours are defined successfully.
In the first sector, configure all the traffic channels to be of type TCHH and in the second sector, configure all the traffic channels to be of type TCHF.	The first sector consists of half rate traffic channels only and the second sector consists of full rate traffic channels only.
Lock all traffic channels in both the sectors. In the source BTS unlock the 7th timeslot of the BCCH TRX and in the target BTS unlock the 7th timeslot of a non-BCCH TRX.	Only one traffic channel remains unlocked in each sector.
Set up an AMR call in the first sector to an MS locked to a completely separate BTS using MOTO Razr V3x phones. Trigger a to and fro DR-TRAU handovers between two sectors and play one audio speech file at MOC end for 30 minutes.	An AMR call is established successfully in the first sector. Handovers started and speech is heard at MTC end clearly.
Listen the sound at the MTC end. Use Abis Play back tool(W Play) to confirm the mute.	A mute for some time is observed after 5-10 minutes while speech was there at MOC end. Mute is observed successfully in this tool.
Disconnect the call.	Call gets disconnected successfully.

Case Ref	BTS Configuration	BTS SW
PR NA04538392.03	2+2	CXM6.0 CD1.0

Test steps to verify the correction

Input to Verify the Correction	Expected Output
Configure the site as stated in the test case.	The site is in supervisory state with no active alarms other than “7801: Local MMI connected to Base Station
Enable AHS codecs and set UL DTX as ON for the sector.	Codecs are set as per test case and UL DTX is ON.
Play one audio file consisting of continuous beep sound at MOC end.	Sound file played successfully.
Make an AHS call on a TRX using MOTO Razr V3x phones.	Call is established successfully
Listen the sound at the MTC end for 5 minutes and monitor Abis traces.	No muting is observed and sound is heard clearly. On Abis continuous speech frames are seen and no any “No Speech” frame is observed.
Now stop the audio file and call remains ongoing. Monitor the Abis traces.	Silence is observed at the MTC end. On Abis continuous “No Speech” frames are seen.
After 5 minutes again play the sound file at the MOC end and monitor Abis traces.	Continuous sound is heard at the MTC end. On Abis continuous speech frames are seen and no any “No Speech” frame is observed.
Use Abis Play back tool(W Play) to confirm the mute and speech periods in all above steps	Mute/Speech is observed successfully according to the expected output with this tool.
Repeat the above three steps 4 times	Results are consistent and as per the expected outputs.
Disconnect the call.	Call gets disconnected successfully.
Repeat the test case with Nokia-6220 and SonyErricson-W810i phones.	All the results are as per given expected outputs.

Case Ref	BTS Configuration	BTS SW	AHS codec in the BTS
PR NA04538392.04	4 Omni	CXM7.0 MP1.0	4.75 ,5.9 & 7.4
PR NA04538392.05	4 Omni	CXM7.0 MP1.0	4.75

Input to Verify the Correction	Expected Output
Configure the site as stated in the test case.	The site is in supervisory state with no active alarms other than “7801: Local MMI connected to Base Station
Enable AHS codecs and set UL DTX as ON for the sector. Define each of the two sectors as a neighbour of the other and set the handover parameters using	Codecs are set as per test case and UL DTX is ON. Neighbours are defined successfully.
Play one audio file consisting of continuous beep sound at MOC end.	Sound file played successfully.
Make an AHS call in first sector to an MS locked in second sector using MOTO Razr V3x phones. Trigger a to and fro handover between two sectors.	Call is established successfully Handovers started.
Listen the sound at the MTC end for 5 minutes and monitor Abis traces.	No muting is observed and sound is heard clearly. On Abis continuous speech frames are seen and no any “No Speech” frame is observed.
Now stop the audio file and call remains ongoing. Monitor the Abis traces.	Silence is observed at the MTC end. On Abis continuous “No Speech” frames are seen.
After 5 minutes again play the sound file at the MOC end and monitor Abis traces.	Continuous sound is heard at the MTC end. On Abis continuous speech frames are seen and no any “No Speech” frame is observed.
Use an Abis Play back tool(W Play) to confirm the mute and speech periods in all above steps	Mute/Speech is observed successfully according to the expected output with this tool.
Repeat the above three steps 4 times	Results are consistent and as per the expected outputs.
Disconnect the call.	Call gets disconnected successfully.
Repeat the test case with Nokia-6220 and SonyErricson-W810i phones.	All the results are as per given expected outputs.

Case Ref	BTS Configuration	BTS SW	AHS codec in the BTS
PR NA04538392.06	2+2	CXM7.0 MP1.0	4.75 ,5.9 & 7.4

Input to Verify the Correction	Expected Output
Configure the site as stated in the test case.	The site is in supervisory state with no active alarms other than “7801: Local MMI connected to Base Station
Enable AHS codecs and set UL DTX as ON for the sector. Define each of the two sectors as a neighbour of the other and set the handover parameters using	Codecs are set as per test case and UL DTX is ON. Neighbours are defined successfully.
In the first sector, configure all the traffic channels to be of type TCHH and in the second sector, configure all the traffic channels to be of type TCHF	The first sector consists of half rate traffic channels only and the second sector consists of full rate traffic channels only.
Lock all traffic channels in both the sectors. In the source BTS unlock the 7th timeslot of the BCCH TRX and in the target BTS unlock the 7th timeslot of a non-BCCH TRX.	Only one traffic channel remains unlocked in each sector.
Play one audio file consisting of continuous beep sound at MOC end.	Sound file played successfully.
Set up an AMR call in the first sector to an MS locked to a completely separate BTS using MOTO Razr V3x phones. Trigger a to and fro DR-TRAU handovers between two sectors	An AMR call is established successfully [**Error! Reference source not found.**] in the first sector. Handovers started.
Listen the sound at the MTC end for 5 minutes and monitor Abis traces.	No muting is observed and sound is heard clearly. On Abis continuous speech frames are seen and no any “No Speech” frame is observed.
Now stop the audio file and call remains ongoing. Monitor the Abis traces.	Silence is observed at the MTC end. On Abis continuous “No Speech” frames are seen.
After 5 minutes again play the sound file at the MOC end and monitor Abis traces.	Continuous sound is heard at the MTC end. On Abis continuous speech frames are seen and no any “No Speech” frame is observed.
Use an Abis Play back tool(W Play) to confirm the mute and speech periods in all above steps	Mute/Speech is observed successfully according to the expected output with this tool.
Repeat the above three steps 4 times	Results are consistent and as per the expected outputs.
Disconnect the call.	Call gets disconnected successfully.
Repeat the test case with Nokia-6220 and SonyErricson-W810i phones.	All the results are as per given expected outputs.

Case Ref	BTS Configuration	BTS SW
PR NA04538392.07	2+2	CXM7.0 MP1.0

Unexpected results:
Speech is heard at MTC end but audio mute periods are still observed during a call.