Source: **T1**

Title: **CR's to TS 34.123-3 v.3.3.0 for approval**

Agenda item: **5.1.3**

Document for: **Approval**

This document contains the CRs to TS 34.123-3 v3.3.0. These CRs have been agreed by T1 and are put forward to TSG T for approval.
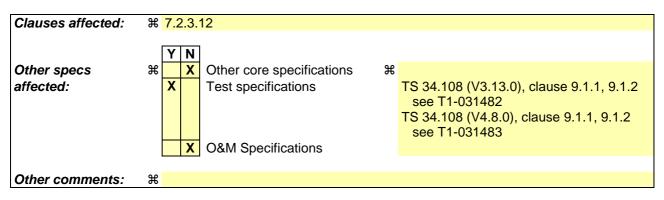
Tdoc #	Title	*CR#*	*rev*	*Cat*	*Version in*	*Version out*	*Release*
T1-031455	Approval of RLC test case 7.2.3.12	144		B	3.3.0	3.4.0	99
T1-031585	CR for correction of two Tabular PDU Constraint Declarations in MAC ATS V3.3.0			F	3.3.0	3.4.0	99
T1-031684	Correction to Package 1 test case 11.3.1.	141	2	F	3.3.0	3.4.0	99
T1-031707	ASP changes and MMI string corrections	142	2	F	3.3.0	3.4.0	99
T1-031732	Security ASP changes			F	3.3.0	3.4.0	99

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-3** CR **CRNum** ⌘**rev** **-** ⌘ Current version: **3.3.0** ⌘

For **HELP** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☐

Title: ⌘	Introduction of test case 7.2.3.12
Source: ⌘	Rohde & Schwarz
Work item code: ⌘	N/A ***Date:*** ⌘ 28 Oct 2003

Category: ⌘ **B**

Use one of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Release: ⌘ R99

Use one of the following releases:
2   (GSM Phase 2)
R96   (Release 1996)
R97   (Release 1997)
R98   (Release 1998)
R99   (Release 1999)
Rel-4   (Release 4)
Rel-5   (Release 5)
Rel-6   (Release 6)

Reason for change: ⌘	To add verified RLC test case 7.2.3.12 to the approved RLC ATS V3.3.0
Summary of change: ⌘	This document lists all changes applied to test case 7.2.3.12 required for approval. See detailed change description for further information.
Consequences if not approved: ⌘	Test case will not be added to ATS

Clauses affected: ⌘ 7.2.3.12

	Y	N		
Other specs affected: ⌘		X	Other core specifications ⌘	
	X		Test specifications	TS 34.108 (V3.13.0), clause 9.1.1, 9.1.2 see T1-031482 TS 34.108 (V4.8.0), clause 9.1.1, 9.1.2 see T1-031483
		X	O&M Specifications	

Other comments: ⌘

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

3GPP TSG- T1 Meeting #21

Budapest, Hungary, 03 – 07 November 2003

T1-031455

Title:	**Changes to test case 7.2.3.12 required for approval**
Source:	Rohde & Schwarz
Agenda Item:	TTCN Issues
Document for:	Approval
Contact:	Thomas Moosburger
	thomas.moosburger@rsd.rohde-schwarz.com
	Tel. +49 89 4129 11731

1 Overview

This document list all the changes needed to correct problems in the TTCN implementation of GCF Package 1 test case 7.2.3.12 which is part of the RLC test suite. Only essential changes to the TTCN are applied and documented in section 4.

With these changes applied the test case can be demonstrated to run with one or more 3G UEs (see section 6). Execution log files are provided as evidence.

2 Table of Contents

3 Verification Test Summary

Test Case:	TC_7_2_3_12
Test Group:	RLC/AcknowledgedMode/SequenceNumbering/
ATS Version:	V3.3.0c3 + essential modifications
System Simulator used:	Rohde & Schwarz 3G system simulator CRTU-W
UE used:	Nokia 3G UE 6650
Verification Status:	PASS

4 Corrections required for test case 7.2.3.12

4.1 Introduction

This section describes the changes required to make test case 7.2.3.12 run correctly with a 3G UE. The RLC ATS version used as basis was RLCv330c3.mp provided by MCC160 on 27/10/03.

All changes are marked with label "**WA#RLC<number>**" in the TTCN comments column of the enclosed RLC ATS [1].

Note that change **WA#RLC3177** was made for another RLC test cases and should not be applied by MCC160 when merging this test case into the approved ATS. Change **WA#RLC3180** documents the addition of test case 7.2.3.12 itself plus 2 dependent elements (cds_RLC_InfoAM_7_2_3_12, tcv_NumSDUsTxAndRx).

4.2 Correction in test body (WA#RLC3159)

Test body	Local test step lt_CheckRxPollBit, line 41
Reason for change	Test case aborts in an INT_TO_BIT function which is called with an INTEGER "exceeding" the number of bits available for conversion.
Summary of change	The INTEGER supplied to an INT_TO_BIT function is taken MOD 4096 such that it is not "exceeding" the number of bits available for conversion.
Source of change	new change
Label	WA#RLC3159
Impact on test prose	none

4.3   Correction of DPCCH_power_offset value (WA#RLC3178)

Test suite constant name   tsc_DPCCH_PowerOffset

Reason for change   The DPCCH_power_offset value specified in the Uplink DPCH Info is out of range.

Summary of change   Modify the DPCCH_power_offset to –80dB (N.B. This translates to an ASN.1 IE value of –40) equivalent to a DPCCH_initial_power value of –20dBm.

Source of change   new change

Label   WA#RLC3178

Impact on test prose   Clause 9.1.1 and 9.1.2 in TS 34.108
CR on prose was raised by Anite for T1 #21 as T1-031482, T1-031483

tsc_KeySeqDef	KeySeq	111B	default Key Sequence. Default value: '111'B
tsc_DPCCH_PowerOffset	DPCCH_PowerOffset	–40	DPCCH power offset value. Default value: -8 VWA#RLC3178
tsc_DefaultDPCH_OffsetValue	DefaultDPCH_OffsetValueFDD	0	Default DPCH offset value. Actual value Default DPCH-OffsetValueFDD = IE value * 512 Default value : 459 VWA#RLC3177
tsc_CRNTI	C_RNTI	00000000000000001B	C RNTI Default value: 0000 0000 0000 0001'B

3

5 Branches executed in test case 7.2.3.12

The test case executed 3 branches with Ciphering disabled (Integrity is mandatory in V330 ATS):

- ▪   CS branch in CS domain
- ▪   CS + PS in CS domain tested
- ▪   CS + PS in PS domain tested

6 Execution Log Files

6.1 Nokia 3G UE 6650

The Nokia 3G UE 6650 passed this test case on Rohde & Schwarz 3G System Simulator CRTU-W. The documentation below is enclosed as evidence of the successful test case run [1]:

- **Execution log file 7_2_3_12-Logs\CSonly\Index.html**
  Execution log file 7_2_3_12-Logs\CS\Index.html
  Execution log file 7_2_3_12-Logs\PS\Index.html
  Execution log files in HTML format shows the dynamic behaviour of the test in a tabular view and in message sequence chart (MSC) view. All message contents are fully decoded and listed in hexadecimal format. Preliminary verdicts and the final test case verdict are listed in the log file.

- **PICS/PIXIT files for all 3 branches executed**
  7_2_3_12_CSonly_Pics-Pixit.txt
  7_2_3_12_CS_Pics-Pixit.txt
  7_2_3_12_PS_Pics-Pixit.txt
  A text file containing all PICS/PIXIT parameters used for testing.

7 References

[1]   **T1-031456**
         Execution log files, PICS/PIXIT file, TTCN MP file

CR-Form-v7

CHANGE REQUEST

| ⌘ | **34.123-3** CR **CRNum** | ⌘rev | **-** | ⌘ | Current version: | **3.3.0** | ⌘ |

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐   ME **X** Radio Access Network ☐   Core Network ☐

Title: ⌘	CR for correction of two Tabular PDU Constraint Declarations in MAC ATS V3.3.0 (Revision of T1-031260)	
Source: ⌘	Anite Telecoms	
Work item code:⌘	N/A	*Date:* ⌘ 06/11/2003
Category: ⌘ **F**		*Release:* ⌘ R99

Use one of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2   (GSM Phase 2)
R96   (Release 1996)
R97   (Release 1997)
R98   (Release 1998)
R99   (Release 1999)
Rel-4   (Release 4)
Rel-5   (Release 5)
Rel-6   (Release 6)

Reason for change: ⌘	A previous CR (T1-030399 for test case 7.1.1.8 – Anritsu) changed the PDU names in the constraint cr_MAC_PDU_RCV_STATUS_TCTF from MAC_PDU_RCV_STATUS --> MAC_PDU to address the mismatch of types. However, this use of a meta-type is not suitable for all compilers. Therefore, a solution is proposed here which is not compiler specific. 1. The cr_MAC_PDU_RCV_STATUS_TCTF constraint's PDU name MAC_PDU, is wrong. 2. The second parameter of cr_MAC_PDU_RCV_STATUS_TCTF constraint p_Data type : PDU, is wrong. 3. The c_MAC_PDU_CT_RCV_STATUS_DCH constraint's PDU name MAC_PDU, is wrong. 4. The second parameter of c_MAC_PDU_CT_RCV_STATUS_DCH constraint p_Data type : PDU, is wrong
Summary of change:⌘	1. Change the cr_MAC_PDU_RCV_STATUS_TCTF constraint's PDU name to MAC_PDU_RCV_STATUS. 2. Change the p_Data parameter type of cr_MAC_PDU_RCV_STATUS_TCTF constraint to RLC_STATUS_PDU. 3. Change the c_MAC_PDU_CT_RCV_STATUS_DCH constraint's PDU name to MAC_PDU_RCV_STATUS. 4. Change the p_Data parameter type of c_MAC_PDU_CT_RCV_STATUS_DCH constraint to RLC_STATUS_PDU.
Consequences if ⌘	When the assignment tcv_StatusPDU := TLC_TR_TestDataInd.data is executed

not approved:	this will cause the test step to fail incorrectly because of the mismatched PDU types.	

Clauses affected:	⌘	N/A			
		Y	**N**		
Other specs affected:	⌘			Other core specifications	⌘
				Test specifications	
				O&M Specifications	
Other comments:	⌘				

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

Tabular PDU Constraint name	cr_MAC_PDU_RCV_STATUS_TCTF
Reason for change	1. The cr_MAC_PDU_RCV_STATUS_TCTF constraint's PDU name MAC_PDU, is wrong. 2. The second parameter of cr_MAC_PDU_RCV_STATUS_TCTF constraint p_Data : PDU, type is wrong.
Summary of change	1. Change the cr_MAC_PDU_RCV_STATUS_TCTF constraint's PDU name to MAC_PDU_RCV_STATUS. 2. Change the p_Data parameter type of cr_MAC_PDU_RCV_STATUS_TCTF constraint to RLC_STATUS_PDU.
Source of change	new change

Before:

PDU Constraint Declaration	
Constraint Name:	cr_MAC_PDU_RCV_STATUS_TCTF(p_TCTF: TCTF; p_Data: PDU)
Group:	
PDU Name:	MAC_PDU
Derivation Path:	
Encoding Rule Name:	
Encoding Variation:	
Comments:	This PDU is used to send MAC PDU's with various values for the TCTF field. Ref 3G TS 25.321 clause 9.1.2 The same constraint can be used for uplink and downlink, since the appropriate TCTF field can be provided as a parameter, and all other fields are the same.

Field Name	Element Value	Type Encoding	Comments
tctf	p_TCTF		
ueIdType	tsc_UE_IdTypeC_RNTI		
ueId	px_CRNTI		
ctField	tsc_CT_LoCh3		
data	p_Data		

Detailed Comment:	The user of this constraint is responsible for ensuring that the MAC header + data is the correct length to fit exactly in one transport block. This PDU will be received by the UE, and routed to the third logical channel mapped to RACH. (High priority NAS SRB)

After:

PDU Constraint Declaration	
Constraint Name:	cr_MAC_PDU_RCV_STATUS_TCTF (p_TCTF: TCTF; p_Data: RLC_STATUS_PDU)
Group:	
PDU Name:	MAC_PDU_RCV_STATUS
Derivation Path:	
Encoding Rule Name:	
Encoding Variation:	
Comments:	This PDU is used to send MAC PDU's with various values for the TCTF field. Ref 3G TS 25.321 clause 9.1.2 The same constraint can be used for uplink and downlink, since the appropriate TCTF field can be provided as a parameter, and all other fields are the same.

Field Name	Element Value	Type Encoding	Comments
tctf	p_TCTF		
ueIdType	tsc_UE_IdTypeC_RNTI		
ueId	px_CRNTI		
ctField	tsc_CT_LoCh3		
data	p_Data		

Detailed Comment:	The user of this constraint is responsible for ensuring that the MAC header + data is the correct length to fit exactly in one transport block. This PDU will be received by the UE, and routed to the third logical channel mapped to RACH. (High priority NAS SRB)

Tabular PDU Constraint name	c_MAC_PDU_CT_RCV_STATUS_DCH
Reason for change	3. The c_MAC_PDU_CT_RCV_STATUS_DCH constraint's PDU name MAC_PDU, is wrong. 4. The second parameter of c_MAC_PDU_CT_RCV_STATUS_DCH constraint, p_Data : PDU, type is wrong.
Summary of change	3. Change the c_MAC_PDU_CT_RCV_STATUS_DCH constraint's PDU name to MAC_PDU_RCV_STATUS. 4. Change the p_Data parameter type of c_MAC_PDU_CT_RCV_STATUS_DCH constraint to RLC_STATUS_PDU.
Source of change	new change

Before:

PDU Constraint Declaration			
Constraint Name:	c_MAC_PDU_CT_RCV_STATUS_DCH(p_CT_Field: CT_Field; p_Data: PDU)		
Group:			
PDU Name:	MAC_PDU		
Derivation Path:			
Encoding Rule Name:			
Encoding Variation:			
Comments:	This PDU is used to send a MAC PDU on a DCCH mapped to FACH with the given value for the CT field. Separate constraints are provided for uplink and downlink since the TCTF field value is different for sending and receiving. Ref 3G TS 25.321 clause 9.1.2 Parameters p_CT_Field The CT field value to be used in the transmitted MAC PDU. p_Data The MAC SDU to be used in the transmitted MAC PDU. NOTE: The user of this constraint is responsible for ensuring that the MAC header + data is the correct length to fit exactly in one transport block.		

Field Name	Element Value	Type Encoding	Comments
tctf	-		
ueIdType	-		
ueId	-		
ctField	p_CT_Field		
data	p_Data		

Detailed Comment:

After:

PDU Constraint Declaration			
Constraint Name:	c_MAC_PDU_CT_RCV_STATUS_DCH(p_CT_Field: CT_Field; p_Data: RLC_STATUS_PDU)		
Group:			
PDU Name:	MAC_PDU_RCV_STATUS		
Derivation Path:			
Encoding Rule Name:			
Encoding Variation:			
Comments:	This PDU is used to send a MAC PDU on a DCCH mapped to FACH with the given value for the CT field. Separate constraints are provided for uplink and downlink since the TCTF field value is different for sending and receiving. Ref 3G TS 25.321 clause 9.1.2 Parameters p_CT_Field The CT field value to be used in the transmitted MAC PDU. p_Data The MAC SDU to be used in the transmitted MAC PDU. NOTE: The user of this constraint is responsible for ensuring that the MAC header + data is the correct length to fit exactly in one transport block.		

Field Name	Element Value	Type Encoding	Comments
tctf	-		
ueIdType	-		
ueId	-		
ctField	p_CT_Field		
data	p_Data		

Detailed Comment:	

CR-Form-v7

CHANGE REQUEST

| ⌘ | **34.123-3** | CR | **141** | ⌘ **rev** | **2** | ⌘ | Current version: | **3.3.0** | ⌘ |

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐   ME **X**   Radio Access Network ☐   Core Network ☐

Title: ⌘	Correction to Package 1 test case 11.3.1.	
Source: ⌘	Ericsson	
Work item code:⌘	TEI	***Date:*** ⌘ 06/11/03

Category: ⌘ **F**	***Release:*** ⌘ R99
Use <u>one</u> of the following categories: **F** *(correction)* **A** *(corresponds to a correction in an earlier release)* **B** *(addition of feature),* **C** *(functional modification of feature)* **D** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Use <u>one</u> of the following releases: 2 *(GSM Phase 2)* R96 *(Release 1996)* R97 *(Release 1997)* R98 *(Release 1998)* R99 *(Release 1999)* Rel-4 *(Release 4)* Rel-5 *(Release 5)* Rel-6 *(Release 6)*

Reason for change: ⌘	In test case 11.3.1 Constraint cs_TearDwnInd_tv has currently TDI Flag hard coded to "1". But according to TS 24.008 chapter 9.5.14.1: "This IE is included in the message in order to indicate whether only the PDP context associated with this specific TI or all active PDP contexts sharing the same PDP address as the PDP context associated with this specific TI shall be deactivated." This means that if TDI Flag is set to 0, Tear down of all PDP Context is not requested. And if TDI Flag is set to 1, Tear down of all PDP Context is requested.
Summary of change:⌘	TDI Flag set to value '?'B (AnyOne) in new constraint cr_TearDwnInd_tv. This new constraint is called from the constraint cbr_Deact_PDP_ContextReq_MO which is modified accordingly.
Consequences if ⌘ ***not approved:***	Test case fails conformant UE.

Clauses affected: ⌘	Constraint cbr_Deact_PDP_ContextReq_MO and new constraint cr_TearDwnInd_tv.

		Y	**N**	
Other specs ⌘			**X**	Other core specifications ⌘
affected:			**X**	Test specifications
			X	O&M Specifications

Other comments:	⌘	

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Change from:

cbr_Deact_PDP_ContextReq_MO

Constraint Name	cbr_Deact_PDP_ContextReq_MO(p_SM_Cause: RejCau)		
PDU Type	DEACTIVATEPDPCONTEXTREQUEST		
Derivation Path			
Encoding Rule Name			
Encoding Variation			
Comments	Deactivate PDP Context Request n <=> ue 24.008, 9.5.14		
Field Name	**Field Value**	**Field Encoding**	**Comments**
ti	*		
SM_ProtocolDiscriminator	tsc_SMPD		
msgType	'01000110'B		
SM_Cause	p_SM_Cause		
tearDwnInd	cs_TearDwnInd_tv IF_PRESENT		
Detailed Comments			

Change to:

cbr_Deact_PDP_ContextReq_MO

Constraint Name	cbr_Deact_PDP_ContextReq_MO(p_SM_Cause: RejCau)
PDU Type	DEACTIVATEPDPCONTEXTREQUEST
Derivation Path	
Encoding Rule Name	
Encoding Variation	
Comments	Deactivate PDP Context Request n <=> ue

	24.008, 9.5.14		
Field Name	**Field Value**	**Field Encoding**	**Comments**
ti	*		
sM_ProtocolDiscriminator	tsc_SMPD		
msgType	'01000110'B		
sM_Cause	p_SM_Cause		
tearDwnInd	cr_TearDwnInd_tv IF_PRESENT		
Detailed Comments			

New Constraint:

cr_TearDwnInd_tv

Constraint Name	cr_TearDwnInd_tv		
Structured Type	TearDwnInd_tv		
Derivation Path			
Encoding Variation			
Comments	Tear down indicator used for the direction ue -> n.		
Element Name	**Element Value**	**Element Encoding**	**Comments**
iei	'1001'B		
spare	'000'B		
tdiflag	'?'B		TDI Flag=0, Tear down of all PDP Context not requested. TDI Flag=1, Tear down of all PDP Context requested.
Detailed Comments			

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-3** CR **142** ⌘ **rev** **3** ⌘ Current version: **3.3.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐   ME ☐ Radio Access Network ☐ Core Network ☐

Title: ⌘	ASP changes and MMI string corrections	
Source: ⌘	MCC task 160, R&S, Ericsson, Motorola, Nokia, Cetecom	
Work item code: ⌘	TEI	***Date:*** ⌘ 10/10/2003
Category: ⌘	F	***Release:*** ⌘ R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use one of the following releases:
2   *(GSM Phase 2)*
R96   *(Release 1996)*
R97   *(Release 1997)*
R98   *(Release 1998)*
R99   *(Release 1999)*
Rel-4   *(Release 4)*
Rel-5   *(Release 5)*
Rel-6   *(Release 6)*

Reason for change: ⌘

1. A number of RAB tests requires the SS sending consecutive DL test data on different RBs, where the configured DL Transport Format Combination (TFC) forces the transmission of the test data on the same TTI.

This can form a problem for SS implementations in test situations where RLC Transmission Discard is not configured for a TR entity, at least for particular RAB connections, such as speech.

> Note: For AM entities RLC Transmission Discard is always configured and for UM entities the described situation does not occur in the considered ATSs.

In order to be able to send the required test data on the same TTI even under these circumstances, SS RLC needs to be informed through a specific ASP before request of sending actual test data on the individual radio bearers. On receipt of this ASP, the SS can temporarily suppress the transmission on these RBs until all the concerned RBs have the test data to be sent. A new ASP is proposed for this purpose.

2. In order to test UE UL signalling and data on the same TTI, a test method of continuously pupming test data is used. The UE is asked to send periodic measurement reports. The SS pumps a sufficient length of data on the RAB. The DL data are sent on every TTI. The data are looped back in UL by UE also on every TTI. If the data pumped are long enough, one of the periodic measurement reports on SRB3 will be transmitted while the test data are being looped back. In this way, certain UL TFCS for SRB and RAB combinations can be tested.

Currently, the way of pumping data is implemented in TTCN through a TSO. It is felt that a standardised ASP is a much more suitable solution for the different SS platforms.

3. The simulation of DL multiple datastreams at the active cell update can be implemented in SS either above DCH or below DCH. The need of a DCH configuration at soft HO is

	optional for SS depending on the implementation. To make the TTCN suitable for the SS flexibility, it is proposed to add a softHO flag in ASP CPHY_TrCH_Config_REQ for DCH configuration. The flag indicates the type of transpot channel configuration as normal or of softHO DCH. 4. The current PICH and AICH power setting definition has a larger range which is not quite in line with the definition of SysInfoType5 in 25.331. 5. 6. The use of matching symbols in constraint assignment in TTCN needs a clarification. 7. MMI command strings need to tidy up. 8. Recover three CS data Bcap PIXIT which were incidently removed in T1-031278. 9. Correction of transport channel identifiers, in order to follow the convention of assignement id in TTCN. 10 A question was received on TSO o_SUFI_Handler. Clarification text is required..
Summary of change: ⌘	1. Create a new ASP CRLC_Bind_TestData_TTI in 7.3.2.2.22a. 2. Create a new ASP CRLC_SendContinuousData in 7.3.2.2.29a. 3. Add tchConfiType in ASP CPHY_TrCH_Config in 7.3.2.2.13 and CPHY_TrCH_Relese in 7.3.2.2.14. 4. Use PICH_PowerOffSet and Aich_PowerOffSet in the ASN.1 definition in 7.3.2.2.11. 5. 6. Clarification of matching symbols AnyValue or AnyOrOmit applied to annex E.3.25. 7. Ericsson proposed to tidy up the MMI command strings and make annex F consistent with TTCN. 8. Recover px_BcapFNUR, px_BcapITC, px_BcapSyncAsync in B.1.2. 9. The uplink transport channel id in 8.3.14 and 8.3.16 are corrected. 10. The clarification text is added to the TSO descriptions in 6.5.2.1 and 8.7.1.1.1.
Consequences if ⌘ *not approved:*	A large number of RAB sub-tests could not be implemented. Soft HO test cases would work only at certain SS platforms.

Clauses affected: ⌘	6.5.2.1, 7.3.2.2.11, 7.3.2.2.13, 7.3.2.2.14, 7.3.2.2.22a , 7.3.2.2.29a, 8.3.14, 8.3.16, 8.7.1.1.1, B1.2, E.3.25, F

		Y	**N**			
Other specs	⌘			Other core specifications	⌘	
affected:				Test specifications		
				O&M Specifications		

Other comments: ⌘	It is a merged CR. 1. Changes 1 - 3 and 10 are based on R&S input 2. Changes 4 and 6 are based on the Cetecom comments 3. Changes 9 is based on the comments and the document from Motorola 4. Change 7 is taken from the Ericsson document. 5. Change 8 is agreed by Nokia and Ericsson.

6.5.2.1 Handling SUFIs in TTCN

The SUFIs are a very flexible set of information elements contained in the RLC protocol. The order of the fields varies, the existance of a field may depend upon the presence of another one. A field can be present multiple times. For matching received SUFIs, it is convenient to define the SUFIs as a HEXSTRING which is treated by a TSO **o_SUFI_Handler**.

Depending upon which SUFIs and which aspects of SUFIs are to be checked, the TSO is provided with the information (**SUFI_Params**) on what checking it is expected to perform. If the check is successful the result TRUE will be returned, otherwise FALSE. Additionally the TSO will return an object which is structured as the SUFIs used in transmission (SuperFields). This will allow to make use of information received and needed to establish SUFIs to be transmitted.

The input parameters to **o_SUFI_Handler** to be used as checking criteria are collected in tabular data structure **SUFI_Params** which is filled each time before the TSO is called. These data are to allow the checking of the presence and the value of SUFIs. All entries shall be set to well-defined values if these are to be used by **o_SUFI_Handler**. As a principle values specifically set are used as criteria for checking, values omitted are used as AnyOrOmit values. The resulting SUFI list is established by **o_SUFI_Handler** and can be retrieved in the data structure returned by the TSO. Details have to be defined in the TSO itself.

Tasks **o_SUFI_Handler** has to perform:

- Transfer the SUFIs received into the structure of SuperFields; this is the SUFI list structure existing today.

- If multiple occurrences of SUFI are found then use the **last** one to fill the SuperFields structure. The LIST SUFI is an exception: multiple SUFIs may be used to transfer the complete LIST information.

- Check for all parameters in SUFI_Params set to a specific expected value that one of the SUFIs using this value is present and that the value received matches the specific expected value.

- Check that if SUFIs are received for which an expected value of Any is specified, the SUFI is consistent if that SUFI is received.

- Check that if SUFIs are received for the presence of which no entry is specified in SUFI_Params, the SUFI is consistent.

- Check that sequence numbers are in the range between LB and UB if specific values are set.

Entries in **SUFI_Params**.

Element Name	Sigificance	Comment
LB	Lower bound of sequence number range	Lowest SN for checking SNs acknowledged
UB	Upper bound of sequence number range	Highest SN for checking SNs acknowledged
WSN_presence	Window Size SUFI present	To check the presence of the Window Size SUFI
MRW_presence	Move Receive Window SUFI present	To check the presence of the MRW SUFI
Nack1	SN of 1st PDU negatively acknowledged	For the NackList to check SN to be negatively acknowledged
Nack2	SN of 2nd PDU negatively acknowledged	For the NackList to check SN to be negatively acknowledged
Nack3	SN of 3rdPDU negatively acknowledged	For the NackList to check SN to be negatively acknowledged

More entries may be required in the future if specific SUFI field values are to be checked. The concept allows to add more fields easily.

7.3.2.2.11 CPHY_RL_Setup

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Setup_CNF
PCO Type	CSAP
Comment	To confirm to setup the Radio Link
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(0..63),
        routingInfo             RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Setup_REQ
PCO Type	CSAP
Comment	To request to setup the associated transport channels and the Radio Link itself.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(0..63),
        routingInfo             RoutingInfo,
        ratType                 RatType,
        setupMessage            CphyRlSetupReq
}
```

ASN.1 Type Definition	
Type Name	CphyRlSetupReq
Comment	To request to setup the Radio Link
Type Definition	

```
SEQUENCE    {
     physicalChannelInfo       CHOICE      {
        primaryCPICHInfo          PrimaryCPICHInfo,
        secondaryCPICHInfo        SecondaryCPICHInfo,
        primarySCHInfo            PrimarySCHInfo,
        secondarySCHInfo          SecondarySCHInfo,
        primaryCCPCHInfo          PrimaryCCPCHInfo,
        secondaryCCPCHInfo        SecondaryCCPCHInfo,
        pRACHInfo                 PRACHInfo,
        pICHInfo                  PICHInfo,
        aICHInfo                  AICHInfo,
        dPCHInfo                  DPCHInfo
     -- pCPCHInfo                 PCPCHInfo,
     -- aP_ICHInfo                AP_AICHInfo,
     -- cD_ICHInfo                CD_ICHInfo,
     -- cD_CA_ichInfo             CD_CA_ICHInfo,
     -- cSICHInfo                 CSICHInfo,
        pDSCHInfo                 PDSCHInfo,
     -- pUSCHInfo                 PUSCHinfo
     }
}
```

ASN.1 Type Definition	
Type Name	PrimaryCPICHInfo
Comment	
Type Definition	

```
SEQUENCE    {
        dl_TxPower_PCPICH         DL_TxPower_PCPICH,
        tx_diversityIndicator     BOOLEAN
}
```

ASN.1 Type Definition	
Type Name	SecondaryCPICHInfo
Comment	
Type Definition	

```
SEQUENCE {
        scramblingCode            INTEGER{0..15},
        dl_ChannelizationCode     SF512_AndCodeNumber,
        dl_TxPower                DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	PrimarySCHInfo
Comment	
Type Definition	

```
SEQUENCE {
        tstdIndicator              BOOLEAN,
        dl_TxPower                 DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	SecondarySCHInfo
Comment	
Type Definition	

```
SEQUENCE       {
        tstdIndicator              BOOLEAN,
        dl_TxPower                 DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	PrimaryCCPCHInfo
Comment	
Type Definition	

```
SEQUENCE       {
        sttd_Indicator             BOOLEAN,
        dl_TxPower                 DL_TxPower
    -- timeSlot                    TimeSlot                 OPTIONAL,
    -- burstType                   BurstType                OPTIONAL,
    -- offset                      Offset                   OPTIONAL,
    --  repetitionPeriod           RepetitionPeriod         OPTIONAL,
    --  repetitionLength           RepetitionLength         OPTIONAL,
}
```

ASN.1 Type Definition	
Type Name	SecondaryCCPCHInfo
Comment	The range for powerOffsetOfTFCI_PO1 and powerOffsetOfPILOT_PO3 is 0-6 dB, 0.25 dB per step.
Type Definition	

```
SEQUENCE {
        scramblingCode             INTEGER(0..15),
        dl_ChannelizationCode      SF256_AndCodeNumber,
        sCCPCHSlotFormat           SCCPCHSlotFormat,
        timingOffset               INTEGER (0..149),
        positionFixedOrFlexible    PositionFixedOrFlexible,
        sttd_Indicator             BOOLEAN,
        dl_TxPower                 DL_TxPower,
        powerOffsetOfTFCI_PO1      INTEGER (0..24),
        powerOffsetOfPILOT_PO3     INTEGER (0..24)
    -- timeSlot                    TimeSlot                 OPTIONAL,
    -- burstType                   BurstType                OPTIONAL,
    -- midambleShift               MidambleShift            OPTIONAL,
    -- offset                      Offset                   OPTIONAL,
    -- repetitionPeriod            RepetitionPeriod         OPTIONAL,
    -- repetitionLength            RepetitionLength         OPTIONAL,
    -- tFCIPresence                TFCIPresence             OPTIONAL,
}
```

ASN.1 Type Definition	
Type Name	PRACHInfo
Comment	
Type Definition	

```
SEQUENCE {
        fdd_tdd                  CHOICE  {
        fdd
           SEQUENCE   {
               preambleSignature          AvailableSignatures,
               spreadingFactorForDataPart  SF_PRACH,
               preambleScramblingCode      PreambleScramblingCodeWordNumber,
               puncturingLimit            PuncturingLimit,
               accessSlot                 AvailableSubChannelNumbers
           },
        tdd
           SEQUENCE   {
               -- timeSlot               TimeSlot,
               -- spreadingCode          SpreadingCode,
               -- midambleCode           MidambleCode,
           }
}
}
```

ASN.1 Type Definition	
Type Name	PICHInfo
Comment	
Type Definition	

```
SEQUENCE   {
        pichinfo                 PICH_Info,
        dl_TxPower               PICH_PowerOffsetDL_TxPower,
        sccpchId_associated      INTEGER {0..31}
}
```

ASN.1 Type Definition	
Type Name	AICHInfo
Comment	
Type Definition	

```
SEQUENCE   {
        aichinfo                 AICH_Info,
        dl_TxPower               AICH_PowerOffsetDL_TxPower
}
```

ASN.1 Type Definition	
Type Name	DPCHInfo
Comment	At least one of the fields shall be present.
Type Definition	

```
SEQUENCE   {
        ul_DPCH_Info             UL_DPCH_Info    OPTIONAL,
        dl_DPCHInfo              DL_DPCHInfo     OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	DL_DPCHInfo
Comment	The range for powerOffsetOfTPC_PO2 and powerOffsetOfTFCI_PO1 and powerOffsetOfPILOT_PO3 is 0-6 dB, 0.25 dB per step.
Type Definition	

```
SEQUENCE   {
        dl_CommonInformation     DL_CommonInformation,
        dl_DPCH_InfoPerRL        DL_DPCH_InfoPerRL,
        powerOffsetOfTFCI_PO1    INTEGER (0..24),
        powerOffsetOfTPC_PO2     INTEGER (0..24),
        powerOffsetOfPILOT_PO3   INTEGER (0..24),
        dl_TxPower               DL_TxPower,
        dl_TxPowerMax            DL_TxPower,
        dl_TxPowerMin            DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	DL_TxPower_PCPICH
Comment	Absolute Tx Power of PCPICH
Type Definition	
INTEGER (-60..-30)	

ASN.1 Type Definition	
Type Name	DL_TxPower
Comment	Downlink Tx Power relative to PCPICH
Type Definition	
INTEGER (-35..+15)	

ASN.1 Type Definition	
Type Name	SCCPCHSlotFormat
Comment	Reference to 3GPP TS25.211 [**Error! Reference source not found.**]
Type Definition	
INTEGER (0..17)	

ASN.1 Type Definition	
Type Name	PDSCHInfo
Comment	
Type Definition	

```
SEQUENCE {
    fdd_tdd         CHOICE  {
        fdd     SEQUENCE    {
                    pdsch_CodeMapping       PDSCH_CodeMapping
                    },
        tdd     SEQUENCE    {
                    --pdsch_Identity        PDSCH_Identity,
                    --pdsch_Info            PDSCH_Info,
                    --pdsch_PowerControlInfo    PDSCH_PowerControlInfo  OPTIONAL
                    },
                },
    dl_TxPower          DL_TxPower
}
```

7.3.2.2.11   CPHY_RL_Setup

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Setup_CNF
PCO Type	CSAP
Comment	To confirm to setup the Radio Link
Type Definition	

```
SEQUENCE     {
        cellId                  INTEGER(0..63),
        routingInfo             RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Setup_REQ
PCO Type	CSAP
Comment	To request to setup the associated transport channels and the Radio Link itself.
Type Definition	

```
SEQUENCE     {
        cellId                  INTEGER(0..63),
        routingInfo             RoutingInfo,
        ratType                 RatType,
        setupMessage            CphyRlSetupReq
}
```

ASN.1 Type Definition	
Type Name	CphyRlSetupReq
Comment	To request to setup the Radio Link
Type Definition	

```
SEQUENCE    {
        physicalChannelInfo         CHOICE      {
            primaryCPICHInfo            PrimaryCPICHInfo,
            secondaryCPICHInfo          SecondaryCPICHInfo,
            primarySCHInfo              PrimarySCHInfo,
            secondarySCHInfo            SecondarySCHInfo,
            primaryCCPCHInfo            PrimaryCCPCHInfo,
            secondaryCCPCHInfo          SecondaryCCPCHInfo,
            pRACHInfo                   PRACHInfo,
            pICHInfo                    PICHInfo,
            aICHInfo                    AICHInfo,
            dPCHInfo                    DPCHInfo
        --  pCPCHInfo                   PCPCHInfo,
        --  aP_ICHInfo                  AP_AICHInfo,
        --  cD_ICHInfo                  CD_ICHInfo,
        --  cD_CA_ichInfo               CD_CA_ICHInfo,
        --  cSICHInfo                   CSICHInfo,
            pDSCHInfo                   PDSCHInfo,
        --  pUSCHInfo                   PUSCHinfo
        }
}
```

ASN.1 Type Definition	
Type Name	PrimaryCPICHInfo
Comment	
Type Definition	

```
SEQUENCE    {
        dl_TxPower_PCPICH           DL_TxPower_PCPICH,
        tx_diversityIndicator       BOOLEAN
}
```

ASN.1 Type Definition	
Type Name	SecondaryCPICHInfo
Comment	
Type Definition	

```
SEQUENCE {
        scramblingCode              INTEGER(0..15),
        dl_ChannelizationCode       SF512_AndCodeNumber,
        dl_TxPower                  DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	PrimarySCHInfo
Comment	
Type Definition	

```
SEQUENCE {
        tstdIndicator               BOOLEAN,
        dl_TxPower                  DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	SecondarySCHInfo
Comment	
Type Definition	

```
SEQUENCE    {
        tstdIndicator               BOOLEAN,
        dl_TxPower                  DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	PrimaryCCPCHInfo
Comment	
Type Definition	

```
SEQUENCE    {
        sttd_Indicator              BOOLEAN,
        dl_TxPower                  DL_TxPower
    -- timeSlot                     TimeSlot                OPTIONAL,
    -- burstType                    BurstType               OPTIONAL,
    -- offset                       Offset                  OPTIONAL,
    -- repetitionPeriod             RepetitionPeriod        OPTIONAL,
    -- repetitionLength             RepetitionLength        OPTIONAL,
}
```

ASN.1 Type Definition	
Type Name	SecondaryCCPCHInfo
Comment	The range for powerOffsetOfTFCI_PO1 and powerOffsetOfPILOT_PO3 is 0-6 dB, 0.25 dB per step.
Type Definition	

```
SEQUENCE {
        scramblingCode              INTEGER(0..15),
        dl_ChannelizationCode       SF256_AndCodeNumber,
        sCCPCHSlotFormat            SCCPCHSlotFormat,
        timingOffset                INTEGER (0..149),
        positionFixedOrFlexible     PositionFixedOrFlexible,
        sttd_Indicator              BOOLEAN,
        dl_TxPower                  DL_TxPower,
        powerOffsetOfTFCI_PO1       INTEGER (0..24),
        powerOffsetOfPILOT_PO3      INTEGER (0..24)
        -- timeSlot                 TimeSlot                OPTIONAL,
        -- burstType                BurstType               OPTIONAL,
        -- midambleShift            MidambleShift           OPTIONAL,
        -- offset                   Offset                  OPTIONAL,
        -- repetitionPeriod         RepetitionPeriod        OPTIONAL,
        -- repetitionLength         RepetitionLength        OPTIONAL,
        -- tFCIPresence             TFCIPresence            OPTIONAL,
}
```

ASN.1 Type Definition	
Type Name	PRACHInfo
Comment	
Type Definition	

```
SEQUENCE {
        fdd_tdd                 CHOICE  {
        fdd
            SEQUENCE    {
                preambleSignature           AvailableSignatures,
                spreadingFactorForDataPart  SF_PRACH,
                preambleScramblingCode      PreambleScramblingCodeWordNumber,
                puncturingLimit             PuncturingLimit,
                accessSlot                  AvailableSubChannelNumbers
            },
        tdd
            SEQUENCE    {
                -- timeSlot                 TimeSlot,
                -- spreadingCode            SpreadingCode,
                -- midambleCode             MidambleCode,
            }
}
}
```

ASN.1 Type Definition	
Type Name	PICHInfo
Comment	
Type Definition	

```
SEQUENCE    {
        pichinfo                PICH_Info,
        dl_TxPower              DL_TxPower,
        sccpchId_associated     INTEGER (0..31)
}
```

ASN.1 Type Definition	
Type Name	AICHInfo
Comment	
Type Definition	

```
SEQUENCE    {
        aichinfo                AICH_Info,
        dl_TxPower              DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	DPCHInfo
Comment	At least one of the fields shall be present.
Type Definition	

```
SEQUENCE    {
        ul_DPCH_Info            UL_DPCH_Info    OPTIONAL,
        dl_DPCHInfo             DL_DPCHInfo     OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	DL_DPCHInfo
Comment	The range for powerOffsetOfTPC_PO2 and powerOffsetOfTFCI_PO1 and powerOffsetOfPILOT_PO3 is 0-6 dB, 0.25 dB per step.
Type Definition	

```
SEQUENCE    {
        dl_CommonInformation        DL_CommonInformation,
        dl_DPCH_InfoPerRL           DL_DPCH_InfoPerRL,
        powerOffsetOfTFCI_PO1       INTEGER (0..24),
        powerOffsetOfTPC_PO2        INTEGER (0..24),
        powerOffsetOfPILOT_PO3      INTEGER (0..24),
        dl_TxPower                  DL_TxPower,
        dl_TxPowerMax               DL_TxPower,
        dl_TxPowerMin               DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	DL_TxPower_PCPICH
Comment	Absolute Tx Power of PCPICH
Type Definition	

```
INTEGER (-60..-30)
```

ASN.1 Type Definition	
Type Name	DL_TxPower
Comment	Downlink Tx Power relative to PCPICH
Type Definition	

```
INTEGER (-35..+15)
```

ASN.1 Type Definition	
Type Name	SCCPCHSlotFormat
Comment	Reference to 3GPP TS25.211 [**Error! Reference source not found.**]
Type Definition	

```
INTEGER (0..17)
```

ASN.1 Type Definition	
Type Name	PDSCHInfo
Comment	
Type Definition	

```
SEQUENCE {
    fdd_tdd        CHOICE   {
            fdd    SEQUENCE   {
                    pdsch_CodeMapping      PDSCH_CodeMapping
                            },
            tdd    SEQUENCE   {
                    --pdsch_Identity       PDSCH_Identity,
                    --pdsch_Info           PDSCH_Info,
                    --pdsch_PowerControlInfo   PDSCH_PowerControlInfo  OPTIONAL
                            },
                        },
    dl_TxPower         DL_TxPower
}
```

7.3.2.2.13   CPHY_TrCH_Config

ASN.1 ASP Type Definition	
Type Name	CPHY_TrCH_Config_CNF
PCO Type	CSAP
Comment	To confirm to configure the transport channel
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_TrCH_Config_REQ
PCO Type	CSAP
Comment	To request to configure the transport channel
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo,
        ratType                     RatType,
        trchConfigType              TrchConfigType,
        configMessage               CphyTrchConfigReq
}
```

ASN.1 Type Definition	
Type Name	CphyTrchConfigReq
Comment	To request to configure the transport channel. The same TFCS information should be provided to the PHY and MAC layers at all times. When a CPHY_TrCH_Config_REQ is used to configure the PHY layer, a corresponding CMAC_Config_REQ should be sent to the MAC layer to ensure that the configuration is consistent.
Type Definition	

```
SEQUENCE    {
     activationTime    SS_ActivationTime,
     ulconnectedTrCHList    SEQUENCE (SIZE (0..maxTrCH)) OF SEQUENCE {
            trchid                TransportChannelIdentity,
            ul_TransportChannelType SS_UL_TransportChannelType,
            transportChannelInfo  CommonOrDedicatedTFS
                                                } OPTIONAL,
     ulTFCS            TFCS    OPTIONAL,
     dlconnectedTrCHList    SEQUENCE (SIZE (0..maxTrCH)) OF SEQUENCE {
            trchid                TransportChannelIdentity,
            dl_TransportChannelType SS_DL_TransportChannelType,
            transportChannelInfo  CommonOrDedicatedTFS
                                                } OPTIONAL,
     dlTFCS            TFCS    OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	RoutingInfo
Comment	To route between each channels.
Type Definition	

```
CHOICE      {
        physicalChannelIdentity        INTEGER                {0..31},
        transportChannelIdentity       TransportChannelIdentity,
        logicalChannelIdentity         LogicalChannelIdentity,
        rB_Identity                    INTEGER                {-31..32},
        cn-DomainIdentity              CN-DomainIdentity
}
```

ASN.1 Type Definition	
Type Name	RatType
Comment	To select route between each channels.
Type Definition	

```
ENUMERATED   {
        fdd (0), tdd (1)
}
```

ASN.1 Type Definition	
Type Name	CommonOrDedicatedTFS
Comment	Transport Format Set
Type Definition	

```
SEQUENCE {
    tti                                CHOICE {
        tti10                              CommonOrDedicatedTF_InfoList,
        tti20                              CommonOrDedicatedTF_InfoList,
        tti40                              CommonOrDedicatedTF_InfoList,
        tti80                              CommonOrDedicatedTF_InfoList,
        dynamic                        CommonOrDedicatedTF_InfoList_DynamicTTI
    },
    semistaticTF_Information            SemistaticTF_Information
}
```

ASN.1 Type Definition	
Type Name	CommonOrDedicatedTF_InfoList
Comment	Transport Format Set
Type Definition	

```
SEQUENCE (SIZE (1..maxTF)) OF CommonOrDedicatedTF_Info
```

ASN.1 Type Definition	
Type Name	CommonOrDedicatedTF_Info
Comment	Transport Format Set
Type Definition	

```
SEQUENCE {
    tb_Size                INTEGER (0..5035),
    numberOfTbSizeList     SEQUENCE (SIZE (1..maxTF)) OF NumberOfTransportBlocks,
    logicalChannelList     LogicalChannelList
}
```

ASN.1 Type Definition	
Type Name	CommonOrDedicatedTF_InfoList_DynamicTTI
Comment	Transport Format Set for TDD mode
Type Definition	

```
SEQUENCE {
    tb_Size                INTEGER (0..5035),
    numberOfTbSizeList     SEQUENCE (SIZE (1..maxTF)) OF NumberOfTransportBlocks,
    logicalChannelList     LogicalChannelList
}
```

ASN.1 Type Definition	
Type Name	TrchConfigType
Comment	
Type Definition	

CHOICE {
                    nonDch   NULL,
                    dch ENUMERATED {Normal(0), SoftHO(1)}}	

7.3.2.2.14 CPHY_TrCH_Release

ASN.1 ASP Type Definition	
Type Name	CPHY_TrCH_Release_REQ
PCO Type	CSAP
Comment	To request to release the Radio Link
Type Definition	

SEQUENCE   {
       cellId   INTEGER(0..63),
       routingInfo   RoutingInfo,
       trchConfigType   TrchConfigType
}	

ASN.1 ASP Type Definition	
Type Name	CPHY_TrCH_Release_CNF
PCO Type	CSAP
Comment	To confirm to release the Radio Link
Type Definition	

SEQUENCE   {
       cellId   INTEGER(0..63),
       routingInfo   RoutingInfo
}	

7.3.2.2.22a CRLC_Bind_TestData_TTI

ASN.1 ASP Type Definition	
Type Name	CRLC_Bind_TestData_TTI_CNF
PCO Type	CSAP
Comment	To confirm the request of binding subsequent data sending RLC_TR_TestDataReq on the different DL RBs in the same TTI.
Type Definition	

SEQUENCE {
       cellId   INTEGER(-1..63),
       result   ENUMERATED{Failure(0), Success(1)}
}	

ASN.1 ASP Type Definition	
Type Name	CRLC_Bind_TestData_TTI_REQ
PCO Type	CSAP
Comment	To request binding subsequent data sending RLC_TR_TestDataReq on the different DL RBs in the same TTI. On the request, the transmission of the test data is temporarily suppressed on those radio bearers which follow subsequently this CRLC_Bind_TestData_TTI_REQ and have 'numOfDiffRb' different RB IDs. Having received the number 'numOfDiffRb' of RLC_TR_TestDataReq, the SS RLC sends the test data on those RBs in the same TTI according to the allowed DL TFCS.
Type Definition	

SEQUENCE {
       cellId   INTEGER(-1..63),
       numOfDiffRb   INTEGER(2..6) -- Number of different RB IDs
}	

7.3.2.2.29a   CRLC_SendContinuousData_TTI

ASN.1 ASP Type Definition	
Type Name	CRLC_SendContinuousData_CNF
PCO Type	CSAP
Comment	Confirm sending data in every TTI on each requested RB
Type Definition	

```
SEQUENCE      {
          cellId                  INTEGER(-1..63),
          result                  ENUMERATED{Failure(0), Success(1)}
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_SendContinuousData_REQ
PCO Type	CSAP
Comment	To request sending data in every TTI on each RB identified. After the CMAC_Restriction_REQ, the TFC under test will be the one corresponding to the maximum CTFC value in the Restricted list, so that SS can select the number of Transport blocks and the size of Transport blocks on individual Transport channels derived from this CTFC. SS shall take care about all kind of discard info in all RLC modes and the final goal is that the DL TFCs under test shall be selected in downlink for sending data on the request RBs in each TTI.
Type Definition	

```
SEQUENCE      {
          cellId                  INTEGER(-1..63),
          rabTxInfo               RabTxInfo
}
```

ASN.1 Type Definition	
Type Name	RabTxInfo
Comment	Provide test data, number of RBs, and RB Tx info of each RB (RB id, SDU size and number of SDUs) to be transmitted in consecutive TTIs
Type Definition	

```
SEQUENCE {
      testData              BIT STRING (SIZE (8..163840)),
      rbTxInfoList          SEQUENCE (SIZE (1..6)) OF RbTxInfo
}
```

ASN.1 Type Definition	
Type Name	RbTxInfo
Comment	Info on RB id and the actual DL test data size (SDU_Size * number of SDUs). The actual test data is extracted from the first (SDU_Size * number of SDUs) bits in the raw testData buffer. SS shall transmit the actual test data in every TTI. The value nomOfSdu = T / TTI , whereby T=1200 is the duration of the data transmitting in the RAB test, taking into account the test tolerance (+50%) of the UE loop back delay (<800 ms).
Type Definition	

```
SEQUENCE {
      rB_Identity           INTEGER    (-31..32),
      sduSize               INTEGER    (1..163840),
      nomOfSdu              INTEGER    (0..255) -- 0 is set for no data on this RB
}
```

8.3.14   Configuration of Cell_Four_DTCH_CS_PS, Cell_Four_DTCH_PS_CS

The configuration is based on 3GPP TS 34.108 [**Error! Reference source not found.**], clauses 6.10.2.4.1.40. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [**Error! Reference source not found.**], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [**Error! Reference source not found.**], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

Table 1: Uplink configuration of Cell_Four_DTCH_CS_PS

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB20 (20)		
LogCh Type	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	tsc_UL_DTCH3 (9)	tsc_UL_DTCH4 (10)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAlone SRB on PRACH
RLC mode	TM	TM	TM	AM		
MAC priority	1	1	1	1		
TrCH Type	DCH	DCH	DCH	DCH		
TrCH identity	tsc_UL_DCH1 (16)	tsc_UL_DCH2 (27)	tsc_UL_DCH3 (38)	tsc_UL_DCH4 (49)		
PhyCh Type	DPDCH					Secondary CCPCH
PhyCH identity	tsc_UL_DPCH1 (20)					tsc_S_CCPCH1 (5)

Table 2: Downlink configuration of Cell_Four_DTCH_CS_PS, Cell_Four_DTCH_PS_CS

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB20 (20)		
LogCh Type	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)	tsc_DL_DTCH4 (10)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAlone SRB on sCCPCH
RLC mode	TM	TM	TM	AM		
MAC priority	1	1	1	1		
TrCH Type	DCH	DCH	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)	Tsc_DL_DCH3 (8)	tsc_DL_DCH4 (9)		
PhyCh Type	DPCH					Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (20)					tsc_S_CCPCH1 (5)

8.3.16 Configuration of Cell_Four_DTCH_CS

The configuration is based on 3GPP TS 34.108 [**Error! Reference source not found.**], clauses 6.10.2.4.1.49. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [**Error! Reference source not found.**], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [**Error! Reference source not found.**], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

Table 3: Uplink configuration of Cell_Four_DTCH_CS

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB13 (13)		
LogCh Type	DTCH	DTCH	DTCH	DTCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAlone SRB on PRACH
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	tsc_UL_DTCH3 (9)	tsc_UL_DTCH4 (10)		
RLC mode	TM	TM	TM	TM		
MAC priority	1	1	1	1		
TrCH Type	DCH	DCH	DCH	DCH		
TrCH identity	tsc_UL_DCH1 (16)	tsc_UL_DCH2 (27)	tsc_UL_DCH3 (38)	tsc_UL_DCH4 (49)		
PhyCh Type	DPDCH					Secondary CCPCH
PhyCH identity	tsc_UL_DPCH1 (20)					tsc_S_CCPCH1 (5)

Table 4: Downlink configuration of Cell_Four_DTCH_CS

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB13 (13)		
LogCh Type	DTCH	DTCH	DTCH	DTCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAlone SRB on sCCPCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)	tsc_DL_DTCH4 (10)		
RLC mode	TM	TM	TM	TM		
MAC priority	1	1	1	1		
TrCH Type	DCH	DCH	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)	tsc_DL_DCH3 (8)	tsc_DL_DCH4 (9)		
PhyCh Type	DPCH					Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (20)					tsc_S_CCPCH1 (5)

8.7.1.1.1   Pseudocode in a C like notation

The pseudocode defined below can be written in a more compact fashion. The code herafter is to allow easy identification of the TSO's tasks. All situations leading to a FALSE result must produce a log. This is not shown in the code hereafter. Possible wrap arounds are not shown in this section. These have to be accounted for at the appropriate places.

```
/* INITIALIZATION */
Initialize_ResAndSUFIs();                          /* RESULT := TRUE, all SUFI fields are AnyOrOmit */

/* EXTRACTION OF SUFIs AND TRANSFER INTO THE TTCN SUFI STRUCUTRE */
i = 0;
if (p_SUFI_String == NULL)
{
RESULT := FALSE;                                   /* No SUFIs -> Result is FALSE */
RETURN;
}
SUFI := Extract_SUFI(i);                           /* Let n SUFI be numbered from 0 to n-1 */
while (SUFI != NULL)                               /* TRUE when there is a SUFI */
```

```
{
    Set_SUFI_ListRec(SUFI);                    /* Put the SUFI at the correct place in the
resulting */
/* SUFI structure; overwrite if the SUFI type has */
/* already been extracted except LIST SUFIs which all are to be collected */
    i++;
    SUFI := Extract_SUFI(i);                   /* Get next SUFI */
}

/* FOR ALL SUFI TYPES: IF EXISTING, PERFORM CONSISTENCY CHECK */
if Exists_SUFI (ACK) AND NOT CheckConsistency (ACK)
RESULT := FALSE;                                /* ACK SUFI inconsistent -> Result is FALSE */
.....
if Exists_SUFI (WINDOW) AND NOT CheckConsistency (WINDOW)
RESULT := FALSE;                                /* WINDOW SUFI inconsistent -> Result is FALSE */


/* TAKE THE INDIVIDUAL CHECKING PARAMETERS & PERFORM THE EXPECTED CHECKING */
/* PART 1: EXISTENCE CHECKS */
if ((WSN_presence == Any) OR (WSN_presence == TRUE) OR (WSN_presence == FALSE)) AND NOT
Exists_SUFI(WINDOW)
RESULT := FALSE;                                /* WINDOW not ex. but should -> Result is FALSE */
if ((MRW_presence == Any) OR (MRW_presence == TRUE) OR (MRW_presence == FALSE)) AND NOT
Exists_SUFI(MRW)
RESULT := FALSE;                                /* MRW not ex. but should -> Result is FALSE */


/* PART 2: RANGE AND NACK CHECKS OF SUFI CONTENTS*/
/* ACK: LB <= LSN received <= UB */
if NOT (LB <= Extract_SUFI_Value(ACK) -1 AND Extract_SUFI_Value(ACK) -1 <= UB)
RESULT := FALSE;                                /* ACK value not in the expected range */
                                                /* LB: first SN acceptable as LSN received */
                                                /* UB: last SN acceptable as LSN received */
                                                /* LSN received acks SNs upto LSN received -1 */


/* Bitmap */
/* for all SNs between between LB and UB */
{
if (ExtractBitmap(FSN extracted, LENGTH extracted, Bitmap extracted, SN) == 1) AND (SN in NackList)
RESULT := FALSE;                                    /* if the bit in the Bitmap is not 0 */
if (ExtractBitmap(FSN extracted, LENGTH extracted, Bitmap extracted, SN) == 0) AND (SN NOT in
NackList)
RESULT := FALSE;                                    /* if the bit in the Bitmap is not 0 */
}


/* LIST */
/* The (SNi,Li) pairs identify AMD PDUs which have not been correctly received. */
/* Therefore the (SNi,Li) pairs have to be consistent with the NackList. */
/* The (SNi,Li) pairs may be contained in multiple LIST SUFIs conveyed in one STATUS PDU */

/* RLIST */

/* The CWs represent the distance between the previous indicated erroneous AMD PDU */
/* up to and including the next erroneous AMD PDU, starting from the FSN contained in the RLIST
SUFI. */
/* Therefore the FSN and the Codewords have to be consistent with the NackList. */
/* Error burst indicator has to be treated as a separate case. May not have to be implemented
currently. */
/* MRW */
/* LENGTH = 0 */
/* 1 SN_MRWi is present and the RLC SDU to be discarded extends above the configured transmission
window in the sender */
/* LENGTH = 1 ... 15 */
/* 1 ...15 SN_MRWi */
/* a) MRW configured ➔ an SN_MRWi indicates the end of each discarded RLC SDU */
/* n SN_MRWs ➔ n RLC SDUs discarded */
/* b) MRW not configured ➔ an SN_MRWi indicates end of last RLC SDU to be discarded */
/* in the receiver */

/* To be implemented as far as required by the RLC ATS */
/* MRW ACK */
/* The SN_ACK must be consistent with the information sent in a previous MRW SUFI upon which the */
/* MRW_ACK represents the answer. */
/* NO MORE */
/* no checking required */
/* SUBFUNCTIONS USED*/
```

```
Check_Consistency (SUFI_type)                    /* returns TRUE when the type fulfills the */

/* requirements of the spec. TS 25.322*/
Exists_SUFI (SUFI_type)                          /* returns TRUE when the specified */

/* type has been extracted, therefore exists*/
ExtractBitmap(FSN extracted, LENGTH extracted, Bitmap extracted, Criterion)
                                        /* Extract the value in the Bitmap at position Criterion */
                                        /* Calculation based on information receivd in the */
                                        /* Bitmap SUFI */
Extract_SUFI (Counter)                  /* returns the SUFI extracted at position counter */

/* from the input p_SUFI_String; */
/* n SUFIs from positions 0 to n-1 */
/* returns NULL if there is no further SUFI */
Extract_SUFI_Value (SUFI_type, field_type )    /* extract the value of specific field type */

/* contained in a specific SUFI type */
/* There will be several flavours depending upon the */
/* result (field) type */
Initialize_ResAndSUFIs ()                        /* Initialize RESULT and all SUFI fields */
Set_SUFI_ListRec(SUFI)                           /* set return values RESULT and */
                                                 /* SUFI structure SUFI_ListRec */
```

B.1.2   L3M Test Suite Parameters Declarations

The following parameters are commonly used in the RRC and NAS ATSs.

Table B.2: L3M PIXIT

Parameter Name	Description	Type	Default Value	Supported Value
px_BcapDataCompression	Data compression supported (used in the Bearer Capability)	B1	'0'B	
px_BcapFNUR	Fixed Network User rate supported: '00001'B: FNUR 9.6 kbit/s '00010'B: FNUR 14.4 kbit/s '00011'B: FNUR 19.2 kbit/s '00100'B: FNUR 28.8 kbit/s '00101'B: FNUR 38.4 kbit/s '00110'B: FNUR 48.0 kbit/s '00111'B: FNUR 56.0 kbit/s '01000'B: FNUR 64.0 kbit/s '01001'B: FNUR 33.6 kbit/s '01010'B: FNUR 32.0 kbit/s	B5	'00001'B	
px_BcapITC	Information transfer capability supported (used for the generation of the Bearer Capability) 0 - UDI 1 - RDI 2 - 31 kHz Audio 3 - Other	ItcInt	2	
px_BcapModemType	Modem type supported (used in the Bearer Capability)	B5	'00110'B	
px_BcapNumberDataBits	Number of data bits supported (used in the Bearer Capability)	B1	'1'B	
px_BcapNumberStopBits	Number of Stops bits supported (used in the Bearer Capability)	B1	'1'B	
px_BcapOtherModemType	Other modem type supported (used in the Bearer Capability)	B2	'10'B	
px_BcapParity	Parity supported (used in the Bearer Capability)	B3	'011'B	
px_BcapSACP	Signalling access protocol supported (used in the Bearer Capability)	B3	'001'B	
px_BcapSyncAsync	Synchronous '0'B or Asynchronous '1'B mode supported by IUT	B1	'1'B	

Parameter Name	Description	Type	Default Value	Supported Value
px_BcapUeFlowControl	UE flow control. 0-outband, 1-inband, 2-no flow control. 3- X.25 4- X.75 Default: 0, outband flow control	FlowControl	0	
px_CC_Serv	Service selected for Mobile Originated calls and Mobile Terminated calls. The possible values are ("Telephony", "EmergencyCall", "31kHz", "V110", "V120", "PIAFS", "FTM", "X31", "BTM", "MmediaCall")	Services	"31kHz"	
px_NwOrgPDP_Support	This indicates if the UE implementation supports network originated PDP Context. TRUE indicates, supported FALSE indicate, not supported	BOOLEAN	FALSE	

E.3.25 Assignment using constraint

According to TR 101 666 [**Error! Reference source not found.**], the Right Hand Side (RHS) of an assignment shall not contain any unbound variables. The matching symbols, AnyValue or AnyOrOmit, in both tabular and ASN.1 constraints shall not be assigned to a test case variable, independent of the type of the test case variable.

Annex F (normative): MMI Command strings

This annex lists MMI command strings which are transmitted from the TTCN test steps to the SS.

F.1 Outgoing Call

~~Please initiate an outgoing Conversational call.~~

~~Please initiate an outgoing Streaming call.~~

~~Please initiate an outgoing Interactive call.~~

~~Please initiate an outgoing Background call.~~

~~Please initiate an outgoing Subscribed traffic call.~~

```
Please originate an emergency call                      - Used only in some RRC steps
Please originate a call                                 - Used only in TC 6.1.2.7

Please trigger UE to initiate an attach procedure for non-PS services    - Used only in NAS ATS

Please trigger UE to initiate a Detach procedure for non-PS services only - Used only in NAS ATS

Please initiate an outgoing packet data transmission             - Used only in BMC ATS
Please Initiate a PS call                               - Used in TS ts_MMI_UE_InitiatePS_Call
```

F.2 Configure UE

```
~~Please~~ Configure UE for a~~n~~ MO Telephony call~~.~~
~~Please~~ Configure UE for an MT Telephony call~~.~~
~~Please~~ Configure UE for an Emergency call~~.~~
Please Enable call refusal on the UE~~.~~                    Only used in NAS ATS.
Please configure UE to use the following em~~m~~ergency number <EMERGENCYCALLNUMBER>~~.~~
Please set UE in operation mode A (to support simulataneous CS and PS services)     - Used only in
NAS ATS

Please set UE in operation mode C (PS services only)              -  Used only in NAS ATS
```

F.3 PLMN

```
Please switch the PLMN selection mode of the UE to automatic selection~~.~~
Please switch the PLMN selection mode of the UE to manual selection~~.~~
Please select the follo~~o~~wing PLMN manually: <PLMN ID>
Please Select PLMN <NUMBER> in Manual mode of PLMN selection

Please Select PLMN <NUMBER> UTRAN in Manual mode of PLMN selection
Please Select PLMN <NUMBER> GSM in Manual mode of PLMN selection
```

F.4 Power

```
Please power on the UE~~.~~
Please power off the UE~~.~~
Please switch on the UE~~.~~
Please switch off the UE~~.~~
```

F.5 USIM

Please insert the USIM card, with information given in table<NUMBER>Please insert the USIM card, with information give in table <TABLE NUMBER> into the UE.
Please insert the USIM card, with Type A EFACC
Please insert the USIM card, with Type B EFACC

Please remove the USIM card from the UE.
Please check if the Memory Capacity Exceeded Flag has been set on the USIM simulator.
Please check if the Memory Capacity Exceeded Flag has been resetreset on the USIM simulator.
Please connect the USIM simulator to the UE.   Only used in SMS ATS.
Please check whether the USIM simulator indicates an attempt made by the ME to store the short message in the USIM and returns the status response 'OK' ('90 00').   Only used in SMS ATS.
Please check whether the USIM simulator indicates an attempt made by the ME to store the short message in the USIM and returns the status response 'Memory Problem' ('92 40').   - Only used in SMS ATS.
Please remove the USIM card and then insert a new one
Please insert Test USIM programmed with Access Class : <ACCESSCLASS>   - Only used in SMS ATS.
Please insert the USIM card of type B into the UE
Please insert 2nd SIM card with short IMSI
Please insert the USIM card into the UE

F.6 SMS

Please check that the reception of a received Short Message is indicated.
Please check that NO reception of a received Short Message is indicated
Please check that NO reception of a received Short Message of type 0 is indicated
Please check that the reception of a received Short Message is NOT indicated.
Please check that NO recalled Short Message is displayed.
Please send an SMS COMMAND message containing a request to delete the previously submitted Short Message.
Please send an SMS COMMAND message containing an enquiry about the previously submitted Short Message Short Message.
Please check the length of the received Short Message: <LENGTH> and please check the contents of the received Short Message: <MESSAGE>.
Please reply to the Short Message of length: <LENGTH> and of the contents: <MESSAGE>.
Please check the contents of the received CBS Message: <MESSAGE>.

F.7 Autocalling

Please initiate an autocalling call with the number: <NUMBER>.
Please initiate an autocalling call with a number that will be put in the blacklisted list. The following number shall not be used: <NUMBER>.
Please reset the autocalling list of blacklisted numbers.

F.8 Miscellaneous

Please check that the DTCH is through connected by generating a noise.
The guard timer has run out. Please take appropriate measures.
Read the data status of UE.
Please check that the DTMF tone indication has been generated.
Please initiate a non call related supplementary service, which is supported by the UE.
Please initiate a DTMF tone with the character <CHARACTER> and the tone duration <TONEDURATION>

CR-Form-v7

CHANGE REQUEST

⌘   **34.123-3 CR 142**   ⌘**rev 4** ⌘ Current version: **3.3.0** ⌘

For HELP on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps⌘ ☐   ME ☐ Radio Access Network ☐ Core Network ☐

Title: ⌘	Security ASP changes	
Source: ⌘	MCC task 160, Motorola	
Work item code: ⌘	TEI	**Date:** ⌘ 12/11/2003
Category: ⌘	F	**Release:** ⌘ R99

Use *one* of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use *one* of the following releases:
2   (GSM Phase 2)
R96   (Release 1996)
R97   (Release 1997)
R98   (Release 1998)
R99   (Release 1999)
Rel-4   (Release 4)
Rel-5   (Release 5)
Rel-6   (Release 6)

Reason for change: ⌘	1. The core specs base-line used for the test has been moved from the March 02 to March 03. The existing security ASP on the March 02 does not include the requirement for interRAT HO and timing reinitialised hard HO. The ciphering ASPs should be updated accordingly.

2. The integrity should be made as mandatory. The integrity ASP needs the clarification. |
| **Summary of change:** ⌘ | 1. Add the clarifications in 7.3.2.2.16 for CMAC_Ciphering_Activate, in 7.3.2.2.23 for CRLC_Ciphering_Activate. In addition, the security test scenarios in 8.5.4 are updated.

2. The clarification for 7.3.2.2.25 for CRLC_Integrity_Activate is added according to 25.331. |
| **Consequences if not approved:** ⌘ | The ciphering parameters at the interRAT and timing re-initialised hard-HO test could not be set correctly. The UE would be failed in P3 and P4 test cases. |

Clauses affected: ⌘	7.3.2.2.16, 7.3.2.2.23, 7.3.2.2.25, 8.5.4

	Y	N		
Other specs affected: ⌘			Other core specifications ⌘	
			Test specifications	
			O&M Specifications	

Other comments: ⌘	It was the 5th part of CR T1-031579 which was split into two documents, T1-031707 and T1-031732. T1-031707 was approved at the T1 #21 meeting. T1-031732 has been deferred and is re-submitted on the reflector for approval.

7.3.2.2.16 CMAC_Ciphering_Activate

ASN.1 ASP Type Definition	
Type Name	CMAC_Ciphering_Activate_CNF
PCO Type	CSAP
Comment	To confirm to activate or inactivate the ciphering
Type Definition	

```
SEQUENCE {
        cellId                    INTEGER(-1..63),
        routingInfo               RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_Ciphering_Activate_REQ
PCO Type	CSAP
Comment	To request to start or restart downlink ciphering or uplink deciphering. The physicalChannelIdentity of DPCH applies to routingInfo. ~~Do not increment HFN part of COUNT-C~~ Initialise the 20 MSB of HFN component of COUNT-C to the START value stored. ~~I~~if the value of inc~~rement~~HFN~~COUNT_C_Ind~~ is set to "NotIncr"~~.~~, the SS initialises the remaining LSBs of HFN component in COUNT-C to zero and the SS shall not increment HFN part of COUNT-C at every CFN cycle. If the value of incHFN~~ForLSBsOfHFN~~ is set to "IncPerCFN_Cycle"~~present~~ the SS initiali~~s~~zes the remaining LSBs of HFN component in COUNT-C to zero, and starts the increment HFN part of COUNT-C at every CFN cycle.~~accordingly.~~ If the value of incHFN is set to "IncByOne_IncPerCFN"~~it is absent~~ the SS initiali~~s~~zes the remaining LSBs of HFN component in COUNT-C to zero, increments the HFN component in COUNT-C by one and then starts the increment HFN part of COUNT-C at every CFN cycle.
Type Definition	

```
SEQUENCE {
        cellId                    INTEGER(-1..63),
        routingInfo               RoutingInfo,
        ratType                   RatType,
        cn_DomainIdentity         CN_DomainIdentity,
        cipheringModeInfo         CipheringModeInfo,
        incHFNrementCOUNT_C_Ind   ENUMERATED {Incr(0), NotIncr(1)}Increment_Mode
        valueForLSBsOfHFN         INTEGER(0..15)   OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	Increment_Mode
Comment	
Type Definition	

```
ENUMERATED {IncPerCFN_Cycler(0), NotIncr(1), IncByOne_IncPerCFN_Cycle(2)}
```

7.3.2.2.23 CRLC_Ciphering_Activate

ASN.1 ASP Type Definition	
Type Name	CRLC_Ciphering_Activate_CNF
PCO Type	CSAP
Comment	To confirm to activate or inactivate the ciphering
Type Definition	

```
SEQUENCE {
        cellId                    INTEGER(-1..63)

}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_Ciphering_Activate_REQ
PCO Type	CSAP
Comment	To request to start orrestart downlink ciphering or uplink deciphering. Each call of the ASP includes one RLC SN in rb-DL-CiphActivationTimeInfo for the corresponding rb-identity. Initialise the 20 MSB of HFN component of COUNT-C to the START value stored. For RLC_UM COUNT-C: If the value of incHFN is set to "NotInc"valueForLSBsOfHFN is present the SS initialiszes the remaining LSBs of HFN component in UM COUNT-C to zero. accordingly. If the value of incHFN is set to "Inc"it is absent the SS initialiszes the remaining LSBs of HFN component in UM COUNT-C to zero, then increments the HFN by one. For RLC_AM COUNT-C: If the value of incHFN is set to "NotInc" no further action is needed. If the value of incHFN is set to "Inc" the SS increments the HFN by one.
Type Definition	

```
SEQUENCE {
        cellId                          INTEGER(-1..63),
        ratType                         RatType,
        cn_DomainIdentity               CN_DomainIdentity,
        ciphActivationInfo              CiphActivationInfo,
        incHFNvalueForLSBsOfHFN         RLC_IncMode     INTEGER(0..31)  OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	CiphActivationInfo
Comment	DL or UL ciphering activation info If RB is omitted in rB_UL_CiphActivationTimeInfo the SS takes no action on this RB and the ciphering configuration keeps unchanged on this RB. CipheringModeCommand = dummy NULL means no ciphering.
Type Definition	

```
CHOICE {
        cipheringModeInfo               CipheringModeInfo,
        rb_UL_CiphActivationTimeInfo    RB_ActivationTimeInfoList
}
```

ASN.1 Type Definition	
Type Name	RLC_IncMode
Comment	
Type Definition	

```
ENUMERATED{NotInc(0), Inc(1)}
```

7.3.2.2.25 CRLC_Integrity_Activate

ASN.1 ASP Type Definition	
Type Name	CRLC_integrity_Activate_CNF
PCO Type	CSAP
Comment	To confirm to activate or inactivate the integrity protection
Type Definition	

```
SEQUENCE {
        cellId                  INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_Integrity_Activate_REQ
PCO Type	CSAP
Comment	To request to start or to modify the the downlink or uplink integrity protection. The ASP shall be called before send SECURITY MODE COMMAND. It activates the integrity on all SRBs in DL. Not to call the ASP if wishing to switch off the integrity in the test case. The SS initialises the 20 MSB of HFN component of COUNT-I to the START value stored and set the remaining LSBs of HFN component in COUNT-I to zero. If integrityModeCommand in ASP is set to "startIntegrityProtection", the SS shall start the downlink integrity protection from the first downlink RRC message. If te integrityModeCommand in ASP is set to "modify", the SS shall start the downlink integrity protection at the RRC message sequence number specified in "dl_IntegrityProtActivationInfo".
Type Definition	

SEQUENCE {
      cellId   INTEGER(-1..63),
      cn_DomainIdentity   CN_DomainIdentity,
      integrityActivationInfo   IntegrityActivationInfo
}	

ASN.1 Type Definition	
Type Name	IntegrityActivationInfo
Comment	DL or UL integrity activation info At the RRC message sequence numbers specified in the ul_IntegProtActivationInfo the SS shall initialize COUNT-I for the SRB's indicated in the ul_IntegrityProtActivationInfo and start using the new configuration on uplink for the indicated SRB's. If the START value is omitted in the CRLC_SecurityMode_Config_REQ above COUNT-I initialization shall not be performed.
Type Definition	

CHOICE {
      integrityProtectionModeInfo   IntegrityProtectionModeInfo,
      ul-IntegProtActivationInfo   IntegrityProtActivationInfoList
}	

ASN.1 Type Definition	
Type Name	IntegrityProtActivationInfoList
Comment	List of SS IntegrityProtActivationInfo
Type Definition	
SEQUENCE (SIZE (1..maxRB)) OF SS_IntegrityProtActivationTimeInfo	

ASN.1 Type Definition	
Type Name	SS_IntegrityProtActivationTimeInfo
Comment	Omitting rrc_MessageSequenceNumber means activation time set to "now".
Type Definition	

SEQUENCE {
    rb_Identity   INTEGER (-31..32),
    rrc_MessageSequenceNumber   RRC_MessageSequenceNumber OPTIONAL
}	

8.5.4 Test security scenarios

Five basic test scenarios are presented in the present document. The corresponding core spec references are found in 3GPP TS 25.331 [21] clauses 8.1.12, 8.2.2.2, 8.5.10.1, 8.5.10.2, 8.6.3.4, 8.6.3.5, 8.6.4.3 and 8.6.4.8.

    Start security,
    RB setup,
    AM RB reconfiguration,
    Security modification,
    SRNS relocation,

Modification of RLC size of AM RB during RB reconfiguration,
Cell/URA update,
InterRAt HO to UTRAN.

As Default, the 1st three basic scenarios can be subdivided into

Start integrity without ciphering start,
Start integrity and ciphering at the same time.

Regarding the simultaneous SRNS relocation, the security scenarios at the relocation are split into

No security configuration modification,
Modification of integrity (FRESH) without ciphering configuration change,
Modification integrity FRESH and ciphering algorithm,
A security modification pending at the SRNS relocation.

This clause shows the procedures how the security ASP applied to the SS configurations at the different security test scenarios.

8.5.4.1 Start security function

```
CIPHERING_STATUS = NotStarted for the CN domain concerned.
```

8.5.4.1.1 Start integrity protection without start of ciphering

```
INTEGRITY_PROTECTION Status = NotStarted.
```

```
SECURITY MODE COMMAND with "Integrity protection mode info" IE containing
integrityProtectionModeCommand = Start, no "Ciphering mode info" IE
```

1 Before sending SECURITY MODE COMMAND (SMC)

```
    CRLC_SecurityMode_Config_REQ
            startValue = value most recently received or 0 (new key)
            integrityKey = value maintained by TTCN
            cn_DomainIdentity = CS or PS
    CRLC_SetRRC_MessageSN_REQ (SN=0)
        -- Downlink RRC message sequence number set to 0
    CRLC_Integrity_Activate_REQ (CN domain concerned)
            integrityProtectionModeCommand = startIntegrityProtection (FRESH)
            integrityProtectionAlgorithm = selected value
            -- downlink integrity protection starts immediately
    CRLC_Integrity_Activate_REQ (CN domain concerned)
            ul_IntegProtActivationInfo = 0 (RB2 only)
```

2 Send SECURITY MODE COMMAND

3 After receiving SECURITY MODE COMPLETE

```
    CRLC_Integrity_Activate_REQ (CN domain concerned)
            ul_IntegProtActivationInfo = value in "Uplink integrity protection activation time"
            (except RB2) received from SECURITY MODE COMPLETE
```

8.5.4.1.2 Start both integrity protection and ciphering

```
INTEGRITY_PROTECTION Status = NotStarted.
```

```
SECURITY MODE COMMAND with "Integrity protection mode info" IE containing
integrityProtectionModeCommand = Start, and "Ciphering mode info" IE containing cipheringModeCommand
= Start/Restart (algorithm UEA0 or UEA1)
```

1 Before sending SECURITY MODE COMMAND message

```
    CRLC_SecurityMode_Config_REQ
            startValue = value most recently received or 0 ( new key)
            cipheringKey = value maintained by TTCN
            integrityKey = value maintained by TTCN
            cn_DomainIdentity = CS or PS
```

```
CRLC_SequenceNumber_REQ
    --  Get current RLC SN of all SRB for calculating suitable down link activation time
CRLC_Suspend_REQ
    -- Suspend all signalling radio bearers except RB2
CRLC_Ciphering_Activate_REQ (CN domain concerned)
        cipheringModeCommand = Start/Restart (algorithm)
        rb_DL_CiphActivationTimeInfo = calculated activation time
        incHFN = NotInc
CRLC_SetRRC_MessageSN_REQ (SN=0)
        --  Downlink RRC message sequence number set to 0
CRLC_Integrity_Activate_REQ (CN domain concerned)
        integrityProtectionModeCommand = startIntegrityProtection (FRESH)
        integrityProtectionAlgorithm = selected value
        (downlink integrity protection starts immediate)
CRLC_Integrity_Activate_REQ (CN domain concerned)
        ul_IntegProtActivationInfo = 0 (RB2 only)
```

2 Send SECURITY MODE COMMAND

3 After receiving SECURITY MODE COMPLETE

```
CRLC_Ciphering_Activate_REQ (CN domain concerned)
        rb_UL_CipheringActivationTimeInfo = value received in SECURITY MODE COMPLETE
        incHFN = NotInc
CRLC_Integrity_Activate_REQ (CN domain concerned)
        ul_IntegProtActivationInfo = value in "Uplink integrity protection activation time"
        (except RB2) received from SECURITY MODE COMPLETE
CRLC_Resume_REQ
```

8.5.4.1.3 Void

8.5.4.2 RB setup

```
INTEGRITY_PROTECTION Status = Started.
Condition: "RAB information for setup" IE included in RADIO BEARER SETUP
```

8.5.4.2.1 AM / UM RB

1 Sending the RADIO BEARER SETUP message

2 Configuring the RB

3 After receiving RADIO BEARER SETUP COMPLETE

8.5.4.2.1.1 Ciphering not started

```
CIPHERING_STATUS = NotStarted for the CN domain concerned

CRLC_SecurityMode_Config_REQ
        startValue = value most recently received
        cipheringKey = value maintained by TTCN
        cn_DomainIdentity = CS or PS
CRLC_Ciphering_Activate_REQ (CN domain concerned)
        cipheringModeCommand = NULL (no ciphering)
        rb_DL_CiphActivationTimeInfo = 0 (from the first block)
        incHFN = NotInc
CRLC_Ciphering_Activate_REQ (CN domain concerned)
        rb_UL_CipheringActivationTimeInfo = 0 (from the first block)
        incHFN = NotInc
```

8.5.4.2.1.2 Ciphering started

```
CIPHERING_STATUS = Started for the CN domain concerned

CRLC_SecurityMode_Config_REQ
        startValue = value most recently received
        cipheringKey = value maintained by TTCN
        cn_DomainIdentity = CS or PS
CRLC_Ciphering_Activate_REQ (CN domain concerned)
        cipheringModeCommand = Start/Restart (algorithm)
        rb_DL_CiphActivationTimeInfo = 0 (from the first block)
        incHFN = NotInc
```

```
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
            rb_UL_CipheringActivationTimeInfo = 0 (from the first block)
            incHFN = NotInc
```

8.5.4.2.2 TM RB

```
Enter Cell_DCH,
no TM RB established before,
"COUNT-C activation time" IE included in RADIO BEARER SETUP COMPLETE message.
```

8.5.4.2.2.1 Ciphering not started

```
CIPHERING_STATUS = NotStarted for the CN domain concerned,
```

1 Send the RADIO BEARER SETUP message

2 Configuring the RB

3 After receiving RADIO BEARER SETUP COMPLETE

```
    CMAC_SecurityMode_Config_REQ
            startValue = value most recently received
            cn_DomainIdentity = CS or PS
    CMAC_Ciphering_Activate_REQ (CN domain concerned)
            incrementCOUNT_CHFN = NotIncr
            cipheringModeCommand = NULL (no ciphering)
            activationTimeForDPCH = value in "COUNT-C activation time"
```

8.5.4.2.2.2 Ciphering started

```
CIPHERING_STATUS = Started for the CN domain concerned,
```

1 Sending RADIO BEARER SETUP

2 Configuring the RB

```
    CMAC_SecurityMode_Config_REQ
            startValue = value most recently received
            cipheringKey = value maintained by TTCN
            cn_DomainIdentity = CS or PS
    CMAC_Ciphering_Activate_REQ (CN domain concerned)
            incrementCOUNT_CHFN = NotIncr
            cipheringModeCommand = Start/Restart (algorithm)
            activationTimeForDPCH = value in "Activation time" of the RB
```

3 After receiving RADIO BEARER SETUP COMPLETE message

```
    CMAC_SecurityMode_Config_REQ
            startValue = value received in response message
            cipheringKey = value maintained by TTCN
            cn_DomainIdentity = CS or PS
    CMAC_Ciphering_Activate_REQ (CN domain concerned)
            incrementCOUNT_CHFN = IncPerCFN_Cycler
            cipheringModeCommand = Start/Restart (algorithm)
            activationTimeForDPCH = value in "COUNT-C activation time"
```

8.5.4.3 RB Reconfiguration for AM RAB modification of RLC size

```
CIPHERING_STATUS = Started  for the CN domain concerned,
"RB mapping info" IE, changeing AM RB RLC size, is inculded in
    CELL UPDATE CONFIRM,
    RADIO REARER RECONFIGURATION,
    RADIO BEARER RELEASE
```

8.5.4.3.1 "RB mapping info" in CELL UPDATE CONFIRM

After sending the CELL UPDATE CONFIRM message, re-establish the RB and re-configure the RB with new RLC size and re-initialize COUNT-C for the RB:

```
CRLC_Config_REQ
       Release the concerned RB
CRLC_Config_REQ
       Setup the concerned RB (new RLC size)
CRLC_SecurityMode_Config_REQ
       startValue = value received in the CELL UPDATE message
       integrityKey = value maintained by TTCN
       cn_DomainIdentity = CS or PS
CRLC_Ciphering_Activate_REQ
       cipheringModeCommand = Start/Restart (existing algorithm)
       rb_DL_CiphActivationTimeInfo = now
       incHFN = NotInc
CRLC_-Ciphering_Activate_REQ
       rb_UL_CiphActivationTimeInfo = now
       incHFN = NotInc
```

8.5.4.3.2 "RB mapping info" in RB RECONFIGURATION / RELEASE

After receiving the reconfiguration complete message, re-establish the RB and re-configure the RB with new RLC size and re-initialize COUNT-C for the RB:

```
CRLC_Config_REQ
       Release the concerned RB
CRLC_Config_REQ
       Setup the concerned RB (new RLC size)
CRLC_SecurityMode_Config_REQ
       startValue = value received in the reconfiguration complete message
       integrityKey = value maintained by TTCN
       cn_DomainIdentity = CS or PS
CRLC_Ciphering_Activate_REQ
       cipheringModeCommand = Start/Restart (existing algorithm)
       rb_DL_CiphActivationTimeInfo = now
       incHFN = NotInc
CRLC_Ciphering_Activate_REQ
       rb_UL_CiphActivationTimeInfo = now
       incHFN = NotInc
```

8.5.4.4 Security modification

Updating security keys is the scenario in this clause.

```
INTEGRITY_PROTECTION STATUS = Started
SECURITY MODE COMMAND contains "Ciphering mode info" IE and/or "Integrity protection mode info" IE
```

8.5.4.4.1 Integrity started, ciphering not started

```
CIPHERING_STATUS = NotStarted for the CN domain concerned
SECURITY MODE COMMAND with "Integrity protection mode info" IE containing
integrityProtectionModeCommand = modify, but "Ciphering mode info" IE absent the same CN domain as
in the previous SMC to start integrity protection.
```

1 Before sending SECURITY MODE COMMAND message

```
CRLC_SecurityMode_Config_REQ
       startValue = 0 (new key)
       integrityKey = new key
       cn_DomainIdentity = CS or PS
CRLC_RRC_MessageSN_REQ
       -- Get current RRC Message SN for calculation of DL activation time
CRLC_Integrity_Activate_REQ (CN domain concerned)
       integrityProtectionModeCommand = modify
       dl_IntegrityProtActivationInfo = now (SRB2), calculated value or a pending activation
       time set by previous security mode control procedure (SRB2 other than SRB2)
CRLC_Integrity_Activate_REQ (CN domain concerned, RB2)
       ul_IntegrityProtActivationInfo = now
```

2 Sending SECURITY MODE COMMAND message

3 After receiving SECURITY MODE COMPLETE

```
CRLC_Integrity_Activate_REQ (CN domain concerned)
       ul_IntegProtActivationInfo = value in "Uplink integrity protection activation time"
       (except RB2)
```

8.5.4.4.2 Integrity and ciphering started

```
CIPHERING_STATUS = Started for the CN domain concerned
SECURITY MODE COMMAND contains
    "Integrity protection mode info" IE with integrityProtectionModeCommand = modify,
    "Ciphering mode info" IE with cipheringModeCommand = Start/Restart.
```

1 Before sending SECURITY MODE COMMAND message

```
    CRLC_SecurityMode_Config_REQ
            startValue = 0 (new key)
            integrityKey = new key
            cipheringKey = new key
            cn_DomainIdentity = CS or PS
    if TM RB exist
        CMAC_SecurityMode_Config_REQ
            startValue = 0 ( new key)
            cipheringKey = new key
            integrityKey = new key
            cn_DomainIdentity = CS or PS
    CRLC_SequenceNumber_REQ
        -- Get current RLC SN for calculating suitable down link activation time
    CRLC_Suspend_REQ
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
            cipheringModeCommand = Start/Restart (existing algorithm)
            rb_DL_CiphActivationTimeInfo = calculated activation time
            incHFN = NotInc
    CRLC_RRC_MessageSN_REQ
        -- Get current RRC message SN for calculating suitable DL activation time
    CRLC_Integrity_Activate_REQ (CN domain concerned)
            integrityProtectionModeCommand = modify
            dl_IntegrityProtActivationInfo = now (SRB2), calculated value or a pending activation
            time set by previous security mode control procedure (SRB other than SRB2)
    CRLC_Integrity_Activate_REQ (CN domain concerned,RB2)
            ul_IntegrityProtActivationInfo = now
    if TM RB exist
        CPHY_Frame_Number_REQ
            --Get current CFN for calculating suitable activation time for TM RB
        CMAC_Ciphering_Activate_REQ (CN domain concerned)
            cipheringModeCommand = Start/Restart (existing algorithm)
            activationTimeForDPCH = calculated activation time
            incHFN = IncPerCFN_Cycle
```

2 Sending SECURITY MODE COMMAND message

3 After receiving SECURITY MODE COMPLETE

```
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
            rb_UL_CipheringActivationTimeInfo = value received in SECURITY MODE COMPLETE
            incHFN = NotInc
    CRLC_Integrity_Activate_REQ (CN domain concerned, except RB2)
            ul_IntegProtActivationInfo = value in "Uplink integrity protection activation time"
    CRLC_Resume_REQ
```

8.5.4.5 SRNS relocation

```
Simulataneous SRNS relocation will take place
either "Downlink count synchronization info" IE is received in
    CELL UPDATE CONFIRM,
    PHYSICAL CHANNEL RECONFIGURATION,
    RADIO REARER RECONFIGURATION,
    RADIO BEARER RELEASE,
    TRANSPORT CHANNEL RECONFIGURATION,
    URA UPDATE CONFIRM,
    UTRAN MOBILITY INFROMATION,
or "new U-RNTI" IE is received in
    RADIO BEARER SETUP.

INTEGRITY_PROTECTION Status = Started
```

8.5.4.5.1 Void

8.5.4.5.2 Presence of "Integrity protection mode info" but absence of "Ciphering mode info"

SRNS relocation related messages listed contains "Integrity protection mode info" but does not have "Ciphering mode info" IE.

```
SRNS relocation related message with "Integrity protection mode info" IE containing
integrityProtectionModeCommand = Start, but no "Ciphering mode info" IE (no ciphering configuration
change).
```

8.5.4.5.2.1 No security configuration pending

No security configuration pending triggered by previous SECURITY MODE COMMAND.

1 Before sending one of the SRNS relocation related messages

```
CRLC_SecurityMode_Config_REQ
        startValue = OMIT (no COUNT-I re-initialization)
        integrityKey = OMIT or value maintained by TTCN (no key change)
        cn_DomainIdentity = CS or PS
CRLC_Integrity_Activate_REQ (CN domain concerned)
        integrityProtectionModeCommand = Start (FRESH)
        integrityProtectionAlgorithm = selected value
        -- downlink integrity protection starts immediately
CRLC_Integrity_Activate_REQ (CN domain concerned)
        ul_IntegProtActivationInfo = value (now)
```

2 Sending one of the SRNS relocation related messages

3 Re-establishing RB2 and re-initialize COUNT-C for RB2

```
CRLC_SequenceNumber_REQ
CRLC_SequenceNumber_CNF
        newHFN = MAX(HFN of DL COUNT-C of RB2, HFN of UL COUNT-C of RB2) + 1
CRLC_Config_REQ
    -- Release RB2
CRLC_Config_REQ
    -- Setup RB2
CRLC_SecurityMode_Config_REQ
        startValue = newHFN
        cn_DomainIdentity = CS or PS concerned
CRLC_Ciphering_Activate_REQ (CN domain concerned)
        if CIPHERING_STATUS= NotStarted
            cipheringModeCommand = NULL (no ciphering)
        if CIPHERING_STATUS = Started
            cipheringModeCommand = Start/Restart (existing algorithm)
        rb_DL_CiphActivationTimeInfo = now (RB2 only)
        incHFN = NotInc
CRLC_Ciphering_Activate_REQ (CN domain concerned)
        rb_UL_CipheringActivationTimeInfo = now (RB2 only)
        incHFN = NotInc
```

4 Receiving the response message

5 Re-establishing all RBs and SRBs (except SRB2) and re-initialize COUNT-C for all RBs and SRBs (except SRB2)

```
CRLC_Config_REQ
    -- Release all RBs and all SRBs (except SRB2)
CRLC_Config_REQ
    -- Setup all RB's and all SRB's (except RB2)
 CRLC_SecurityMode_Config_REQ
        startValue = value received in the response message
        integrityKey = value maintained by TTCN
        cn_DomainIdentity = CS or PS
CRLC_Ciphering_Activate_REQ
        if CIPHERING_STATUS= NotStarted
            cipheringModeCommand = NULL (no ciphering)
        if CIPHERING_STATUS = Started
            cipheringModeCommand = Start/Restart (existing algorithm)
        rb_DL_CiphActivationTimeInfo = now (except SRB2)
        incHFN = NotInc
CRLC_Ciphering_Activate_REQ
```

```
        rb_UL_CiphActivationTimeInfo = now (except SRB2)
        incHFN = NotInc
```

8.5.4.5.2.2 Pending security configuration (new keys)

A pending security configuration is triggered by the previous SECURITY MODE COMMAND (new Key).

1 Before sending one of the SRNS relocation related messages

```
CRLC_SecurityMode_Config_REQ
        startValue = 0 (new key)
        integrityKey = new key
        cn_DomainIdentity = CS or PS
CRLC_Integrity_Activate_REQ
        IntegrityProtectionModeCommand = Start (FRESH)
        IntegrityProtectionAlgorithm = selected value (downlink integrity protection starts
        immediately)
CRLC_Integrity_Activate_REQ
        ul_IntegProtActivationInfo = value (now)
```

2 Send one of the SRNS relocation related messages

3 Re-establish RB2 and re-initialize COUNT-C for RB2

```
CRLC_SequenceNumber_REQ
CRLC_SequenceNumber_CNF
        HFN = MAX(HFN of DL/UL COUNT-C of RB2) + 1
CRLC_Config_REQ
        Release RB2
CRLC_Config_REQ
        Setup RB2
CRLC_SecurityMode_Config_REQ
        startValue = HFN calculated above
        cipheringKey = new key
        cn_DomainIdentity = CS or PS
CRLC_Ciphering_Activate_REQ
        if CIPHERING_STATUS= NotStarted
            cipheringModeCommand = NULL (no ciphering)
        if CIPHERING_STATUS = Started
            cipheringModeCommand = Start/Restart (existing algorithm)
        rb_DL_CiphActivationTimeInfo = now (RB2 only)
        incHFN = NotInc
CRLC_Ciphering_Activate_REQ
        rb_UL_CipheringActivationTimeInfo = now (RB2 only)
        incHFN = NotInc
```

4 Receive the response message

5 Re-establish all RBs and SRBs (except RB2) and re-initialize COUNT-C for all RBs and SRBs (except RB2)

```
CRLC_Config_REQ
        Release all RB's and SRB's (except RB2)
CRLC_Config_REQ
        Setup all RB's and SRB's (except RB2)
CRLC_SecurityMode_Config_REQ
        startValue = value received in the response message
        integrityKey = new key
        cipheringKey = new key
        cn_DomainIdentity = CS or PS
CRLC_−Ciphering_Activate _REQ
        if CIPHERING_STATUS= NotStarted
            cipheringModeCommand = NULL (no ciphering)
        if CIPHERING_STATUS = Started
            cipheringModeCommand = Start/Restart (existing algorithm)
        rb_DL_CiphActivationTimeInfo = now (except RB2)
        incHFN = NotInc
CRLC_Ciphering_Activate_REQ
        rb_UL_CiphActivationTimeInfo = now (except RB2)
        incHFN = NotInc
```

6 Re-initialize COUNT-I for all RB's and SRB's (except RB2)

```
CRLC_SecurityMode_Config_REQ
        startValue = 0 (new key)
        integrityKey = new key
        cn_DomainIdentity = CS or PS
```

```
CRLC_Integrity_Activate_REQ
      IntegrityProtectionModeCommand = Start (FRESH)
      IntegrityProtectionAlgorithm = selected value (downlink integrity protection starts
      immediately)
CRLC_Integrity_Activate_REQ
      ul_IntegProtActivationInfo = value (now)
```

8.5.4.5.2.3   Pending security configuration (no new keys)

A pending security configuration is triggered by the previous SECURITY MODE COMMAND (no new keys).

1 Before sending one of the SRNS relocation related messages

```
CRLC_SecurityMode_Config_REQ
      startValue = OMIT (no COUNT-I re-initialization)
      integrityKey = OMIT or value maintained by TTCN (no key change) cn_DomainIdentity = CS
      or PS
CRLC_Integrity_Activate_REQ
      SS_IntegrityProtectionModeCommand = Start (FRESH)
      IntegrityProtectionAlgorithm = selected value (downlink integrity protection starts
      immediately)
CRLC_Integrity_Activate_REQ
      ul_IntegProtActivationInfo = value (now)
```

2 Send one of the SRNS relocation related messages

3 Re-establish RB2 and re-initialize COUNT-C for RB2

```
CRLC_SequenceNumber_REQ
CRLC_SequenceNumber_CNF
      HFN = MAX(HFN of DL/UL COUNT-C of RB2) + 1
CRLC_Config_REQ
      Release RB2
CRLC_Config_REQ
      Setup RB2
CRLC_SecurityMode_Config_REQ
      startValue = HFN calculated above
      cn_DomainIdentity = CS or PS
CRLC_Ciphering_Activate_REQ
      if CIPHERING_STATUS= NotStarted
          cipheringModeCommand = NULL (no ciphering)
      if CIPHERING_STATUS = Started
          cipheringModeCommand = Start/Restart (existing algorithm)
      rb_DL_CiphActivationTimeInfo = now (RB2 only)
      incHFN = NotInc
CRLC_Ciphering_Activate_REQ
      rb_UL_CipheringActivationTimeInfo = now (RB2 only)
      incHFN = NotInc
```

4 Receive the response message

5 Re-establish all RBs and SRBs (except RB2) and re-initialize COUNT-C for all RBs and SRBs (except RB2)

```
CRLC_Config_REQ
      Release all RB's and SRB's (except RB2)
CRLC_Config_REQ
      Setup all RB's and SRB's (except RB2)
CRLC_SecurityMode_Config_REQ
      startValue = value received in the response message
      integrityKey = value maintained by TTCN
      cn_DomainIdentity = CS or PS
CRLC_Ciphering_Activate_REQ
      if CIPHERING_STATUS= NotStarted
          cipheringModeCommand = NULL (no ciphering)
      if CIPHERING_STATUS = Started
          cipheringModeCommand = Start/Restart (existing algorithm)
      rb_DL_CiphActivationTimeInfo = now (except RB2)
      incHFN = NotInc
CRLC_Ciphering_Activate_REQ
      rb_UL_CiphActivationTimeInfo = now (except RB2)
      incHFN = NotInc
```

6 Re-initialize COUNT-I for all RB's and SRB's (except RB2)

```
CRLC_SecurityMode_Config_REQ
      startValue = value received in the response message
```

```
            integrityKey = value maintained by TTCN
            cn_DomainIdentity = CS or PS
    CRLC_Integrity_Activate_REQ
            IntegrityProtectionModeCommand = Start (FRESH)
            IntegrityProtectionAlgorithm = selected value (downlink integrity protection starts
            immediately)
    CRLC_Integrity_Activate_REQ
            ul_IntegProtActivationInfo = value (now)
```

8.5.4.5.3 Presence of "Integrity protection mode info" and "Ciphering mode info" IE

```
CIPHERING_STATUS = Started  for the CN domain concerned,
SRNS relocation related message with "Integrity protection mode info" IE containing
integrityProtectionModeCommand = Start, and "Ciphering mode info" IE containing cipheringModeCommand
= Start/Restart (change ciphering algorithm, no "Radio bearer downlink ciphering activation time
info")
```

8.5.4.5.3.1 No security configuration pending

1 Before sending one of the SRNS relocation related messages

```
    CRLC_SecurityMode_Config_REQ
            startValue = OMIT (no COUNT-I re-initialization)
            integrityKey = OMIT or value maintained by TTCN (no key change)
            cn_DomainIdentity = CS or PS
    CRLC_Integrity_Activate_REQ
            SS_IntegrityProtectionModeCommand = Start (FRESH)
            IntegrityProtectionAlgorithm = selected value (downlink integrity protection starts
            immediately)
    CRLC_Integrity_Activate_REQ
            ul_IntegProtActivationInfo = value (now)
```

2 Send one of the SRNS relocation related messages

3 Re-establish RB2 and re-initialize COUNT-C for RB2

```
    CRLC_SequenceNumber_REQ
    CRLC_SequenceNumber_CNF
            HFN = MAX(HFN of DL/UL COUNT-C of RB2) + 1
    CRLC_Config_REQ
            Release RB2
    CRLC_Config_REQ
            Setup RB2
    CRLC_SecurityMode_Config_REQ
            startValue = HFN calculated above
            cn_DomainIdentity = CS or PS
    CRLC_Ciphering_Activate_REQ
            if CIPHERING_STATUS= NotStarted
                cipheringModeCommand = NULL (no ciphering)
            if CIPHERING_STATUS = Started
                cipheringModeCommand = Start/Restart (existing algorithm)
            rb_DL_CiphActivationTimeInfo = now (RB2 only)
            incHFN = NotInc
    CRLC_Ciphering_Activate_REQ
            rb_UL_CipheringActivationTimeInfo = now (RB2 only)
            incHFN = NotInc
```

4 Receive the response message

5 Re-establish all RBs and SRBs (except RB2) and re-initialize COUNT-C for all RBs and SRBs (except RB2)

```
    CRLC_Config_REQ
            Release all RB's and SRB's (except RB2)
    CRLC_Config_REQ
            Setup all RB's and SRB's (except RB2)
    CRLC_SecurityMode_Config_REQ
            startValue = value received in the response message
            integrityKey = value maintained by TTCN
            cn_DomainIdentity = CS or PS
    CRLC_Ciphering_Activate_REQ
            cipheringModeCommand = Start/Restart (new algorithm)
            rb_DL_CiphActivationTimeInfo = now (except RB2)
            incHFN = NotInc
    CRLC_Ciphering_Activate_REQ
            rb_UL_CiphActivationTimeInfo = now (except RB2)
```

```
            incHFN = NotInc
```

8.5.4.5.3.2 Pending security configuration (new keys)

1 Before sending one of the SRNS relocation related messages

```
CRLC_SecurityMode_Config_REQ
        startValue = 0 (new key)
        integrityKey = new key
        cn_DomainIdentity = CS or PS
CRLC_Integrity_Activate_REQ
        SS_IntegrityProtectionModeCommand = Start (FRESH)
        IntegrityProtectionAlgorithm = selected value (downlink integrity protection starts
        immediately)
CRLC_Integrity_Activate_REQ
        ul_IntegProtActivationInfo = value (now)
```

2 Send one of the SRNS relocation related messages

3 Re-establish RB2 and re-initialize COUNT-C for RB2

```
CRLC_SequenceNumber_REQ
        CRLC_SequenceNumber_CNF
        HFN = MAX(HFN of DL/UL COUNT-C of RB2) + 1
CRLC_Config_REQ
        Release RB2
CRLC_Config_REQ
        Setup RB2
CRLC_SecurityMode_Config_REQ
        startValue = HFN calculated above
        cn_DomainIdentity = CS or PS
CRLC_Ciphering_Activate_REQ
        cipheringModeCommand = NULL (no ciphering status change)
        rb_DL_CiphActivationTimeInfo = now (RB2 only)
        incHFN = NotInc
CRLC_Ciphering_Activate_REQ
        rb_UL_CipheringActivationTimeInfo = now (RB2 only)
        incHFN = NotInc
```

4 Receive the response message

5 Re-establish all RBs and SRBs (except RB2) and re-initialize COUNT-C for all RBs and SRBs (except RB2)

```
CRLC_Config_REQ
        Release all RB's and SRB's (except RB2)
CRLC_Config_REQ
        Setup all RB's and SRB's (except RB2)
CRLC_SecurityMode_Config_REQ
        startValue = 0
        integrityKey = new key
        cn_DomainIdentity = CS or PS
CRLC_—Ciphering_Activate _REQ
        cipheringModeCommand = Start/Restart (new algorithm)
        rb_DL_CiphActivationTimeInfo = now (except RB2)
        incHFN = NotInc
CRLC_Ciphering_Activate_REQ
        rb_UL_CiphActivationTimeInfo = now (except RB2)
        incHFN = NotInc
```

6 Re-initialize COUNT-I for all RBs and SRBs (except RB2)

```
CRLC_SecurityMode_Config_REQ
        startValue = 0 (new key)
        integrityKey = new key
        cn_DomainIdentity = CS or PS
CRLC_Integrity_Activate_REQ
        IntegrityProtectionModeCommand = Start (FRESH)
        IntegrityProtectionAlgorithm = selected value (downlink integrity protection starts
        immediately)
CRLC_Integrity_Activate_REQ
        ul_IntegProtActivationInfo = value (now)
```

8.5.4.5.3.3 Pending security configuration (no new key)

1 Before sending one of the SRNS relocation related messages

```
CRLC_SecurityMode_Config_REQ
        startValue = OMIT (no COUNT-I re-initialization)
        integrityKey = OMIT or value maintained by TTCN (no key change)
        cn_DomainIdentity = CS or PS
CRLC_Integrity_Activate_REQ
        SS_IntegrityProtectionModeCommand = Start (FRESH)
        IntegrityProtectionAlgorithm = selected value (downlink integrity protection starts
        immediately)
CRLC_Integrity_Activate_REQ
        ul_IntegProtActivationInfo = value (now)
```

2 Send one of the SRNS relocation related messages

3 Re-establish RB2 and re-initialize COUNT-C for RB2

```
CRLC_SequenceNumber_REQ
        CRLC_SequenceNumber_CNF
        HFN = MAX(HFN of DL/UL COUNT-C of RB2) + 1
CRLC_Config_REQ
        Release RB2
CRLC_Config_REQ
        Setup RB2
CRLC_SecurityMode_Config_REQ
        startValue = HFN calculated above
        n_DomainIdentity = CS or PS
CRLC_Ciphering_Activate_REQ
        if CIPHERING_STATUS= NotStarted
            cipheringModeCommand = NULL (no ciphering)
        if CIPHERING_STATUS = Started
            cipheringModeCommand = Start/Restart (existing algorithm)
        rb_DL_CiphActivationTimeInfo = now (RB2 only)
        incHFN = NotInc
CRLC_Ciphering_Activate_REQ
        rb_UL_CipheringActivationTimeInfo = now (RB2 only)
        incHFN = NotInc
```

4 Receive the response message

5 Re-establish all RBs and SRBs (except RB2) and re-initialize COUNT-C for all RBs and SRBs (except RB2)

```
CRLC_Config_REQ
        Release all RB's and SRB's (except RB2)
CRLC_Config_REQ
        Setup all RB's and SRB's (except RB2)
CRLC_SecurityMode_Config_REQ
        startValue = value received in the response mesage
        integrityKey = value maintained by TTCN
        cn_DomainIdentity = CS or PS
CRLC_ Ciphering_Activate _REQ
        cipheringModeCommand = Start/Restart (new algorithm)
        rb_DL_CiphActivationTimeInfo = now (except RB2)
CRLC_ Ciphering_Activate _REQ
        rb_UL_CiphActivationTimeInfo = now (except RB2)
```

6 Re-initialize COUNT-I for all RBs and SRBs (except RB2)

```
CRLC_SecurityMode_Config_REQ
        startValue = value received in the response message
        integrityKey = value maintained by TTCN
        cn_DomainIdentity = CS or PS
CRLC_Integrity_Activate_REQ
        IntegrityProtectionModeCommand = Start (FRESH)
        IntegrityProtectionAlgorithm = selected value (downlink integrity protection starts
        immediately)
CRLC_Integrity_Activate_REQ
        ul_IntegProtActivationInfo = value (now)
```

8.5.4.6 CELL/URA update

8.5.4.6.1 RLC re-establish (RB2, RB3, RB4)

"RLC re-establish (RB2, RB3, RB4)" in CELL UPDATE CONFIRM message is set to TRUE CIPHERING_STATUS = Started for the CN domain concerned

1. After sending CELL UPDATE CONFIRM message, re-establish the RB2, RB3 and RB4 (if established)

```
    CRLC_SecurityMode_Config_REQ
            startValue = value received from CELL UPDATE message
            cipheringKey = value maintained by TTCN
            cn_DomainIdentity = CS or PS
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
            cipheringModeCommand = Start/Restart (existing algorithm)
            rb_DL_CiphActivationTimeInfo = now (RB2, RB3, RB4)
            incHFN = NotInc
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
            rb_UL_CipheringActivationTimeInfo = now (RB2, RB3, RB4)
            incHFN = NotInc
```

8.5.4.6.2 RLC re-establish (RAB)

"RLC re-establish (RB5 and upwards)" in CELL UPDATE CONFIRM message is set to TRUE CIPHERING_STATUS = Started for the CN domain concerned

1. After sending CELL UPDATE CONFIRM message, re-establish the RAB

```
    CRLC_SecurityMode_Config_REQ
            startValue = value received from CELL UPDATE message
            cipheringKey = value maintained by TTCN
            cn_DomainIdentity = CS or PS
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
            cipheringModeCommand = Start/Restart (existing algorithm)
            rb_DL_CiphActivationTimeInfo = now (RB5 and upwards)
            incHFN = NotInc
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
            rb_UL_CipheringActivationTimeInfo = now (RB5 and upwards)
            incHFN = NotInc
```

8.5.4.7 Inter RAT handover to UTRAN

8.5.4.7.1 ciphering has not been activated

ciphering has not been started in the radio access technology from which inter RAT handover is performed.TM mode radio bearer will be established in the UTRAN.

1. Sending HANDOVER TO UTRAN COMMAND in a RAT different from UTRAN

2. After receiving HANDOVER TO UTRAN COMPLETE message

```
    CMAC_SecurityMode_Config_REQ
            startValue = value received in HANDOVER TO UTRAN COMPLETE message
            cn_DomainIdentity = CS or PS
    CMAC_Ciphering_Activate_REQ (CN domain concerned)
            incHFNrementCOUNT_C = NotIncr
            cipheringModeCommand = NULL
            activationTimeForDPCH = now
    CRLC_SecurityMode_Config_REQ
            startValue = value received in HANDOVER TO UTRAN COMPLETE
            cn_DomainIdentity = CS or PS
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
            cipheringModeCommand = NULL
            rb_DL_CiphActivationTimeInfo = now (RB1, RB2, RB3, RB4)
            incHFN = IncvalueForlSBOfHFN = 1
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
            rb_UL_CipheringActivationTimeInfo = now (RB1, RB2, RB3, RB4)
            incHFN = Inc
    CRLC_SecurityMode_Config_REQ
            startValue = (value received in HANDOVER TO UTRAN COMPLETE) + 1
            cn_DomainIdentity = CS or PS
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
            cipheringModeCommand = NULL
            rb_DL_CiphActivationTimeInfo = now (RB2, RB3, RB4)
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
            rb_UL_CipheringActivationTimeInfo = now (RB2, RB3, RB4)
```

8.5.4.7.2 ciphering has been activated

ciphering has been started in the radio access technology from which inter RAT handover is performed.TM mode radio bearer will be established in the UTRAN.

1. Before sending HANDOVER TO UTRAN COMMAND

```
CRLC_SecurityMode_Config_REQ
        startValue = "START" value included in the IE "UE security information" in the variable
"INTER_RAT_HANDOVER_INFO_TRANSFERRED"
        cipheringKey = value generated in authentication procedure in GRAN
        cn_DomainIdentity = CS or PS
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
        cipheringModeCommand = Start/Restart (algorithm in HANDOVER TO UTRAN COMMAND)
        rb_DL_CiphActivationTimeInfo = now (RB1, RB2, RB3, RB4)
        incHFN = NotInc
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
        rb_UL_CipheringActivationTimeInfo = now (RB1, RB2, RB3, RB4)
        incHFN = NotInc
    CMAC_SecurityMode_Config_REQ
        startValue = "START" value included in the IE "UE security information" in the variable
"INTER_RAT_HANDOVER_INFO_TRANSFERRED"
        cipheringKey = value generated in authentication procedure in GRAN
        cn_DomainIdentity = CS or PS
    CMAC_Ciphering_Activate_REQ (CN domain concerned)
        incHFNrementCOUNT_C = NotIncr
        cipheringModeCommand = Start/Restart (algorithm algorithm in HANDOVER TO UTRAN COMMAND)
        activationTimeForDPCH = now
```

2. Sending HANDOVER TO UTRAN COMMAND in a RAT different from UTRAN

3. After receiving HANDOVER TO UTRAN COMPLETE message

```
    CMAC_SecurityMode_Config_REQ
        startValue = value received in the response message
        cipheringKey = value maitained by TTCN
        cn_DomainIdentity = CS or PS
    CMAC_Ciphering_Activate_REQ (CN domain concerned)
        incrementCOUNT_C = Incr
        cipheringModeCommand = Start/Restart (algorithm) in HANDOVER TO UTRAN COMMAND)
        activationTimeForDPCH = value in "COUNT-C activation time"
        valueForlSBOfHFN = 1incHFN = IncByOne_IncPerCFN_Cycle
    CRLC_SecurityMode_Config_REQ
        startValue = value received in HANDOVER TO UTRAN COMPLETE
        cipheringKey = value generated in authentication procedure in GRAN
        cn_DomainIdentity = CS or PS
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
        cipheringModeCommand = Start/Restart (algorithm in HANDOVER TO UTRAN COMMAND)
        rb_DL_CiphActivationTimeInfo = now (RB1, RB2, RB3, RB4)
        incHFN = IncvalueForLSBsOfHFN = 1
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
        rb_UL_CipheringActivationTimeInfo = now (RB1, RB2, RB3, RB4)
        incHFN = Inc
    CRLC_SecurityMode_Config_REQ
        startValue = (value received in HANDOVER TO UTRAN COMPLETE) + 1
        cipheringKey = value generated in authentication procedure in GRAN
        cn_DomainIdentity = CS or PS
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
        cipheringModeCommand = Start/Restart (algorithm in HANDOVER TO UTRAN COMMAND)
        rb_DL_CiphActivationTimeInfo = now (RB2, RB3, RB4)
    CRLC_Ciphering_Activate_REQ (CN domain concerned)
        rb_UL_CipheringActivationTimeInfo = now (RB2, RB3, RB4)
```

8.5.4.8 Hard handover

```
Ciphering is activated for any TM radio bearer;
"Downlink DPCH info for all RL" in a message performing timing re-initialized hard handover or;
"Downlink DPCH info for all RL" in a message other than RADIO BEARER SETUP tranfering UE to Cell_DCH
from non-Cell_DCH state.
```

1. Before sending the message

```
    CMAC_SecurityMode_Config_REQ
        startValue = value most recently received
        cipheringKey = value maitained by TTCN
        cn_DomainIdentity = CS or PS
    CMAC_Ciphering_Activate_REQ (CN domain concerned)
        incHFNrementCOUNT_C = NotIncr
        cipheringModeCommand = Start/Restart (existing algorithm)
        activationTimeForDPCH = now
```

2. Send the message for hard HO

3. After receiving the response message

```
CMAC_SecurityMode_Config_REQ
        startValue = value received in the response message
        cipheringKey = value maitained by TTCN
        cn_DomainIdentity = CS or PS
CMAC_Ciphering_Activate_REQ (CN domain concerned)
        incrementCOUNT_C = Incr
        cipheringModeCommand = Start/Restart (existing algorithm)
        activationTimeForDPCH = value in "COUNT-C activation time"
        incHFN = IncByOne_IncPerCFN_CyclevalueForLSBsOfHFN = 1
```

2. Send the message for hard HO

3. After receiving the response message

```
CMAC_SecurityMode_Config_REQ
```