Title: CRs (R'99 and Rel-4/Rel-5 category A) to TS 25.331. (3)

Source: TSG-RAN WG2

Agenda item: 7.2.3

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Version
R2-023081	Agreed	25.331	1729	-	R'99	Correction to the RRC transaction table management	F	3.12.0	3.13.0
R2-023082	Agreed	25.331	1730	-	Rel-4	Correction to the RRC transaction table management	А	4.7.0	4.8.0
R2-023083	Agreed	25.331	1731	-	Rel-5	Correction to the RRC transaction table management	A	5.2.0	5.3.0
R2-023097	Agreed	25.331	1738	-	R'99	Use of DCH Quality Target with Blind Transport Format Detection	F	3.12.0	3.13.0
R2-023098	Agreed	25.331	1739	-	Rel-4	Use of DCH Quality Target with Blind Transport Format Detection	Α	4.7.0	4.8.0
R2-023099	Agreed	25.331	1803	-	Rel-5	Use of DCH Quality Target with Blind Transport Format Detection	Α	5.2.0	5.3.0
R2-023100	Agreed	25.331	1740	-	R'99	Correction to storing current TFC subset in variable TFC_SUBSET for TDD	F	3.12.0	3.13.0
R2-023101	Agreed	25.331	1741	-	Rel-4	Correction to storing current TFC subset in variable TFC_SUBSET for TDD	Α	4.7.0	4.8.0
R2-023102	Agreed	25.331	1742	-	Rel-5	Correction to storing current TFC subset in variable TFC_SUBSET for TDD	Α	5.2.0	5.3.0
R2-023103	Agreed	25.331	1743	-	R'99	Security at inter-RAT handover	F	3.12.0	3.13.0
R2-023104	Agreed	25.331	1744	-	Rel-4	Security at inter-RAT handover	Α	4.7.0	4.8.0
R2-023105	Agreed	25.331	1745	-	Rel-5	Security at inter-RAT handover	Α	5.2.0	5.3.0
R2-023106	Agreed	25.331	1746	-	R'99	Integrity protection activations times	F	3.12.0	3.13.0
R2-023107	Agreed	25.331	1747	-	Rel-4	Integrity protection activations times	A	4.7.0	4.8.0
R2-023108	Agreed	25.331	1748	-	Rel-5	Integrity protection activations times	Α	5.2.0	5.3.0

R2-023109	Agreed	25.331	1749	-	R'99	Additional measurements	F	3.12.0	3.13.0
R2-023110	Agreed	25.331	1750	-	Rel-4	Additional measurements	Α	4.7.0	4.8.0
R2-023111	Agreed	25.331	1751	-	Rel-5	Additional measurements	Α	5.2.0	5.3.0

CR-Form-v7

### CHANGE REQUEST

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25.331 CR 1729

# rev

Current version: 3.12.0 #

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

ME X Radio Access Network X Core Network Proposed change affects: UICC apps#

Title: Correction to the RRC transaction table management Source: Philips Date: # 13/11/2002 ж **F** Category: Release: # R99 Use one of the following releases: Use one of the following categories: (GSM Phase 2) F (correction) 2 A (corresponds to a correction in an earlier release) R96 (Release 1996) **B** (addition of feature), (Release 1997) R97 **C** (functional modification of feature) R98 (Release 1998) **D** (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can Rel-4 (Release 4) be found in 3GPP TR 21.900. (Release 5) Rel-5 Rel-6 (Release 6)

Reason for change: ₩

There is currently a problem in the handling of the transaction tables: in case the received message is RADIO BEARER SETUP, RADIO BEARER RECONFIGURATION, RADIO BEARER RELEASE, PHYSICAL CHANNEL RECONFIGURATION or TRANSPORT CHANNEL RECONFIGURATION, both conditions to accept and reject the message can be met. This is the case when the table "Accepted transactions" in the variable TRANSACTIONS contains an entry with an IE "Message Type" set to ACTIVE SET UPDATE and ORDERED\_RECONFIGURATION, CELL\_UPDATE\_STARTED and PROTOCOL\_ERROR\_REJECT are set to FALSE.

#### **Isolated Impact**

As this CR clarifies something that was agreed in RAN2 long ago (the RADIO BEARER SETUP, RADIO BEARER RECONFIGURATION, RADIO BEARER RELEASE, PHYSICAL CHANNEL RECONFIGURATION and TRANSPORT CHANNEL RECONFIGURATION shall be rejected when an ACTIVE SET UPDATE message is being processed), it does not affect the UE behaving according to this principle.

Summary of change: ₩

Due to the possible misinterpretations of the spec, it is proposed to add a check on the presence of the active set update message in the table of accepted transactions in the list of checks performed to determine if the received message is to be accepted or not.

Consequences if not approved:

The UE rejects a RADIO BEARER RECONFIGURATION, RADIO BEARER SETUP, RADIO BEARER RELEASE, TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION following an ACTIVE SET UPDATE whereas the NW can expect it accepts the message due to unclear specification.

第 8.6.3.11 Clauses affected:

Other specs affected:	¥	Y	N	Other core specifications # Test specifications O&M Specifications	
Other comments:	¥				

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
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- 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.

#### 8.6.3.11 RRC transaction identifier

The IE "RRC transaction identifier" may be used, together with the message type, for identification of an invocation of a downlink procedure (transaction). The UE behaviour for accepting or rejecting transactions based on the message type and the IE "RRC transaction identifier" is specified below.

If the IE "RRC transaction identifier" is included in a received message, the UE shall perform the actions below. The UE shall:

If the received message is any of the messages:

- RADIO BEARER SETUP; or
- RADIO BEARER RECONFIGURATION; or
- RADIO BEARER RELEASE; or
- TRANSPORT CHANNEL RECONFIGURATION; or
- PHYSICAL CHANNEL RECONFIGURATION:

#### the UE shall:

- 1> if the variable ORDERED\_RECONFIGURATION is set to FALSE; and
- 1> if the variable CELL\_UPDATE\_STARTED is set to FALSE; and
- 1> if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL\_ERROR\_REJECT is set to FALSE; and
- 1> if the table "Accepted transactions" in the variable TRANSACTIONS does not contain an entry with an IE "Message Type" set to ACTIVE SET UPDATE;
  - 2> accept the transaction; and
  - 2> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS.

#### 1> else:

- 2> if the variable ORDERED\_RECONFIGURATION is set to TRUE; or
- 2> if the variable CELL\_UPDATE\_STARTED is set to TRUE; or
- 2> if the table "Accepted transactions" in the variable TRANSACTIONS contains an entry with an IE "Message Type" set to ACTIVE SET UPDATE; or
- 2> if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE:
  - 3> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:
    - 4> ignore the transaction; and
    - 4> continue with any ongoing processes and procedures as the message was not received;
    - 4> and end the procedure.

#### 3> else:

- 4> reject the transaction; and
- 4> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:
  - 5> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

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Other comments:

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## 3GPP TSG-RAN WG2 Meeting #33 Sophia Antipolis, France, 12-15 November 2002

Tdoc # R2-023097

CHANGE REQUEST													
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Proposed	change a	affects: UICC a	apps策 <mark> </mark>	ME X	Rad	io Ad	ccess Networ	k <mark>X</mark> Cor	e Network				
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Reason for change: ₩

The note in section 8.6.5.4 correctly describes the cases in which the UE can adjust its SIR target. However, the note implies that it is not possible for the UE to maintain an quality target in the case that the UE is configured to use blind transport format detection and the transport channel does not have a CRC in every transport format. This implication is not immediately obvious from the existing note and so it is proposed that this is also captured.

Rel-5

Rel-6

(Release 5)

(Release 6)

Summary of change: ₩

The following sentence is added to the existing note in section 8.6.5.4:

The UE can not maintain the quality target of a transport channel in the case that a CRC does not exist in all transport formats and blind transport format detection is used..

#### **Isolated Impact Analysis**

be found in 3GPP TR 21.900.

Functionality corrected: Downlink outer loop power control

Isolated impact statement: Correction to a function where specification was not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Consequences if not approved:

If the CR is not approved then it will not be clear that some configurations exits where it is not possible for the UE to correctly maintain a DCH quality target. If a network used one of these configurations then it could result in a transport channel suffering a significantly worse block error rate than that requested by the network.

Clauses affected: # 8.6.5.4

Other specs affected:	¥	Y N	Other core specifications Test specifications O&M Specifications	¥	
Other comments:	X				

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
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# 8.6.5.4 DCH quality target

If the IE "DCH quality target" is included, the UE shall:

- 1> set, at physical channel establishment, an initial downlink target SIR value based on the received IE "DCH quality target";
- 1> adjust the target SIR for the downlink power control to meet the quality target received in the IE "DCH quality target".

NOTE: Adjusting the target SIR is possible to do continuously by the UE if a CRC exists in all transport formats in the downlink TFS for a DCH. If a CRC does not exist in all transport formats, the UE can only adjust the target SIR when receiving transport formats containing a CRC and the UE has knowledge about the transport format according to [27].

NOTE: If the UTRAN configures a UE to use blind transport format detection, and configures a transport channel such that single transport format detection [27] must be used to detect the TF then it is not possible for the UE to maintain a quality target for that transport channel.

ME X Radio Access Network X Core Network

## 3GPP TSG-RAN WG2 Meeting #33 Sophia Antipolis, France, 12-15 November 2002

UICC apps₩

Proposed change affects:

CHANGE REQUEST													
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Use of DCH Quality Target with Blind Transport Format Detection Title: Source: Motorola Date: 第 11/10/02 Work item code: ₩ TEI Release: # Rel-4 Category: Use <u>one</u> of the following categories: Use one of the following releases: F (correction) (GSM Phase 2) 2 A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) **C** (functional modification of feature) (Release 1998) R98 **D** (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can Rel-4 (Release 4) (Release 5) be found in 3GPP TR 21.900. Rel-5 Rel-6 (Release 6)

Reason for change: 

The note in section 8.6.5.4 correctly describes the cases in which the UE can adjust its SIR target. However, the note implies that it is not possible for the UE to maintain an quality target in the case that the UE is configured to use blind transport format detection and the transport channel does not have a CRC in every transport format. This implication is not immediately obvious from the existing note and so it is proposed that this is also captured.

Summary of change: 

The following sentence is added to the existing note in section 8.6.5.4:

The UE can not maintain the quality target of a transport channel in the case that a CRC does not exist in all transport formats and blind transport format detection is used..

# **Isolated Impact Analysis**

Functionality corrected: Downlink outer loop power control

Isolated impact statement: Correction to a function where specification was not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

# Consequences if not approved:

If the CR is not approved then it will not be clear that some configurations exits where it is not possible for the UE to correctly maintain a DCH quality target. If a network used one of these configurations then it could result in a transport channel suffering a significantly worse block error rate than that requested by the network.

Clauses affected: # 8.6.5.4

Other specs affected:	¥	Υ	X	Other core specifications Test specifications O&M Specifications	¥	
Other comments:	¥					

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NOTE: If the UTRAN configures a UE to use blind transport format detection, and configures a transport channel such that single transport format detection [27] must be used to detect the TF then it is not possible for the UE to maintain a quality target for that transport channel.

# 3GPP TSG-RAN2 Meeting #33 Sophia Antipolis, France, 12-15 November 2002

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- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

# 8.2.5.3 Reception of a TRANSPORT FORMAT COMBINATION CONTROL message by the UE

Upon reception of the TRANSPORT FORMAT COMBINATION CONTROL message the UE shall:

- 1> act upon all received information elements as specified in 8.6, unless specified otherwise in the following;
- 1> perform the actions for the transport format combination subset specified in the IE "DPCH/PUSCH TFCS in uplink" according to subclause 8.6.5.3;
- 1> if the variable INVALID\_CONFIGURATION is set to FALSE:
  - 2> if the IE "TFC Control duration" is included in the message:
    - 3> store the value of the IE "TFC Control duration" in the IE "Duration" in the variable TFC\_SUBSET;
    - 3> set the IE "Current TFC subset" (or for the CCTrCh indicated by the IE "TFCS Id" in case of TDD) in the variable TFC\_SUBSET to the value of the IE "Transport format combination subset";
    - 3> apply the transport format combination subset in the IE "Current TFC subset" stored in the variable TFC SUBSET for the number of (10 ms) frames specified in the IE "TFC Control duration";
    - 3> at the end of the time period defined by the IE "TFC control duration":
      - 4> if the variable TFC\_SUBSET has not subsequently been reset by another message:
        - 5> go back to any previous restriction of the transport format combination set defined by the content of the IE "Default TFC subset" in the variable TFC\_SUBSET;
        - 5> set the value of the IE "Current TFC subset" in the variable TFC\_SUBSET to the value of the IE "Default TFC subset" in the variable TFC\_SUBSET;
        - 5> clear the IE "Duration" in the variable TFC SUBSET.
  - 2> if the IE "TFC Control duration" is not included in the message:
    - 3> set both the IE "Current TFC subset" and the IE "Default TFC subset" (or for the CCTrCh indicated by the IE "TFCS Id" in case of TDD) in the variable TFC\_SUBSET to the value of the IE "Transport format combination subset".
- 1> if the UE is unable to comply with the reconfiguration due to an invalid activation time:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.

#### The UE shall:

- 1> clear the entry for the TRANSPORT FORMAT COMBINATION CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> and the procedure ends.

# 3GPP TSG-RAN2 Meeting #33 Sophia Antipolis, France, 12-15 November 2002

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- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

# 8.2.5.3 Reception of a TRANSPORT FORMAT COMBINATION CONTROL message by the UE

If the TRANSPORT FORMAT COMBINATION CONTROL message was received on AM RLC or UM RLC, the UE shall:

- 1> act upon all received information elements as specified in 8.6, unless specified otherwise in the following;
- 1> perform the actions for the transport format combination subset specified in the IE "DPCH/PUSCH TFCS in uplink" according to subclause 8.6.5.3;
- 1> if the variable INVALID CONFIGURATION is set to FALSE:
  - 2> if the IE "TFC Control duration" is included in the message:
    - 3> store the value of the IE "TFC Control duration" in the IE "Duration" in the variable TFC\_SUBSET;
    - 3> set the IE "Current TFC subset" (or for the CCTrCh indicated by the IE "TFCS Id" in case of TDD) in the variable TFC\_SUBSET to the value of the IE "Transport format combination subset";
    - 3> apply the transport format combination subset in the IE "Current TFC subset" stored in the variable TFC\_SUBSET for the number of (10 ms) frames specified in the IE "TFC Control duration";
    - 3> at the end of the time period defined by the IE "TFC control duration":
      - 4> if the variable TFC\_SUBSET has not subsequently been reset by another message:
        - 5> go back to any previous restriction of the transport format combination set defined by the content of the IE "Default TFC subset" in the variable TFC\_SUBSET;
        - 5> set the value of the IE "Current TFC subset" in the variable TFC\_SUBSET to the value of the IE "Default TFC subset" in the variable TFC\_SUBSET;
        - 5> clear the IE "Duration" in the variable TFC\_SUBSET.
  - 2> if the IE "TFC Control duration" is not included in the message:
    - 3> set both the IE "Current TFC subset" and the IE "Default TFC subset" (or for the CCTrCh indicated by the IE "TFCS Id" in case of TDD) in the variable TFC\_SUBSET to the value of the IE "Transport format combination subset".
- 1> if the UE is unable to comply with the reconfiguration due to an invalid activation time:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.

#### If the TRANSPORT FORMAT COMBINATION CONTROL message was received on TM RLC, the UE shall:

- 1> consider the size of the transport block of the downlink transport channel where this message was received to select the format for the transparent format combination control mode as specified in subclause 12.4.1.1;
- 1> if the IE "TFC subset identity" identifies one of the TFC subsets stored in the IE "TFC subset list" in the variable TFC\_SUBSET:
  - 2> perform the actions as specified in subclause 8.6.5.3;
  - 2> if the variable INVALID CONFIGURATION is set to FALSE:
    - 3> in the variable TFC\_SUBSET, set the IE "Current TFC subset" to the value of the IE "TFC subset" in "TFC subset list" which is identified by the IE "TFC subset identity".
- 1> if the IE "TFC subset identity" is greater than the maximum number of TFC subsets stored in the IE "TFC subset list" in the variable TFC\_SUBSET:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.

The UE shall:

- 1> clear the entry for the TRANSPORT FORMAT COMBINATION CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> and the procedure ends.

# 3GPP TSG-RAN2 Meeting #33 Sophia Antipolis, France, 12-15 November 2002

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- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

# 8.2.5.3 Reception of a TRANSPORT FORMAT COMBINATION CONTROL message by the UE

If the TRANSPORT FORMAT COMBINATION CONTROL message was received on AM RLC or UM RLC, the UE shall:

- 1> act upon all received information elements as specified in 8.6, unless specified otherwise in the following;
- 1> perform the actions for the transport format combination subset specified in the IE "DPCH/PUSCH TFCS in uplink" according to subclause 8.6.5.3;
- 1> if the variable INVALID CONFIGURATION is set to FALSE:
  - 2> if the IE "TFC Control duration" is included in the message:
    - 3> store the value of the IE "TFC Control duration" in the IE "Duration" in the variable TFC\_SUBSET;
    - 3> set the IE "Current TFC subset" (or for the CCTrCh indicated by the IE "TFCS Id" in case of TDD) in the variable TFC\_SUBSET to the value of the IE "Transport format combination subset";
    - 3> apply the transport format combination subset in the IE "Current TFC subset" stored in the variable TFC\_SUBSET for the number of (10 ms) frames specified in the IE "TFC Control duration";
    - 3> at the end of the time period defined by the IE "TFC control duration":
      - 4> if the variable TFC\_SUBSET has not subsequently been reset by another message:
        - 5> go back to any previous restriction of the transport format combination set defined by the content of the IE "Default TFC subset" in the variable TFC\_SUBSET;
        - 5> set the value of the IE "Current TFC subset" in the variable TFC\_SUBSET to the value of the IE "Default TFC subset" in the variable TFC\_SUBSET;
        - 5> clear the IE "Duration" in the variable TFC\_SUBSET.
  - 2> if the IE "TFC Control duration" is not included in the message:
    - 3> set both the IE "Current TFC subset" and the IE "Default TFC subset" (or for the CCTrCh indicated by the IE "TFCS Id" in case of TDD) in the variable TFC\_SUBSET to the value of the IE "Transport format combination subset".
- 1> if the UE is unable to comply with the reconfiguration due to an invalid activation time:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.

#### If the TRANSPORT FORMAT COMBINATION CONTROL message was received on TM RLC, the UE shall:

- 1> consider the size of the transport block of the downlink transport channel where this message was received to select the format for the transparent format combination control mode as specified in subclause 12.4.1.1;
- 1> if the IE "TFC subset identity" identifies one of the TFC subsets stored in the IE "TFC subset list" in the variable TFC\_SUBSET:
  - 2> perform the actions as specified in subclause 8.6.5.3;
  - 2> if the variable INVALID CONFIGURATION is set to FALSE:
    - 3> in the variable TFC\_SUBSET, set the IE "Current TFC subset" to the value of the IE "TFC subset" in "TFC subset list" which is identified by the IE "TFC subset identity".
- 1> if the IE "TFC subset identity" is greater than the maximum number of TFC subsets stored in the IE "TFC subset list" in the variable TFC\_SUBSET:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.

The UE shall:

- 1> clear the entry for the TRANSPORT FORMAT COMBINATION CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> and the procedure ends.

## 3GPP TSG-RAN2 Meeting #33 Sophia Antipolis, France, 11<sup>th</sup>-15<sup>th</sup> November 2002

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Reason for change: # 1) At reception of HANDOVER TO UTRAN COMMAND, the UE will perform actions related to security (setting COUNT-C values, starting ciphering, setting the START-list and COUNT-C activation time in the response message etc).

> This works as intended for the case where a default radio configuration is used at the handover. However, in case an explicit configuration is given (i.e. the IEs "RB information to setup" and "Signalling RB information to setup list" are included), the security related actions intended for RB setup are erroneously performed, where e.g. the COUNT-Cs are initialised to other values. These actions are not intended for the Inter-RAT HO case. The end result is also ambiguous depending on in which order the UE performs the actions in the different sections.

Depending on in which order the actions in 8.3.6.3 (HO to UTRAN) and 8.6.4.1 / 8.6.4.3 (RB/SRB info to setup) are performed the following problems occurs:

- a) COUNT-C for TM is initially set to either a) the START value transferred via the network or b) the latest transmitted START value. These values are not necessarily the same and UTRAN does not know which value is used.
- b) After the COUNT-C activation time COUNT-C for TM is set either to a) START in the response message or b) START in the response message +1. UTRAN does not know which value is used
- c) In 8.6.4.3 actions related to initialisation of COUNT-C shall be performed at the activation time in the IE "Activation time" which is not even present in the HANDOVER TO UTRAN COMMAND message.
- d) For AM and UM RBs the COUNT-C values will be set either to a) COUNT-C in the response message or b) COUNT-C in the response message +1. UTRAN does not know which value is used.

In order to have a consistent behaviour it is clarified that the security related

actions in 8.6.4.1. and 8.6.4.3 shall not be performed in case of inter-RAT HO.

2) In the SMC procedure 8.1.12.3 it is stated that the security capability received in SMC shall be compared with the stored info in

UE\_CAPABILITY\_TRANSFERRED, but this variable is not updated at handover from GSM to UMTS.

Summary of change: # 1) It is clarified that the actions related to security in 8.6.4.1 and 8.6.4.3 are not performed if the IEs are received in a HANDOVER TO UTRAN COMMAND message.

> 2) It is clarified that at HO from GSM, the variable UE\_CAPABILITY\_TRANSFERRED should be updated with the UE capabilities stored in its variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED

#### Impact analysis:

Impacted functionality: The CR affects the handling of COUNT-C and START variables at handover from GSM.

Correction type: The CR has isolated impact since it only affects functions for ciphering related to handover from GSM.

#### Interoperability:

In case the CR is implemented in the UE but not in the network, the functionality will be still be correct (only UE impact).

#### Consequences if not approved:

Significant risk that different UE implementations will use different COUNT-C values for ciphering at HO from GSM to UTRAN. If this happens, ciphering will fail.

Clauses affected:	<b>8.3.6.3</b> , <b>8.6.4.1</b> , <b>8.6.4.3</b>						
Other specs affected:	Y N  X Other core specifications   X Test specifications   X O&M Specifications						
Other comments:	<b>*</b>						

#### **How to create CRs using this form:**

- 1) Fill out the above form. The symbols above marked \( \mathcal{X} \) contain pop-up help information about the field that they are closest to.
- 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.

### 8.3.6.3 Reception of HANDOVER TO UTRAN COMMAND message by the UE

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

The UE shall act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following. The UE shall:

- 1> store a U-RNTI value (32 bits), which is derived by the IEs "SRNC identity" (12 bits) and "S-RNTI 2" (10 bits) included in IE "U-RNTI-short". In order to produce a full size U-RNTI value, a full size "S-RNTI" (20 bits) shall be derived by padding the IE "S-RNTI 2" with 10 zero bits in the most significant positions; and
- 1> initialise the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS with the signalling connections that remains after the handover according to the specifications of the source RAT;
- 1> initialise the variable UE\_CAPABILITIES\_TRANSFERRED with the UE capabilities that have been transferred to the network up to the point prior to the handover, if any;
- 1> initialise the variable TIMERS\_AND\_CONSTANTS to the default values and start to use those timer and constants values;
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":
  - 2> initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity";
  - 2> initiate the physical channels in accordance with the predefined parameters identified by the IE "Predefined radio configuration identity" and the received physical channel information elements;
  - 2> store information about the established radio access bearers and radio bearers according to the IE "Predefined configuration identity"; and
  - 2> set the IE "RAB Info Post" in the variable ESTABLISHED\_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED\_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":
  - 2> initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity";
  - 2> initiate the physical channels in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" and the received physical channel information elements;
- NOTE IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used
  - 2> set the IE "RAB Info Post" in the variable ESTABLISHED\_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED\_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration":
  - 2> use the following values for parameters that are neither signalled within the HANDOVER TO UTRAN COMMAND message nor included within pre-defined or default configuration:
    - 3> 0 dB for the power offset P Pilot-DPDCH bearer in FDD;
    - 3> calculate the Default DPCH Offset Value using the following formula:
    - 3> in FDD:

Default DPCH Offset Value = (SRNTI 2 mod 600) \* 512

3> in TDD:

#### Default DPCH Offset Value = (SRNTI 2 mod 7)

- 3> handle the above Default DPCH Offset Value as if an IE with that value was included in the message, as specified in subclause 8.6.6.21.
- 1> if IE "Specification mode" is set to "Complete specification":
  - 2> initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.
- 1> perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;
- 1> set the IE "START" for each CN domain, in the IE "START list" in the HANDOVER TO UTRAN COMPLETE message equal to the START value for each CN domain stored in the USIM if the USIM is present, or as stored in the UE for each CN domain if the SIM is present;
- 1> if ciphering has been activated and ongoing in the radio access technology from which inter- RAT handover is performed:
  - 2> for the CN domain included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:
    - 3> set the variable LATEST\_CONFIGURED\_CN\_DOMAIN to the value indicated in the IE "CN domain identity", or to the CS domain when this IE is not present;
    - 3> set the 20 MSB of the HFN component of the COUNT-C variable for all radio bearers using RLC-TM and all signalling radio bearers to the "START" value included in the IE "UE security information" in the variable "INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED";
    - 3> set the remaining LSBs of the HFN component of COUNT-C for all radio bearers using RLC-TM and all signalling radio bearers to zero;
    - 3> not increment the HFN component of COUNT-C for radio bearers using RLC-TM, i.e. keep the HFN value fixed without incrementing every CFN cycle;
    - 3> set the CFN component of the COUNT-C variable to the value of the CFN as calculated in subclause 8.5.15;
    - 3> set the IE "Status" in the variable CIPHERING\_STATUS to "Started";
    - 3> apply the algorithm according to IE "Ciphering Algorithm" and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.
- 1> if ciphering has not been activated and ongoing in the radio access technology from which inter-RAT handover is performed:
  - 2> for the CN domain included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:
    - 3> set the IE "Status" in the variable CIPHERING\_STATUS to "Not Started".

If the UE succeeds in establishing the connection to UTRAN, it shall:

- 1> if the IE "Status" in the variable CIPHERING\_STATUS of a CN domain is set to "Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
  - 2> include the IE "COUNT-C activation time" in the response message and specify a CFN value other than the default, "Now" for this IE;
  - 2> at the CFN value as indicated in the response message in the IE "COUNT-C activation time" for radio bearers using RLC-TM:

- 3> set the 20 MSB of the HFN component of the COUNT-C variable common for all transparent mode radio bearers of this CN domain to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
- 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
- 3> increment the HFN component of the COUNT-C variable by one;
- 3> set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
- 3> step the COUNT-C variable, as normal, at each CFN value. The HFN component is no longer fixed in value but incremented at each CFN cycle.
- 1> if the IE "Status" in the variable CIPHERING\_STATUS of a CN domain is set to "Not Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
  - 2> initialise the 20 MSB of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value as indicated in the IE "START list" of the response message for the relevant CN domain;
  - 2> set the remaining LSBs of the HFN component of COUNT-C to zero;
  - 2> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
- 1> transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH, using, if ciphering has been started, the new ciphering configuration;
- 1> when the HANDOVER TO UTRAN COMPLETE message has been submitted to lower layers for transmission:
  - 2> enter UTRA RRC connected mode in state CELL\_DCH;
  - 2> initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
  - 2> update the variable UE CAPABILITY TRANSFERRED with the UE capabilities stored in the variable INTER RAT HANDOVER INFO TRANSFERRED;
  - 2> for all radio bearers using RLC-AM or RLC-UM:
    - 3> set the 20 MSB of the HFN component of the uplink and downlink COUNT-C variable to the START value indicated in the IE "START list" of the response message for the relevant CN domain; and
    - 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
    - 3> increment the HFN component of the COUNT-C variable by one;
    - 3> start incrementing the COUNT-C values.
- 1> and the procedure ends.

#### 8.6.4 Radio bearer information elements

# 8.6.4.1 Signalling RB information to setup list

If the IE "Signalling RB information to setup list" is included the UE shall:

- 1> use the same START value to initialise the COUNT-C and COUNT-I variables for all the signalling radio bearers in the list;
- 1> if the IE "Signalling RB information to setup list" was included in the RADIO BEARER SETUP message:
  - 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN has been initialised:

- 3> calculate the START value only once during this procedure according to subclause 8.5.9 for the CN domain indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
- 3> store the calculated START value in the variable START\_VALUE\_TO\_TRANSMIT.
- 1> for each occurrence of the IE "Signalling RB information to setup":
  - 2> use the value of the IE "RB identity" as the identity of the signalling radio bearer to setup;
  - 2> if the signalling radio bearer identified with the IE "RB identity" does not exist in the variable ESTABLISHED RABS:
    - 3> create a new entry for the signalling radio bearer in the variable ESTABLISHED\_RABS.
  - 2> if the IE "Signalling RB information to setup list RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
  - 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN has been initialised and the value "STATUS" of the variable CIPHERING\_STATUS of the CN domain stored in this variable is "Started":
    - 3> if the IE "Uplink RLC mode" or the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "AM RLC" or "UM RLC":
      - 4> initialise the 20 MSB of the hyper frame number component of COUNT-C for this signalling radio bearer with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
      - 4> set the remaining LSB of the hyper frame number component of COUNT-C for this signalling radio bearer to zero;
      - 4> start to perform ciphering on this signalling radio bearer, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.
  - 2> if the IE "Signalling RB information to setup listRB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
  - 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN has been initialised and the value "Status" of the variable "INTEGRITY\_PROTECTION\_INFO" of the CN domain stored in this variable is "Started":
    - 3> initialise the 20 MSB of the hyper frame number component of COUNT-I for this signalling radio bearer with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
    - 3> set the remaining LSB of the hyper frame number component of COUNT-I for this signalling radio bearer to zero;
    - 3> for this signalling radio bearer, set the IE "Uplink RRC Message sequence number" in the variable INTEGRITY\_PROTECTION\_INFO to zero;
    - 3> start performing integrity protection according to subclauses 8.5.10.1 and 8.5.10.2.
  - 2> perform the actions for the IE "RLC info" as specified in subclause 8.6.4.9, applied for that signalling radio bearer;
  - 2> perform the actions for the IE "RB mapping info" as specified in subclause 8.6.4.8, applied for that signalling radio bearer.
- 1> apply a default value of the IE "RB identity" equal to 1 for the first IE "Signalling RB information to setup"; and
- 1> increase the default value by 1 for each occurrence.

### 8.6.4.2 RAB information for setup

If the IE "RAB information for setup" is included, the procedure is used to establish radio bearers belonging to a radio access bearer, and the UE shall:

1> if several IEs "RAB information for setup" are included and the included IEs "CN domain identity" in the IE "RAB info" does not all have the same value:

- 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the radio access bearer identified with the IE "RAB info" does not exist in the variable ESTABLISHED\_RABS:
  - 2> create a new entry for the radio access bearer in the variable ESTABLISHED\_RABS;
  - 2> store the content of the IE "RAB info" in the entry for the radio access bearer in the variable ESTABLISHED\_RABS;
  - 2> indicate the establishment of the radio access bearer to the upper layer entity using the IE "CN domain identity", forwarding the content of the IE "RAB identity";
  - 2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" and at least one transparent mode radio bearer is included in the IE "RB information to setup"; or
  - 2> if at least one RLC-AM or RLC-UM radio bearer is included in the IE "RB information to setup":
    - 3> calculate the START value only once during this procedure (the same START value shall be used on all new radio bearers created for this radio access bearer) according to subclause 8.5.9 for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";
    - 3> store the calculated START value in the variable START\_VALUE\_TO\_TRANSMIT.
- 1> for each radio bearer in the IE "RB information to setup":
  - 2> if the radio bearer identified with the IE "RB identity" does not exist in the variable ESTABLISHED\_RABS:
    - 3> perform the actions specified in subclause 8.6.4.3;
    - 3> store information about the new radio bearer in the entry for the radio access bearer identified by "RAB info" in the variable ESTABLISHED\_RABS;
    - 3> create a new RAB subflow for the radio access bearer;
    - 3> number the RAB subflow in ascending order, assigning the smallest number to the RAB subflow corresponding to the first radio bearer in the list;
    - 3> if the IE "CN domain identity" in the IE "RAB info" is set to "PS domain" and the number of RAB subflows for the radio access bearer is greater than 1:
      - 4> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> if the radio bearer identified with the IE "RB identity" already exists in the variable ESTABLISHED\_RABS:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.

### 8.6.4.3 RB information to setup

If the IE "RB information to setup" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

- 1> use the same START value to initialise the hyper frame number components of COUNT-C variables for all the new radio bearers to setup;
- 1> perform the actions for the IE "PDCP info", if present, according to subclause 8.6.4.10, applied for the radio bearer:
- 1> perform the actions for the IE "RLC info", according to subclause 8.6.4.9, applied for the radio bearer;
- 1> perform the actions for the IE "RB mapping info", according to subclause 8.6.4.8, applied for the radio bearer;
- 1> if the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "TM RLC":

- 2> configure delivery of erroneous SDUs in lower layers according to indication from upper layer [5].
- 1> if the IE "RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
- 1> if the IE "Uplink RLC mode" or the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "AM RLC" or "UM RLC":
  - 2> initialise the 20 MSB of the hyper frame number component of COUNT-C for this radio bearer with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
  - 2> set the remaining LSB of the hyper frame number component of COUNT-C for this radio bearer to zero;
  - 2> start incrementing the COUNT-C values.
- 1> if the IE "RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
- 1> if the IE "Uplink RLC mode" and the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "TM RLC":
  - 2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS and at least one transparent mode radio bearer is included in the IE "RB information to setup":
    - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Not Started":
      - 4> at the activation time as specified in the IE "Ciphering activation time for DPCH" if included in the IE "Ciphering mode info" in the command message or, if this IE is not included, as specified in the IE "COUNT-C activation time" included in the response message:
        - 5> initialise the 20 most significant bits of the hyper frame number component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
        - 5> set the remaining LSB of the hyper frame number component of COUNT-C to zero;
        - 5> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
    - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
      - 4> at the activation time as specified in the IE "Activation Time" in the RADIO BEARER SETUP message:
        - 5> initialise the 20 most significant bits of the HFN component of COUNT-C common for all transparent mode RLC radio bearer to the value of the latest transmitted START for this CN domain, while not incrementing the value of the HFN component of COUNT-C at each CFN cycle; and
        - 5> set the remaining LSB of the HFN component of COUNT-C to zero;
        - 5> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN.
      - 4> at the activation time as specified in the IE "Ciphering activation time for DPCH" if included in the IE "Ciphering mode info" in the command message or, if this IE is not included, as specified in the IE "COUNT-C activation time" included in the response message:
        - 5> initialise the 20 most significant bits of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
        - 5> set the remaining LSB of the HFN component of COUNT-C to zero;

- 5> start incrementing the COUNT-C value common for all transparent mode radio bearers of this CN domain as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.
- 2> if prior to this procedure there exists at least one transparent mode radio bearer for the CN domain included in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS:
  - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Not Started":
    - 4> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
  - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
    - 4> continue incrementing the COUNT-C value common for all transparent mode radio bearers of this CN domain.
- 1> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
  - 2> start to perform ciphering on the radio bearer in lower layers, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.
- NOTE: UTRAN should not use the IE "RB information to setup" to setup radio bearers with RB identity in the range 1-4.

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Reason for change: # 1) At reception of HANDOVER TO UTRAN COMMAND, the UE will perform actions related to security (setting COUNT-C values, starting ciphering, setting the START-list and COUNT-C activation time in the response message etc).

> This works as intended for the case where a default radio configuration is used at the handover. However, in case an explicit configuration is given (i.e. the IEs "RB information to setup" and "Signalling RB information to setup list" are included), the security related actions intended for RB setup are erroneously performed, where e.g. the COUNT-Cs are initialised to other values. These actions are not intended for the Inter-RAT HO case. The end result is also ambiguous depending on in which order the UE performs the actions in the different sections.

Depending on in which order the actions in 8.3.6.3 (HO to UTRAN) and 8.6.4.1 / 8.6.4.3 (RB/SRB info to setup) are performed the following problems occurs:

- a) COUNT-C for TM is initially set to either a) the START value transferred via the network or b) the latest transmitted START value. These values are not necessarily the same and UTRAN does not know which value is used.
- b) After the COUNT-C activation time COUNT-C for TM is set either to a) START in the response message or b) START in the response message +1. UTRAN does not know which value is used
- c) In 8.6.4.3 actions related to initialisation of COUNT-C shall be performed at the activation time in the IE "Activation time" which is not even present in the HANDOVER TO UTRAN COMMAND message.
- d) For AM and UM RBs the COUNT-C values will be set either to a) COUNT-C in the response message or b) COUNT-C in the response message +1. UTRAN does not know which value is used.

In order to have a consistent behaviour it is clarified that the security related

actions in 8.6.4.1. and 8.6.4.3 shall not be performed in case of inter-RAT HO.

2) In the SMC procedure 8.1.12.3 it is stated that the security capability received in SMC shall be compared with the stored info in

UE\_CAPABILITY\_TRANSFERRED, but this variable is not updated at handover from GSM to UMTS.

Summary of change: # 1) It is clarified that the actions related to security in 8.6.4.1 and 8.6.4.3 are not performed if the IEs are received in a HANDOVER TO UTRAN COMMAND message.

> 2) It is clarified that at HO from GSM, the variable UE\_CAPABILITY\_TRANSFERRED should be updated with the UE capabilities stored in its variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED

#### Impact analysis:

Impacted functionality: The CR affects the handling of COUNT-C and START variables at handover from GSM.

Correction type: The CR has isolated impact since it only affects functions for ciphering related to handover from GSM.

#### Interoperability:

In case the CR is implemented in the UE but not in the network, the functionality will be still be correct (only UE impact).

### Consequences if not approved:

Significant risk that different UE implementations will use different COUNT-C values for ciphering at HO from GSM to UTRAN. If this happens, ciphering will fail.

Clauses affected:	<b>8.3.6.3</b> , <b>8.6.4.1</b> , <b>8.6.4.3</b>
Other specs affected:	Y N  X Other core specifications   X Test specifications   X O&M Specifications
Other comments:	<b>%</b>

#### **How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked \( \mathcal{X} \) contain pop-up help information about the field that they are closest to.
- 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.

### 8.3.6.3 Reception of HANDOVER TO UTRAN COMMAND message by the UE

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

The UE shall act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following. The UE shall:

- 1> store a U-RNTI value (32 bits), which is derived by the IEs "SRNC identity" (12 bits) and "S-RNTI 2" (10 bits) included in IE "U-RNTI-short". In order to produce a full size U-RNTI value, a full size "S-RNTI" (20 bits) shall be derived by padding the IE "S-RNTI 2" with 10 zero bits in the most significant positions; and
- 1> initialise the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS with the signalling connections that remains after the handover according to the specifications of the source RAT;
- 1> initialise the variable UE\_CAPABILITIES\_TRANSFERRED with the UE capabilities that have been transferred to the network up to the point prior to the handover, if any;
- 1> initialise the variable TIMERS\_AND\_CONSTANTS to the default values and start to use those timer and constants values;
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":
  - 2> initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity";
  - 2> initiate the physical channels in accordance with the predefined parameters identified by the IE "Predefined radio configuration identity" and the received physical channel information elements;
  - 2> store information about the established radio access bearers and radio bearers according to the IE "Predefined configuration identity"; and
  - 2> set the IE "RAB Info Post" in the variable ESTABLISHED\_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED\_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":
  - 2> initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity";
  - 2> initiate the physical channels in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" and the received physical channel information elements;
- NOTE IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used
  - 2> set the IE "RAB Info Post" in the variable ESTABLISHED\_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED\_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration":
  - 2> use the following values for parameters that are neither signalled within the HANDOVER TO UTRAN COMMAND message nor included within pre-defined or default configuration:
    - 3> 0 dB for the power offset P Pilot-DPDCH bearer in FDD;
    - 3> calculate the Default DPCH Offset Value using the following formula:
    - 3> in FDD:

Default DPCH Offset Value = (SRNTI 2 mod 600) \* 512

3> in TDD:

#### Default DPCH Offset Value = (SRNTI 2 mod 7)

- 3> handle the above Default DPCH Offset Value as if an IE with that value was included in the message, as specified in subclause 8.6.6.21.
- 1> if IE "Specification mode" is set to "Complete specification":
  - 2> initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.
- 1> perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;
- 1> set the IE "START" for each CN domain, in the IE "START list" in the HANDOVER TO UTRAN COMPLETE message equal to the START value for each CN domain stored in the USIM if the USIM is present, or as stored in the UE for each CN domain if the SIM is present;
- 1> if ciphering has been activated and ongoing in the radio access technology from which inter- RAT handover is performed:
  - 2> for the CN domain included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:
    - 3> set the variable LATEST\_CONFIGURED\_CN\_DOMAIN to the value indicated in the IE "CN domain identity", or to the CS domain when this IE is not present;
    - 3> set the 20 MSB of the HFN component of the COUNT-C variable for all radio bearers using RLC-TM and all signalling radio bearers to the "START" value included in the IE "UE security information" in the variable "INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED";
    - 3> set the remaining LSBs of the HFN component of COUNT-C for all radio bearers using RLC-TM and all signalling radio bearers to zero;
    - 3> not increment the HFN component of COUNT-C for radio bearers using RLC-TM, i.e. keep the HFN value fixed without incrementing every CFN cycle;
    - 3> set the CFN component of the COUNT-C variable to the value of the CFN as calculated in subclause 8.5.15;
    - 3> set the IE "Status" in the variable CIPHERING STATUS to "Started";
    - 3> apply the algorithm according to IE "Ciphering Algorithm" and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.
- 1> if ciphering has not been activated and ongoing in the radio access technology from which inter-RAT handover is performed:
  - 2> for the CN domain included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:
    - 3> set the IE "Status" in the variable CIPHERING\_STATUS to "Not Started".

If the UE succeeds in establishing the connection to UTRAN, it shall:

- 1> if the IE "Status" in the variable CIPHERING\_STATUS of a CN domain is set to "Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
  - 2> include the IE "COUNT-C activation time" in the response message and specify a CFN value other than the default, "Now" for this IE;
  - 2> at the CFN value as indicated in the response message in the IE "COUNT-C activation time" for radio bearers using RLC-TM:

- 3> set the 20 MSB of the HFN component of the COUNT-C variable common for all transparent mode radio bearers of this CN domain to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
- 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
- 3> increment the HFN component of the COUNT-C variable by one;
- 3> set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
- 3> step the COUNT-C variable, as normal, at each CFN value. The HFN component is no longer fixed in value but incremented at each CFN cycle.
- 1> if the IE "Status" in the variable CIPHERING\_STATUS of a CN domain is set to "Not Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
  - 2> initialise the 20 MSB of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value as indicated in the IE "START list" of the response message for the relevant CN domain;
  - 2> set the remaining LSBs of the HFN component of COUNT-C to zero;
  - 2> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
- 1> transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH, using, if ciphering has been started, the new ciphering configuration;
- 1> when the HANDOVER TO UTRAN COMPLETE message has been submitted to lower layers for transmission:
  - 2> enter UTRA RRC connected mode in state CELL\_DCH;
  - 2> initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
  - 2> update the variable UE CAPABILITY TRANSFERRED with the UE capabilities stored in the variable INTER RAT HANDOVER INFO TRANSFERRED;
  - 2> for all radio bearers using RLC-AM or RLC-UM:
    - 3> set the 20 MSB of the HFN component of the uplink and downlink COUNT-C variable to the START value indicated in the IE "START list" of the response message for the relevant CN domain; and
    - 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
    - 3> increment the HFN component of the COUNT-C variable by one;
    - 3> start incrementing the COUNT-C values.
- 1> and the procedure ends.

### 8.6.4 Radio bearer information elements

### 8.6.4.1 Signalling RB information to setup list

If the IE "Signalling RB information to setup list" is included the UE shall:

- 1> use the same START value to initialise the COUNT-C and COUNT-I variables for all the signalling radio bearers in the list;
- 1> if the IE "Signalling RB information to setup list" was included in the RADIO BEARER SETUP message:
  - 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN has been initialised:

- 3> calculate the START value only once during this procedure according to subclause 8.5.9 for the CN domain indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
- 3> store the calculated START value in the variable START\_VALUE\_TO\_TRANSMIT.
- 1> for each occurrence of the IE "Signalling RB information to setup":
  - 2> use the value of the IE "RB identity" as the identity of the signalling radio bearer to setup;
  - 2> if the signalling radio bearer identified with the IE "RB identity" does not exist in the variable ESTABLISHED RABS:
    - 3> create a new entry for the signalling radio bearer in the variable ESTABLISHED\_RABS.
  - 2> if the IE "Signalling RB information to setup listRB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
  - 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN has been initialised and the value "STATUS" of the variable CIPHERING\_STATUS of the CN domain stored in this variable is "Started":
    - 3> if the IE "Uplink RLC mode" or the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "AM RLC" or "UM RLC":
      - 4> initialise the 20 MSB of the hyper frame number component of COUNT-C for this signalling radio bearer with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
      - 4> set the remaining LSB of the hyper frame number component of COUNT-C for this signalling radio bearer to zero;
      - 4> start to perform ciphering on this signalling radio bearer, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.
  - 2> if the IE "Signalling RB information to setup list RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
  - 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN has been initialised and the value "Status" of the variable "INTEGRITY\_PROTECTION\_INFO" of the CN domain stored in this variable is "Started":
    - 3> initialise the 20 MSB of the hyper frame number component of COUNT-I for this signalling radio bearer with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
    - 3> set the remaining LSB of the hyper frame number component of COUNT-I for this signalling radio bearer to zero;
    - 3> for this signalling radio bearer, set the IE "Uplink RRC Message sequence number" in the variable INTEGRITY\_PROTECTION\_INFO to zero;
    - 3> start performing integrity protection according to subclauses 8.5.10.1 and 8.5.10.2.
  - 2> perform the actions for the IE "RLC info" as specified in subclause 8.6.4.9, applied for that signalling radio bearer;
  - 2> perform the actions for the IE "RB mapping info" as specified in subclause 8.6.4.8, applied for that signalling radio bearer.
- 1> apply a default value of the IE "RB identity" equal to 1 for the first IE "Signalling RB information to setup"; and
- 1> increase the default value by 1 for each occurrence.

### 8.6.4.2 RAB information for setup

If the IE "RAB information for setup" is included, the procedure is used to establish radio bearers belonging to a radio access bearer, and the UE shall:

1> if several IEs "RAB information for setup" are included and the included IEs "CN domain identity" in the IE "RAB info" does not all have the same value:

- 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the radio access bearer identified with the IE "RAB info" does not exist in the variable ESTABLISHED\_RABS:
  - 2> create a new entry for the radio access bearer in the variable ESTABLISHED\_RABS;
  - 2> store the content of the IE "RAB info" in the entry for the radio access bearer in the variable ESTABLISHED\_RABS;
  - 2> indicate the establishment of the radio access bearer to the upper layer entity using the IE "CN domain identity", forwarding the content of the IE "RAB identity";
  - 2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" and at least one transparent mode radio bearer is included in the IE "RB information to setup"; or
  - 2> if at least one RLC-AM or RLC-UM radio bearer is included in the IE "RB information to setup":
    - 3> calculate the START value only once during this procedure (the same START value shall be used on all new radio bearers created for this radio access bearer) according to subclause 8.5.9 for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";
    - 3> store the calculated START value in the variable START\_VALUE\_TO\_TRANSMIT.
- 1> for each radio bearer in the IE "RB information to setup":
  - 2> if the radio bearer identified with the IE "RB identity" does not exist in the variable ESTABLISHED\_RABS:
    - 3> perform the actions specified in subclause 8.6.4.3;
    - 3> store information about the new radio bearer in the entry for the radio access bearer identified by "RAB info" in the variable ESTABLISHED\_RABS;
    - 3> create a new RAB subflow for the radio access bearer;
    - 3> number the RAB subflow in ascending order, assigning the smallest number to the RAB subflow corresponding to the first radio bearer in the list;
    - 3> if the IE "CN domain identity" in the IE "RAB info" is set to "PS domain" and the number of RAB subflows for the radio access bearer is greater than 1:
      - 4> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> if the radio bearer identified with the IE "RB identity" already exists in the variable ESTABLISHED\_RABS:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.

### 8.6.4.3 RB information to setup

If the IE "RB information to setup" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

- 1> use the same START value to initialise the hyper frame number components of COUNT-C variables for all the new radio bearers to setup;
- 1> perform the actions for the IE "PDCP info", if present, according to subclause 8.6.4.10, applied for the radio bearer:
- 1> perform the actions for the IE "RLC info", according to subclause 8.6.4.9, applied for the radio bearer;
- 1> perform the actions for the IE "RB mapping info", according to subclause 8.6.4.8, applied for the radio bearer;
- 1> if the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "TM RLC":

- 2> configure delivery of erroneous SDUs in lower layers according to indication from upper layer [5].
- 1> if the IE "RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
- 1> if the IE "Uplink RLC mode" or the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "AM RLC" or "UM RLC":
  - 2> initialise the 20 MSB of the hyper frame number component of COUNT-C for this radio bearer with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
  - 2> set the remaining LSB of the hyper frame number component of COUNT-C for this radio bearer to zero;
  - 2> start incrementing the COUNT-C values.
- 1> if the IE "RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
- 1> if the IE "Uplink RLC mode" and the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "TM RLC":
  - 2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS and at least one transparent mode radio bearer is included in the IE "RB information to setup":
    - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Not Started":
      - 4> at the activation time as specified in the IE "Ciphering activation time for DPCH" if included in the IE "Ciphering mode info" in the command message or, if this IE is not included, as specified in the IE "COUNT-C activation time" included in the response message:
        - 5> initialise the 20 most significant bits of the hyper frame number component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
        - 5> set the remaining LSB of the hyper frame number component of COUNT-C to zero;
        - 5> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
    - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
      - 4> at the activation time as specified in the IE "Activation Time" in the RADIO BEARER SETUP message:
        - 5> initialise the 20 most significant bits of the HFN component of COUNT-C common for all transparent mode RLC radio bearer to the value of the latest transmitted START for this CN domain, while not incrementing the value of the HFN component of COUNT-C at each CFN cycle; and
        - $5\!\!>$  set the remaining LSB of the HFN component of COUNT-C to zero;
        - 5> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN.
      - 4> at the activation time as specified in the IE "Ciphering activation time for DPCH" if included in the IE "Ciphering mode info" in the command message or, if this IE is not included, as specified in the IE "COUNT-C activation time" included in the response message:
        - 5> initialise the 20 most significant bits of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
        - 5> set the remaining LSB of the HFN component of COUNT-C to zero;

- 5> start incrementing the COUNT-C value common for all transparent mode radio bearers of this CN domain as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.
- 2> if prior to this procedure there exists at least one transparent mode radio bearer for the CN domain included in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS:
  - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Not Started":
    - 4> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
  - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
    - 4> continue incrementing the COUNT-C value common for all transparent mode radio bearers of this CN domain.
- 1> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
  - 2> start to perform ciphering on the radio bearer in lower layers, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.
- NOTE: UTRAN should not use the IE "RB information to setup" to setup radio bearers with RB identity in the range 1-4.

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Reason for change: # 1) At reception of HANDOVER TO UTRAN COMMAND, the UE will perform actions related to security (setting COUNT-C values, starting ciphering, setting the START-list and COUNT-C activation time in the response message etc).

> This works as intended for the case where a default radio configuration is used at the handover. However, in case an explicit configuration is given (i.e. the IEs "RB information to setup" and "Signalling RB information to setup list" are included), the security related actions intended for RB setup are erroneously performed, where e.g. the COUNT-Cs are initialised to other values. These actions are not intended for the Inter-RAT HO case. The end result is also ambiguous depending on in which order the UE performs the actions in the different sections.

Depending on in which order the actions in 8.3.6.3 (HO to UTRAN) and 8.6.4.1 / 8.6.4.3 (RB/SRB info to setup) are performed the following problems occurs:

- a) COUNT-C for TM is initially set to either a) the START value transferred via the network or b) the latest transmitted START value. These values are not necessarily the same and UTRAN does not know which value is used.
- b) After the COUNT-C activation time COUNT-C for TM is set either to a) START in the response message or b) START in the response message +1. UTRAN does not know which value is used
- c) In 8.6.4.3 actions related to initialisation of COUNT-C shall be performed at the activation time in the IE "Activation time" which is not even present in the HANDOVER TO UTRAN COMMAND message.
- d) For AM and UM RBs the COUNT-C values will be set either to a) COUNT-C in the response message or b) COUNT-C in the response message +1. UTRAN does not know which value is used.

In order to have a consistent behaviour it is clarified that the security related

actions in 8.6.4.1. and 8.6.4.3 shall not be performed in case of inter-RAT HO.

2) In the SMC procedure 8.1.12.3 it is stated that the security capability received in SMC shall be compared with the stored info in

UE\_CAPABILITY\_TRANSFERRED, but this variable is not updated at handover from GSM to UMTS.

Summary of change: # 1) It is clarified that the actions related to security in 8.6.4.1 and 8.6.4.3 are not performed if the IEs are received in a HANDOVER TO UTRAN COMMAND message.

> 2) It is clarified that at HO from GSM, the variable UE\_CAPABILITY\_TRANSFERRED should be updated with the UE capabilities stored in its variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED

#### Impact analysis:

Impacted functionality: The CR affects the handling of COUNT-C and START variables at handover from GSM.

Correction type: The CR has isolated impact since it only affects functions for ciphering related to handover from GSM.

#### Interoperability:

In case the CR is implemented in the UE but not in the network, the functionality will be still be correct (only UE impact).

### Consequences if not approved:

Significant risk that different UE implementations will use different COUNT-C values for ciphering at HO from GSM to UTRAN. If this happens, ciphering will fail.

Clauses affected:	<b>8.3.6.3</b> , <b>8.6.4.1</b> , <b>8.6.4.3</b>
Other specs affected:	Y N  X Other core specifications   X Test specifications   X O&M Specifications
Other comments:	<b>%</b>

#### **How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked \( \mathcal{X} \) contain pop-up help information about the field that they are closest to.
- 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.

### 8.3.6.3 Reception of HANDOVER TO UTRAN COMMAND message by the UE

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

The UE shall act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following. The UE shall:

- 1> store a U-RNTI value (32 bits), which is derived by the IEs "SRNC identity" (12 bits) and "S-RNTI 2" (10 bits) included in IE "U-RNTI-short". In order to produce a full size U-RNTI value, a full size "S-RNTI" (20 bits) shall be derived by padding the IE "S-RNTI 2" with 10 zero bits in the most significant positions; and
- 1> initialise the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS with the signalling connections that remains after the handover according to the specifications of the source RAT;
- 1> initialise the variable UE\_CAPABILITIES\_TRANSFERRED with the UE capabilities that have been transferred to the network up to the point prior to the handover, if any;
- 1> initialise the variable TIMERS\_AND\_CONSTANTS to the default values and start to use those timer and constants values;
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":
  - 2> initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity";
  - 2> initiate the physical channels in accordance with the predefined parameters identified by the IE "Predefined radio configuration identity" and the received physical channel information elements;
  - 2> store information about the established radio access bearers and radio bearers according to the IE "Predefined configuration identity"; and
  - 2> set the IE "RAB Info Post" in the variable ESTABLISHED\_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED\_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":
  - 2> initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity";
  - 2> initiate the physical channels in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" and the received physical channel information elements;
- NOTE IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used
  - 2> set the IE "RAB Info Post" in the variable ESTABLISHED\_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED\_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration":
  - 2> use the following values for parameters that are neither signalled within the HANDOVER TO UTRAN COMMAND message nor included within pre-defined or default configuration:
    - 3> 0 dB for the power offset P Pilot-DPDCH bearer in FDD;
    - 3> calculate the Default DPCH Offset Value using the following formula:
    - 3> in FDD:

Default DPCH Offset Value = (SRNTI 2 mod 600) \* 512

3> in TDD:

#### Default DPCH Offset Value = (SRNTI 2 mod 7)

- 3> handle the above Default DPCH Offset Value as if an IE with that value was included in the message, as specified in subclause 8.6.6.21.
- 1> if IE "Specification mode" is set to "Complete specification":
  - 2> initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.
- 1> perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;
- 1> set the IE "START" for each CN domain, in the IE "START list" in the HANDOVER TO UTRAN COMPLETE message equal to the START value for each CN domain stored in the USIM if the USIM is present, or as stored in the UE for each CN domain if the SIM is present;
- 1> if ciphering has been activated and ongoing in the radio access technology from which inter- RAT handover is performed:
  - 2> for the CN domain included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:
    - 3> set the variable LATEST\_CONFIGURED\_CN\_DOMAIN to the value indicated in the IE "CN domain identity", or to the CS domain when this IE is not present;
    - 3> set the 20 MSB of the HFN component of the COUNT-C variable for all radio bearers using RLC-TM and all signalling radio bearers to the "START" value included in the IE "UE security information" in the variable "INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED";
    - 3> set the remaining LSBs of the HFN component of COUNT-C for all radio bearers using RLC-TM and all signalling radio bearers to zero;
    - 3> not increment the HFN component of COUNT-C for radio bearers using RLC-TM, i.e. keep the HFN value fixed without incrementing every CFN cycle;
    - 3> set the CFN component of the COUNT-C variable to the value of the CFN as calculated in subclause 8.5.15;
    - 3> set the IE "Status" in the variable CIPHERING STATUS to "Started";
    - 3> apply the algorithm according to IE "Ciphering Algorithm" and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.
- 1> if ciphering has not been activated and ongoing in the radio access technology from which inter-RAT handover is performed:
  - 2> for the CN domain included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:
    - 3> set the IE "Status" in the variable CIPHERING\_STATUS to "Not Started".

If the UE succeeds in establishing the connection to UTRAN, it shall:

- 1> if the IE "Status" in the variable CIPHERING\_STATUS of a CN domain is set to "Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
  - 2> include the IE "COUNT-C activation time" in the response message and specify a CFN value other than the default, "Now" for this IE;
  - 2> at the CFN value as indicated in the response message in the IE "COUNT-C activation time" for radio bearers using RLC-TM:

- 3> set the 20 MSB of the HFN component of the COUNT-C variable common for all transparent mode radio bearers of this CN domain to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
- 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
- 3> increment the HFN component of the COUNT-C variable by one;
- 3> set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
- 3> step the COUNT-C variable, as normal, at each CFN value. The HFN component is no longer fixed in value but incremented at each CFN cycle.
- 1> if the IE "Status" in the variable CIPHERING\_STATUS of a CN domain is set to "Not Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
  - 2> initialise the 20 MSB of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value as indicated in the IE "START list" of the response message for the relevant CN domain;
  - 2> set the remaining LSBs of the HFN component of COUNT-C to zero;
  - 2> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
- 1> transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH, using, if ciphering has been started, the new ciphering configuration;
- 1> when the HANDOVER TO UTRAN COMPLETE message has been submitted to lower layers for transmission:
  - 2> enter UTRA RRC connected mode in state CELL\_DCH;
  - 2> initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
  - 2> update the variable UE CAPABILITY TRANSFERRED with the UE capabilities stored in the variable INTER RAT HANDOVER INFO TRANSFERRED;
  - 2> for all radio bearers using RLC-AM or RLC-UM:
    - 3> set the 20 MSB of the HFN component of the uplink and downlink COUNT-C variable to the START value indicated in the IE "START list" of the response message for the relevant CN domain; and
    - 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
    - 3> increment the HFN component of the COUNT-C variable by one;
    - 3> start incrementing the COUNT-C values.
- 1> and the procedure ends.

### 8.6.4 Radio bearer information elements

### 8.6.4.1 Signalling RB information to setup list

If the IE "Signalling RB information to setup list" is included the UE shall:

- 1> use the same START value to initialise the COUNT-C and COUNT-I variables for all the signalling radio bearers in the list;
- 1> if the IE "Signalling RB information to setup list" was included in the RADIO BEARER SETUP message:
  - 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN has been initialised:

- 3> calculate the START value only once during this procedure according to subclause 8.5.9 for the CN domain indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
- 3> store the calculated START value in the variable START\_VALUE\_TO\_TRANSMIT.
- 1> for each occurrence of the IE "Signalling RB information to setup":
  - 2> use the value of the IE "RB identity" as the identity of the signalling radio bearer to setup;
  - 2> if the signalling radio bearer identified with the IE "RB identity" does not exist in the variable ESTABLISHED RABS:
    - 3> create a new entry for the signalling radio bearer in the variable ESTABLISHED\_RABS.
  - 2> if the IE "Signalling RB information to setup listRB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
  - 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN has been initialised and the value "STATUS" of the variable CIPHERING\_STATUS of the CN domain stored in this variable is "Started":
    - 3> if the IE "Uplink RLC mode" or the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "AM RLC" or "UM RLC":
      - 4> initialise the 20 MSB of the hyper frame number component of COUNT-C for this signalling radio bearer with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
      - 4> set the remaining LSB of the hyper frame number component of COUNT-C for this signalling radio bearer to zero;
      - 4> start to perform ciphering on this signalling radio bearer, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.
  - 2> if the IE "Signalling RB information to setup list RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
  - 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN has been initialised and the value "Status" of the variable "INTEGRITY\_PROTECTION\_INFO" of the CN domain stored in this variable is "Started":
    - 3> initialise the 20 MSB of the hyper frame number component of COUNT-I for this signalling radio bearer with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
    - 3> set the remaining LSB of the hyper frame number component of COUNT-I for this signalling radio bearer to zero;
    - 3> for this signalling radio bearer, set the IE "Uplink RRC Message sequence number" in the variable INTEGRITY\_PROTECTION\_INFO to zero;
    - 3> start performing integrity protection according to subclauses 8.5.10.1 and 8.5.10.2.
  - 2> perform the actions for the IE "RLC info" as specified in subclause 8.6.4.9, applied for that signalling radio bearer;
  - 2> perform the actions for the IE "RB mapping info" as specified in subclause 8.6.4.8, applied for that signalling radio bearer.
- 1> apply a default value of the IE "RB identity" equal to 1 for the first IE "Signalling RB information to setup"; and
- 1> increase the default value by 1 for each occurrence.

### 8.6.4.2 RAB information for setup

If the IE "RAB information for setup" is included, the procedure is used to establish radio bearers belonging to a radio access bearer, and the UE shall:

1> if several IEs "RAB information for setup" are included and the included IEs "CN domain identity" in the IE "RAB info" does not all have the same value:

- 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the radio access bearer identified with the IE "RAB info" does not exist in the variable ESTABLISHED\_RABS:
  - 2> create a new entry for the radio access bearer in the variable ESTABLISHED\_RABS;
  - 2> store the content of the IE "RAB info" in the entry for the radio access bearer in the variable ESTABLISHED\_RABS;
  - 2> indicate the establishment of the radio access bearer to the upper layer entity using the IE "CN domain identity", forwarding the content of the IE "RAB identity";
  - 2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" and at least one transparent mode radio bearer is included in the IE "RB information to setup"; or
  - 2> if at least one RLC-AM or RLC-UM radio bearer is included in the IE "RB information to setup":
    - 3> calculate the START value only once during this procedure (the same START value shall be used on all new radio bearers created for this radio access bearer) according to subclause 8.5.9 for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";
    - 3> store the calculated START value in the variable START\_VALUE\_TO\_TRANSMIT.
- 1> for each radio bearer in the IE "RB information to setup":
  - 2> if the radio bearer identified with the IE "RB identity" does not exist in the variable ESTABLISHED\_RABS:
    - 3> perform the actions specified in subclause 8.6.4.3;
    - 3> store information about the new radio bearer in the entry for the radio access bearer identified by "RAB info" in the variable ESTABLISHED\_RABS;
    - 3> create a new RAB subflow for the radio access bearer;
    - 3> number the RAB subflow in ascending order, assigning the smallest number to the RAB subflow corresponding to the first radio bearer in the list;
    - 3> if the IE "CN domain identity" in the IE "RAB info" is set to "PS domain" and the number of RAB subflows for the radio access bearer is greater than 1:
      - 4> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> if the radio bearer identified with the IE "RB identity" already exists in the variable ESTABLISHED\_RABS:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.

### 8.6.4.3 RB information to setup

If the IE "RB information to setup" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

- 1> use the same START value to initialise the hyper frame number components of COUNT-C variables for all the new radio bearers to setup;
- 1> perform the actions for the IE "PDCP info", if present, according to subclause 8.6.4.10, applied for the radio bearer:
- 1> perform the actions for the IE "RLC info", according to subclause 8.6.4.9, applied for the radio bearer;
- 1> perform the actions for the IE "RB mapping info", according to subclause 8.6.4.8, applied for the radio bearer;
- 1> if the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "TM RLC":

- 2> configure delivery of erroneous SDUs in lower layers according to indication from upper layer [5].
- 1> if the IE "RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
- 1> if the IE "Uplink RLC mode" or the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "AM RLC" or "UM RLC":
  - 2> initialise the 20 MSB of the hyper frame number component of COUNT-C for this radio bearer with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
  - 2> set the remaining LSB of the hyper frame number component of COUNT-C for this radio bearer to zero;
  - 2> start incrementing the COUNT-C values.
- 1> if the IE "RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
- 1> if the IE "Uplink RLC mode" and the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "TM RLC":
  - 2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS and at least one transparent mode radio bearer is included in the IE "RB information to setup":
    - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Not Started":
      - 4> at the activation time as specified in the IE "Ciphering activation time for DPCH" if included in the IE "Ciphering mode info" in the command message or, if this IE is not included, as specified in the IE "COUNT-C activation time" included in the response message:
        - 5> initialise the 20 most significant bits of the hyper frame number component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
        - 5> set the remaining LSB of the hyper frame number component of COUNT-C to zero;
        - 5> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
    - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
      - 4> at the activation time as specified in the IE "Activation Time" in the RADIO BEARER SETUP message:
        - 5> initialise the 20 most significant bits of the HFN component of COUNT-C common for all transparent mode RLC radio bearer to the value of the latest transmitted START for this CN domain, while not incrementing the value of the HFN component of COUNT-C at each CFN cycle; and
        - $5\!\!>$  set the remaining LSB of the HFN component of COUNT-C to zero;
        - 5> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN.
      - 4> at the activation time as specified in the IE "Ciphering activation time for DPCH" if included in the IE "Ciphering mode info" in the command message or, if this IE is not included, as specified in the IE "COUNT-C activation time" included in the response message:
        - 5> initialise the 20 most significant bits of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
        - 5> set the remaining LSB of the HFN component of COUNT-C to zero;

- 5> start incrementing the COUNT-C value common for all transparent mode radio bearers of this CN domain as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.
- 2> if prior to this procedure there exists at least one transparent mode radio bearer for the CN domain included in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS:
  - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Not Started":
    - 4> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
  - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
    - 4> continue incrementing the COUNT-C value common for all transparent mode radio bearers of this CN domain.
- 1> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
  - 2> start to perform ciphering on the radio bearer in lower layers, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.
- NOTE: UTRAN should not use the IE "RB information to setup" to setup radio bearers with RB identity in the range 1-4.

# 3GPP TSG-RAN WG2 meeting #33 Sofia Antipolis, France, 11<sup>th</sup> – 15<sup>th</sup> November 2002

CHANGE REQUEST

# 25.331 CR 1746 # rev - # Current version: 3.12.0 #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the \mathbb{H} symbols.

Proposed change affects: UICC apps# ME X Radio Access Network Core Network								
Title:	Ж	Integrity	protection activation	ons times	5			
			•					
Source:	$\mathfrak{R}$	Ericsso	n					
Work item code:	:#	TEI				Date: ₩	2002-11-13	
Category:	$\mathfrak{R}$	F				Release: ₩	R99	
		Use <u>one</u> (	of the following categ	ories:		Use <u>one</u> of	the following rele	eases:
		<b>F</b> (c	orrection)			2	(GSM Phase 2)	
		<b>A</b> (0	corresponds to a corre	ection in a	n earlier release)	) R96	(Release 1996)	
		<b>B</b> (a	nddition of feature),			R97	(Release 1997)	
		<b>C</b> (fi	unctional modification	of feature	<del>)</del> )	R98	(Release 1998)	
		<b>D</b> (e	editorial modification)			R99	(Release 1999)	
		Detailed 6	explanations of the ab	ove cate	jories can	Rel-4	(Release 4)	
		be found	in 3GPP TR 21.900.			Rel-5	(Release 5)	

#### Reason for change: ₩

 In the response message to UTRAN, the activation time in the IE "Integrity protection activation info" for the signalling radio bearer used for the reconfiguration message, should be included. But the value should be ignored by UTRAN. This needs to be clarified.

Rel-6

(Release 6)

- 2. The CCCH on SRB 0 is also a signalling radio bearer. Ambiguous text is removed.
- The current specification is slightly ambiguous as to the inclusion of IE " Integrity Protection Mode Info " in messages that can perform SRNS relocation.

#### Summary of change: ₩

- In chapter 8.5.10.2, it is clarified that the activation time for the signalling radio bearer used for the reconfiguration message should be included in the response message to UTRAN, but the value should be ignored by UTRAN. Integrity protection is applied for the response message.
- 2. In chapter, 10.3.3.17, the text, CCCH = SRB 0, is removed.
- In chapter 10.2, the tabular section is updated with text in the semantics description clarifying that UTRAN should not include IE "Integrity Protection Mode Info" in those messages unless when performing SRNS relocation.

### **Backwards compatibility analysis:**

If the CR is not implemented, or implemented by only the UE or UTRAN:

Ambigous behaivour for integrity protection activation times.

UE or UTRAN may potentially have incorrect handling of integrity activation times

on SRBs where the message performing security configuration is transferred. The incorrect behavior may cause integrity protection to fail.

No impact for implementations that have assumed the intended behaviour.

\*\*Ambigous behaviour for integrity protection activation times. Integrity protection may not work if the specification is interpreted in the wrong way, leading to not beeing able to setup up a service to the UE.

Clauses affected:	ж	8.5.10.2, 10.3.3.17, 10.2.8, 10.2.9, 10.2.10, 10.2.22, 10.2.27, 10.2.30, 10.2.33, 10.2.50, 10.2.61, 10.2.62
		YN
Other specs affected:	$\mathfrak{R}$	X Other core specifications X Test specifications O&M Specifications
Other comments:	¥	

#### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked \$\mathbb{X}\$ contain pop-up help information about the field that they are closest to.
- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

### 8.5.10.2 Integrity protection in uplink

Prior to sending an RRC message using the signalling radio bearer with radio bearer identity n, and the "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started" the UE shall:

- 1> increment "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO with 1, even if the message is a retransmission of a previously transmitted message. When "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO becomes 0, the UE shall increment "Uplink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO with 1;
- 1> calculate the message authentication code in accordance with subclause 8.5.10.3;
- 1> replace the "Message authentication code" in the IE "Integrity check info" in the message with the calculated message authentication code;
- 1> replace the "RRC Message sequence number" in the IE "Integrity check info" in the message with contents set to the new value of the "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO.

In the response message for the procedure ordering the security reconfiguration, the UE indicates the activation time, for each signalling radio bearer except for the signalling radio bearer that was used for this security reconfiguration procedure. When the new integrity configuration is to be applied in uplink, UTRAN should start to apply the new integrity protection configuration according to the activation time for each signalling radio bearer (except for the signalling radio bearer which is used to send the message that is reconfiguring the security configuration) where the new configuration is to be applied starting from and including reception of the response message).

### 10.3.3.17 Integrity protection activation info

This IE contains the time, in terms of RRC sequence numbers, when a new integrity protection configuration shall be activated for the signalling radio bearers.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
RRC message sequence number list	MP	4 to 5		The RRC sequence number when a new integrity protection configuration shall be applied, for CCCH (=RB0) and signalling radio bearers in the order RB0, RB1, RB2, RB3, RB4.  The value for RB1 shall be ignored if this IE was included in a RRC message sent on RB1.  The value for RB2 shall be ignored if this IE was included in a RRC message sent on RB1.
>RRC message sequence	MP		Integer (0	
number			15)	
	1		- /	

### 10.2.8 CELL UPDATE CONFIRM

This message confirms the cell update procedure and can be used to reallocate new RNTI information for the UE valid in the new cell.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN $\rightarrow$ UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE Information Elements	01/ 000//			
U-RNTI	CV-CCCH		U-RNTI	
RRC transaction identifier	MP		10.3.3.47 RRC	
Trice transaction identifier	IVII		transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
Integrity protection mode info	OP		10.3.3.16 Integrity	The UTRAN should not
integrity protection mode into			protection	include this IE unless it is
			mode info	performing a SRNS relocation
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
A stirration times	MD		10.3.3.5	Default value is "now"
Activation time	טוטו		Activation time 10.3.3.1	Default value is now
New U-RNTI	OP		U-RNTI	
11011 5 11111			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	
DDC Ctata Indicator	MD		10.3.3.9a RRC State	
RRC State Indicator	MP		Indicator	
			10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient			cycle length	
			coefficient	
RLC re-establish indicator (RB2,	MP		10.3.3.49 RLC re-	
RB3 and RB4)	IVIP		establish	
Tibe and Tib I)			indicator	
			10.3.3.35	
RLC re-establish indicator (RB5	MP		RLC re-	
and upwards)			establish	
			indicator 10.3.3.35	
CN Information Elements			10.3.3.33	
CN Information info	OP		CN	
			Information	
LITE AND COMPANY		<u> </u>	info 10.3.1.3	
UTRAN Information Elements URA identity	OP			
ONA Identity	0-		URA identity 10.3.2.6	
RB information elements			10.0.2.0	
RB information to release list	OP	1 to		
		<maxrb></maxrb>		
>RB information to release	MP		RB	
			information	
			to release 10.3.4.19	
RB information to reconfigure list	OP	1 to	10.0.7.10	
-		<maxrb></maxrb>		
>RB information to reconfigure	MP		RB	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			information to reconfigure	
RB information to be affected list	OP	1 to <maxrb></maxrb>	10.3.4.18	
>RB information to be affected	MP	<iiidxkd></iiidxkd>	RB information to be affected 10.3.4.17	
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs&gt;</maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels  UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	MP		10.0.0.2	
>FDD	OD		CDCU - CDC	
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch &gt;</maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels  DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		

Information Element/Group name	Need	Multi	Type and reference	Semantics description
		>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch></maxtrch>		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88.	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode >FDD	MP			
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

Condition	Explanation				
CCCH	This IE is mandatory present when CCCH is used and				
	ciphering is not required and not needed otherwise.				

# 10.2.9 COUNTER CHECK

This message is used by the UTRAN to indicate the current COUNT-C MSB values associated to each radio bearer utilising UM or AM RLC mode and to request the UE to compare these to its COUNT-C MSB values and to report the comparison results to UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Presence	Multi	IE type and reference	Semantics description
Message Type	MP			
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	MP		Integrity check info 10.3.3.16	
RB information elements				
RB COUNT-C MSB information	MP	1 to < maxRBallR ABs >		For each RB (excluding signalling radio bearers) using UM or AM RLC.
>RB COUNT-C MSB information	MP		RB COUNT- C MSB information 10.3.4.14	

# 10.2.10 COUNTER CHECK RESPONSE

This message is used by the UE to respond to a COUNTER CHECK message.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Presence	Multi	IE type and reference	Semantics description
Message Type	MP			
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	MP		Integrity check info 10.3.3.16	
RB information elements				
RB COUNT-C information	OP	1 to < maxRBallR ABs >		
>RB COUNT-C information	MP		RB COUNT- C information 10.3.4.15	

# 10.2.22 PHYSICAL CHANNEL RECONFIGURATION

This message is used by UTRAN to assign, replace or release a set of physical channels used by a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN  $\rightarrow$  UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements			туре	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing a SRNS relocation
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a	
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a	
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49	
CN Information Elements				
CN Information info	OP		CN Information info 10.3.1.3	
UTRAN mobility information elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements				
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs&gt;</maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
PhyCH information elements	0.5		F	
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing value of the maximum allowed UL TX power
CHOICE channel requirement	OP	1		
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>CPCH SET Info			CPCH SET	
>CPCH set ID			10.3.6.13 CPCH set ID	
201 CIT Set ID			10.3.5.3	
Downlink radio resources				
CHOICE mode	MP			
>FDD				
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

# 10.2.27 RADIO BEARER RECONFIGURATION

This message is sent from UTRAN to reconfigure parameters related to a change of QoS. This procedure can also change the multiplexing of MAC, reconfigure transport channels and physical channels.

RLC-SAP: AM or UM
Logical channel: DCCH

Direction: UTRAN  $\rightarrow$  UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing a SRNS relocation
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			10.3.3.9a	
RRC State Indicator	MP		RRC State	
			Indicator	
LITE AND DEV	0.0		10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient			cycle length	
			coefficient	
CN information elements			10.3.3.49	
CN Information info	OP		CN	
CN Information into	OP		Information info 10.3.1.3	
UTRAN mobility information elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements				
RAB information to reconfigure	OP	1 to <		
list		maxRABse tup >		
>RAB information to reconfigure	MP		RAB information	
			to	
			reconfigure 10.3.4.11	
RB information to reconfigure list	MP	1to		Although this IE is not always
		<maxrb></maxrb>		required, need is MP to align with ASN.1
>RB information to reconfigure	MP		RB	
			information	
			to	
			reconfigure 10.3.4.18	
RB information to be affected list	OP	1 to <maxrb></maxrb>	10.0.4.10	
>RB information to be affected	MP	<iiiaxkb></iiiaxkb>	RB	
>NB initiation to be affected	IVIE		information	
			to be	
			affected	
			10.3.4.17	
TrCH Information Elements			10.0.1111	
Uplink transport channels				
UL Transport channel	OP		UL Transport	
information common for all			channel	
transport channels			information	
l manopont on annion			common for	
			all transport	
			channels	
			10.3.5.24	
Deleted TrCH information list	OP	1 to		
		<maxtrch< td=""><td></td><td></td></maxtrch<>		
	<u> </u>	>		
>Deleted UL TrCH information	MP		Deleted UL	
			TrCH	
			information	
			10.3.5.5	
Added or Reconfigured TrCH	OP	1 to		
information list		<maxtrch< td=""><td></td><td></td></maxtrch<>		
	L	>		
>Added or Reconfigured UL	MP		Added or	
TrCH information			Reconfigure	
			d UL TrČH	
			information	
CHOICE mainte	OB	1	10.3.5.2	
CHOICE mode	OP			

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch &gt;</maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels				,
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode	MP			
>FDD				
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	MP	1 to <maxrl></maxrl>		Although this IE is not always required, need is MP to align with ASN.1

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
>Downlink information for each	MP		Downlink	
radio link			information	
			for each	
			radio link	
			10.3.6.27	

## 10.2.30 RADIO BEARER RELEASE

This message is used by UTRAN to release a radio bearer. It can also include modifications to the configurations of transport channels and/or physical channels. It can simultaneously indicate release of a signalling connection when UE is connected to more than one CN domain.

RLC-SAP: AM or UM
Logical channel: DCCH

Direction: UTRAN  $\rightarrow$  UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
Wessage Type	I IVII		Type	
UE Information Elements			Турс	
RRC transaction identifier	MP		RRC	
TATO transaction identifier	IVII		transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
integrity check into	011		check info	
			10.3.3.16	
Integrity protection mode info	OP		Integrity	The UTRAN should not
integrity protection mode into	Oi		protection	include this IE unless it is
			mode info	performing a SRNS relocation
			10.3.3.19	performing a Sixivo relocation
Ciphering mode info	OP		Ciphering	
Cipriering mode into	OF .		mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
Activation time	IVID		time 10.3.3.1	Default value is now
New U-RNTI	OP		U-RNTI	
New U-RNTI	OP			
New C-RNTI	OD		10.3.3.47 C-RNTI	
New C-RNTI	OP		-	
New DSCH-RNTI	OP		10.3.3.8 DSCH-RNTI	
New DSCH-RNTI	OP		10.3.3.9a	
RRC State Indicator	MP		RRC State	
RRC State Indicator	IMP			
			Indicator	
LITEAN DDV avala langeth	OD		10.3.3.35a UTRAN DRX	
UTRAN DRX cycle length	OP		_	
coefficient			cycle length coefficient	
			10.3.3.49	
CN Information Elements			10.3.3.49	
CN Information info	OP		CN	
ON INIOIMATION INIO	UP		Information	
			info 10.3.1.3	
0: 11: 0	0.0			
Signalling Connection release	OP		CN domain	
indication			identity	
			10.3.1.1	
UTRAN mobility information elements				
URA identity	OP		URA identity	
ŕ			10.3.2.6	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB Information Elements			1010101100	
RAB information to reconfigure list	OP	1 to < maxRABse tup >		
>RAB information to reconfigure	MP		RAB information to reconfigure 10.3.4.11	
RB information to release list	MP	1 to <maxrb></maxrb>		
>RB information to release	MP		RB information to release 10.3.4.19	
RB information to be affected list	OP	1 to <maxrb></maxrb>		
>RB information to be affected	MP		RB information to be affected 10.3.4.17	
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs&gt;</maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels  UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	OP			
>FDD >>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>TDD				(no data)
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP		10.0.0.00	
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode	MP			
>>DOWNlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

# 10.2.33 RADIO BEARER SETUP

This message is sent by UTRAN to the UE to establish new radio bearer(s). It can also include modifications to the configurations of transport channels and/or physical channels.

RLC-SAP: AM or UM Logical channel: DCCH Direction: UTRAN  $\rightarrow$  UE

Information Element/Group name			Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE Information Elements	NAD		DDO	
RRC transaction identifier	MP		RRC	
			transaction identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
3 4, 1 11			check info	
			10.3.3.16	
Integrity protection mode info	OP		Integrity	The UTRAN should not
			protection	include this IE unless it is
			mode info	performing a SRNS relocation
Cinharing made info	OP		10.3.3.19 Ciphering	
Ciphering mode info	I OP		mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
N. DOOLL DAIT	0.0		10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	
RRC State Indicator	MP		10.3.3.9a RRC State	
Tito State Indicator	IVII		Indicator	
			10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient			cycle length	
			coefficient	
ON Information Florida			10.3.3.49	
CN Information Elements CN Information info	OP		CN	
CN Information info	OP .		Information	
			info 10.3.1.3	
UTRAN mobility information				
elements				
URA identity	OP		URA identity	
DD Information Flores			10.3.2.6	
RB Information Elements Signalling RB information to	OP	1 to		For each signalling radio
setup list	OF	<maxsrbs< td=""><td></td><td>bearer established</td></maxsrbs<>		bearer established
octup not		etup>		Source Cotabiloried
>Signalling RB information to	MP		Signalling	
setup			RB	
			information	
			to setup	
DAD information to actualist	OP	1 to	10.3.4.24	For each RAB established
RAB information to setup list	UP	<pre>1 to <maxrabs< pre=""></maxrabs<></pre>		Ful each rad established
		etup>		
>RAB information for setup	MP	0.00	RAB	
•	1		information	

Information Element/Group name			Type and reference	Semantics description
			for setup 10.3.4.10	
RB information to be affected list	OP	1 to <maxrb></maxrb>	10.0.1.10	
>RB information to be affected	MP	SIIIdAND	RB information to be affected 10.3.4.17	
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs&gt;</maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels  UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	OP			
>FDD	OD		ODOLL - 115	
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch &gt;</maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels  DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels10. 3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Deleted DL TrCH information	MP		Deleted DL	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured DL TrCH information				
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode	MP			
>FDD				
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

# 10.2.50 TRANSPORT CHANNEL RECONFIGURATION

This message is used by UTRAN to configure the transport channel of a UE. This also includes a possible reconfiguration of physical channels. The message can also be used to assign a TFC subset and reconfigure physical channel.

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements			туре	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
Integrity protection mode info	OP		10.3.3.16 Integrity	The UTRAN should not
Integrity protection mode into	OP .		protection	include this IE unless it is
			mode info	performing a SRNS relocation
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
New U-RNTI	OP		time 10.3.3.1 U-RNTI	
INEW U-KINII	l OF		10.3.3.47	
New C-RNTI	OP		C-RNTI	
	0.		10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	
			10.3.3.9a	
RRC State Indicator	MP		RRC State	
			Indicator	
LITEAN DRY avale less eth	OP		10.3.3.35a UTRAN DRX	
UTRAN DRX cycle length coefficient	UP		cycle length	
Coefficient			coefficient	
			10.3.3.49	
CN Information Elements				
CN Information info	OP		CN	
			Information	
UTRAN mobility information			info 10.3.1.3	
elements				
URA identity	OP		URA identity	
			10.3.2.6	
RB information elements				
Downlink counter	OP			
synchronisation info	0.5			TI: 15: 1 10
>RB with PDCP information list	OP	1 to <maxrball< td=""><td></td><td>This IE is needed for each RB having PDCP in the case of</td></maxrball<>		This IE is needed for each RB having PDCP in the case of
	1	RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information 10.3.4.22	
TrCH Information Elements			10.0.7.22	
Uplink transport channels				
UL Transport channel	OP		UL Transport	
information common for all			channel	
transport channels			information	
			common for	
			all transport channels	
			10.3.5.24	
Added or Reconfigured TrCH	OP	1 to		
information list		<maxtrch< td=""><td></td><td></td></maxtrch<>		
	1	>	<b>.</b>	
>Added or Reconfigured UL	MP		Added or	
TrCH information			Reconfigure d UL TrCH	
	1			<u> </u>

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			information 10.3.5.2	
CHOICE mode	OP		10.0.0.2	
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch &gt;</maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels  DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch< td=""><td>10.3.3.0</td><td></td></maxtrch<>	10.3.3.0	
>Added or Reconfigured DL TrCH information	MP	>	Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources	MD			
CHOICE mode >FDD	MP			
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

## 10.2.61 URA UPDATE CONFIRM

This message confirms the URA update procedure and can be used to reallocate new RNTI information for the UE valid after the URA update.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

		Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
U-RNTI	CV-CCCH		U-RNTI	
			10.3.3.47	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
Lata militar also a la linda	011		10.3.3.36	
Integrity check info	СН		Integrity	Integrity check info is included
			check info	if integrity protection is applied
Intervity protection medicinfo	OP		10.3.3.16	The LITE AND about direct
Integrity protection mode info	OP		Integrity	The UTRAN should not include this IF upless it is
			protection mode info	include this IE unless it is performing a SRNS relocation
			10.3.3.19	performing a SKNS relocation
Ciphering mode info	OP		Ciphering	
Cipriering mode into	OF		mode info	
			10.3.3.5	
New U-RNTI	OP		U-RNTI	
New O-KINTI	OI .		10.3.3.47	
New C-RNTI	OP		C-RNTI	
New O Kivii	O.		10.3.3.8	
RRC State Indicator	MP		RRC State	
Tito State marcater			Indicator	
			10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient			cycle length	
			coefficient	
			10.3.3.49	
CN Information Elements				
CN Information info	OP		CN	
			Information	
			info 10.3.1.3	
UTRAN mobility information				
elements				
URA identity	OP		URA identity	
			10.3.2.6	
RB information elements	0.0			
Downlink counter	OP			
synchronisation info	0.5	<b>.</b> .		T. 15
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
>>RB with PDCP information	MD	RABs>	DD with	lossless SRNS relocation
>>kb with PDCP information	MP		RB with PDCP	
	1	1	1 7007	
			information	

Condition	Explanation
CCCH	This IE is mandatory present when CCCH is used and
	not needed otherwise.

# 10.2.62 UTRAN MOBILITY INFORMATION

This message is used by UTRAN to allocate a new RNTI and to convey other UTRAN mobility related information to a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE Information Elements				
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity protection mode info	OP		Integrity	The UTRAN should not
			protection	include this IE unless it is
			mode info	performing a SRNS relocation
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
UE Timers and constants in	OP		UE Timers	
connected mode			and	
			constants in	
			connected	
			mode	
			10.3.3.43	
CN Information Elements				
CN Information info	OP		CN	
			Information	
			info full	
			10.3.1.3a	
UTRAN Information Elements	1			
URA identity	OP		URA identity	
			10.3.2.6	
RB Information elements	1			
Downlink counter	OP			
synchronisation info	1			
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
	1	RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information	
			10.3.4.22	

#### R2-023107

## 3GPP TSG-RAN WG2 meeting #33 Sofia Antipolis, France, 11<sup>th</sup> – 15<sup>th</sup> November 2002

			СНА	NGE RE	QUE	ST			CR-Form-v7
*		25.33	1 CR 174	7	<b>'</b>	ж	Current version	on: <b>4.7.0</b>	¥
For <u>HL</u>	ELP on	using this	form, see botto	m of this page	or look a	at th	e pop-up text o	over the ¥ sy	mbols.
Proposed	l change	e affects:	UICC apps₩	ME	X Rad	dio A	ccess Network	X Core No	etwork
Title:		<b>≝</b> Integrit	y protection act	ivations times					
Source:	;	₩ Ericsso	n						
Work iten	n code:	₩ TEI					Date: ₩	2002-11-13	

Work item code: # TEI  Date: # 2002-11-13  Category: # A  Use one of the following categories: Use one of the following release.  F (correction) 2 (GSM Phase 2)  A (corresponds to a correction in an earlier release) R96 (Release 1996)	Source:	Ericsson			
Use <u>one</u> of the following categories:  Use <u>one</u> of the following release.  F (correction)  2 (GSM Phase 2)	Work item code:	TEI	Date: ૠ	2002-11-13	
Use <u>one</u> of the following categories:  Use <u>one</u> of the following release.  F (correction)  2 (GSM Phase 2)	Category:	R A	Release: ₩	Rel-4	
		Use one of the following categories:	Use <u>one</u> of	the following releases:	
A (corresponds to a correction in an earlier release) R96 (Release 1996)		F (correction)	2	(GSM Phase 2)	
		A (corresponds to a correction in an earlier release	e) R96	(Release 1996)	
<b>B</b> (addition of feature), R97 (Release 1997)		<b>B</b> (addition of feature),	R97	(Release 1997)	
C (functional modification of feature) R98 (Release 1998)		C (functional modification of feature)	R98	(Release 1998)	
<b>D</b> (editorial modification) R99 (Release 1999)		<b>D</b> (editorial modification)	R99	(Release 1999)	
Detailed explanations of the above categories can Rel-4 (Release 4)		Detailed explanations of the above categories can	Rel-4	(Release 4)	
be found in 3GPP TR 21.900. Rel-5 (Release 5)		be found in 3GPP TR 21.900.	Rel-5	(Release 5)	
Rel-6 (Release 6)			Rel-6	(Release 6)	

#### Reason for change: ₩

- In the response message to UTRAN, the activation time in the IE "Integrity
  protection activation info" for the signalling radio bearer used for the
  reconfiguration message, should be included. But the value should be
  ignored by UTRAN. This needs to be clarified.
- 2. The CCCH on SRB 0 is also a signalling radio bearer. Ambiguous text is removed.
- The current specification is slightly ambiguous as to the inclusion of IE " Integrity Protection Mode Info " in messages that can perform SRNS relocation.

#### Summary of change: ₩

- In chapter 8.5.10.2, it is clarified that the activation time for the signalling radio bearer used for the reconfiguration message should be included in the response message to UTRAN, but the value should be ignored by UTRAN. Integrity protection is applied for the response message.
- 2. In chapter, 10.3.3.17, the text, CCCH = SRB 0, is removed.
- In chapter 10.2, the tabular section is updated with text in the semantics description clarifying that UTRAN should not include IE "Integrity Protection Mode Info" in those messages unless when performing SRNS relocation.

## **Backwards compatibility analysis:**

If the CR is not implemented, or implemented by only the UE or UTRAN:

Ambigous behaivour for integrity protection activation times.

UE or UTRAN may potentially have incorrect handling of integrity activation times

on SRBs where the message performing security configuration is transferred. The incorrect behavior may cause integrity protection to fail.

No impact for implementations that have assumed the intended behaviour.

Consequences if not approved:

Ambigous behaviour for integrity protection activation times. Integrity protection may not work if the specification is interpreted in the wrong way, leading to not beeing able to setup up a service to the UE.

#### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

## 8.5.10.2 Integrity protection in uplink

Prior to sending an RRC message using the signalling radio bearer with radio bearer identity n, and the "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started" the UE shall:

- 1> increment "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO with 1, even if the message is a retransmission of a previously transmitted message. When "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO becomes 0, the UE shall increment "Uplink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO with 1;
- 1> calculate the message authentication code in accordance with subclause 8.5.10.3;
- 1> replace the "Message authentication code" in the IE "Integrity check info" in the message with the calculated message authentication code;
- 1> replace the "RRC Message sequence number" in the IE "Integrity check info" in the message with contents set to the new value of the "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO.

In the response message for the procedure ordering the security reconfiguration, the UE indicates the activation time, for each signalling radio bearer except for the signalling radio bearer that was used for this security reconfiguration procedure. When the new integrity configuration is to be applied in uplink, UTRAN should start to apply the new integrity protection configuration according to the activation time for each signalling radio bearer (except for the signalling radio bearer which is used to send the message that is reconfiguring the security configuration) where the new configuration is to be applied starting from and including reception of the response message).

## 10.3.3.17 Integrity protection activation info

This IE contains the time, in terms of RRC sequence numbers, when a new integrity protection configuration shall be activated for the signalling radio bearers.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
RRC message sequence number list	MP	4 to 5		The RRC sequence number when a new integrity protection configuration shall be applied, for CCCH (=RB0) and signalling radio bearers in the order RB0, RB1, RB2, RB3, RB4.  The value for RB1 shall be ignored if this IE was included in a RRC message sent on RB1.  The value for RB2 shall be ignored if this IE was included in a RRC message sent on RB1.
>RRC message sequence	MP		Integer (0	
number	''''		15)	
Hallibel	1	j	10)	

### 10.2.8 CELL UPDATE CONFIRM

This message confirms the cell update procedure and can be used to reallocate new RNTI information for the UE valid in the new cell.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Information Element/Group name	t/Group Need M		Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE Information Elements	01/ 000//			
U-RNTI	CV-CCCH		U-RNTI	
RRC transaction identifier	MP		10.3.3.47 RRC	
Trice transaction identifier	IVII		transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
Integrity protection mode info	OP		10.3.3.16 Integrity	The UTRAN should not
integrity protection mode into			protection	include this IE unless it is
			mode info	performing a SRNS relocation
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
A stirration times	MD		10.3.3.5	Default value is "now"
Activation time	טוטו		Activation time 10.3.3.1	Default value is now
New U-RNTI	OP		U-RNTI	
11011 5 11111			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	
DDC Ctata Indicator	MD		10.3.3.9a RRC State	
RRC State Indicator	MP		Indicator	
			10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient			cycle length	
			coefficient	
RLC re-establish indicator (RB2,	MP		10.3.3.49 RLC re-	
RB3 and RB4)	IVIP		establish	
Tibe and Tib I)			indicator	
			10.3.3.35	
RLC re-establish indicator (RB5	MP		RLC re-	
and upwards)			establish	
			indicator 10.3.3.35	
CN Information Elements			10.3.3.33	
CN Information info	OP		CN	
			Information	
LITE AND COMPANY			info 10.3.1.3	
UTRAN Information Elements URA identity	OP			
ONA Identity	0-		URA identity 10.3.2.6	
RB information elements			10.0.2.0	
RB information to release list	OP	1 to		
		<maxrb></maxrb>		
>RB information to release	MP		RB	
			information	
			to release 10.3.4.19	
RB information to reconfigure list	OP	1 to	10.0.7.10	
-		<maxrb></maxrb>		
>RB information to reconfigure	MP		RB	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			information to reconfigure	
RB information to be affected list	OP	1 to <maxrb></maxrb>	10.3.4.18	
>RB information to be affected	MP	<iiidxkd></iiidxkd>	RB information to be affected 10.3.4.17	
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs&gt;</maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels  UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	MP		10.0.0.2	
>FDD	OD		CDCU - CDC	
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch &gt;</maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels  DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		

Information Element/Group name	Need	Multi	Type and reference	Semantics description
		>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch></maxtrch>		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88.	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode >FDD	MP			
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

Condition	Explanation		
CCCH	This IE is mandatory present when CCCH is used and		
	ciphering is not required and not needed otherwise.		

# 10.2.9 COUNTER CHECK

This message is used by the UTRAN to indicate the current COUNT-C MSB values associated to each radio bearer utilising UM or AM RLC mode and to request the UE to compare these to its COUNT-C MSB values and to report the comparison results to UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Presence	Multi	IE type and reference	Semantics description
Message Type	MP			
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	MP		Integrity check info 10.3.3.16	
RB information elements				
RB COUNT-C MSB information	MP	1 to < maxRBallR ABs >		For each RB (excluding signalling radio bearers) using UM or AM RLC.
>RB COUNT-C MSB information	MP		RB COUNT- C MSB information 10.3.4.14	

## 10.2.10 COUNTER CHECK RESPONSE

This message is used by the UE to respond to a COUNTER CHECK message.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Presence	Multi	IE type and reference	Semantics description
Message Type	MP			
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	MP		Integrity check info 10.3.3.16	
RB information elements				
RB COUNT-C information	OP	1 to < maxRBallR ABs >		
>RB COUNT-C information	MP		RB COUNT- C information 10.3.4.15	

## 10.2.22 PHYSICAL CHANNEL RECONFIGURATION

This message is used by UTRAN to assign, replace or release a set of physical channels used by a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements			Туре	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing a SRNS relocation
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a	
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a	
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49	
CN Information Elements				
CN Information info	OP		CN Information info 10.3.1.3	
UTRAN mobility information elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements				
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs&gt;</maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
PhyCH information elements	OD		F	
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing value of the maximum allowed UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>CPCH SET Info			CPCH SET Info	
>CPCH set ID			10.3.6.13 CPCH set ID	
201 CIT Set ID			10.3.5.3	
Downlink radio resources				
CHOICE mode	MP			
>FDD				
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

# 10.2.27 RADIO BEARER RECONFIGURATION

This message is sent from UTRAN to reconfigure parameters related to a change of QoS. This procedure can also change the multiplexing of MAC, reconfigure transport channels and physical channels.

RLC-SAP: AM or UM
Logical channel: DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing a SRNS relocation
Ciphering mode info	ОР		Ciphering mode info 10.3.3.5	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			10.3.3.9a	
RRC State Indicator	MP		RRC State	
			Indicator	
LITE AND DEV	0.0		10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient			cycle length	
			coefficient	
CN information elements			10.3.3.49	
CN Information info	OP		CN	
CN Information into	OP		Information info 10.3.1.3	
UTRAN mobility information elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements				
RAB information to reconfigure	OP	1 to <		
list		maxRABse tup >		
>RAB information to reconfigure	MP		RAB information	
			to	
			reconfigure 10.3.4.11	
RB information to reconfigure list	MP	1to		Although this IE is not always
-		<maxrb></maxrb>		required, need is MP to align with ASN.1
>RB information to reconfigure	MP		RB	
			information	
			to	
			reconfigure 10.3.4.18	
RB information to be affected list	OP	1 to	10.0.4.10	
>RB information to be affected	MP	<maxrb></maxrb>	RB	
>NB initiation to be affected	IVIE		information	
			to be	
			affected	
			10.3.4.17	
TrCH Information Elements			10.0.1111	
Uplink transport channels				
UL Transport channel	OP		UL Transport	
information common for all	0.		channel	
transport channels			information	
			common for	
			all transport	
			channels	
			10.3.5.24	
Deleted TrCH information list	OP	1 to		
		<maxtrch< td=""><td></td><td></td></maxtrch<>		
		>		
>Deleted UL TrCH information	MP		Deleted UL	
			TrCH	
			information	
Added on December of Troll	OB	1 to	10.3.5.5	
Added or Reconfigured TrCH	OP	1 to		
information list		<maxtrch< td=""><td></td><td></td></maxtrch<>		
Added or Description 3111	MD	>	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
>Added or Reconfigured UL	MP		Added or	
TrCH information			Reconfigure	
	1	1	d UL TrČH	
			information	
CHOICE made	OB	<del>                                     </del>	10.3.5.2	
CHOICE mode	OP	L		

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch &gt;</maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels				(
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode	MP			
>FDD				
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	MP	1 to <maxrl></maxrl>		Although this IE is not always required, need is MP to align with ASN.1

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
>Downlink information for each	MP		Downlink	
radio link			information	
			for each	
			radio link	
			10.3.6.27	

## 10.2.30 RADIO BEARER RELEASE

This message is used by UTRAN to release a radio bearer. It can also include modifications to the configurations of transport channels and/or physical channels. It can simultaneously indicate release of a signalling connection when UE is connected to more than one CN domain.

RLC-SAP: AM or UM
Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Type	
UE Information Elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Integrity protection mode info	OP		Integrity	The UTRAN should not
			protection	include this IE unless it is
			mode info	performing a SRNS relocation
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	
			10.3.3.9a	
RRC State Indicator	MP		RRC State	
The State Handale.			Indicator	
			10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient	"		cycle length	
Committee			coefficient	
			10.3.3.49	
CN Information Elements		1		
CN Information info	OP	1	CN	
o	] .		Information	
			info 10.3.1.3	
Signalling Connection release	OP	1	CN domain	
9				
indication			identity	
			10.3.1.1	
UTRAN mobility information elements				
URA identity	OP	1	URA identity	
	]		10.3.2.6	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB Information Elements				
RAB information to reconfigure list	ОР	1 to < maxRABse tup >		
>RAB information to reconfigure	MP		RAB information to reconfigure 10.3.4.11	
RB information to release list	MP	1 to <maxrb></maxrb>		
>RB information to release	MP		RB information to release 10.3.4.19	
RB information to be affected list	OP	1 to <maxrb></maxrb>		
>RB information to be affected	MP		RB information to be affected 10.3.4.17	
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs&gt;</maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels  UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	OP			
>FDD >>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	ОР	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>TDD				(no data)
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP		10.0.0.00	
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode	MP			
>>DOWNlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

# 10.2.33 RADIO BEARER SETUP

This message is sent by UTRAN to the UE to establish new radio bearer(s). It can also include modifications to the configurations of transport channels and/or physical channels.

RLC-SAP: AM or UM Logical channel: DCCH Direction: UTRAN  $\rightarrow$  UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE Information Elements	NAD		DDO	
RRC transaction identifier	MP		RRC	
			transaction identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
3 4, 1 11			check info	
			10.3.3.16	
Integrity protection mode info	OP		Integrity	The UTRAN should not
			protection	include this IE unless it is
			mode info	performing a SRNS relocation
Cinharing made info	OP		10.3.3.19 Ciphering	
Ciphering mode info	I OP		mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
N. DOOLL DAIT	0.0		10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	
RRC State Indicator	MP		10.3.3.9a RRC State	
Tito State Indicator	IVII		Indicator	
			10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient			cycle length	
			coefficient	
ON Information Florida			10.3.3.49	
CN Information Elements CN Information info	OP		CN	
CN Information info	OP .		Information	
			info 10.3.1.3	
UTRAN mobility information				
elements				
URA identity	OP		URA identity	
DD Information Flores			10.3.2.6	
RB Information Elements Signalling RB information to	OP	1 to		For each signalling radio
setup list	OF	<maxsrbs< td=""><td></td><td>bearer established</td></maxsrbs<>		bearer established
octup not		etup>		Source Cotabiloried
>Signalling RB information to	MP		Signalling	
setup			RB	
			information	
			to setup	
DAD information to actualist	OP	1 to	10.3.4.24	For each RAB established
RAB information to setup list	UP	<pre>1 to <maxrabs< pre=""></maxrabs<></pre>		Ful each rad established
		etup>		
>RAB information for setup	MP	0.00	RAB	
•	1		information	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			for setup 10.3.4.10	
RB information to be affected list	OP	1 to <maxrb></maxrb>	10.0.1.10	
>RB information to be affected	MP	SIIIdAND	RB information to be affected 10.3.4.17	
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs&gt;</maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels  UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	OP			
>FDD	OD		ODOLL - 115	
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch &gt;</maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels  DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels10. 3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Deleted DL TrCH information	MP		Deleted DL	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode	MP			
>FDD				
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

# 10.2.50 TRANSPORT CHANNEL RECONFIGURATION

This message is used by UTRAN to configure the transport channel of a UE. This also includes a possible reconfiguration of physical channels. The message can also be used to assign a TFC subset and reconfigure physical channel.

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements			туре	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
Integrity protection mode info	OP		10.3.3.16 Integrity	The UTRAN should not
Integrity protection mode into	OP .		protection	include this IE unless it is
			mode info	performing a SRNS relocation
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
New U-RNTI	OP		time 10.3.3.1 U-RNTI	
INEW U-KINII	l OF		10.3.3.47	
New C-RNTI	OP		C-RNTI	
	0.		10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	
			10.3.3.9a	
RRC State Indicator	MP		RRC State	
			Indicator	
LITEAN DRY avale less eth	OP		10.3.3.35a UTRAN DRX	
UTRAN DRX cycle length coefficient	UP		cycle length	
Coefficient			coefficient	
			10.3.3.49	
CN Information Elements				
CN Information info	OP		CN	
			Information	
UTRAN mobility information			info 10.3.1.3	
elements				
URA identity	OP		URA identity	
			10.3.2.6	
RB information elements				
Downlink counter	OP			
synchronisation info	0.5			TI: 15: 1 10
>RB with PDCP information list	OP	1 to <maxrball< td=""><td></td><td>This IE is needed for each RB having PDCP in the case of</td></maxrball<>		This IE is needed for each RB having PDCP in the case of
	1	RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information 10.3.4.22	
TrCH Information Elements			10.0.7.22	
Uplink transport channels				
UL Transport channel	OP		UL Transport	
information common for all			channel	
transport channels			information	
			common for	
			all transport channels	
			10.3.5.24	
Added or Reconfigured TrCH	OP	1 to		
information list		<maxtrch< td=""><td></td><td></td></maxtrch<>		
	1	>	<b>.</b>	
>Added or Reconfigured UL	MP		Added or	
TrCH information			Reconfigure d UL TrCH	
	1			<u> </u>

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			information 10.3.5.2	
CHOICE mode	OP		10.3.3.2	
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch &gt;</maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels  DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch< td=""><td>10.3.3.0</td><td></td></maxtrch<>	10.3.3.0	
>Added or Reconfigured DL TrCH information	MP	>	Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP		10.0.0.00	
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources	MD			
CHOICE mode >FDD	MP			
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

## 10.2.61 URA UPDATE CONFIRM

This message confirms the URA update procedure and can be used to reallocate new RNTI information for the UE valid after the URA update.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

		Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
U-RNTI	CV-CCCH		U-RNTI	
			10.3.3.47	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
Lata militar also a la linda	011		10.3.3.36	
Integrity check info	СН		Integrity	Integrity check info is included
			check info	if integrity protection is applied
Into with a part action, and do info	OP		10.3.3.16	The LITE AND about direct
Integrity protection mode info	OP		Integrity	The UTRAN should not include this IF upless it is
			protection mode info	include this IE unless it is performing a SRNS relocation
			10.3.3.19	performing a SKNS relocation
Ciphering mode info	OP		Ciphering	
Cipriering mode into	OF		mode info	
			10.3.3.5	
New U-RNTI	OP		U-RNTI	
New O-KINTI	OI .		10.3.3.47	
New C-RNTI	OP		C-RNTI	
New O Kivii	O.		10.3.3.8	
RRC State Indicator	MP		RRC State	
Tito State marcater			Indicator	
			10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient			cycle length	
			coefficient	
			10.3.3.49	
CN Information Elements				
CN Information info	OP		CN	
			Information	
			info 10.3.1.3	
UTRAN mobility information				
elements				
URA identity	OP		URA identity	
			10.3.2.6	
RB information elements	0.0			
Downlink counter	OP			
synchronisation info	0.5	<b>.</b> .		T. 15
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
>>RB with PDCP information	MD	RABs>	DD with	lossless SRNS relocation
>>kb with PDCP information	MP		RB with PDCP	
	1	1	1 7007	
			information	

Condition	Explanation			
CCCH	This IE is mandatory present when CCCH is used and			
	not needed otherwise.			

# 10.2.62 UTRAN MOBILITY INFORMATION

This message is used by UTRAN to allocate a new RNTI and to convey other UTRAN mobility related information to a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE Information Elements				
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity protection mode info	OP		Integrity	The UTRAN should not
			protection	include this IE unless it is
			mode info	performing a SRNS relocation
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
UE Timers and constants in	OP		UE Timers	
connected mode			and	
			constants in	
			connected	
			mode	
			10.3.3.43	
CN Information Elements				
CN Information info	OP		CN	
			Information	
			info full	
			10.3.1.3a	
UTRAN Information Elements	1			
URA identity	OP		URA identity	
			10.3.2.6	
RB Information elements	1			
Downlink counter	OP			
synchronisation info	1			
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
	1	RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information	
			10.3.4.22	

## 3GPP TSG-RAN WG2 meeting #33 Sofia Antipolis, France, 11<sup>th</sup> – 15<sup>th</sup> November 2002

	CHANGE REQUEST								CR-Form-v7
ж	25.33	1 CR	1748	жrev	-	ж	Current version:	5.2.0	¥
	on using this f		e bottom of this				e pop-up text over	_	

Title:	ж	Integrity protection activations times		
Source:	æ	Ericsson		
Work item code:	: <b>Ж</b>	TEI	Date: ₩	2002-11-13
Category:	ж	A	Release: ೫	Rel-5
		Use one of the following categories:	Use <u>one</u> of	the following releases:
		<b>F</b> (correction)	2	(GSM Phase 2)
		A (corresponds to a correction in an earlier release)	R96	(Release 1996)
		<b>B</b> (addition of feature),	R97	(Release 1997)
		C (functional modification of feature)	R98	(Release 1998)
		<b>D</b> (editorial modification)	R99	(Release 1999)
		Detailed explanations of the above categories can	Rel-4	(Release 4)
		be found in 3GPP TR 21.900.	Rel-5	(Release 5)
			Rel-6	(Release 6)

#### Reason for change: ₩

- In the response message to UTRAN, the activation time in the IE "Integrity
  protection activation info" for the signalling radio bearer used for the
  reconfiguration message, should be included. But the value should be
  ignored by UTRAN. This needs to be clarified.
- 2. The CCCH on SRB 0 is also a signalling radio bearer. Ambiguous text is removed.
- 3. The current specification is slightly ambiguous as to the inclusion of IE " Integrity Protection Mode Info " in messages that can perform SRNS relocation.

#### Summary of change: ₩

- 1. In chapter 8.5.10.2, it is clarified that the activation time for the signalling radio bearer used for the reconfiguration message should be included in the response message to UTRAN, but the value should be ignored by UTRAN. Integrity protection is applied for the response message.
- 2. In chapter, 10.3.3.17, the text, CCCH = SRB 0, is removed.
- In chapter 10.2, the tabular section is updated with text in the semantics description clarifying that UTRAN should not include IE "Integrity Protection Mode Info" in those messages unless when performing SRNS relocation.

## **Backwards compatibility analysis:**

If the CR is not implemented, or implemented by only the UE or UTRAN:

Ambigous behaivour for integrity protection activation times.

UE or UTRAN may potentially have incorrect handling of integrity activation times

on SRBs where the message performing security configuration is transferred. The incorrect behavior may cause integrity protection to fail.

No impact for implementations that have assumed the intended behaviour.

\*\*Ambigous behaviour for integrity protection activation times. Integrity protection may not work if the specification is interpreted in the wrong way, leading to not beeing able to setup up a service to the UE.

#### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

## 8.5.10.2 Integrity protection in uplink

Prior to sending an RRC message using the signalling radio bearer with radio bearer identity n, and the "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started" the UE shall:

- 1> increment "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO with 1, even if the message is a retransmission of a previously transmitted message. When "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO becomes 0, the UE shall increment "Uplink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO with 1;
- 1> calculate the message authentication code in accordance with subclause 8.5.10.3;
- 1> replace the "Message authentication code" in the IE "Integrity check info" in the message with the calculated message authentication code;
- 1> replace the "RRC Message sequence number" in the IE "Integrity check info" in the message with contents set to the new value of the "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO.

In the response message for the procedure ordering the security reconfiguration, the UE indicates the activation time, for each signalling radio bearer except for the signalling radio bearer that was used for this security reconfiguration procedure. When the new integrity configuration is to be applied in uplink, UTRAN should start to apply the new integrity protection configuration according to the activation time for each signalling radio bearer (except for the signalling radio bearer which is used to send the message that is reconfiguring the security configuration) where the new configuration is to be applied starting from and including reception of the response message).

## 10.3.3.17 Integrity protection activation info

This IE contains the time, in terms of RRC sequence numbers, when a new integrity protection configuration shall be activated for the signalling radio bearers.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
RRC message sequence number list	MP	4 to 5		The RRC sequence number when a new integrity protection configuration shall be applied, for CCCH (=RB0) and signalling radio bearers in the order RB0, RB1, RB2, RB3, RB4.  The value for RB1 shall be ignored if this IE was included in a RRC message sent on RB1.  The value for RB2 shall be ignored if this IE was included in a RRC message sent on RB2.
>RRC message sequence	MP		Integer (0	
number	'''		15)	
Harrison	l	l	10)	

### 10.2.8 CELL UPDATE CONFIRM

This message confirms the cell update procedure and can be used to reallocate new RNTI information for the UE valid in the new cell.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE Information Elements	01/ 000//			
U-RNTI	CV-CCCH		U-RNTI	
RRC transaction identifier	MP		10.3.3.47 RRC	
Titto transaction identifier	IVII		transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
Integrity protection mode info	OP		10.3.3.16 Integrity	The UTRAN should not
integrity protection mode into			protection	include this IE unless it is
			mode info	performing a SRNS relocation
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
A stirration times	MD		10.3.3.5	Default value is "now"
Activation time	טוטו		Activation time 10.3.3.1	Default value is now
New U-RNTI	OP		U-RNTI	
11011 5 11111			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	
DDC Ctata Indicator	MD		10.3.3.9a RRC State	
RRC State Indicator	MP		Indicator	
			10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient			cycle length	
			coefficient	
RLC re-establish indicator (RB2,	MP		10.3.3.49 RLC re-	
RB3 and RB4)	IVIP		establish	
Tibe and Tib I)			indicator	
			10.3.3.35	
RLC re-establish indicator (RB5	MP		RLC re-	
and upwards)			establish	
			indicator 10.3.3.35	
CN Information Elements			10.3.3.33	
CN Information info	OP		CN	
			Information	
LITE AND COMPANY			info 10.3.1.3	
UTRAN Information Elements URA identity	OP			
ONA Identity	0-		URA identity 10.3.2.6	
RB information elements			10.0.2.0	
RB information to release list	OP	1 to		
		<maxrb></maxrb>		
>RB information to release	MP		RB	
			information	
			to release 10.3.4.19	
RB information to reconfigure list	OP	1 to	10.0.7.10	
-		<maxrb></maxrb>		
>RB information to reconfigure	MP		RB	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			information to reconfigure	
RB information to be affected list	OP	1 to <maxrb></maxrb>	10.3.4.18	
>RB information to be affected	MP	<iiidxnd></iiidxnd>	RB information to be affected 10.3.4.17	
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs&gt;</maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels  UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	MP		10.0.0.2	
>FDD	0.0		ODOLL LID	
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch &gt;</maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels  DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		

Information Element/Group name	Need	Multi	Type and reference	Semantics description
		>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88.	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode >FDD	MP			
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

Condition	Explanation
CCCH	This IE is mandatory present when CCCH is used and
	ciphering is not required and not needed otherwise.

# 10.2.9 COUNTER CHECK

This message is used by the UTRAN to indicate the current COUNT-C MSB values associated to each radio bearer utilising UM or AM RLC mode and to request the UE to compare these to its COUNT-C MSB values and to report the comparison results to UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Presence	Multi	IE type and reference	Semantics description
Message Type	MP			
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	MP		Integrity check info 10.3.3.16	
RB information elements				
RB COUNT-C MSB information	MP	1 to < maxRBallR ABs >		For each RB (excluding signalling radio bearers) using UM or AM RLC.
>RB COUNT-C MSB information	MP		RB COUNT- C MSB information 10.3.4.14	

# 10.2.10 COUNTER CHECK RESPONSE

This message is used by the UE to respond to a COUNTER CHECK message.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Presence	Multi	IE type and reference	Semantics description
Message Type	MP			
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	MP		Integrity check info 10.3.3.16	
RB information elements				
RB COUNT-C information	OP	1 to < maxRBallR ABs >		
>RB COUNT-C information	MP		RB COUNT- C information 10.3.4.15	

## 10.2.22 PHYSICAL CHANNEL RECONFIGURATION

This message is used by UTRAN to assign, replace or release a set of physical channels used by a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements			туре	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing a SRNS relocation
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a	
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a	
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49	
CN Information Elements				
CN Information info	OP		CN Information info 10.3.1.3	
UTRAN mobility information elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements				
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs&gt;</maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
PhyCH information elements	OD		F	
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing value of the maximum allowed UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>CPCH SET Info			CPCH SET Info	
>CPCH set ID			10.3.6.13 CPCH set ID	
201 CIT Set ID			10.3.5.3	
Downlink radio resources				
CHOICE mode	MP			
>FDD				
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

# 10.2.27 RADIO BEARER RECONFIGURATION

This message is sent from UTRAN to reconfigure parameters related to a change of QoS. This procedure can also change the multiplexing of MAC, reconfigure transport channels and physical channels.

RLC-SAP: AM or UM
Logical channel: DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing a SRNS relocation
Ciphering mode info	ОР		Ciphering mode info 10.3.3.5	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			10.3.3.9a	
RRC State Indicator	MP		RRC State	
			Indicator	
			10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient			cycle length	
			coefficient 10.3.3.49	
CN information elements			10.3.3.49	
CN Information info	OP		CN	
			Information	
			info 10.3.1.3	
UTRAN mobility information elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements	<u> </u>		10.3.2.0	
RAB information to reconfigure	OP	1 to <		
list	0.	maxRABse		
		tup >		
>RAB information to reconfigure	MP	•	RAB	
			information	
			to	
			reconfigure	
RB information to reconfigure list	MP	1to	10.3.4.11	Although this IE is not always
RB information to reconligure list	IVIP	<maxrb></maxrb>		required, need is MP to align
		(IIIaxIND)		with ASN.1
>RB information to reconfigure	MP		RB	Will 7 Col II 1
The same and the s			information	
			to	
			reconfigure	
			10.3.4.18	
RB information to be affected list	OP	1 to <maxrb></maxrb>		
>RB information to be affected	MP	<iiiaxnb></iiiaxnb>	RB	
>ND Illionnation to be directed	IVII		information	
			to be	
			affected	
			10.3.4.17	
TrCH Information Elements				
Uplink transport channels				
UL Transport channel	OP		UL Transport	
information common for all			channel	
transport channels			information	
			common for	
			all transport channels	
			10.3.5.24	
Deleted TrCH information list	OP	1 to		
		<maxtrch< td=""><td></td><td></td></maxtrch<>		
		>		
>Deleted UL TrCH information	MP		Deleted UL	
			TrCH	
			information	
Added or Reconfigured TrCH	OP	1 to	10.3.5.5	
information list		<maxtrch< td=""><td></td><td></td></maxtrch<>		
omadon iist		>		
>Added or Reconfigured UL	MP	1	Added or	
TrCH information			Reconfigure	
			d UL TrČH	
			information	
	<u> </u>		10.3.5.2	
CHOICE mode	OP			

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch &gt;</maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels				(
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode	MP			
>FDD				
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	MP	1 to <maxrl></maxrl>		Although this IE is not always required, need is MP to align with ASN.1

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
>Downlink information for each	MP		Downlink	
radio link			information	
			for each	
			radio link	
			10.3.6.27	

## 10.2.30 RADIO BEARER RELEASE

This message is used by UTRAN to release a radio bearer. It can also include modifications to the configurations of transport channels and/or physical channels. It can simultaneously indicate release of a signalling connection when UE is connected to more than one CN domain.

RLC-SAP: AM or UM
Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Type	
UE Information Elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Integrity protection mode info	OP		Integrity	The UTRAN should not
			protection	include this IE unless it is
			mode info	performing a SRNS relocation
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	
			10.3.3.9a	
RRC State Indicator	MP		RRC State	
The State Handale.			Indicator	
			10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient	"		cycle length	
Committee			coefficient	
			10.3.3.49	
CN Information Elements		1		
CN Information info	OP	1	CN	
o	] .		Information	
			info 10.3.1.3	
Signalling Connection release	OP	1	CN domain	
indication			identity	
			10.3.1.1	
UTRAN mobility information elements				
URA identity	OP	1	URA identity	
	]		10.3.2.6	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB Information Elements				
RAB information to reconfigure list	ОР	1 to < maxRABse tup >		
>RAB information to reconfigure	MP		RAB information to reconfigure 10.3.4.11	
RB information to release list	MP	1 to <maxrb></maxrb>		
>RB information to release	MP		RB information to release 10.3.4.19	
RB information to be affected list	OP	1 to <maxrb></maxrb>		
>RB information to be affected	MP		RB information to be affected 10.3.4.17	
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs&gt;</maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels  UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	OP			
>FDD >>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	ОР	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>TDD				(no data)
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP		10.0.0.00	
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode	MP			
>>DOWNlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

# 10.2.33 RADIO BEARER SETUP

This message is sent by UTRAN to the UE to establish new radio bearer(s). It can also include modifications to the configurations of transport channels and/or physical channels.

RLC-SAP: AM or UM Logical channel: DCCH Direction: UTRAN  $\rightarrow$  UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE Information Elements	NAD		DDO	
RRC transaction identifier	MP		RRC	
			transaction identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
3 4, 1 11			check info	
			10.3.3.16	
Integrity protection mode info	OP		Integrity	The UTRAN should not
			protection	include this IE unless it is
			mode info	performing a SRNS relocation
Cinharing made info	OP		10.3.3.19 Ciphering	
Ciphering mode info	I OP		mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
N. DOOLL DAIT	0.0		10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	
RRC State Indicator	MP		10.3.3.9a RRC State	
Tito State Indicator	IVII		Indicator	
			10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient			cycle length	
			coefficient	
ON Information Florida			10.3.3.49	
CN Information Elements CN Information info	OP		CN	
CN Information info	OP .		Information	
			info 10.3.1.3	
UTRAN mobility information				
elements				
URA identity	OP		URA identity	
DD Information Flores			10.3.2.6	
RB Information Elements Signalling RB information to	OP	1 to		For each signalling radio
setup list	OF	<maxsrbs< td=""><td></td><td>bearer established</td></maxsrbs<>		bearer established
octup not		etup>		Source Cotabiloried
>Signalling RB information to	MP		Signalling	
setup			RB	
			information	
			to setup	
DAD information to actualist	OP	1 to	10.3.4.24	For each RAB established
RAB information to setup list	UP	<pre>1 to <maxrabs< pre=""></maxrabs<></pre>		Ful each rad established
		etup>		
>RAB information for setup	MP	0.00	RAB	
•	1		information	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			for setup 10.3.4.10	
RB information to be affected list	OP	1 to <maxrb></maxrb>	10.0.1.10	
>RB information to be affected	MP	SIIIdAND	RB information to be affected 10.3.4.17	
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs&gt;</maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels  UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	OP			
>FDD	OD		ODOLL - 115	
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch &gt;</maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels  DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels10. 3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Deleted DL TrCH information	MP		Deleted DL	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch &gt;</maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode	MP			
>FDD				
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

# 10.2.50 TRANSPORT CHANNEL RECONFIGURATION

This message is used by UTRAN to configure the transport channel of a UE. This also includes a possible reconfiguration of physical channels. The message can also be used to assign a TFC subset and reconfigure physical channel.

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements			туре	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
Integrity protection mode info	OP		10.3.3.16 Integrity	The UTRAN should not
Integrity protection mode into	OP .		protection	include this IE unless it is
			mode info	performing a SRNS relocation
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
New U-RNTI	OP		time 10.3.3.1 U-RNTI	
INEW U-KINII	l OF		10.3.3.47	
New C-RNTI	OP		C-RNTI	
	0.		10.3.3.8	
New DSCH-RNTI	OP		DSCH-RNTI	
			10.3.3.9a	
RRC State Indicator	MP		RRC State	
			Indicator	
LITEAN DRY avale less eth	OP		10.3.3.35a UTRAN DRX	
UTRAN DRX cycle length coefficient	UP		cycle length	
Coefficient			coefficient	
			10.3.3.49	
CN Information Elements				
CN Information info	OP		CN	
			Information	
UTRAN mobility information			info 10.3.1.3	
elements				
URA identity	OP		URA identity	
			10.3.2.6	
RB information elements				
Downlink counter	OP			
synchronisation info	0.5			TI: 15: 1 10
>RB with PDCP information list	OP	1 to <maxrball< td=""><td></td><td>This IE is needed for each RB having PDCP in the case of</td></maxrball<>		This IE is needed for each RB having PDCP in the case of
	1	RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information 10.3.4.22	
TrCH Information Elements			10.0.7.22	
Uplink transport channels				
UL Transport channel	OP		UL Transport	
information common for all			channel	
transport channels			information	
			common for	
			all transport channels	
			10.3.5.24	
Added or Reconfigured TrCH	OP	1 to		
information list		<maxtrch< td=""><td></td><td></td></maxtrch<>		
	1	>	<b>.</b>	
>Added or Reconfigured UL	MP		Added or	
TrCH information			Reconfigure d UL TrCH	
	1			<u> </u>

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			information 10.3.5.2	
CHOICE mode	OP		10.3.3.2	
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch &gt;</maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels  DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch< td=""><td>10.3.3.0</td><td></td></maxtrch<>	10.3.3.0	
>Added or Reconfigured DL TrCH information	MP	>	Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP		10.0.0.00	
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources	MD			
CHOICE mode >FDD	MP			
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

## 10.2.61 URA UPDATE CONFIRM

This message confirms the URA update procedure and can be used to reallocate new RNTI information for the UE valid after the URA update.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

		Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
U-RNTI	CV-CCCH		U-RNTI	
			10.3.3.47	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
Lata militar also also info	011		10.3.3.36	
Integrity check info	СН		Integrity	Integrity check info is included
			check info	if integrity protection is applied
Intervity protection medicinfo	OP		10.3.3.16	The LITE AND about direct
Integrity protection mode info	OP		Integrity	The UTRAN should not include this IF upless it is
			protection mode info	include this IE unless it is performing a SRNS relocation
			10.3.3.19	performing a SKNS relocation
Ciphering mode info	OP		Ciphering	
Cipriering mode into	OF		mode info	
			10.3.3.5	
New U-RNTI	OP		U-RNTI	
New O-KINTI	OI .		10.3.3.47	
New C-RNTI	OP		C-RNTI	
New O Kivii	O.		10.3.3.8	
RRC State Indicator	MP		RRC State	
Tito State marcater			Indicator	
			10.3.3.35a	
UTRAN DRX cycle length	OP		UTRAN DRX	
coefficient			cycle length	
			coefficient	
			10.3.3.49	
CN Information Elements				
CN Information info	OP		CN	
			Information	
			info 10.3.1.3	
UTRAN mobility information				
elements				
URA identity	OP		URA identity	
			10.3.2.6	
RB information elements	0.0			
Downlink counter	OP			
synchronisation info	0.5	<b>.</b> .		T. 15
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
>>RB with PDCP information	MD	RABs>	DD with	lossless SRNS relocation
>>kb with PDCP information	MP		RB with PDCP	
	1	1	1 7007	
			information	

Condition	Explanation					
CCCH	This IE is mandatory present when CCCH is used and					
	not needed otherwise.					

# 10.2.62 UTRAN MOBILITY INFORMATION

This message is used by UTRAN to allocate a new RNTI and to convey other UTRAN mobility related information to a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE Information Elements				
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity protection mode info	OP		Integrity	The UTRAN should not
			protection	include this IE unless it is
			mode info	performing a SRNS relocation
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
UE Timers and constants in	OP		UE Timers	
connected mode			and	
			constants in	
			connected	
			mode	
			10.3.3.43	
CN Information Elements				
CN Information info	OP		CN	
			Information	
			info full	
			10.3.1.3a	
UTRAN Information Elements	1			
URA identity	OP		URA identity	
			10.3.2.6	
RB Information elements	1			
Downlink counter	OP			
synchronisation info	1			
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
	1	RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information	
			10.3.4.22	

# TSG-RAN Working Group 2 meeting #33 Sophia-Antipolis, France 12<sup>th</sup> – 15<sup>rd</sup> November 2002

R2-023109

	(	CHANG	SE REQI	UEST	CR-Form-v7
*	25.331 CR	1749	жrev	ж	Current version: 3.12.0 **

For <u><b>HELP</b></u> o	n u	sing this	form, see bo	ttom of this p	age or look at	the pop	o-up text	over the \$	ß symbols.
Proposed chang	ge a	affects:	UICC apps	# <u> </u>	ME X Radio	Access	s Netwoi	k X Cor	re Network
Title:	ж	Additio	nal measure	ments					
Source:	¥	Ericsso	n						
Work item code	<b>:</b> #	TEI					Date: ♯	October	2002
Category:	Ж	-				_	ease: ૠૢ		,
			of the followin	g categories:		Us	se <u>one</u> of 2		g releases:
		•	correction) corresponds to	a correction i	n an earlier relea	ase)	2 R96	(GSM Phas (Release 1	,
			addition of fea		ir air carner reice	430)	R97	(Release 1	,
				lification of fea	ture)		R98	(Release 1	,
		<b>D</b> (6	editorial modifi	ication)	,		R99	(Release 1	999)
				of the above ca	ategories can		Rel-4	(Release 4	,
		be found	in 3GPP TR 2	<u>21.900</u> .			Rel-5	(Release 5	,
							Rel-6	(Release 6	5)

Reason for change: 

It is currently unclear if an intra-frequency, inter-frequency or inter-RAT measurement configured with event based reporting, can be used as a referenced measurement in the IE "Addional Measurement List".

**Summary of change: \*\*** It is proposed to clarify in a new section it is not possible to have an intra-frequency, interfrequency or inter-RAT measurement configured with event based reporting as an additional measurement in another measurement.

As a result the following measurements are still suitable for referencing as additional measurement:

- A measurement of any measurement type except intra-frequency, inter-frequency or inter-RAT, configured with event based reporting;

### T1 impact:

No impact on T1 specifications is foreseen.

## **Impact analysis:**

**Impacted functionality**: Additional measurements

Clarification of a function where the specification is ambiguous.

A UE not implementing this CR will handle the indicated measurement configurations and thus comply already since the UE behaviour is clarified to be unspecified.

A UTRAN not implementing this CR would request measurements combinations for which it is not known how the UE will handle them.

Consequences if not approved:

**X** A UTRAN might assume that it is possible to use an intra-frequency, inter-frequency or inter-RAT measurement, configured with event based reporting as additional measurement.

Clauses affected:	₩ 8.4.1.3; 8.6.7.x(new)
Other specs affected:	Y N  X Other core specifications Test specifications O&M Specifications
Other comments:	lpha

### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

## 8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

#### The UE shall:

- 1> read the IE "Measurement command":
- 1> if the IE "Measurement command" has the value "setup":
  - 2> store this measurement in the variable MEASUREMENT\_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
  - 2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
    - 3> if the UE is in CELL\_FACH state:
      - 4> the UE behaviour is not specified.
  - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":
    - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; or
    - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:
      - 4> if the measurement is valid in the current RRC state of the UE:
        - 5> begin measurements according to the stored control information for this measurement identity.
  - 2> for measurement type "UE positioning measurement":
    - 3> if the UE is in CELL\_FACH state:
      - 4> if IE "Positioning Method" is set to "OTDOA":
        - 5> if IE "Method Type" is set to "UE assisted":
          - 6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:
            - 7> if System Information Block type 15.4 is broadcast:
              - 8> read System Information Block type 15.4.
            - 7> act as specified in subclause 8.6.7.19.2.
        - 5> if IE "Method Type" is set to "UE based":
          - 6> if IE "UE positioning OTDOA assistance data for UE based" is not included:
            - 7> if System Information Block type 15.5 is broadcast:
              - 8> read System Information Block type 15.5.
            - 7> act as specified in subclause 8.6.7.19.2a.
  - 2> for any other measurement type:
    - 3> if the measurement is valid in the current RRC state of the UE:
      - 4> begin measurements according to the stored control information for this measurement identity.

- 1> if the IE "Measurement command" has the value "modify":
  - 2> for all IEs present in the MEASUREMENT CONTROL message:
    - 3> if a measurement was stored in the variable MEASUREMENT\_IDENTITY associated to the identity by the IE "measurement identity":
      - 4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
        - 5> if the UE is in CELL\_FACH state:
          - 6> the UE behaviour is not specified.
      - 4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "inter-frequency measurement", for any of the optional IEs "Inter-frequency measurement quantity", "Inter-frequency reporting quantity", "Measurement Validity", "Inter-frequency set update" and "parameters required for each event" (given "report criteria" is set to either "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "inter-RAT measurement", for any of the optional IEs "Inter-RAT measurement objects list", "Inter-RAT measurement quantity", "Inter-RAT reporting quantity" and "parameters required for each event" (given "report criteria" is set to "inter-RAT measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning OTDOA assistance data" is present, for any of the optional IEs "UE positioning OTDOA neighbour cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-assisted", "UE positioning OTDOA neighbour cell info for UE-based", "UE positioning OTDOA neighbour cell info for UE-based" and "UE positioning" that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS navigation model", "UE positioning GPS ionospheric model", "UE positioning GPS ultromodel", "UE positioning GPS almanac", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "traffic volume measurement", for any of the optional IEs "Traffic volume measurement Object", "Traffic volume measurement quantity", "Traffic volume reporting quantity", "Measurement Validity" and "parameters required for each event" (given "report criteria" is set to "traffic volume measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "quality measurement", for any of the optional IE "Quality reporting quantity" that is present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE internal measurement", for any of the optional IEs "UE internal measurement quantity", "UE internal reporting quantity" and "parameters required for each event" (given "report criteria" is set to "UE internal measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
        - 5> replace the corresponding information (the IEs listed above and all their children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;
        - 5> leave all other stored information elements unchanged in the variable MEASUREMENT\_IDENTITY.

- 4> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 2> if measurement type is set to "inter-frequency measurement":
  - 3> if "report criteria" is set to "intra-frequency report criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
    - 4> leave the currently stored "inter-frequency report criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency report criteria" and intra-frequency reporting criteria.

#### 3> otherwise

- 4> clear the variables associated with the CHOICE "report criteria" and store the received "report criteria" choice:
- 4> if the IE "inter-frequency measurement quantity" is present:
  - 5> clear the variables associated with the choice "reporting criteria" in "inter-frequency measurement quantity" and store the received "reporting criteria" choice.
- 2> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:
  - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; and
  - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:
    - 4> resume the measurements according to the new stored measurement control information.
- 2> for any other measurement type:
  - 3> resume the measurements according to the new stored measurement control information.
- 1> if the IE "measurement command" has the value "release":
  - 2> terminate the measurement associated with the identity given in the IE "measurement identity";
  - 2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT\_IDENTITY.
- 1> if the IE "DPCH Compressed Mode Status Info" is present:
  - 2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IE 'TGMP' in variable TGPS\_IDENTITY):
    - 3> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
  - 2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS\_IDENTITY):
    - 3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
      - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;
      - 4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS\_IDENTITY to "inactive".
    - 3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
      - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.

- NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.
  - 2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:
    - 3> activate the pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and
    - 3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS\_IDENTITY to "active"; and
    - 3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
    - 3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:
      - 4> start the concerned pattern sequence immediately at that CFN.
  - 2> not alter pattern sequences stored in variable TGPS\_IDENTITY, if the pattern sequence is not identitifed in IE "TGPSI" in the received message.
- 1> if the UE in CELL\_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT\_IDENTITY:
  - 2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT\_IDENTITY; and
  - 2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT\_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.
- 1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE\_CAPABILITY\_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> if the UE "Additional Measurement List" is present:
  - 2> if the received measurement configuration in this MEASUREMENT CONTROL message, or any measurement identities in the "Additional Measurement List" do not all have the same validity:
    - 3> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

The UE may:

- 1> if the IE "Measurement command" has the value "setup":
  - 2> for measurement type "UE positioning measurement":
    - 3> if the UE is CELL\_FACH state:
      - 4> if IE "Positioning Method" is set to "GPS":
        - 5> if IE "UE positioning GPS assistance data" is not included and variable UE\_POSITIONING\_GPS\_DATA is empty:
          - 6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:
            - 7> read System Information Block types 15, 15.1, 15.2 and 15.3.
          - 6> act as specified in subclause 8.6.7.19.3.

1> and the procedure ends.

### 8.6.7.x Additional Measurement List

### If the IE "Additional Measurement List" is received in a MEASUREMENT CONTROL message:

- 1> if the received measurement configuration in this MEASUREMENT CONTROL message, or any measurement referenced in the "Additional Measurement List" do not all have the same validity:
- 2> set the variable CONFIGURATION INCOMPLETE to TRUE.
- 1> if any of the measurements referenced in the "Additional Measurement List" is an intra-frequency, interfrequence or inter-RAT measurement, and this measurement is configured with event based reporting:
  - 2> the UE behaviour is not specified.
- If the measurement configured with the MEASUREMENT CONTROL message triggers a measurement report, the UE shall also include the reporting quantities for the measurements referenced by the additional measurement identities. The contents of the IE "Additional Measured results" is completely determined by the measurement configuration of the referenced additional measurement.

# TSG-RAN Working Group 2 meeting #33 Sophia-Antipolis, France 12<sup>th</sup> – 15<sup>rd</sup> November 2002

R2-023110

CHANGE REQUEST									
*	25.331 CR	1750	⊭ rev	¥	Current version:	4.7.0	ж		

For <b>HELP</b>	on us	sing this	form, see b	ottom of th	is page or	look at the	е рор-ир	text	over the	symbols.
Proposed char	nge a	affects:	UICC app	os#	MEX	Radio Ad	ccess Ne	twor	k X Core	e Network
Title:	ж	Additio	nal measur	ements						
Source:	¥	Ericsso	n							
Work item cod	'e:₩	TEI					Date	e: #	October 2	2002
Category:	¥	Α					Release		-	
		F (0 A (0 B (3 C (1) D (0 Detailed	of the follow.correction) corresponds addition of fe iunctional mod editorial mod explanations in 3GPP TR	to a correcti ature), odification of lification)	on in an ear feature)		2	 3 3 3 9 -4 -5	the following (GSM Phas (Release 19 (Release 19 (Release 19 (Release 4) (Release 5)	e 2) 996) 997) 998) 999)

Reason for change: 

It is currently unclear if an intra-frequency, inter-frequency or inter-RAT measurement configured with event based reporting, can be used as a referenced measurement in the IE "Addional Measurement List".

**Summary of change: \*\*** It is proposed to clarify in a new section it is not possible to have an intra-frequency, interfrequency or inter-RAT measurement configured with event based reporting as an additional measurement in another measurement.

As a result the following measurements are still suitable for referencing as additional measurement:

- A measurement of any measurement type except intra-frequency, inter-frequency or inter-RAT, configured with event based reporting;

### T1 impact:

No impact on T1 specifications is foreseen.

## **Impact analysis:**

**Impacted functionality**: Additional measurements

Clarification of a function where the specification is ambiguous.

A UE not implementing this CR will handle the indicated measurement configurations and thus comply already since the UE behaviour is clarified to be unspecified.

A UTRAN not implementing this CR would request measurements combinations for which it is not known how the UE will handle them.

Consequences if not approved:

**\*\*** A UTRAN might assume that it is possible to use an intra-frequency, inter-frequency or inter-RAT measurement, configured with event based reporting as additional measurement.

Clauses affected:	₩ 8.4.1.3; 8.6.7.x(new)
Other specs affected:	Y N  X Other core specifications Test specifications O&M Specifications
Other comments:	lpha

### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked **%** contain pop-up help information about the field that they are closest to.
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## 8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

#### The UE shall:

- 1> read the IE "Measurement command":
- 1> if the IE "Measurement command" has the value "setup":
  - 2> store this measurement in the variable MEASUREMENT\_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
  - 2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
    - 3> if the UE is in CELL\_FACH state:
      - 4> the UE behaviour is not specified.
  - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":
    - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; or
    - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:
      - 4> if the measurement is valid in the current RRC state of the UE:
        - 5> begin measurements according to the stored control information for this measurement identity.
  - 2> for measurement type "UE positioning measurement":
    - 3> if the UE is in CELL\_FACH state:
      - 4> if IE "Positioning Method" is set to "OTDOA":
        - 5> if IE "Method Type" is set to "UE assisted":
          - 6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:
            - 7> if System Information Block type 15.4 is broadcast:
              - 8> read System Information Block type 15.4.
            - 7> act as specified in subclause 8.6.7.19.2.
        - 5> if IE "Method Type" is set to "UE based":
          - 6> if IE "UE positioning OTDOA assistance data for UE based" is not included:
            - 7> if System Information Block type 15.5 is broadcast:
              - 8> read System Information Block type 15.5.
            - 7> act as specified in subclause 8.6.7.19.2a.
  - 2> for any other measurement type:
    - 3> if the measurement is valid in the current RRC state of the UE:
      - 4> begin measurements according to the stored control information for this measurement identity.

- 1> if the IE "Measurement command" has the value "modify":
  - 2> for all IEs present in the MEASUREMENT CONTROL message:
    - 3> if a measurement was stored in the variable MEASUREMENT\_IDENTITY associated to the identity by the IE "measurement identity":
      - 4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
        - 5> if the UE is in CELL\_FACH state:
          - 6> the UE behaviour is not specified.
      - 4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "inter-frequency measurement", for any of the optional IEs "Inter-frequency measurement quantity", "Inter-frequency reporting quantity", "Measurement Validity", "Inter-frequency set update" and "parameters required for each event" (given "report criteria" is set to either "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "inter-RAT measurement", for any of the optional IEs "Inter-RAT measurement objects list", "Inter-RAT measurement quantity", "Inter-RAT reporting quantity" and "parameters required for each event" (given "report criteria" is set to "inter-RAT measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning OTDOA assistance data" is present, for any of the optional IEs "UE positioning OTDOA neighbour cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-assisted", "UE positioning OTDOA neighbour cell info for UE-based", "UE positioning OTDOA neighbour cell info for UE-based" and "UE positioning" that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS navigation model", "UE positioning GPS ionospheric model", "UE positioning GPS ultromodel", "UE positioning GPS almanac", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "traffic volume measurement", for any of the optional IEs "Traffic volume measurement Object", "Traffic volume measurement quantity", "Traffic volume reporting quantity", "Measurement Validity" and "parameters required for each event" (given "report criteria" is set to "traffic volume measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "quality measurement", for any of the optional IE "Quality reporting quantity" that is present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE internal measurement", for any of the optional IEs "UE internal measurement quantity", "UE internal reporting quantity" and "parameters required for each event" (given "report criteria" is set to "UE internal measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
        - 5> replace the corresponding information (the IEs listed above and all their children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;
        - 5> leave all other stored information elements unchanged in the variable MEASUREMENT\_IDENTITY.

- 4> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 2> if measurement type is set to "inter-frequency measurement":
  - 3> if "report criteria" is set to "intra-frequency report criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
    - 4> leave the currently stored "inter-frequency report criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency report criteria" and intra-frequency reporting criteria.

#### 3> otherwise

- 4> clear the variables associated with the CHOICE "report criteria" and store the received "report criteria" choice;
- 4> if the IE "inter-frequency measurement quantity" is present:
  - 5> clear the variables associated with the choice "reporting criteria" in "inter-frequency measurement quantity" and store the received "reporting criteria" choice.
- 2> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:
  - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; and
  - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:
    - 4> resume the measurements according to the new stored measurement control information.
- 2> for any other measurement type:
  - 3> resume the measurements according to the new stored measurement control information.
- 1> if the IE "measurement command" has the value "release":
  - 2> terminate the measurement associated with the identity given in the IE "measurement identity";
  - 2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT\_IDENTITY.
- 1> if the IE "DPCH Compressed Mode Status Info" is present:
  - 2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IE 'TGMP' in variable TGPS\_IDENTITY):
    - 3> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
  - 2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS\_IDENTITY):
    - 3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
      - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;
      - 4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS\_IDENTITY to "inactive".
    - 3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
      - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.

- NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.
  - 2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:
    - 3> activate the pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and
    - 3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS\_IDENTITY to "active"; and
    - 3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
    - 3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:
      - 4> start the concerned pattern sequence immediately at that CFN.
  - 2> not alter pattern sequences stored in variable TGPS\_IDENTITY, if the pattern sequence is not identitifed in IE "TGPSI" in the received message.
- 1> if the UE in CELL\_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT\_IDENTITY:
  - 2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT\_IDENTITY; and
  - 2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT\_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.
- 1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE\_CAPABILITY\_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> if the UE "Additional Measurement List" is present:
  - 2> if the received measurement configuration in this MEASUREMENT CONTROL message, or any measurement identities in the "Additional Measurement List" do not all have the same validity:
    - 3> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

The UE may:

- 1> if the IE "Measurement command" has the value "setup":
  - 2> for measurement type "UE positioning measurement":
    - 3> if the UE is CELL\_FACH state:
      - 4> if IE "Positioning Method" is set to "GPS":
        - 5> if IE "UE positioning GPS assistance data" is not included and variable UE\_POSITIONING\_GPS\_DATA is empty:
          - 6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:
            - 7> read System Information Block types 15, 15.1, 15.2 and 15.3.
          - 6> act as specified in subclause 8.6.7.19.3.

1> and the procedure ends.

### 8.6.7.x Additional Measurement List

### If the IE "Additional Measurement List" is received in a MEASUREMENT CONTROL message:

- 1> if the received measurement configuration in this MEASUREMENT CONTROL message, or any measurement referenced in the "Additional Measurement List" do not all have the same validity:
- 2> set the variable CONFIGURATION INCOMPLETE to TRUE.
- 1> if any of the measurements referenced in the "Additional Measurement List" is an intra-frequency, interfrequence or inter-RAT measurement, and this measurement is configured with event based reporting:
  - 2> the UE behaviour is not specified.
- If the measurement configured with the MEASUREMENT CONTROL message triggers a measurement report, the UE shall also include the reporting quantities for the measurements referenced by the additional measurement identities. The contents of the IE "Additional Measured results" is completely determined by the measurement configuration of the referenced additional measurement.

# TSG-RAN Working Group 2 meeting #33 Sophia-Antipolis, France 12<sup>th</sup> – 15<sup>rd</sup> November 2002

R2-023111

CHANGE REQUEST								
ж	25.331 CR	1751	жrev	ж	Current version:	5.2.0	*	

For <u><b>HELP</b></u> o	n us	ing this form, see bottom of this page or look at the	pop-up text	fover the # symbols.
Proposed chang	ge a	ffects: UICC apps₩ ME X Radio Acc	cess Netwo	rk X Core Network
Title:	ж	Additional measurements		
Source:	$\mathfrak{R}$	Ericsson		
Work item code	<i>:</i> Ж	TEI	Date: ♯	October 2002
Category:	*	A 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.	2	Rel-5 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)

Reason for change: 

It is currently unclear if an intra-frequency, inter-frequency or inter-RAT measurement configured with event based reporting, can be used as a referenced measurement in the IE "Addional Measurement List".

**Summary of change: \*\*** It is proposed to clarify in a new section it is not possible to have an intra-frequency, interfrequency or inter-RAT measurement configured with event based reporting as an additional measurement in another measurement.

As a result the following measurements are still suitable for referencing as additional measurement:

- A measurement of any measurement type except intra-frequency, inter-frequency or inter-RAT, configured with event based reporting;

### T1 impact:

No impact on T1 specifications is foreseen.

## **Impact analysis:**

**Impacted functionality**: Additional measurements

Clarification of a function where the specification is ambiguous.

A UE not implementing this CR will handle the indicated measurement configurations and thus comply already since the UE behaviour is clarified to be unspecified.

A UTRAN not implementing this CR would request measurements combinations for which it is not known how the UE will handle them.

Consequences if not approved:

**X** A UTRAN might assume that it is possible to use an intra-frequency, inter-frequency or inter-RAT measurement, configured with event based reporting as additional measurement.

Clauses affected:	₩ 8.4.1.3; 8.6.7.x(new)
Other specs affected:	Y N  X Other core specifications Test specifications O&M Specifications
Other comments:	lpha

### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

## 8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

#### The UE shall:

- 1> read the IE "Measurement command":
- 1> if the IE "Measurement command" has the value "setup":
  - 2> store this measurement in the variable MEASUREMENT\_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
  - 2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
    - 3> if the UE is in CELL\_FACH state:
      - 4> the UE behaviour is not specified.
  - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":
    - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; or
    - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:
      - 4> if the measurement is valid in the current RRC state of the UE:
        - 5> begin measurements according to the stored control information for this measurement identity.
  - 2> for measurement type "UE positioning measurement":
    - 3> if the UE is in CELL\_FACH state:
      - 4> if IE "Positioning Method" is set to "OTDOA":
        - 5> if IE "Method Type" is set to "UE assisted":
          - 6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:
            - 7> if System Information Block type 15.4 is broadcast:
              - 8> read System Information Block type 15.4.
            - 7> act as specified in subclause 8.6.7.19.2.
        - 5> if IE "Method Type" is set to "UE based":
          - 6> if IE "UE positioning OTDOA assistance data for UE based" is not included:
            - 7> if System Information Block type 15.5 is broadcast:
              - 8> read System Information Block type 15.5.
            - 7> act as specified in subclause 8.6.7.19.2a.
  - 2> for any other measurement type:
    - 3> if the measurement is valid in the current RRC state of the UE:
      - 4> begin measurements according to the stored control information for this measurement identity.

- 1> if the IE "Measurement command" has the value "modify":
  - 2> for all IEs present in the MEASUREMENT CONTROL message:
    - 3> if a measurement was stored in the variable MEASUREMENT\_IDENTITY associated to the identity by the IE "measurement identity":
      - 4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
        - 5> if the UE is in CELL\_FACH state:
          - 6> the UE behaviour is not specified.
      - 4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "inter-frequency measurement", for any of the optional IEs "Inter-frequency measurement quantity", "Inter-frequency reporting quantity", "Measurement Validity", "Inter-frequency set update" and "parameters required for each event" (given "report criteria" is set to either "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "inter-RAT measurement", for any of the optional IEs "Inter-RAT measurement objects list", "Inter-RAT measurement quantity", "Inter-RAT reporting quantity" and "parameters required for each event" (given "report criteria" is set to "inter-RAT measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning OTDOA assistance data" is present, for any of the optional IEs "UE positioning OTDOA neighbour cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-assisted", "UE positioning OTDOA neighbour cell info for UE-based", "UE positioning OTDOA neighbour cell info for UE-based" and "UE positioning" that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS navigation model", "UE positioning GPS ionospheric model", "UE positioning GPS ultromodel", "UE positioning GPS almanac", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "traffic volume measurement", for any of the optional IEs "Traffic volume measurement Object", "Traffic volume measurement quantity", "Traffic volume reporting quantity", "Measurement Validity" and "parameters required for each event" (given "report criteria" is set to "traffic volume measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "quality measurement", for any of the optional IE "Quality reporting quantity" that is present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE internal measurement", for any of the optional IEs "UE internal measurement quantity", "UE internal reporting quantity" and "parameters required for each event" (given "report criteria" is set to "UE internal measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
        - 5> replace the corresponding information (the IEs listed above and all their children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;
        - 5> leave all other stored information elements unchanged in the variable MEASUREMENT\_IDENTITY.

- 4> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 2> if measurement type is set to "inter-frequency measurement":
  - 3> if "report criteria" is set to "intra-frequency report criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
    - 4> leave the currently stored "inter-frequency report criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency report criteria" and intra-frequency reporting criteria.

#### 3> otherwise

- 4> clear the variables associated with the CHOICE "report criteria" and store the received "report criteria" choice;
- 4> if the IE "inter-frequency measurement quantity" is present:
  - 5> clear the variables associated with the choice "reporting criteria" in "inter-frequency measurement quantity" and store the received "reporting criteria" choice.
- 2> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:
  - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; and
  - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:
    - 4> resume the measurements according to the new stored measurement control information.
- 2> for any other measurement type:
  - 3> resume the measurements according to the new stored measurement control information.
- 1> if the IE "measurement command" has the value "release":
  - 2> terminate the measurement associated with the identity given in the IE "measurement identity";
  - 2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT\_IDENTITY.
- 1> if the IE "DPCH Compressed Mode Status Info" is present:
  - 2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IE 'TGMP' in variable TGPS\_IDENTITY):
    - 3> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
  - 2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS\_IDENTITY):
    - 3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
      - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;
      - 4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS\_IDENTITY to "inactive".
    - 3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
      - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.

- NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.
  - 2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:
    - 3> activate the pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and
    - 3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS\_IDENTITY to "active"; and
    - 3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
    - 3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:
      - 4> start the concerned pattern sequence immediately at that CFN.
  - 2> not alter pattern sequences stored in variable TGPS\_IDENTITY, if the pattern sequence is not identitifed in IE "TGPSI" in the received message.
- 1> if the UE in CELL\_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT\_IDENTITY:
  - 2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT\_IDENTITY; and
  - 2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT\_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.
- 1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE\_CAPABILITY\_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> if the UE "Additional Measurement List" is present:
  - 2> if the received measurement configuration in this MEASUREMENT CONTROL message, or any measurement identities in the "Additional Measurement List" do not all have the same validity:
    - 3> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

The UE may:

- 1> if the IE "Measurement command" has the value "setup":
  - 2> for measurement type "UE positioning measurement":
    - 3> if the UE is CELL\_FACH state:
      - 4> if IE "Positioning Method" is set to "GPS":
        - 5> if IE "UE positioning GPS assistance data" is not included and variable UE\_POSITIONING\_GPS\_DATA is empty:
          - 6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:
            - 7> read System Information Block types 15, 15.1, 15.2 and 15.3.
          - 6> act as specified in subclause 8.6.7.19.3.

1> and the procedure ends.

### 8.6.7.x Additional Measurement List

### If the IE "Additional Measurement List" is received in a MEASUREMENT CONTROL message:

- 1> if the received measurement configuration in this MEASUREMENT CONTROL message, or any measurement referenced in the "Additional Measurement List" do not all have the same validity:
- 2> set the variable CONFIGURATION INCOMPLETE to TRUE.
- 1> if any of the measurements referenced in the "Additional Measurement List" is an intra-frequency, interfrequence or inter-RAT measurement, and this measurement is configured with event based reporting:
  - 2> the UE behaviour is not specified.
- If the measurement configured with the MEASUREMENT CONTROL message triggers a measurement report, the UE shall also include the reporting quantities for the measurements referenced by the additional measurement identities. The contents of the IE "Additional Measured results" is completely determined by the measurement configuration of the referenced additional measurement.

ME X Radio Access Network X Core Network

## 3GPP TSG-RAN WG2 Meeting #33 Sophia Antipolis, France, 12-15 November 2002

UICC apps₩

Proposed change affects:

CHANGE REQUEST								CR-Form-v
H	25.331 CR	1803	<b>≋ rev</b>	-	ж	Current version:	5.2.0	¥
	25.331 CR on using this form, se							

Title:	ж	Use of DCH Quality Target with Blind Transport F	ormat Detect	ion
Source:	$\mathfrak{H}$	Motorola		
Work item code.	:₩	TEI	Date: ₩	11/10/02
Category:	$\mathfrak{R}$	A	Release: ₩	Rel-5
		Use <u>one</u> of the following categories:	Use <u>one</u> of	the following releases:
		<b>F</b> (correction)		(GSM Phase 2)
		A (corresponds to a correction in an earlier release	e) R96	(Release 1996)
		<b>B</b> (addition of feature),	R97	(Release 1997)
		C (functional modification of feature)		(Release 1998)
		<b>D</b> (editorial modification)		(Release 1999)
		Detailed explanations of the above categories can		(Release 4)
		be found in 3GPP <u>TR 21.900</u> .		(Release 5)
			Rel-6	(Release 6)

Reason for change: #	The note in section 8.6.5.4 correctly describes the cases in which the UE can adjust its SIR target. However, the note implies that it is not possible for the UE to maintain an quality target in the case that the UE is configured to use blind transport format detection and the transport channel does not have a CRC in every transport format. This implication is not immediately obvious from the existing note and so it is proposed that this is also captured.
Summary of change: 第	The following sentence is added to the existing note in section 8.6.5.4:
	The UE can not maintain the quality target of a transport channel in the case that a CRC does not exist in all transport formats and blind transport format detection is used
	Isolated Impact Analysis Functionality corrected: Downlink outer loop power control
	Isolated impact statement: Correction to a function where specification was not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.
Consequences if # not approved:	If the CR is not approved then it will not be clear that some configurations exits where it is not possible for the UE to correctly maintain a DCH quality target. If a network used one of these configurations then it could result in a transport

Clauses affected: # 8.6.5.4

network.

channel suffering a significantly worse block error rate than that requested by the

Other specs affected:	¥	Υ	X	Other core specifications Test specifications O&M Specifications	¥	
Other comments:	¥					

#### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

## 8.6.5.4 DCH quality target

If the IE "DCH quality target" is included, the UE shall:

- 1> set, at physical channel establishment, an initial downlink target SIR value based on the received IE "DCH quality target";
- 1> adjust the target SIR for the downlink power control to meet the quality target received in the IE "DCH quality target".

NOTE: Adjusting the target SIR is possible to do continuously by the UE if a CRC exists in all transport formats in the downlink TFS for a DCH. If a CRC does not exist in all transport formats, the UE can only adjust the target SIR when receiving transport formats containing a CRC and the UE has knowledge about the transport format according to [27].

NOTE: If the UTRAN configures a UE to use blind transport format detection, and configures a transport channel such that single transport format detection [27] must be used to detect the TF then it is not possible for the UE to maintain a quality target for that transport channel.