

TSG-RAN Meeting #23
Phoenix, 10-12 March 2004

RP-040108

Title: CRs on 25.331 (2) (Rel-5 onwards)

Source: TSG-RAN WG2

Agenda item: 7.3.5

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Workitem
25.331	2262	-	Rel-5	HSDPA related corrections on buffer flushing on state transitions, RAT transitions, error cases, MAC-hs reconfiguration and readiness to receive HS-PDSCH	F	5.7.1	5.8.0	R2-040662	HSDPA_L23
25.331	2263	-	Rel-6	HSDPA related corrections on buffer flushing on state transitions, RAT transitions, error cases, MAC-hs reconfiguration and readiness to receive HS-PDSCH	A	6.0.1	6.1.0	R2-040663	HSDPA_L23
25.331	2266	1	Rel-5	Modification of Inter-frequency CELL_INFO_LIST	F	5.7.1	5.8.0	R2-040727	TEI5
25.331	2267	1	Rel-6	Modification of Inter-frequency CELL_INFO_LIST	A	6.0.1	6.1.0	R2-040728	TEI5
25.331	2268	-	Rel-5	[VAS] 1B-1C conflicts when 1A is not configured	F	5.7.1	5.8.0	R2-040668	TEI5
25.331	2269	-	Rel-6	[VAS] 1B-1C conflicts when 1A is not configured	A	6.0.1	6.1.0	R2-040669	TEI5
25.331	2270	-	Rel-5	Handling of wait time in RRC connection reject	F	5.7.1	5.8.0	R2-040672	TEI5
25.331	2271	-	Rel-6	Handling of wait time in RRC connection reject	A	6.0.1	6.1.0	R2-040673	TEI5
25.331	2273	-	Rel-5	Misalignments between R'99 and Rel-5 procedures	F	5.7.1	5.8.0	R2-040683	TEI5
25.331	2274	-	Rel-6	Misalignments between R'99 and Rel-5 procedures	A	6.0.1	6.1.0	R2-040684	TEI5

CHANGE REQUEST

25.331 CR 2262 # rev # Current version: 5.7.1

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

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

Title:	# HSDPA related corrections on buffer flushing on state transitions, RAT transitions, error cases, MAC-hs reconfiguration and readiness to receive HS-PDSCH		
Source:	# RAN WG2		
Work item code:	# HSDPA_L23	Date:	# February 12, 2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 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)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change: #H 1. The current specification does not state what the UE is to do with the MAC-hs PDUs still in the re-ordering buffer when transitioning to a RRC state other than CELL_DCH and when transitioning to another RAT either due to Handover or Cell Change Order. This is especially the case if the network does not set the MAC_hs reset indicator to TRUE. This latter possibility in fact doesn't exist for the Inter-RAT messages.

2. UE actions in case of Radio Link failure are stated from a HS-DSCH perspective. Similar actions would be expected in case of RLC unrecoverable error causing a move to CELL_FACH to send the CELL UPDATE with the corresponding cause. UE should stop receiving HS-PDSCH. This action is missing.

3. Since a UE starts decoding the HS_SCCH channel as soon as the Downlink HS-PDSCH information is provided to it, it is necessary to ensure that the network has provided it with the necessary radio bearer and transport channel configuration. Else the UE would be decoding physical channel for which there is no transport channel/radio bearer mapping. While this is clearly an incorrect configuration on the network's part a clear UE behavior would be useful in terms of when exactly it should start decoding the physical channel. **In addition the UE is required to have the deltaACK and deltaNACK, and the Ack-Nack repetition factor information sent in the IE "Uplink DPCH Power control info". Unless this information is available to the UE, it cannot send corresponding ACK/NACK information.**

4 Void

5. The current UE behavior for the mapping of MAC-d PDU sizes and indices in

not clear. It is not clear for e.g. if a MAC-d PDU size index is missing whether it is still valid.

6. When the parameters of an individual MAC-hs queue are modified (for e.g. T1, MAC-hs queue to MAC-d flow mapping) UE actions are not clear. The UE actions for the T1 timer are proposed in a companion but independent CR to TS 25.321.

Summary of change: ⌘

1, 2: It is stated that the UE shall stop receiving HS-PDSCH, delete the H-RNTI and remove all configuration information regarding the HS-PDSCH. The UE shall also release the soft buffer resources allocated for HARQ. Further it is stated that the UE shall reset the MAC-hs entity causing all MAC-hs PDUs in the re-ordering buffer being released to the upper layers. The current actions in the Radio Link Failure subclause are deleted since the addition to the CELL UPDATE procedure now captures this for both Radio Link Failure and RLC unrecoverable error.

3. Having stored information for the radio bearer and transport channel configuration for the HS-PDSCH is added as a criterion to setting the variable HS_DSCH_RECEPTION to TRUE. **It is clarified that the UE shall not set the variable HS_DSCH_RECEPTION to TRUE unless the necessary information related to the sending of ACK/NACK has been sent by the network (change made in 8.6.6.32). This option is chosen over setting INVALID_CONFIGURATION to TRUE. The requirement is however on the network to send the needed information while ensuring that the UE is not required to unnecessarily receive and process the HS-SCCH and HS-PDSCH channels**

4. Void

5. The UE behaviour with respect to both missing and present MAC-d PDU size index is explicitly stated.

6. UE actions in the case the MAC_d flow mapping is reconfigured are stated. It is specified that the UE shall overwrite the stored MAC-hs Queue – MAC-d Flow mapping if a mapping is provided in the current message. (Note – while in one message it is not possible to map a MAC-hs queue to two MAC-d flows, it is not obvious that this shall be prohibited using multiple messages. This correction ensures that this is not allowed).

Consequences if not approved:

⌘ 1,2 : Incomplete specification with respect to handling of PDUs in re-ordering buffer and the UE has moved to CELL FACH for whatever reason. UTRAN would need not be aware right away of the RLC status in case the UE is maintained in CELL_FACH state. In particular if there are only a few PDUs remaining to be transferred and the UTRAN prefers to perform this transmission in CELL_FACH this would not be possible until a finite time has elapsed.

3. Incorrect definition of when the UE should start receiving the HS-PDSCH.

4. Void.

5, 6. Incomplete specification wrt handling of reconfiguration of MAC_hs parameters leading to inconsistency between network and UE.

Clauses affected:

⌘ 8.2.2.3, 8.2.2.7, 8.3.1.2, 8.3.7.3, 8.3.7.5, 8.3.11.3, 8.3.11.5, 8.5.6, 8.6.5.5a, 8.6.6.32.

Other specs affected:

Y	N		⌘
	X	Other core specifications	
	X	Test specifications	
	X	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 <http://www.3gpp.org/specs/CR.htm>.

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 <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.

8.2.2.3 Reception of RADIO BEARER SETUP or RADIO BEARER RECONFIGURATION or RADIO BEARER RELEASE or TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION message by the UE

The UE shall:

1> be able to receive any of the following messages:

2> RADIO BEARER SETUP message; or

2> RADIO BEARER RECONFIGURATION message; or

2> RADIO BEARER RELEASE message; or

2> TRANSPORT CHANNEL RECONFIGURATION message; or

2> PHYSICAL CHANNEL RECONFIGURATION message;

1> perform a hard handover and apply physical layer synchronisation procedure A as specified in [29], even if no prior UE measurements have been performed on the target cell and/or frequency.

If the UE receives:

- a RADIO BEARER SETUP message; or

- a RADIO BEARER RECONFIGURATION message; or

- a RADIO BEARER RELEASE message; or

- a TRANSPORT CHANNEL RECONFIGURATION message; or

- a PHYSICAL CHANNEL RECONFIGURATION message;

it shall:

1> set the variable ORDERED_RECONFIGURATION to TRUE;

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

1> act upon all received information elements as specified in subclause 8.6, unless specified in the following and perform the actions below.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

1> in FDD, if the IE "PDSCH code mapping" is included but the IE "PDSCH with SHO DCH Info" is not included and if the DCH has only one link in its active set:

2> act upon the IE "PDSCH code mapping" as specified in subclause 8.6; and

2> infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted.

1> enter a state according to subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

- 1> in FDD; or
- 1> in TDD when "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 2> remove any C-RNTI from MAC;
 - 2> clear the variable C_RNTI.

If after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> stop any HS-DSCH reception procedures; ~~according to the stored HS-PDSCH configuration;~~
- 1> clear any stored HS-PDSCH configuration;
- 1> ~~act as if the IE "MAC-hs reset indicator" is received and set to TRUE;~~
- 1> release all HARQ resources;
- 1> remove any H-RNTI stored;
- 1> clear the variable H_RNTI;
- 1> set the variable HS_DSCH_RECEPTION to FALSE.

~~NOTE: Unless explicitly deleted by UTRAN, on state transitions the UE will continue to maintain all other information related to the HS-DSCH configuration if already stored.~~

~~NOTE: If configured for HS-DSCH, the UE will have still stored the IEs "Added or Reconfigured MAC-d flow" and "RB mapping Info"~~

In FDD, if after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> remove any DSCH-RNTI from MAC;
- 1> clear the variable DSCH_RNTI.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> in TDD:
 - 2> if "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 3> remove any C-RNTI from MAC;
 - 3> clear the variable C_RNTI.
- 1> if "DPCH frame offset" is included for one or more RLS in the active set:
 - 2> use its value to determine the beginning of the DPCH frame in accordance with the following:
 - 3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH frame offset currently used by the UE:
 - 4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).
 - 3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:

4> set the variable INVALID_CONFIGURATION to TRUE.

3> and the procedure ends.

2> adjust the radio link timing accordingly.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4] on that frequency;

2> if the UE finds a suitable UTRA cell on that frequency:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> when the cell update procedure completed successfully:

5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:

3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

3> when the cell update procedure completed successfully:

4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4];

2> if the UE finds a suitable UTRA cell on the current frequency:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> when the cell update procedure completed successfully:

5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

2> else, if the UE can not find a suitable UTRA cell on the current frequency but it finds a suitable UTRA cell on another frequency:

3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

3> when the cell update procedure completed successfully:

4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;

- 1> select PRACH according to subclause 8.5.17;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> use the transport format set given in system information;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.
- 1> if the contents of the variable C_RNTI is empty:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.

If the UE was in CELL_FACH state upon reception of the reconfiguration message and remains in CELL_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the UE finds a suitable UTRA cell on that frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> if the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) is included the UE shall either:
 - 3> ignore the content of the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) and proceed as below;
 - 2> or:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CPCH info" (for TDD), and it is different from the current cell:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> when the cell update procedure completed successfully:

5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

If after state transition the UE enters CELL_PCH or URA_PCH state, the UE shall:

1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:

2> set the variable INVALID_CONFIGURATION to TRUE.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or

1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:

2> if the variable PDCP_SN_INFO is empty:

3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".

2> else:

3> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "stop";

3> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "stop".

2> re-establish RB2;

2> for the downlink and the uplink, apply the ciphering configuration as follows:

3> if the received re-configuration message included the IE "Ciphering Mode Info":

4> use the ciphering configuration in the received message when transmitting the response message.

3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:

4> if the previous SECURITY MODE COMMAND was received due to new keys being received:

5> consider the new ciphering configuration to include the received new keys;

5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in subclause 8.1.12.3.1.

4> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST_CONFIGURED_CN_DOMAIN:

5> consider the new ciphering configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN;

5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the LATEST_CONFIGURED_CN_DOMAIN at the reception of the previous SECURITY MODE COMMAND.

4> apply the new ciphering configuration immediately following RLC re-establishment.

3> else:

4> continue using the current ciphering configuration.

- 2> set the new uplink and downlink HFN of RB2 to MAX(uplink HFN of RB2, downlink HFN of RB2);
 - 2> increment by one the downlink and uplink HFN values for RB2;
 - 2> calculate the START value according to subclause 8.5.9;
 - 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
- 2> if the variable START_VALUE_TO_TRANSMIT is set:
 - 3> include and set the IE "START" to the value of that variable.
 - 2> if the variable START_VALUE_TO_TRANSMIT is not set and the IE "New U-RNTI" is included:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
 - 2> if the received reconfiguration message caused a change in the RLC size for any RB using RLC-AM:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for the CN domain associated with the corresponding RB identity in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
- 2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info":
- 2> include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- 1> if the received reconfiguration message did not contain the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info":
- 2> if prior to this procedure there exist no transparent mode RLC radio bearers:
 - 3> if, at the conclusion of this procedure, the UE will be in CELL_DCH state; and
 - 3> if, at the conclusion of this procedure, at least one transparent mode RLC radio bearer exists:
 - 4> include the IE "COUNT-C activation time" and specify a CFN value for this IE that is a multiple of 8 frames ($CFN \bmod 8 = 0$) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted.

NOTE: UTRAN should not include the IE "Ciphering mode info" in any reconfiguration message unless it is also used to perform an SRNS relocation with change of ciphering algorithm.

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> if the variable PDCP_SN_INFO is not empty:
 - 2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_INFO.
- 1> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):

2> set the IE "Uplink Timing Advance" according to subclause 8.6.6.26.

1> if the IE "Integrity protection mode info" was present in the received reconfiguration message:

2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.

If after state transition the UE enters URA_PCH state, the UE shall, after the state transition and transmission of the response message:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4] on that frequency.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4].

1> prohibit periodical status transmission in RLC;

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI;

1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;

1> select Secondary CCPCH according to subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.

1> if the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 is fulfilled after cell selection:

2> initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";

2> when the URA update procedure is successfully completed:

3> the procedure ends.

If after state transition the UE enters CELL_PCH state from CELL_DCH state, the UE shall, after the state transition and transmission of the response message:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4] on that frequency.

2> if the UE finds a suitable UTRA cell on that frequency:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> proceed as below.

2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:

3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

3> proceed as below.

- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4].
 - 2> if the UE finds a suitable UTRA cell on the current frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on the current frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> proceed as below.
 - 1> prohibit periodical status transmission in RLC;
 - 1> remove any C-RNTI from MAC;
 - 1> clear the variable C_RNTI;
 - 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;
 - 1> select Secondary CCPCH according to subclause 8.5.19;
 - 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
 - 1> the procedure ends.

If after state transition the UE enters CELL_PCH state from CELL_FACH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
 - 2> if the UE finds a suitable UTRA cell on that frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 4> proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> proceed as below.
 - 1> if the IE "Frequency info" is not included in the received reconfiguration message:

- 2> if the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) is included the UE shall either:
 - 3> ignore the content of the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) and proceed as below;
- 2> or:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CPCH info" (for TDD), and it is different from the current cell:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> proceed as below.
- 1> prohibit periodical status transmission in RLC;
- 1> remove any C-RNTI from MAC;
- 1> clear the variable C_RNTI;
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- 1> the procedure ends.

8.2.2.7 Physical channel failure

If the received message caused the UE to be in CELL_DCH state and the UE according to subclause 8.5.4 failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

1> ~~for HS-DSCH remove existing HS-PDSCH configurations~~ if HS-DSCH is configured:

2> stop any HS-DSCH reception procedures;

2> clear any stored HS-PDSCH configuration;

2> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

2> release all HARQ resources;

2> remove any H-RNTI stored;

2> clear the variable H-RNTI;

2> set the variable HS_DSCH_RECEPTION to FALSE;

1> ~~otherwise~~ revert to the configuration prior to the reception of the message (old configuration);

1> if the old configuration includes dedicated physical channels (CELL_DCH state) and the UE is unable to revert to the old configuration:

2> initiate a cell update procedure according to subclause 8.3.1, using the cause "radio link failure";

2> after the cell update procedure has completed successfully:

3> proceed as below.

1> if the old configuration does not include dedicated physical channels (CELL_FACH state):

2> select a suitable UTRA cell according to [4];

2> if the UE selects another cell than the cell the UE camped on upon reception of the reconfiguration message:

3> initiate a cell update procedure according to subclause 8.3.1, using the cause "Cell reselection";

3> after the cell update procedure has completed successfully:

4> proceed as below.

1> transmit a failure response message as specified in subclause 8.2.2.9, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to "physical channel failure".

1> set the variable ORDERED_RECONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The procedure ends.

8.3.1.2 Initiation

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

- 2> if the UE is in URA_PCH or CELL_PCH state; and
- 2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:
 - 3> perform cell update using the cause "uplink data transmission".

1> Paging response:

- 2> if the criteria for performing cell update with the cause specified above in the current subclause is not met; and
- 2> if the UE in URA_PCH or CELL_PCH state, receives a PAGING TYPE 1 message fulfilling the conditions for initiating a cell update procedure specified in subclause 8.1.2.3:
 - 3> perform cell update using the cause "paging response".

1> Radio link failure:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:
 - 3> if the UE is in CELL_DCH state and the criteria for radio link failure is met as specified in subclause 8.5.6; or
 - 3> if the transmission of the UE CAPABILITY INFORMATION message fails as specified in subclause 8.1.6.6:
 - 4> perform cell update using the cause "radio link failure".

1> Re-entering service area:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE is in CELL_FACH or CELL_PCH state; and
- 2> if the UE has been out of service area and re-enters service area before T307 or T317 expires:
 - 3> perform cell update using the cause "re-entering service area".

1> RLC unrecoverable error:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE detects RLC unrecoverable error [16] in an AM RLC entity:
 - 3> perform cell update using the cause "RLC unrecoverable error".

1> Cell reselection:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:
 - 3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or
 - 3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:
 - 4> perform cell update using the cause "cell reselection".

1> Periodical cell update:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE is in CELL_FACH or CELL_PCH state; and
- 2> if the timer T305 expires; and
- 2> if the criteria for "in service area" as specified in subclause 8.5.5.2 is fulfilled; and
- 2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":
 - 3> perform cell update using the cause "periodical cell update".

A UE in URA_PCH state shall initiate the URA update procedure in the following cases:

1> URA reselection:

- 2> if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or
- 2> if the list of URA identities in system information block type 2 is empty; or
- 2> if the system information block type 2 can not be found:
 - 3> perform URA update using the cause "change of URA".

1> Periodic URA update:

- 2> if the criteria for performing URA update with the causes as specified above in the current subclause are not met; and
- 2> if the timer T305 expires while the UE is in the service area; and
- 2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":
 - 3> perform URA update using the cause "periodic URA update".

When initiating the URA update or cell update procedure, the UE shall:

- 1> stop timer T305;
- 1> if the UE is in CELL_DCH state:
 - 2> in the variable RB_TIMER_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;
 - 2> if the stored values of the timer T314 and timer T315 are both equal to zero; or
 - 2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":
 - 3> release all its radio resources;
 - 3> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - 3> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - 3> clear the variable ESTABLISHED_RABS;
 - 3> enter idle mode;
 - 3> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2;
 - 3> and the procedure ends.

- 2> if the stored value of the timer T314 is equal to zero:
 - 3> release all radio bearers, associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314";
 - 3> in the variable RB_TIMER_INDICATOR set the IE "T314 expired" to TRUE.
- 2> if the stored value of the timer T315 is equal to zero:
 - 3> release all radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315";
 - 3> in the variable RB_TIMER_INDICATOR set the IE "T315 expired" to TRUE.
- 2> if the stored value of the timer T314 is greater than zero:
 - 3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314":
 - 4> start timer T314.
 - 3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":
 - 4> start timer T314.
- 2> if the stored value of the timer T315 is greater than zero:
 - 3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":
 - 4> start timer T315.
- 2> for the released radio bearer(s):
 - 3> delete the information about the radio bearer from the variable ESTABLISHED_RABS;
 - 3> when all radio bearers belonging to the same radio access bearer have been released:
 - 4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED_RABS;
 - 4> delete all information about the radio access bearer from the variable ESTABLISHED_RABS.
- 2> select a suitable UTRA cell according to [4];
- 2> set the variable ORDERED_RECONFIGURATION to FALSE.
- 1> set the variables PROTOCOL_ERROR_INDICATOR, FAILURE_INDICATOR, UNSUPPORTED_CONFIGURATION and INVALID_CONFIGURATION to FALSE;
- 1> set the variable CELL_UPDATE_STARTED to TRUE;
- 1> if HS-DSCH is configured:
 - 2> stop any HS-DSCH reception procedures;
 - 2> clear any stored HS-PDSCH configuration;
 - 2> act as if the IE MAC-hs reset indicator is received and set to TRUE;
 - 2> release all HARQ resources;
 - 2> remove any H-RNTI stored;
 - 2> clear the variable H_RNTI;
 - 2> set the variable HS_DSCH_RECEPTION to FALSE;

- 1> if the UE is not already in CELL_FACH state:
 - 2> move to CELL_FACH state;
 - 2> select PRACH according to subclause 8.5.17;
 - 2> select Secondary CCPCH according to subclause 8.5.19;
 - 2> use the transport format set given in system information as specified in subclause 8.6.5.1.
- 1> if the UE performs cell re-selection:
 - 2> clear the variable C_RNTI; and
 - 2> stop using that C_RNTI just cleared from the variable C_RNTI in MAC.
- 1> set CFN in relation to SFN of current cell according to subclause 8.5.15;
- 1> in case of a cell update procedure:
 - 2> set the contents of the CELL UPDATE message according to subclause 8.3.1.3;
 - 2> submit the CELL UPDATE message for transmission on the uplink CCCH.
- 1> in case of a URA update procedure:
 - 2> set the contents of the URA UPDATE message according to subclause 8.3.1.3;
 - 2> submit the URA UPDATE message for transmission on the uplink CCCH.
- 1> set counter V302 to 1;
- 1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

8.3.7.3 Reception of a HANDOVER FROM UTRAN COMMAND message by the UE

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

The UE shall:

- 1> [if HS-DSCH is configured for UTRA:](#)
 - 2> [stop any HS-DSCH reception procedures;](#)
 - 2> [clear any stored HS-PDSCH configuration;](#)
 - 2> [act as if the IE "MAC-hs reset indicator" is received and set to TRUE;](#)
 - 2> [release all HARQ resources;](#)
 - 2> [remove any H-RNTI stored;](#)
 - 2> [clear the variable H_RNTI;](#)
 - 2> [set the variable HS_DSCH_RECEPTION to FALSE](#)

- 1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later, or 3GPP TS 44.018	HANDOVER COMMAND
GERAN Iu	3GPP TS 44.118	RADIO BEARER RECONFIGURATION
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

- 1> if the IE "System type" has the value "GSM" or "GERAN Iu":
 - 2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":
 - 3> set the BAND_INDICATOR [45] to "ARFCN indicates 1800 band".
 - 2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":
 - 3> set the BAND_INDICATOR [45] to "ARFCN indicates 1900 band".
- 1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.
- 1> if the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message:
 - 2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":
 - 3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: In handover to GERAN *Iu mode*, the RAB information is included in the RADIO BEARER RECONFIGURATION message specified in [53].

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

8.3.7.5 UE fails to complete requested handover

If the UE does not succeed in establishing the connection to the target radio access technology, it shall:

~~1> for HS-DSCH remove existing HS-PDSCH configurations;~~

1> ~~otherwise~~ revert back to the UTRA configuration;

NOTE: If configured for HS-DSCH while in UTRA, the UE will have still stored the IEs "Added or Reconfigured MAC-d flow" and "RB mapping Info".

1> establish the UTRA physical channel(s) used at the time for reception of HANOVER FROM UTRAN COMMAND;

1> if the UE does not succeed to establish the UTRA physical channel(s):

2> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";

2> when the cell update procedure has completed successfully:

3> proceed as below.

1> transmit the HANOVER FROM UTRAN FAILURE message setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

8.3.11.3 Reception of an CELL CHANGE ORDER FROM UTRAN message by the UE

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":

- 1> the UE shall act as if the message was never received.

The UE shall:

- 1> if HS-DSCH is configured for UTRA:
 - 2> stop any HS-DSCH reception procedures;
 - 2> clear any stored HS-PDSCH configuration;
 - 2> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;
 - 2> release all HARQ resources;
 - 2> remove any H-RNTI stored;
 - 2> clear the variable H RNTI;
 - 2> set the variable HS_DSCH_RECEPTION to FALSE

- 1> start timer T309; and

- 1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

- 1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

- 2> retrieve it from the target cell as specified in [43];
- 2> act upon IE "NC mode" as specified in [43].

- 1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

- 2> ignore the contents of the IE "RAB Information List".

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].

- 1> if the UE supports UTRAN to GERAN Network Assisted Cell Change, the IE "Geran-System Information" is present and the UE is in CELL_DCH state:
 - 2> if according to [44] the IE "GERAN System Information" includes a correct and consistent set of SI or PSI messages:
 - 3> use this information as the system information to begin access on the target GERAN cell.
 - 2> otherwise:
 - 3> ignore the IE "GERAN System Information" and continue the Cell Change Order procedure.

8.3.11.5 Expiry of timer T309 or UE fails to complete requested cell change order

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:

2> ~~for HS-DSCH remove existing HS-PDSCH configurations;~~

2> ~~otherwise~~ revert back to the UTRA configuration;

NOTE: If configured for HS-DSCH while in UTRA, the UE will have still stored the IEs "Added or Reconfigured MAC-d flow" and "RB mapping Info".

2> establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;

2> if the UE does not succeed in establishing the UTRA physical channel(s):

3> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";

3> when the cell update procedure has completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.

1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state:

2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;

2> if the UE is unable to return to this cell:

3> select a suitable UTRA cell according to [4];

3> initiate the cell update procedure according to subclause 8.3.1 using the cause "cell re-selection";

3> when the cell update procedure completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

- 3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 3> clear that entry;
 - 3> set the IE "Inter-RAT change failure" to "physical channel failure".
- 2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:
- 3> the procedure ends.

8.5.6 Radio link failure criteria and actions upon radio link failure

In CELL_DCH State, after receiving N313 consecutive "out of sync" indications from layer 1 for the established DPCH physical channel in FDD, and the DPCH associated with mapped DCCHs in TDD, the UE shall:

- 1> start timer T313;
- 1> upon receiving N315 successive "in sync" indications from layer 1 and upon change of UE state:
 - 2> stop and reset timer T313.
- 1> if T313 expires:
 - 2> consider it as a "Radio link failure".

Periods in time where neither "in sync" nor "out of sync" is reported by layer 1 do not affect the evaluation of the number of consecutive (resp. successive) "in sync" or "out of sync" indications.

When a radio link failure occurs, the UE shall:

- 1> clear the dedicated physical channel configuration;
 - ~~1> stop any HS-DSCH reception procedures according to the stored HS-PDSCH configuration;~~
 - ~~1> clear any stored HS-PDSCH configuration;~~
 - ~~1> remove any H-RNTI stored;~~
 - ~~1> clear the variable H-RNTI;~~
 - ~~1> set the variable HS_DSCH_RECEPTION to FALSE;~~
- 1> perform actions as specified for the ongoing procedure;
- 1> if no procedure is ongoing or no actions are specified for the ongoing procedure:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "radio link failure".

8.6.5.5a Added or reconfigured MAC-d flow

If the IE "Added or reconfigured MAC-d flow" is included, the UE shall:

1> if a MAC-hs queue (identified by the IE "MAC-hs queue Id") is included in both the IE "MAC-hs queue to add or reconfigure list" and the IE "MAC-hs queue to delete list":

2> set the variable INVALID_CONFIGURATION to TRUE.

1> for each MAC-hs queue included in the IE "MAC-hs queue to add or reconfigure" list:

2> if the UE has previously stored a mapping between this MAC-hs queue and a MAC-d flow:

3> delete the old mapping;

2> map the MAC-d flow indicated in the current message to this MAC-hs queue;

2> set the release timer for each of the MAC-hs queues in the MAC-hs entity to the value in the corresponding IE "T1";

2> set the MAC-hs receiver window size for each of the MAC-hs queues in the MAC-hs entity to the value in the corresponding IE "MAC-hs window size"; and

~~2> apply the indicated mapping between MAC-d flows and MAC-hs queues; and~~

2> configure MAC-hs with the mapping between MAC-d PDU sizes index and allowed MAC-d PDU sizes as ~~indicated~~follows:

3> if a MAC-d PDU size has been stored for a MAC-d PDU size index for the corresponding MAC-hs queue and no mapping is provided in the current message for this MAC-d PDU index:

4> continue to use this mapping;

3> if a MAC-d PDU size has been stored for a MAC-d PDU size index for the corresponding MAC-hs queue and a mapping is provided in the current message for this MAC-d PDU index:

4> configure the MAC-hs entity with the mapping indicated in the current message. ~~potentially replacing already existing MAC-d PDU sizes.~~

1> for each MAC-hs queue included in the IE "MAC-hs queue to delete" list:

2> delete any information about the MAC-hs queue identified by the IE "MAC-hs queue Id".

8.6.6.32 Downlink HS-PDSCH Information

If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message, the UE shall:

1> if the IE "New H-RNTI" is included:

2> perform the actions as specified in subclause 8.6.3.1b.

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34.

1> if, as a result of the received message, the variable H_RNTI is set and the UE has a stored IE "HS-SCCH Info" and a stored IE "Measurement Feedback Info"; and;

1> if the UE has received IE "Uplink DPCH Power Control Info" and stored Δ_{ACK} , Δ_{NACK} , and Ack-NACK Repetition factor; and

1> if the UE has stored IEs "MAC-hs queue to add or reconfigure list", "MAC-d PDU size Info" and "RB Mapping Info" corresponding to the HS-PDSCH configuration:

2> set the variable HS_DSCH_RECEPTION to TRUE;

2> start HS-DSCH reception procedures according to the stored HS-PDSCH configuration:

3> as stated in subclause 8.6.3.1b for the IE "H-RNTI";

3> in subclause 8.6.6.33 for the IE "HS-SCCH Info"; and

3> in subclause 8.6.6.34 for the IE "Measurement Feedback Info".

1> if the IE "HS-DSCH Timeslot Configuration" is included:

2> store the received configuration.

If the IE "Downlink HS-PDSCH Information" is not included, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop HS-DSCH reception procedures according to the stored HS-PDSCH configuration.

CHANGE REQUEST

25.331 CR 2263 # rev # Current version: 6.0.1

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

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

Title:	# HSDPA related corrections on buffer flushing on state transitions, RAT transitions, error cases, MAC-hs reconfiguration and readiness to receive HS-PDSCH		
Source:	# RAN WG2		
Work item code:	# HSDPA_L23	Date:	# February 12, 2004
Category:	# A	Release:	# Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 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)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change: #H 1. The current specification does not state what the UE is to do with the MAC-hs PDUs still in the re-ordering buffer when transitioning to a RRC state other than CELL_DCH and when transitioning to another RAT either due to Handover or Cell Change Order. This is especially the case if the network does not set the MAC_hs reset indicator to TRUE. This latter possibility in fact doesn't exist for the Inter-RAT messages.

2. UE actions in case of Radio Link failure are stated from a HS-DSCH perspective. Similar actions would be expected in case of RLC unrecoverable error causing a move to CELL_FACH to send the CELL_UPDATE with the corresponding cause. UE should stop receiving HS-PDSCH. This action is missing.

3. Since a UE starts decoding the HS_SCCH channel as soon as the Downlink HS-PDSCH information is provided to it, it is necessary to ensure that the network has provided it with the necessary radio bearer and transport channel configuration. Else the UE would be decoding physical channel for which there is no transport channel/radio bearer mapping. While this is clearly an incorrect configuration on the network's part a clear UE behavior would be useful in terms of when exactly it should start decoding the physical channel. **In addition the UE is required to have the deltaACK and deltaNACK, and the Ack-Nack repetition factor information sent in the IE "Uplink DPCH Power control info". Unless this information is available to the UE, it cannot send corresponding ACK/NACK information.**

4 Void

5. The current UE behavior for the mapping of MAC-d PDU sizes and indices in

not clear. It is not clear for e.g. if a MAC-d PDU size index is missing whether it is still valid.

6. When the parameters of an individual MAC-hs queue are modified (for e.g. T1, MAC-hs queue to MAC-d flow mapping) UE actions are not clear. The UE actions for the T1 timer are proposed in a companion but independent CR to TS 25.321.

Summary of change: ¶ 1, 2: It is stated that the UE shall stop receiving HS-PDSCH, delete the H-RNTI and remove all configuration information regarding the HS-PDSCH. The UE shall also release the soft buffer resources allocated for HARQ. Further it is stated that the UE shall reset the MAC-hs entity causing all MAC-hs PDUs in the re-ordering buffer being released to the upper layers. The current actions in the Radio Link Failure subclause are deleted since the addition to the CELL UPDATE procedure now captures this for both Radio Link Failure and RLC unrecoverable error.

3. Having stored information for the radio bearer and transport channel configuration for the HS-PDSCH is added as a criterion to setting the variable HS_DSCH_RECEPTION to TRUE. **It is clarified that the UE shall not set the variable HS_DSCH_RECEPTION to TRUE unless the necessary information related to the sending of ACK/NACK has been sent by the network (change made in 8.6.6.32). This option is chosen over setting INVALID_CONFIGURATION to TRUE. The requirement is however on the network to send the needed information while ensuring that the UE is not required to unnecessarily receive and process the HS-SCCH and HS-PDSCH channels**

4. Void

5. The UE behaviour with respect to both missing and present MAC-d PDU size index is explicitly stated.

6. UE actions in the case the MAC_d flow mapping is reconfigured are stated. It is specified that the UE shall overwrite the stored MAC-hs Queue – MAC-d Flow mapping if a mapping is provided in the current message. (Note – while in one message it is not possible to map a MAC-hs queue to two MAC-d flows, it is not obvious that this shall be prohibited using multiple messages. This correction ensures that this is not allowed).

Consequences if not approved: ¶ 1,2 : Incomplete specification with respect to handling of PDUs in re-ordering buffer and the UE has moved to CELL FACH for whatever reason. UTRAN would need not be aware right away of the RLC status in case the UE is maintained in CELL_FACH state. In particular if there are only a few PDUs remaining to be transferred and the UTRAN prefers to perform this transmission in CELL_FACH this would not be possible until a finite time has elapsed.

3. Incorrect definition of when the UE should start receiving the HS-PDSCH.

4. Void.

5, 6. Incomplete specification wrt handling of reconfiguration of MAC_hs parameters leading to inconsistency between network and UE.

Clauses affected: ¶ 8.2.2.3, 8.2.2.7, 8.3.1.2, 8.3.7.3, 8.3.7.5, 8.3.11.3, 8.3.11.5, 8.5.6, 8.6.5.5a, 8.6.6.32.

	Y	N	
Other specs affected:		X	Other core specifications ¶
		X	Test specifications
		X	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 <http://www.3gpp.org/specs/CR.htm>.

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 <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.

8.2.2.3 Reception of RADIO BEARER SETUP or RADIO BEARER RECONFIGURATION or RADIO BEARER RELEASE or TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION message by the UE

The UE shall:

1> be able to receive any of the following messages:

2> RADIO BEARER SETUP message; or

2> RADIO BEARER RECONFIGURATION message; or

2> RADIO BEARER RELEASE message; or

2> TRANSPORT CHANNEL RECONFIGURATION message; or

2> PHYSICAL CHANNEL RECONFIGURATION message;

1> perform a hard handover and apply physical layer synchronisation procedure A as specified in [29], even if no prior UE measurements have been performed on the target cell and/or frequency.

If the UE receives:

- a RADIO BEARER SETUP message; or

- a RADIO BEARER RECONFIGURATION message; or

- a RADIO BEARER RELEASE message; or

- a TRANSPORT CHANNEL RECONFIGURATION message; or

- a PHYSICAL CHANNEL RECONFIGURATION message;

it shall:

1> set the variable ORDERED_RECONFIGURATION to TRUE;

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

1> act upon all received information elements as specified in subclause 8.6, unless specified in the following and perform the actions below.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

1> in FDD, if the IE "PDSCH code mapping" is included but the IE "PDSCH with SHO DCH Info" is not included and if the DCH has only one link in its active set:

2> act upon the IE "PDSCH code mapping" as specified in subclause 8.6; and

2> infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted.

1> enter a state according to subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

- 1> in FDD; or
- 1> in TDD when "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 2> remove any C-RNTI from MAC;
 - 2> clear the variable C_RNTI.

If after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> stop any HS-DSCH reception procedures; ~~according to the stored HS-PDSCH configuration;~~
- 1> clear any stored HS-PDSCH configuration;
- 1> ~~act as if the IE "MAC-hs reset indicator" is received and set to TRUE;~~
- 1> release all HARQ resources;
- 1> remove any H-RNTI stored;
- 1> clear the variable H_RNTI;
- 1> set the variable HS_DSCH_RECEPTION to FALSE.

~~NOTE: Unless explicitly deleted by UTRAN, on state transitions the UE will continue to maintain all other information related to the HS-DSCH configuration if already stored.~~

~~NOTE: If configured for HS-DSCH, the UE will have still stored the IEs "Added or Reconfigured MAC-d flow" and "RB mapping Info"~~

In FDD, if after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> remove any DSCH-RNTI from MAC;
- 1> clear the variable DSCH_RNTI.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> in TDD:
 - 2> if "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 3> remove any C-RNTI from MAC;
 - 3> clear the variable C_RNTI.
 - 1> if "DPCH frame offset" is included for one or more RLS in the active set:
 - 2> use its value to determine the beginning of the DPCH frame in accordance with the following:
 - 3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH frame offset currently used by the UE:
 - 4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).
 - 3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:

4> set the variable INVALID_CONFIGURATION to TRUE.

3> and the procedure ends.

2> adjust the radio link timing accordingly.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4] on that frequency;

2> if the UE finds a suitable UTRA cell on that frequency:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> when the cell update procedure completed successfully:

5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:

3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

3> when the cell update procedure completed successfully:

4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4];

2> if the UE finds a suitable UTRA cell on the current frequency:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> when the cell update procedure completed successfully:

5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

2> else, if the UE can not find a suitable UTRA cell on the current frequency but it finds a suitable UTRA cell on another frequency:

3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

3> when the cell update procedure completed successfully:

4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;

- 1> select PRACH according to subclause 8.5.17;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> use the transport format set given in system information;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.
- 1> if the contents of the variable C_RNTI is empty:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.

If the UE was in CELL_FACH state upon reception of the reconfiguration message and remains in CELL_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the UE finds a suitable UTRA cell on that frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> if the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) is included the UE shall either:
 - 3> ignore the content of the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) and proceed as below;
 - 2> or:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CPCH info" (for TDD), and it is different from the current cell:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> when the cell update procedure completed successfully:

5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

If after state transition the UE enters CELL_PCH or URA_PCH state, the UE shall:

1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:

2> set the variable INVALID_CONFIGURATION to TRUE.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or

1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:

2> if the variable PDCP_SN_INFO is empty:

3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".

2> else:

3> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "stop";

3> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "stop".

2> re-establish RB2;

2> for the downlink and the uplink, apply the ciphering configuration as follows:

3> if the received re-configuration message included the IE "Ciphering Mode Info":

4> use the ciphering configuration in the received message when transmitting the response message.

3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:

4> if the previous SECURITY MODE COMMAND was received due to new keys being received:

5> consider the new ciphering configuration to include the received new keys;

5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in subclause 8.1.12.3.1.

4> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST_CONFIGURED_CN_DOMAIN:

5> consider the new ciphering configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN;

5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the LATEST_CONFIGURED_CN_DOMAIN at the reception of the previous SECURITY MODE COMMAND.

4> apply the new ciphering configuration immediately following RLC re-establishment.

3> else:

4> continue using the current ciphering configuration.

- 2> set the new uplink and downlink HFN of RB2 to MAX(uplink HFN of RB2, downlink HFN of RB2);
 - 2> increment by one the downlink and uplink HFN values for RB2;
 - 2> calculate the START value according to subclause 8.5.9;
 - 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
- 2> if the variable START_VALUE_TO_TRANSMIT is set:
 - 3> include and set the IE "START" to the value of that variable.
 - 2> if the variable START_VALUE_TO_TRANSMIT is not set and the IE "New U-RNTI" is included:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
 - 2> if the received reconfiguration message caused a change in the RLC size for any RB using RLC-AM:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for the CN domain associated with the corresponding RB identity in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
- 2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info":
- 2> include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- 1> if the received reconfiguration message did not contain the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info":
- 2> if prior to this procedure there exist no transparent mode RLC radio bearers:
 - 3> if, at the conclusion of this procedure, the UE will be in CELL_DCH state; and
 - 3> if, at the conclusion of this procedure, at least one transparent mode RLC radio bearer exists:
 - 4> include the IE "COUNT-C activation time" and specify a CFN value for this IE that is a multiple of 8 frames ($CFN \bmod 8 = 0$) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted.

NOTE: UTRAN should not include the IE "Ciphering mode info" in any reconfiguration message unless it is also used to perform an SRNS relocation with change of ciphering algorithm.

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> if the variable PDCP_SN_INFO is not empty:
 - 2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_INFO.
- 1> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):

2> set the IE "Uplink Timing Advance" according to subclause 8.6.6.26.

1> if the IE "Integrity protection mode info" was present in the received reconfiguration message:

2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.

If after state transition the UE enters URA_PCH state, the UE shall, after the state transition and transmission of the response message:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4] on that frequency.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4].

1> prohibit periodical status transmission in RLC;

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI;

1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;

1> select Secondary CCPCH according to subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.

1> if the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 is fulfilled after cell selection:

2> initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";

2> when the URA update procedure is successfully completed:

3> the procedure ends.

If after state transition the UE enters CELL_PCH state from CELL_DCH state, the UE shall, after the state transition and transmission of the response message:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4] on that frequency.

2> if the UE finds a suitable UTRA cell on that frequency:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> proceed as below.

2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:

3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

3> proceed as below.

- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4].
 - 2> if the UE finds a suitable UTRA cell on the current frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on the current frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> proceed as below.
 - 1> prohibit periodical status transmission in RLC;
 - 1> remove any C-RNTI from MAC;
 - 1> clear the variable C_RNTI;
 - 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;
 - 1> select Secondary CCPCH according to subclause 8.5.19;
 - 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
 - 1> the procedure ends.

If after state transition the UE enters CELL_PCH state from CELL_FACH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
 - 2> if the UE finds a suitable UTRA cell on that frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 4> proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> proceed as below.
 - 1> if the IE "Frequency info" is not included in the received reconfiguration message:

- 2> if the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) is included the UE shall either:
 - 3> ignore the content of the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) and proceed as below;
- 2> or:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CPCH info" (for TDD), and it is different from the current cell:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> proceed as below.
- 1> prohibit periodical status transmission in RLC;
- 1> remove any C-RNTI from MAC;
- 1> clear the variable C_RNTI;
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- 1> the procedure ends.

8.2.2.7 Physical channel failure

If the received message caused the UE to be in CELL_DCH state and the UE according to subclause 8.5.4 failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

1> ~~for HS-DSCH remove existing HS-PDSCH configurations~~ if HS-DSCH is configured:

2> stop any HS-DSCH reception procedures;

2> clear any stored HS-PDSCH configuration;

2> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

2> release all HARQ resources;

2> remove any H-RNTI stored;

2> clear the variable H-RNTI;

2> set the variable HS_DSCH_RECEPTION to FALSE;

1> ~~otherwise~~ revert to the configuration prior to the reception of the message (old configuration);

1> if the old configuration includes dedicated physical channels (CELL_DCH state) and the UE is unable to revert to the old configuration:

2> initiate a cell update procedure according to subclause 8.3.1, using the cause "radio link failure";

2> after the cell update procedure has completed successfully:

3> proceed as below.

1> if the old configuration does not include dedicated physical channels (CELL_FACH state):

2> select a suitable UTRA cell according to [4];

2> if the UE selects another cell than the cell the UE camped on upon reception of the reconfiguration message:

3> initiate a cell update procedure according to subclause 8.3.1, using the cause "Cell reselection";

3> after the cell update procedure has completed successfully:

4> proceed as below.

1> transmit a failure response message as specified in subclause 8.2.2.9, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to "physical channel failure".

1> set the variable ORDERED_RECONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The procedure ends.

8.3.1.2 Initiation

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

- 2> if the UE is in URA_PCH or CELL_PCH state; and
- 2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:
 - 3> perform cell update using the cause "uplink data transmission".

1> Paging response:

- 2> if the criteria for performing cell update with the cause specified above in the current subclause is not met; and
- 2> if the UE in URA_PCH or CELL_PCH state, receives a PAGING TYPE 1 message fulfilling the conditions for initiating a cell update procedure specified in subclause 8.1.2.3:
 - 3> perform cell update using the cause "paging response".

1> Radio link failure:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:
 - 3> if the UE is in CELL_DCH state and the criteria for radio link failure is met as specified in subclause 8.5.6; or
 - 3> if the transmission of the UE CAPABILITY INFORMATION message fails as specified in subclause 8.1.6.6:
 - 4> perform cell update using the cause "radio link failure".

1> Re-entering service area:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE is in CELL_FACH or CELL_PCH state; and
- 2> if the UE has been out of service area and re-enters service area before T307 or T317 expires:
 - 3> perform cell update using the cause "re-entering service area".

1> RLC unrecoverable error:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE detects RLC unrecoverable error [16] in an AM RLC entity:
 - 3> perform cell update using the cause "RLC unrecoverable error".

1> Cell reselection:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:
 - 3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or
 - 3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:
 - 4> perform cell update using the cause "cell reselection".

1> Periodical cell update:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE is in CELL_FACH or CELL_PCH state; and
- 2> if the timer T305 expires; and
- 2> if the criteria for "in service area" as specified in subclause 8.5.5.2 is fulfilled; and
- 2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":
 - 3> perform cell update using the cause "periodical cell update".

A UE in URA_PCH state shall initiate the URA update procedure in the following cases:

1> URA reselection:

- 2> if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or
- 2> if the list of URA identities in system information block type 2 is empty; or
- 2> if the system information block type 2 can not be found:
 - 3> perform URA update using the cause "change of URA".

1> Periodic URA update:

- 2> if the criteria for performing URA update with the causes as specified above in the current subclause are not met; and
- 2> if the timer T305 expires while the UE is in the service area; and
- 2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":
 - 3> perform URA update using the cause "periodic URA update".

When initiating the URA update or cell update procedure, the UE shall:

- 1> stop timer T305;
- 1> if the UE is in CELL_DCH state:
 - 2> in the variable RB_TIMER_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;
 - 2> if the stored values of the timer T314 and timer T315 are both equal to zero; or
 - 2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":
 - 3> release all its radio resources;
 - 3> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - 3> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - 3> clear the variable ESTABLISHED_RABS;
 - 3> enter idle mode;
 - 3> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2;
 - 3> and the procedure ends.

- 2> if the stored value of the timer T314 is equal to zero:
 - 3> release all radio bearers, associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314";
 - 3> in the variable RB_TIMER_INDICATOR set the IE "T314 expired" to TRUE.
- 2> if the stored value of the timer T315 is equal to zero:
 - 3> release all radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315";
 - 3> in the variable RB_TIMER_INDICATOR set the IE "T315 expired" to TRUE.
- 2> if the stored value of the timer T314 is greater than zero:
 - 3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314":
 - 4> start timer T314.
 - 3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":
 - 4> start timer T314.
- 2> if the stored value of the timer T315 is greater than zero:
 - 3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":
 - 4> start timer T315.
- 2> for the released radio bearer(s):
 - 3> delete the information about the radio bearer from the variable ESTABLISHED_RABS;
 - 3> when all radio bearers belonging to the same radio access bearer have been released:
 - 4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED_RABS;
 - 4> delete all information about the radio access bearer from the variable ESTABLISHED_RABS.
- 2> select a suitable UTRA cell according to [4];
- 2> set the variable ORDERED_RECONFIGURATION to FALSE.
- 1> set the variables PROTOCOL_ERROR_INDICATOR, FAILURE_INDICATOR, UNSUPPORTED_CONFIGURATION and INVALID_CONFIGURATION to FALSE;
- 1> set the variable CELL_UPDATE_STARTED to TRUE;
- 1> if HS-DSCH is configured:
 - 2> stop any HS-DSCH reception procedures;
 - 2> clear any stored HS-PDSCH configuration;
 - 2> act as if the IE MAC-hs reset indicator is received and set to TRUE;
 - 2> release all HARQ resources;
 - 2> remove any H-RNTI stored;
 - 2> clear the variable H_RNTI;
 - 2> set the variable HS_DSCH_RECEPTION to FALSE;

- 1> if the UE is not already in CELL_FACH state:
 - 2> move to CELL_FACH state;
 - 2> select PRACH according to subclause 8.5.17;
 - 2> select Secondary CCPCH according to subclause 8.5.19;
 - 2> use the transport format set given in system information as specified in subclause 8.6.5.1.
- 1> if the UE performs cell re-selection:
 - 2> clear the variable C_RNTI; and
 - 2> stop using that C_RNTI just cleared from the variable C_RNTI in MAC.
- 1> set CFN in relation to SFN of current cell according to subclause 8.5.15;
- 1> in case of a cell update procedure:
 - 2> set the contents of the CELL UPDATE message according to subclause 8.3.1.3;
 - 2> submit the CELL UPDATE message for transmission on the uplink CCCH.
- 1> in case of a URA update procedure:
 - 2> set the contents of the URA UPDATE message according to subclause 8.3.1.3;
 - 2> submit the URA UPDATE message for transmission on the uplink CCCH.
- 1> set counter V302 to 1;
- 1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

8.3.7.3 Reception of a HANDOVER FROM UTRAN COMMAND message by the UE

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

The UE shall:

- 1> [if HS-DSCH is configured for UTRA:](#)
 - 2> [stop any HS-DSCH reception procedures;](#)
 - 2> [clear any stored HS-PDSCH configuration;](#)
 - 2> [act as if the IE "MAC-hs reset indicator" is received and set to TRUE;](#)
 - 2> [release all HARQ resources;](#)
 - 2> [remove any H-RNTI stored;](#)
 - 2> [clear the variable H_RNTI;](#)
 - 2> [set the variable HS_DSCH_RECEPTION to FALSE](#)

- 1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later, or 3GPP TS 44.018	HANDOVER COMMAND
GERAN Iu	3GPP TS 44.118	RADIO BEARER RECONFIGURATION
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

- 1> if the IE "System type" has the value "GSM" or "GERAN Iu":
 - 2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":
 - 3> set the BAND_INDICATOR [45] to "ARFCN indicates 1800 band".
 - 2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":
 - 3> set the BAND_INDICATOR [45] to "ARFCN indicates 1900 band".
- 1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.
- 1> if the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message:
 - 2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":
 - 3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: In handover to GERAN *Iu mode*, the RAB information is included in the RADIO BEARER RECONFIGURATION message specified in [53].

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

8.3.7.5 UE fails to complete requested handover

If the UE does not succeed in establishing the connection to the target radio access technology, it shall:

~~1> for HS-DSCH remove existing HS-PDSCH configurations;~~

1> ~~otherwise~~ revert back to the UTRA configuration;

NOTE: If configured for HS-DSCH while in UTRA, the UE will have still stored the IEs "Added or Reconfigured MAC-d flow" and "RB mapping Info".

1> establish the UTRA physical channel(s) used at the time for reception of HANOVER FROM UTRAN COMMAND;

1> if the UE does not succeed to establish the UTRA physical channel(s):

2> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";

2> when the cell update procedure has completed successfully:

3> proceed as below.

1> transmit the HANOVER FROM UTRAN FAILURE message setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

8.3.11.3 Reception of an CELL CHANGE ORDER FROM UTRAN message by the UE

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":

- 1> the UE shall act as if the message was never received.

The UE shall:

- 1> if HS-DSCH is configured for UTRA:
 - 2> stop any HS-DSCH reception procedures;
 - 2> clear any stored HS-PDSCH configuration;
 - 2> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;
 - 2> release all HARQ resources;
 - 2> remove any H-RNTI stored;
 - 2> clear the variable H RNTI;
 - 2> set the variable HS_DSCH_RECEPTION to FALSE

- 1> start timer T309; and

- 1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

- 1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

- 2> retrieve it from the target cell as specified in [43];
- 2> act upon IE "NC mode" as specified in [43].

- 1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

- 2> ignore the contents of the IE "RAB Information List".

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].

- 1> if the UE supports UTRAN to GERAN Network Assisted Cell Change, the IE "Geran-System Information" is present and the UE is in CELL_DCH state:
 - 2> if according to [44] the IE "GERAN System Information" includes a correct and consistent set of SI or PSI messages:
 - 3> use this information as the system information to begin access on the target GERAN cell.
 - 2> otherwise:
 - 3> ignore the IE "GERAN System Information" and continue the Cell Change Order procedure.

8.3.11.5 Expiry of timer T309 or UE fails to complete requested cell change order

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:

2> ~~for HS-DSCH remove existing HS-PDSCH configurations;~~

2> ~~otherwise~~ revert back to the UTRA configuration;

NOTE: If configured for HS-DSCH while in UTRA, the UE will have still stored the IEs "Added or Reconfigured MAC-d flow" and "RB mapping Info".

2> establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;

2> if the UE does not succeed in establishing the UTRA physical channel(s):

3> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";

3> when the cell update procedure has completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.

1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state:

2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;

2> if the UE is unable to return to this cell:

3> select a suitable UTRA cell according to [4];

3> initiate the cell update procedure according to subclause 8.3.1 using the cause "cell re-selection";

3> when the cell update procedure completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

- 3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 3> clear that entry;
 - 3> set the IE "Inter-RAT change failure" to "physical channel failure".
- 2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:
- 3> the procedure ends.

8.5.6 Radio link failure criteria and actions upon radio link failure

In CELL_DCH State, after receiving N313 consecutive "out of sync" indications from layer 1 for the established DPCH physical channel in FDD, and the DPCH associated with mapped DCCHs in TDD, the UE shall:

- 1> start timer T313;
- 1> upon receiving N315 successive "in sync" indications from layer 1 and upon change of UE state:
 - 2> stop and reset timer T313.
- 1> if T313 expires:
 - 2> consider it as a "Radio link failure".

Periods in time where neither "in sync" nor "out of sync" is reported by layer 1 do not affect the evaluation of the number of consecutive (resp. successive) "in sync" or "out of sync" indications.

When a radio link failure occurs, the UE shall:

- 1> clear the dedicated physical channel configuration;
 - ~~1> stop any HS-DSCH reception procedures according to the stored HS-PDSCH configuration;~~
 - ~~1> clear any stored HS-PDSCH configuration;~~
 - ~~1> remove any H-RNTI stored;~~
 - ~~1> clear the variable H-RNTI;~~
 - ~~1> set the variable HS_DSCH_RECEPTION to FALSE;~~
- 1> perform actions as specified for the ongoing procedure;
- 1> if no procedure is ongoing or no actions are specified for the ongoing procedure:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "radio link failure".

8.6.5.5a Added or reconfigured MAC-d flow

If the IE "Added or reconfigured MAC-d flow" is included, the UE shall:

1> if a MAC-hs queue (identified by the IE "MAC-hs queue Id") is included in both the IE "MAC-hs queue to add or reconfigure list" and the IE "MAC-hs queue to delete list":

2> set the variable INVALID_CONFIGURATION to TRUE.

1> for each MAC-hs queue included in the IE "MAC-hs queue to add or reconfigure" list:

2> if the UE has previously stored a mapping between this MAC-hs queue and a MAC-d flow:

3> delete the old mapping;

2> map the MAC-d flow indicated in the current message to this MAC-hs queue;

2> set the release timer for each of the MAC-hs queues in the MAC-hs entity to the value in the corresponding IE "T1";

2> set the MAC-hs receiver window size for each of the MAC-hs queues in the MAC-hs entity to the value in the corresponding IE "MAC-hs window size"; and

~~2> apply the indicated mapping between MAC-d flows and MAC-hs queues; and~~

2> configure MAC-hs with the mapping between MAC-d PDU sizes index and allowed MAC-d PDU sizes as ~~indicated~~follows:

3> if a MAC-d PDU size has been stored for a MAC-d PDU size index for the corresponding MAC-hs queue and no mapping is provided in the current message for this MAC-d PDU index:

4> continue to use this mapping;

3> if a MAC-d PDU size has been stored for a MAC-d PDU size index for the corresponding MAC-hs queue and a mapping is provided in the current message for this MAC-d PDU index:

4> configure the MAC-hs entity with the mapping indicated in the current message. ~~potentially replacing already existing MAC-d PDU sizes.~~

1> for each MAC-hs queue included in the IE "MAC-hs queue to delete" list:

2> delete any information about the MAC-hs queue identified by the IE "MAC-hs queue Id".

8.6.6.32 Downlink HS-PDSCH Information

If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message, the UE shall:

1> if the IE "New H-RNTI" is included:

2> perform the actions as specified in subclause 8.6.3.1b.

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34.

1> if, as a result of the received message, the variable H_RNTI is set and the UE has a stored IE "HS-SCCH Info" and a stored IE "Measurement Feedback Info"; and;

1> if the UE has received IE "Uplink DPCH Power Control Info" and stored Δ_{ACK} , Δ_{NACK} , and Ack-NACK Repetition factor; and

1> if the UE has stored IEs "MAC-hs queue to add or reconfigure list", "MAC-d PDU size Info" and "RB Mapping Info" corresponding to the HS-PDSCH configuration:

2> set the variable HS_DSCH_RECEPTION to TRUE;

2> start HS-DSCH reception procedures according to the stored HS-PDSCH configuration:

3> as stated in subclause 8.6.3.1b for the IE "H-RNTI";

3> in subclause 8.6.6.33 for the IE "HS-SCCH Info"; and

3> in subclause 8.6.6.34 for the IE "Measurement Feedback Info".

1> if the IE "HS-DSCH Timeslot Configuration" is included:

2> store the received configuration.

If the IE "Downlink HS-PDSCH Information" is not included, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop HS-DSCH reception procedures according to the stored HS-PDSCH configuration.

TSG-RAN Working Group 2 meeting #41
Malaga, Spain , 16th-20th Febr 2004

R2-040727

CR-Form-v7

CHANGE REQUEST

⌘ **25.331 CR 2266** ⌘ rev **1** ⌘ Current version: **5.7.1** ⌘

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

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

Title:	⌘ Modification of Inter-frequency CELL_INFO_LIST
Source:	⌘ RAN WG2
Work item code:	⌘ TEI-5
Date:	⌘ Febr 2004
Category:	⌘ F
	Use <u>one</u> of the following categories:
	F (correction)
	A (corresponds to a correction in an earlier release)
	B (addition of feature),
	C (functional modification of feature)
	D (editorial modification)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .
Release:	⌘ Rel-5
	Use <u>one</u> of the following releases:
	2 (GSM Phase 2)
	R96 (Release 1996)
	R97 (Release 1997)
	R98 (Release 1998)
	R99 (Release 1999)
	Rel-4 (Release 4)
	Rel-5 (Release 5)
	Rel-6 (Release 6)

Reason for change: ⌘ 1. According to an informative note in 25.331, section 8.4.1.3, UTRAN may act as follows for modifying the Inter-frequency Cell Info List:

NOTE: If the UTRAN wants to modify the inter-frequency cell info list for an inter-frequency measurement configured with event based reporting without repeating any IEs related to the configured events, the only possibility is to set the IE "report criteria" to "intra-frequency report criteria", not include the IE "parameters required for each event", and set the IE "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria".

The specification does however not require that UE leaves the stored Intra-frequency event list unchanged if IE "Parameters required for each event" is not included.

Earlier in section 8.4.1.3, this UE behaviour is specified for the case the Intra-frequency event list is not included when modifying Intra-frequency measurement (e.g. the intra-frequency cell info list).

In case this change is not agreed, the note in section 8.4.1.3 need to be modified instead.

2. In section 8.4.1.3 and 8.6.7.14, incorrect IE names exist for Intra- and Inter-frequency measurements IEs.

3. In second part section 14.11.1, Initial virtual active set, UE behaviour is specified for the case UTRAN does not configure specific 1x events for the handling of virtual active set. However, in the text referring to the IE "Parameters required for each event", it is not clear if the Intra- or Inter-frequency event list is targeted.

Added in rev 1:

<p>Although the proposed changes are introduced from the Rel-5 onwards, they apply to release 99 functionality and may be implemented in UEs from R99 onwards.</p>	
<p>Summary of change: ⌘</p>	<p>1. It has been added that UE shall leave the stored Intra-frequency event list unchanged in the intra-frequency event list is not included in the message.</p> <p>2. Indicated errors have been corrected.</p> <p>3. It has been clarified that the IE "Parameters for each event" contains the intra-frequency event list. Also, the corresponding If-statement in the first part of the section has been change.</p> <p>T1 impact: No impact Backward compatibility: Considered a clarification of currently specified UE behaviour. This correction will affect a UE implementation that has not already implemented the CR.</p>
<p>Consequences if not approved: ⌘</p>	<p>1. At modification of Inter-frequency CELLINFOLIST, the MEASUREMENT CONTROL message would need to contain the complete Intra-freq event list.</p> <p>2. The indicated unclarities/incorrections will remain in the specification.</p> <p>3. The indicated unclarities/incorrections will remain in the specification.</p>

<p>Clauses affected: ⌘</p>	<p>8.4.1.3, 8.6.7.14, 14.11.1</p>									
<p>Other specs affected:</p>	<table border="1"> <thead> <tr> <th>Y</th> <th>N</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	Y	N	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Other core specifications ⌘</p> <p>Test specifications ⌘</p> <p>O&M Specifications ⌘</p>
Y	N									
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<p>Other comments: ⌘</p>										

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. 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 <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.

8.4.1.3 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" that require measurements on a frequency other than the actually used frequency:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements on at least one supported band of that measurement type:
 - 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.

NOTE: The UE is not required to perform measurements on cells for which it needs compressed mode but a suitable compressed mode pattern is not activated.

- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 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.
- 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 reference 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 ionospheric model", "UE positioning GPS UTC model", "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 all instances of 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 IEs received in the MEASUREMENT CONTROL message;
 - 5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.
- 3> otherwise:
- 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 [measurement reporting](#) criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
 - 4> [if IE "Parameters required for each event" is included:](#)
 - 45> leave the currently stored "inter-frequency [measurement reporting](#) criteria" within "report riteria" 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 [measurement reporting](#) criteria" and "[intra-frequency reporting criteria](#)". [\[Changed indentation\]](#)
 - 4> [otherwise:](#)
 - 5> [leave the currently stored "inter-frequency measurement reporting criteria" and "intra-frequency measurement reporting criteria" within "report riteria" 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 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.
- NOTE: If the UTRAN wants to modify the inter-frequency cell info list for an inter-frequency measurement configured with event based reporting without repeating any IEs related to the configured events, the only possibility is to set the IE "report criteria" to "intra-frequency [measurement reporting](#) criteria", not include the IE "parameters required for each event", and set the IE "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria".
- 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 after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode, on at least one supported band of that measurement type, to perform the measurements:
 - 4> resume the measurements according to the new stored measurement control information.
 - 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:

- 4> resume measurements according to the new stored control information for this measurement identity.
 - 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 there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
 - 3> the UE behaviour is unspecified;
 - 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 identified 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.

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.

8.6.7.14 Inter-frequency measurement

If the Inter-frequency cell info list, included in the variable CELL_INFO_LIST, includes a number (M) of frequencies that is larger than the number (N) considered in a UE performance requirement defined in [19] and [20]:

- 1> the UE shall:
 - 2> meet this performance requirement on the first relevant (N) frequencies, according to the order defined by the position of the frequencies in the Inter-frequency cell info list, included in the variable CELL_INFO_LIST.

1> the UE may:

- 2> ignore the remaining (M-N) frequencies.

If IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", but IE "Inter-frequency measurement quantity", IE "Inter-frequency reporting quantity" or IE "parameters required for each event" (given "CHOICE Report criteria" is set to "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") is not received, the UE shall:

- 1> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY;
- 1> set the variable CONFIGURATION_INCOMPLETE to TRUE.;

In the case of an inter-frequency measurement for FDD, the UE shall:

- 1> if IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", if an inter-frequency event is configured that is different from event 2d or 2f, and if the IE "Inter-frequency SET UPDATE" is not received in that same message:
 - 2> set the variable CONFIGURATION_INCOMPLETE to TRUE.
- 1> if the IE "Inter-frequency SET UPDATE" is received:
 - 2> if the value of the IE "UE autonomous update mode" set to "Off" or "On":
 - 3> if more than one frequency is included in the list of cells pointed at in the IE "cells for measurement" if also included in the same IE "Inter-frequency measurement", or otherwise included in the "Inter-frequency cell info" part of the variable CELL_INFO_LIST:
 - 4> set the variable CONFIGURATION_INCOMPLETE to TRUE.

If IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message:

- 1> if "~~CHOICE~~ "Report criteria" is set to "inter-frequency [measurement reporting criteria](#)" and [CHOICE "reporting criteria" in "inter-frequency measurement quantity"](#) is not set to "inter-frequency reporting criteria"; or
- 1> if "~~CHOICE~~ "Report criteria" is set to "intra-frequency [measurement reporting criteria](#)" and [CHOICE "reporting criteria" in "inter-frequency measurement quantity"](#) is not set to "intra-frequency reporting criteria":
 - 2> the UE behaviour is not specified.

If the variable CONFIGURATION_INCOMPLETE is set to TRUE, the UE shall:

- 1> act as described in subclause 8.4.1.4a.

14.11.1 Initial virtual active set

If the UE receives a MEASUREMENT CONTROL message that sets up or modifies an inter-frequency measurement and includes the IE "Inter-frequency set update", the UE shall:

1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" is included in the MEASUREMENT CONTROL message; or

1> if the IE "Intra-Frequency measurement reporting criteria" ~~and the~~including IE "Parameters required for each event" are stored for this measurement in the variable MEASUREMENT_IDENTITY;

2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

3> for each non-used frequency F_i considered in the measurement:

4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0 , the greatest downlink RSCP after despreading, or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

5> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

$$N_i = \min(N_{Ia}, N_{Cells\ F_i}) \text{ if } N_{Ia} \neq 0 \text{ and } N_i = N_{Cells\ F_i} \text{ otherwise.}$$

where:

N_{Ia} is the "Reporting deactivation threshold" included in the "Intra-Frequency measurement" IE received for that inter-frequency measurement for event 1a.

$N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

5> else:

$$N_i = N_{Cells\ F_i}$$

where:

$N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

2> if the IE "UE autonomous update mode" is set to "on":

3> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

4> send a MEASUREMENT REPORT with IEs set as follows:

5> set the Measurement identity to the identity of the inter-frequency measurement;

5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in a virtual active set of the non-used frequency considered in the inter-frequency measurement;

5> do not include the IEs "measured results" or "additional measured results".

2> if the IE "UE autonomous update mode" is set to "Off":

3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off":

4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.

3> otherwise:

- 4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and
- 4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.

1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" were not included in the MEASUREMENT CONTROL message; and

1> the IE "Intra-Frequency measurement reporting criteria" ~~and the~~ including IE "Parameters required for each event" are not stored for this measurement in the variable MEASUREMENT_IDENTITY:

2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

3> for each non-used frequency F_i considered in the measurement:

4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0 or the greatest downlink RSCP after despreading or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

5> if event 1a is configured for the used frequency in an intra-frequency measurement:

$$N_i = \min(N_{1a}, N_{Cells\ F_i}) \text{ if } N_{1a} \neq 0 \text{ and } N_i = N_{Cells\ F_i} \text{ otherwise.}$$

where:

N_{1a} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity.

$N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

5> else:

$$N_i = N_{Cells\ F_i}$$

where:

$N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

3> if the IE "UE autonomous update mode" is set to "on":

4> if event 1a is configured for the used frequency in an intra-frequency measurement:

5> send a measurement report with IEs set as follows:

6> set the Measurement identity to the identity of the inter-frequency measurement;

6> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in the initial virtual active set of the non-used frequency considered in that measurement;

6> do not include the IEs "measured results" or "additional measured results".

2> if the IE "UE autonomous update mode" is set to "off":

3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off":

4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.

3> otherwise:

- 4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and
- 4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.

TSG-RAN Working Group 2 meeting #41
Malaga, Spain , 16th-20th Febr 2004

R2-040728

CR-Form-v7

CHANGE REQUEST

⌘ **25.331 CR 2267** ⌘ rev **1** ⌘ Current version: **6.0.1** ⌘

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

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

Title:	⌘ Modification of Inter-frequency CELL_INFO_LIST
Source:	⌘ RAN WG2
Work item code:	⌘ TEI-5
Date:	⌘ Febr 2004
Category:	⌘ A
	Use <u>one</u> of the following categories:
	F (correction)
	A (corresponds to a correction in an earlier release)
	B (addition of feature),
	C (functional modification of feature)
	D (editorial modification)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .
Release:	⌘ Rel-6
	Use <u>one</u> of the following releases:
	2 (GSM Phase 2)
	R96 (Release 1996)
	R97 (Release 1997)
	R98 (Release 1998)
	R99 (Release 1999)
	Rel-4 (Release 4)
	Rel-5 (Release 5)
	Rel-6 (Release 6)

Reason for change: ⌘ 1. According to an informative note in 25.331, section 8.4.1.3, UTRAN may act as follows for modifying the Inter-frequency Cell Info List:

NOTE: If the UTRAN wants to modify the inter-frequency cell info list for an inter-frequency measurement configured with event based reporting without repeating any IEs related to the configured events, the only possibility is to set the IE "report criteria" to "intra-frequency report criteria", not include the IE "parameters required for each event", and set the IE "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria".

The specification does however not require that UE leaves the stored Intra-frequency event list unchanged if IE "Parameters required for each event" is not included.

Earlier in section 8.4.1.3, this UE behaviour is specified for the case the Intra-frequency event list is not included when modifying Intra-frequency measurement (e.g. the intra-frequency cell info list).

In case this change is not agreed, the note in section 8.4.1.3 need to be modified instead.

2. In section 8.4.1.3 and 8.6.7.14, incorrect IE names exist for Intra- and Inter-frequency measurements IEs.

3. In second part section 14.11.1, Initial virtual active set, UE behaviour is specified for the case UTRAN does not configure specific 1x events for the handling of virtual active set. However, in the text referring to the IE "Parameters required for each event", it is not clear if the Intra- or Inter-frequency event list is targeted.

Added in rev 1:

<p>Although the proposed changes are introduced from the Rel-5 onwards, they apply to release 99 functionality and may be implemented in UEs from R99 onwards.</p>	
Summary of change: ⌘	<p>1. It has been added that UE shall leave the stored Intra-frequency event list unchanged in the intra-frequency event list is not included in the message.</p> <p>2. Indicated errors have been corrected.</p> <p>3. It has been clarified that the IE "Parameters required for each event" contains the intra-frequency event list. Also, the corresponding If-statement in the first part of the section has been change.</p> <p>T1 impact: No impact Backward compatibility: Considered a clarification of currently specified UE behaviour. This correction will affect a UE implementation that has not already implemented the CR.</p>
Consequences if not approved:	<p>⌘ 1. At modification of Inter-frequency CELLINFOLIST, the MEASUREMENT CONTROL message would need to contain the complete Intra-freq event list.</p> <p>2. The indicated unclarities/incorrections will remain in the specification.</p> <p>3. The indicated unclarities/incorrections will remain in the specification.</p>

Clauses affected:	⌘ 8.4.1.3, 8.6.7.14, 14.11.1								
Other specs affected:	<table border="1" style="display: inline-table; vertical-align: middle;"> <thead> <tr> <th style="width: 20px;">Y</th> <th style="width: 20px;">N</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <p>Other core specifications ⌘</p> <p>Test specifications</p> <p>O&M Specifications</p> </div>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N								
<input type="checkbox"/>	<input checked="" type="checkbox"/>								
<input type="checkbox"/>	<input checked="" type="checkbox"/>								
<input type="checkbox"/>	<input checked="" type="checkbox"/>								
Other comments:	⌘								

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- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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" that require measurements on a frequency other than the actually used frequency:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements on at least one supported band of that measurement type:
 - 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.

NOTE: The UE is not required to perform measurements on cells for which it needs compressed mode but a suitable compressed mode pattern is not activated.

- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 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.
 - 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 reference 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 ionospheric model", "UE positioning GPS UTC model", "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 all instances of 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 IEs received in the MEASUREMENT CONTROL message;
 - 5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.
- 3> otherwise:
- 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 [measurement reporting](#) criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
 - 4> [if IE "Parameters required for each event" is included:](#)
 - 45> leave the currently stored "inter-frequency [measurement reporting](#) criteria" within "report riteria" 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 [measurement reporting](#) criteria" and "[intra-frequency reporting criteria](#)". [\[Changed indentation\]](#)
 - 4> [otherwise:](#)
 - 5> [leave the currently stored "inter-frequency measurement reporting criteria" and "intra-frequency measurement reporting criteria" within "report riteria" 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 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.
- NOTE: If the UTRAN wants to modify the inter-frequency cell info list for an inter-frequency measurement configured with event based reporting without repeating any IEs related to the configured events, the only possibility is to set the IE "report criteria" to "intra-frequency [measurement reporting](#) criteria", not include the IE "parameters required for each event", and set the IE "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria".
- 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 after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode, on at least one supported band of that measurement type, to perform the measurements:
 - 4> resume the measurements according to the new stored measurement control information.
 - 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:

- 4> resume measurements according to the new stored control information for this measurement identity.
 - 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 there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
 - 3> the UE behaviour is unspecified;
 - 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 identified 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.

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.

8.6.7.14 Inter-frequency measurement

If the Inter-frequency cell info list, included in the variable CELL_INFO_LIST, includes a number (M) of frequencies that is larger than the number (N) considered in a UE performance requirement defined in [19] and [20]:

- 1> the UE shall:
 - 2> meet this performance requirement on the first relevant (N) frequencies, according to the order defined by the position of the frequencies in the Inter-frequency cell info list, included in the variable CELL_INFO_LIST.
- 1> the UE may:
 - 2> ignore the remaining (M-N) frequencies.

If IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", but IE "Inter-frequency measurement quantity", IE "Inter-frequency reporting quantity" or IE "parameters required for each event" (given "CHOICE Report criteria" is set to "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") is not received, the UE shall:

- 1> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY;
- 1> set the variable CONFIGURATION_INCOMPLETE to TRUE.;

In the case of an inter-frequency measurement for FDD, the UE shall:

- 1> if IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", if an inter-frequency event is configured that is different from event 2d or 2f, and if the IE "Inter-frequency SET UPDATE" is not received in that same message:
 - 2> set the variable CONFIGURATION_INCOMPLETE to TRUE.
- 1> if the IE "Inter-frequency SET UPDATE" is received:
 - 2> if the value of the IE "UE autonomous update mode" set to "Off" or "On":
 - 3> if more than one frequency is included in the list of cells pointed at in the IE "cells for measurement" if also included in the same IE "Inter-frequency measurement", or otherwise included in the "Inter-frequency cell info" part of the variable CELL_INFO_LIST:
 - 4> set the variable CONFIGURATION_INCOMPLETE to TRUE.

If IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message:

- 1> if ~~CHOICE "Report criteria"~~ is set to "inter-frequency [measurement reporting criteria](#)" and [CHOICE "reporting criteria" in "inter-frequency measurement quantity"](#) is not set to "inter-frequency reporting criteria"; or
- 1> if ~~CHOICE "Report criteria"~~ is set to "intra-frequency [measurement reporting criteria](#)" and [CHOICE "reporting criteria" in "inter-frequency measurement quantity"](#) is not set to "intra-frequency reporting criteria":
 - 2> the UE behaviour is not specified.

If the variable CONFIGURATION_INCOMPLETE is set to TRUE, the UE shall:

- 1> act as described in subclause 8.4.1.4a.

14.11.1 Initial virtual active set

If the UE receives a MEASUREMENT CONTROL message that sets up or modifies an inter-frequency measurement and includes the IE "Inter-frequency set update", the UE shall:

1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" is included in the MEASUREMENT CONTROL message; or

1> if the IE "Intra-Frequency measurement reporting criteria" ~~and the~~including IE "Parameters required for each event" are stored for this measurement in the variable MEASUREMENT_IDENTITY;

2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

3> for each non-used frequency F_i considered in the measurement:

4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0 , the greatest downlink RSCP after despreading, or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

5> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

$$N_i = \min(N_{Ia}, N_{Cells\ F_i}) \text{ if } N_{Ia} \neq 0 \text{ and } N_i = N_{Cells\ F_i} \text{ otherwise.}$$

where:

N_{Ia} is the "Reporting deactivation threshold" included in the "Intra-Frequency measurement" IE received for that inter-frequency measurement for event 1a.

$N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

5> else:

$$N_i = N_{Cells\ F_i}$$

where:

$N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

2> if the IE "UE autonomous update mode" is set to "on":

3> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

4> send a MEASUREMENT REPORT with IEs set as follows:

5> set the Measurement identity to the identity of the inter-frequency measurement;

5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in a virtual active set of the non-used frequency considered in the inter-frequency measurement;

5> do not include the IEs "measured results" or "additional measured results".

2> if the IE "UE autonomous update mode" is set to "Off":

3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off":

4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.

3> otherwise:

- 4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and
- 4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.

1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" were not included in the MEASUREMENT CONTROL message; and

1> the IE "Intra-Frequency measurement reporting criteria" ~~and the~~ including IE "Parameters required for each event" are not stored for this measurement in the variable MEASUREMENT_IDENTITY:

2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

3> for each non-used frequency F_i considered in the measurement:

4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0 or the greatest downlink RSCP after despreading or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

5> if event 1a is configured for the used frequency in an intra-frequency measurement:

$$N_i = \min(N_{1a}, N_{Cells\ F_i}) \text{ if } N_{1a} \neq 0 \text{ and } N_i = N_{Cells\ F_i} \text{ otherwise.}$$

where:

N_{1a} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity.

$N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

5> else:

$$N_i = N_{Cells\ F_i}$$

where:

$N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

3> if the IE "UE autonomous update mode" is set to "on":

4> if event 1a is configured for the used frequency in an intra-frequency measurement:

5> send a measurement report with IEs set as follows:

6> set the Measurement identity to the identity of the inter-frequency measurement;

6> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in the initial virtual active set of the non-used frequency considered in that measurement;

6> do not include the IEs "measured results" or "additional measured results".

2> if the IE "UE autonomous update mode" is set to "off":

3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off":

4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.

3> otherwise:

- 4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and
- 4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.

CHANGE REQUEST

25.331 CR 2268 # rev - # Current version: 5.7.1

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

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

Title:	# [VAS] 1B-1C conflicts when 1A is not configured		
Source:	# RAN WG2		
Work item code:	# TEI-5	Date:	# 02/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 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)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	# In clause 14.11.2 there is a requirement to continuously update the VAS if event 1A is not configured ("if event 1a is not configured:[...]the UE shall continuously update the virtual active set to consist of all cells on frequency F_i considered in that inter-frequency measurement, without sending any corresponding measurement report").This conflicts with the requirements set for event 1B, 1C set in the same section, since the current wording suggests that even without event 1A configured, events 1B, 1C could be triggered. R99/Rel-4 UEs are already allowed to implement this functionality as specified in this CR.
Summary of change:	# Separated the conditions of having 1A configured and triggered so that 1B and 1C are only available when 1A is configured.
Consequences if not approved:	# Wording will still suggest that events 1B/1C can be triggered when even 1A is not configured and this will conflict with the requirement for the UE to update the VAS autonomously and not send any measurement report.

Clauses affected:	# 14.11.2						
Other specs affected:	#						
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> </table> Other core specifications # Test specifications # O&M Specifications #	Y	N				
Y	N						
Other comments:	#						

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>.

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 <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.

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14.11.1 Initial virtual active set

If the UE receives a MEASUREMENT CONTROL message that sets up or modifies an inter-frequency measurement and includes the IE "Inter-frequency set update", the UE shall:

- 1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" is included in the MEASUREMENT CONTROL message; or
- 1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" are stored for this measurement in the variable MEASUREMENT_IDENTITY:
- 2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":
 - 3> for each non-used frequency F_i considered in the measurement:
 - 4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0 , the greatest downlink RSCP after despreading, or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:
 - 5> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

$$N_i = \min(N_{1a}, N_{Cells\ F_i}) \text{ if } N_{1a} \neq 0 \text{ and } N_i = N_{Cells\ F_i} \text{ otherwise.}$$

where:

N_{1a} is the "Reporting deactivation threshold" included in the "Intra-Frequency measurement" IE received for that inter-frequency measurement for event 1a.

$N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

5> else:

$$N_i = N_{Cells\ F_i}$$

where:

$N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

- 2> if the IE "UE autonomous update mode" is set to "on":
 - 3> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":
 - 4> send a MEASUREMENT REPORT with IEs set as follows:
 - 5> set the Measurement identity to the identity of the inter-frequency measurement;
 - 5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in a virtual active set of the non-used frequency considered in the inter-frequency measurement;
 - 5> do not include the IEs "measured results" or "additional measured results".
- 2> if the IE "UE autonomous update mode" is set to "Off":

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- 3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off":
- 4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.
- 3> otherwise:
- 4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement;
and
- 4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.
- 1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" were not included in the MEASUREMENT CONTROL message; and
- 1> the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" are not stored for this measurement in the variable MEASUREMENT_IDENTITY:
- 2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":
- 3> for each non-used frequency F_i considered in the measurement:
- 4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0 or the greatest downlink RSCP after despreading or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:
- 5> if event 1a is configured for the used frequency in an intra-frequency measurement:
- $$N_i = \min(N_{Ia}, N_{Cells\ F_i}) \text{ if } N_{Ia} \neq 0 \text{ and } N_i = N_{Cells\ F_i} \text{ otherwise.}$$
- where:
- N_{Ia} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity.
- $N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.
- 5> else:
- $$N_i = N_{Cells\ F_i}$$
- where:
- $N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.
- 3> if the IE "UE autonomous update mode" is set to "on":
- 4> if event 1a is configured for the used frequency in an intra-frequency measurement:
- 5> send a measurement report with IEs set as follows:
- 6> set the Measurement identity to the identity of the inter-frequency measurement;

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- 6> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in the initial virtual active set of the non-used frequency considered in that measurement;
 - 6> do not include the IEs "measured results" or "additional measured results".
- 2> if the IE "UE autonomous update mode" is set to "off":
- 3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off":
 - 4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.
 - 3> otherwise:
 - 4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement;
and
 - 4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.

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14.11.2 Virtual active set update during an inter-frequency measurement

If the IE "Intra-frequency measurement reporting criteria" is stored for an inter-frequency measurement [and Event 1A is configured](#), the UE shall:

- 1> ~~if Event 1a is configured in that IE~~, when [Event 1a](#) ~~this event~~ is triggered by a cell for a non-used frequency considered in that measurement (according to the criteria described in subclause 14.1.2.1):
 - 2> if the "Reporting deactivation threshold" is equal to 0, or if the "Reporting deactivation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is less than or equal to the "Reporting deactivation threshold":
 - 3> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":
 - 4> add the primary CPICH that enters the reporting range to the "virtual active set".
 - 3> if the IE "UE autonomous update mode" is set to "on" or "off":
 - 4> send a measurement report with IEs set as below:
 - 5> set the Measurement identity to the identity of the inter-frequency measurement;
 - 5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of the cell that triggered the event;
 - 5> do not include the IEs "measured results" or "additional measured results".
 - 1> if Event 1b was configured, when this event is triggered by a cell for a non-used frequency considered in that measurement (according to the criteria described in subclause 14.1.2.2):
 - 2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" and if the number of cells included in the virtual active set is greater than 1:
 - 3> remove the primary CPICH that leaves the reporting range from the "virtual active set".
 - 2> if the IE "UE autonomous update mode" is set to "on" or "off":
 - 3> send a measurement report with IEs set as below:
 - 4> set the Measurement identity to the identity of the inter-frequency measurement;
 - 4> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1b, and in "Cell measurement event results" the CPICH info of the cell that triggered the event;
 - 4> do not include the IEs "measured results" or "additional measured results".
 - 1> if Event 1c was configured, when this event is triggered by a cell for a non-used frequency considered in that measurement (according to the criteria described in subclause 14.1.2.3):
 - 2> if the "Reporting activation threshold" is equal to 0, or if the "Reporting activation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is greater than or equal to the "Reporting activation threshold":
 - 3> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

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- 4> rank all active and non-active primary CPICHs and take the n best cells to create a new "virtual active set", where n is the number of active primary CPICHs in the "virtual active set".
- 3> if the IE "UE autonomous update mode" is set to "on" or "off":
 - 4> send a measurement report with IEs set as below:
 - 5> set the Measurement identity to the identity of the inter-frequency measurement;
 - 5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1c, and in "Cell measurement event results" include the CPICH info of all the cells that satisfy the event, and the rest of the entries as the cells that were in the virtual active set before the event occurred and that are worse than the best cell that triggered the event, in the order of their measured value (best one first);
 - 5> do not include the IEs "measured results" or "additional measured results".

If the IE "Intra-frequency measurement reporting criteria" is stored for an inter-frequency measurement, the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

- 1> if event 1a is not configured:
 - 2> the UE shall continuously update the virtual active set to consist of all cells on frequency F_i considered in that inter-frequency measurement, without sending any corresponding measurement report.

If the IE "Intra-frequency measurement reporting criteria" is not stored for that inter-frequency measurement, the UE shall:

- 1> apply the events of type 1a, 1b and 1c that were defined for the used frequency in other stored measurements of type "intra-frequency" at the time the inter-frequency measurement was set up; and
- 1> update the virtual active set for the non-used frequencies considered in that measurement according to the following rules:
 - 2> if several events of type 1a (resp. 1b,1c) were defined for the used frequency when the inter-frequency measurement was set up, only the first 1a event (resp 1b, 1c) that was defined in the measurement with the lowest measurement identity shall apply to the non-used frequencies;
 - 2> all the cells considered in the inter-frequency measurements shall be able to affect the reporting range for event 1a and 1b. (i.e. the IE "Cells forbidden to affect reporting range" possibly stored for the intra-frequency measurements on the used frequency does not apply to the non-used frequencies considered in the inter-frequency measurement);
 - 2> the IEs "amount of reporting" and "reporting interval" that were stored for the intra-frequency measurements on the used frequency shall not be considered if reports of the virtual active set updates are needed.
- 1> if event 1a is applicable to the non-used frequencies considered in the inter-frequency measurement:
 - 2> when this event is triggered (according to the criteria described in subclause 14.1.2.1) by a cell for a non-used frequency considered in that measurement:
 - 23> if the "Reporting deactivation threshold" is equal to 0, or if the "Reporting deactivation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is less than or equal to the "Reporting deactivation threshold":
 - 34> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":
 - 45> add the primary CPICH that enters the reporting range to the "virtual active set".

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If the IE "Intra-frequency measurement reporting criteria" is not stored for an inter-frequency measurement, the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

- 1> if Event 1a is not defined for the used frequency in other stored measurements of type "intra-frequency" at the time the inter-frequency measurement was set up:
- 2> the UE shall continuously update the virtual active set to consist of all cells on frequency F_i considered in that inter-frequency measurement, without sending any corresponding measurement report.

If none of the cells that are considered in the measurement on this frequency were measured, the UE may treat the virtual active set as empty and follow the appropriate initialisation procedured in subclause 14.11.1 when any relevant cell can first be measured.

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CR-Form-v7

CHANGE REQUEST

25.331 CR 2269 # rev - # Current version: 6.0.1

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

Title:	# [VAS] 1B-1C conflicts when 1A is not configured		
Source:	# RAN WG2		
Work item code:	# TEI-5	Date:	# 02/2004
Category:	# A	Release:	# Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 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)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# In clause 14.11.2 there is a requirement to continuously update the VAS if event 1A is not configured ("if event 1a is not configured:[...]the UE shall continuously update the virtual active set to consist of all cells on frequency F_i considered in that inter-frequency measurement, without sending any corresponding measurement report").This conflicts with the requirements set for event 1B, 1C set in the same section, since the current wording suggests that even without event 1A configured, events 1B, 1C could be triggered. R99/Rel-4 UEs are already allowed to implement this functionality as specified in this CR.
Summary of change:	# Separated the conditions of having 1A configured and triggered so that 1B and 1C are only available when 1A is configured.
Consequences if not approved:	# Wording will still suggest that events 1B/1C can be triggered when even 1A is not configured and this will conflict with the requirement for the UE to update the VAS autonomously and not send any measurement report.

Clauses affected:	# 14.11.2						
Other specs affected:	<table style="display: inline-table; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px;">Y</td> <td style="border: 1px solid black; padding: 2px;">N</td> </tr> <tr> <td style="border: 1px solid black; width: 20px; height: 15px;"></td> <td style="border: 1px solid black; width: 20px; height: 15px;"></td> </tr> <tr> <td style="border: 1px solid black; width: 20px; height: 15px;"></td> <td style="border: 1px solid black; width: 20px; height: 15px;"></td> </tr> </table> Other core specifications # Test specifications # O&M Specifications #	Y	N				
Y	N						
Other comments:	#						

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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 <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.

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14.11.1 Initial virtual active set

If the UE receives a MEASUREMENT CONTROL message that sets up or modifies an inter-frequency measurement and includes the IE "Inter-frequency set update", the UE shall:

- 1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" is included in the MEASUREMENT CONTROL message; or
- 1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" are stored for this measurement in the variable MEASUREMENT_IDENTITY:
- 2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":
 - 3> for each non-used frequency F_i considered in the measurement:
 - 4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0 , the greatest downlink RSCP after despreading, or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:
 - 5> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

$$N_i = \min(N_{1a}, N_{Cells\ F_i}) \text{ if } N_{1a} \neq 0 \text{ and } N_i = N_{Cells\ F_i} \text{ otherwise.}$$

where:

N_{1a} is the "Reporting deactivation threshold" included in the "Intra-Frequency measurement" IE received for that inter-frequency measurement for event 1a.

$N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

5> else:

$$N_i = N_{Cells\ F_i}$$

where:

$N_{Cells\ F_i}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

- 2> if the IE "UE autonomous update mode" is set to "on":
 - 3> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":
 - 4> send a MEASUREMENT REPORT with IEs set as follows:
 - 5> set the Measurement identity to the identity of the inter-frequency measurement;
 - 5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in a virtual active set of the non-used frequency considered in the inter-frequency measurement;
 - 5> do not include the IEs "measured results" or "additional measured results".
- 2> if the IE "UE autonomous update mode" is set to "Off":

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- 3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off":
 - 4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.
 - 3> otherwise:
 - 4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and
 - 4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.
 - 1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" were not included in the MEASUREMENT CONTROL message; and
 - 1> the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" are not stored for this measurement in the variable MEASUREMENT_IDENTITY:
 - 2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":
 - 3> for each non-used frequency F_i considered in the measurement:
 - 4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0 or the greatest downlink RSCP after despreading or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:
 - 5> if event 1a is configured for the used frequency in an intra-frequency measurement:

$$N_i = \min(N_{Ia}, N_{Cells Fi}) \text{ if } N_{Ia} \neq 0 \text{ and } N_i = N_{Cells Fi} \text{ otherwise.}$$
 - where:
 - N_{Ia} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity.
 - $N_{Cells Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.
 - 5> else:

$$N_i = N_{Cells Fi}$$
 - where:
 - $N_{Cells Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.
- 3> if the IE "UE autonomous update mode" is set to "on":
 - 4> if event 1a is configured for the used frequency in an intra-frequency measurement:
 - 5> send a measurement report with IEs set as follows:
 - 6> set the Measurement identity to the identity of the inter-frequency measurement;

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6> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in the initial virtual active set of the non-used frequency considered in that measurement;

6> do not include the IEs "measured results" or "additional measured results".

2> if the IE "UE autonomous update mode" is set to "off":

3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off":

4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.

3> otherwise:

4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement;
and

4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.

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14.11.2 Virtual active set update during an inter-frequency measurement

If the IE "Intra-frequency measurement reporting criteria" is stored for an inter-frequency measurement [and Event 1A is configured](#), the UE shall:

- 1> ~~if Event 1a is configured in that IE~~, when [Event 1a](#) ~~this event~~ is triggered by a cell for a non-used frequency considered in that measurement (according to the criteria described in subclause 14.1.2.1):
 - 2> if the "Reporting deactivation threshold" is equal to 0, or if the "Reporting deactivation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is less than or equal to the "Reporting deactivation threshold":
 - 3> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":
 - 4> add the primary CPICH that enters the reporting range to the "virtual active set".
 - 3> if the IE "UE autonomous update mode" is set to "on" or "off":
 - 4> send a measurement report with IEs set as below:
 - 5> set the Measurement identity to the identity of the inter-frequency measurement;
 - 5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of the cell that triggered the event;
 - 5> do not include the IEs "measured results" or "additional measured results".
 - 1> if Event 1b was configured, when this event is triggered by a cell for a non-used frequency considered in that measurement (according to the criteria described in subclause 14.1.2.2):
 - 2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" and if the number of cells included in the virtual active set is greater than 1:
 - 3> remove the primary CPICH that leaves the reporting range from the "virtual active set".
 - 2> if the IE "UE autonomous update mode" is set to "on" or "off":
 - 3> send a measurement report with IEs set as below:
 - 4> set the Measurement identity to the identity of the inter-frequency measurement;
 - 4> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1b, and in "Cell measurement event results" the CPICH info of the cell that triggered the event;
 - 4> do not include the IEs "measured results" or "additional measured results".
 - 1> if Event 1c was configured, when this event is triggered by a cell for a non-used frequency considered in that measurement (according to the criteria described in subclause 14.1.2.3):
 - 2> if the "Reporting activation threshold" is equal to 0, or if the "Reporting activation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is greater than or equal to the "Reporting activation threshold":
 - 3> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

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- 4> rank all active and non-active primary CPICHs and take the n best cells to create a new "virtual active set", where n is the number of active primary CPICHs in the "virtual active set".
- 3> if the IE "UE autonomous update mode" is set to "on" or "off":
 - 4> send a measurement report with IEs set as below:
 - 5> set the Measurement identity to the identity of the inter-frequency measurement;
 - 5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1c, and in "Cell measurement event results" include the CPICH info of all the cells that satisfy the event, and the rest of the entries as the cells that were in the virtual active set before the event occurred and that are worse than the best cell that triggered the event, in the order of their measured value (best one first);
 - 5> do not include the IEs "measured results" or "additional measured results".

If the IE "Intra-frequency measurement reporting criteria" is stored for an inter-frequency measurement, the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

- 1> if event 1a is not configured:
 - 2> the UE shall continuously update the virtual active set to consist of all cells on frequency F_i considered in that inter-frequency measurement, without sending any corresponding measurement report.

If the IE "Intra-frequency measurement reporting criteria" is not stored for that inter-frequency measurement, the UE shall:

- 1> apply the events of type 1a, 1b and 1c that were defined for the used frequency in other stored measurements of type "intra-frequency" at the time the inter-frequency measurement was set up; and
- 1> update the virtual active set for the non-used frequencies considered in that measurement according to the following rules:
 - 2> if several events of type 1a (resp. 1b,1c) were defined for the used frequency when the inter-frequency measurement was set up, only the first 1a event (resp 1b, 1c) that was defined in the measurement with the lowest measurement identity shall apply to the non-used frequencies;
 - 2> all the cells considered in the inter-frequency measurements shall be able to affect the reporting range for event 1a and 1b. (i.e. the IE "Cells forbidden to affect reporting range" possibly stored for the intra-frequency measurements on the used frequency does not apply to the non-used frequencies considered in the inter-frequency measurement);
 - 2> the IEs "amount of reporting" and "reporting interval" that were stored for the intra-frequency measurements on the used frequency shall not be considered if reports of the virtual active set updates are needed.
- 1> if event 1a is applicable to the non-used frequencies considered in the inter-frequency measurement:
 - 2> when this event is triggered (according to the criteria described in subclause 14.1.2.1) by a cell for a non-used frequency considered in that measurement:
 - 23> if the "Reporting deactivation threshold" is equal to 0, or if the "Reporting deactivation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is less than or equal to the "Reporting deactivation threshold":
 - 34> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":
 - 45> add the primary CPICH that enters the reporting range to the "virtual active set".

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~~34~~> if the IE "UE autonomous update mode" is set to "on" or "off":

~~4~~> send a measurement report with IEs set as below:

5> set the Measurement identity to the identity of the inter-frequency measurement;

5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of the cell that triggered the event;

5> do not include the IEs "measured results" or "additional measured results".

~~42~~> if event 1b is applicable for the non-used frequencies considered in that inter-frequency measurement, when this event is triggered (according to the criteria described in subclause 14.1.2.2) by a cell for a non-used frequency considered in that measurement:

~~23~~> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" and if the number of cells included in the virtual active set is greater than 1:

~~34~~> remove the primary CPICH that leaves the reporting range from the "virtual active set".

~~23~~> if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement report with IEs set as below:

~~34~~> set the Measurement identity to the identity of the inter-frequency measurement;

~~34~~> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1b, and in "Cell measurement event results" the CPICH info of the cell that triggered the event;

~~34~~> do not include the IEs "measured results" or "additional measured results".

~~42~~> if event 1c is applicable for the non-used frequencies considered in that inter-frequency measurement, when this event is triggered (according to the criteria described in subclause 14.1.2.3) by a cell for a non-used frequency considered in that measurement:

~~23~~> if the "Reporting activation threshold" is equal to 0, or if the "Reporting activation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is greater than or equal to the "Reporting activation threshold":

~~34~~> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

~~45~~> rank all active and non-active primary CPICHs and take the n best cells to create a new "virtual active set", where n is the number of active primary CPICHs in the "virtual active set".

~~34~~> if the IE "UE autonomous update mode" is set to "on" or "off":

~~4~~> send a measurement report with IEs set as below:

5> set the Measurement identity to the identity of the inter-frequency measurement.

5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1c, and in "Cell measurement event results" include the CPICH info of all the non-active cells which satisfy the event, and the rest of the entries as the cells that were in the virtual active set before the event occurred and that are worse than the best cell that triggered the event, in the order of their measured value (best one first);

5> do not include the IEs "measured results" or "additional measured results".

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If the IE "Intra-frequency measurement reporting criteria" is not stored for an inter-frequency measurement, the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

- 1> if Event 1a is not defined for the used frequency in other stored measurements of type "intra-frequency" at the time the inter-frequency measurement was set up:
- 2> the UE shall continuously update the virtual active set to consist of all cells on frequency F_i considered in that inter-frequency measurement, without sending any corresponding measurement report.

If none of the cells that are considered in the measurement on this frequency were measured, the UE may treat the virtual active set as empty and follow the appropriate initialisation procedured in subclause 14.11.1 when any relevant cell can first be measured.

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CHANGE REQUEST

25.331 CR 2270 # rev - # Current version: 5.7.1

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

Title:	# Handling of wait time in RRC connection reject		
Source:	# RAN WG2		
Work item code:	# TEI-5	Date:	# 09/02/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	# Section 8.1.3.9 described the UE behaviour on reception of RRC CONNECTION REJECT. However, there are 2 aspects which are not fully specified: 1/ If the message directs a the UE to another RAT or to another frequency then the UE is required to: "disable cell reselection to the original RAT/original UTRA carrier until the time stated in the IE " wait time" has elapsed." This text does not specify whether this requirement to disable reselection to the original RAT/UTRA carrier applies only until the UE has successfully established a connection (either an RRC Connection or a connection on the indicated RAT), or whether it also applies after the connection has been established and potentially even after the UE has returned to idle mode again. 2/ If the UE receives an RRC Connection Reject message that directs the UE to another frequency the UE will move to that frequency and disable reselection to the original frequency until the wait time has elapsed. However the cell on the new frequency could also redirect the UE to a third frequency and require the UE to disable reselection to that frequency until the wait timer has expired. Also, the new frequency could redirect the UE to back to the original frequency which would be in conflict with the original redirection. It is not specified how the UE is intended to handle such scenarios.
Summary of change:	# 1/ It is proposed to clarify that the disabling of reselection to the original RAT or original UTRA frequency only applies until the RRC Connection establishment

procedure ends (either successfully or unsuccessfully) or the UE successfully establishes a connection on the target RAT.

2/ It is proposed to clarify that when the UE receives an RRC Connection Reject the UE can restart cell reselection to any frequency that is disabled. This newly received RRC Connection Reject could apply a redirection to a third frequency or back to the original frequency.

Although the proposed changes are introduced from the Rel-5 onwards, they apply to release 99 functionality and may be implemented in UEs from R99 onwards.

Consequences if not approved:

⌘ If the first aspect of the CR is not approved UEs may continue to disable cell reselections to a certain RAT or UTRA carrier after the RRC Connection Establishment procedure ends. This means, for example, that an RRC Connected mode UE may not perform expected cell reselections.

If the second aspect CR is not approved then UE behaviour will be unpredictable in the case of multiple redirections. UEs may implement an unnecessary requirement to handle multiple wait timers for multiple frequencies simultaneously.

Clauses affected: ⌘ 8.1.3.9

Other specs affected:

Y	N
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Other core specifications ⌘
Test specifications ⌘
O&M Specifications ⌘

Other comments: ⌘

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- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.1.3.9 Reception of an RRC CONNECTION REJECT message by the UE

When the UE receives an RRC CONNECTION REJECT message on the downlink CCCH, it shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION REJECT message with the value of the variable INITIAL_UE_IDENTITY:

If the values are different, the UE shall ignore the rest of the message;

If the values are identical, the UE shall:

1> stop timer T300; and

1> clear the entry for the RRC CONNECTION REJECT message in the table "Accepted transactions" in the variable TRANSACTIONS;

1> if the UE has disabled cell reselection to a UTRA carrier due to an earlier RRC CONNECTION REJECT message, the UE shall resume cell reselection to that UTRA carrier;

1> if the IE "wait time" <> '0'; and

1> if the IE "frequency info" is present and:

2> if V300 is equal to or smaller than N300:

3> select a suitable cell belonging to the selected PLMN or any PLMN indicated to be equivalent to that PLMN on the designated UTRA carrier;

3> after having selected and camped on a suitable cell on the designated UTRA carrier:

4> set CFN in relation to SFN of current cell according to subclause 8.5.15;

4> set the contents of the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;

4> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;

4> transmit an RRC CONNECTION REQUEST message on the uplink CCCH;

4> reset counter V300;

4> start timer T300 when the MAC layer indicates success or failure in transmitting the message;

4> disable cell reselection to original UTRA carrier until the time stated in the IE "wait time" has elapsed or until the RRC connection establishment procedure ends, whichever occurs first;

3> if no suitable cell on the designated UTRA carrier is found:

4> wait for at least the time stated in the IE "wait time";

4> set CFN in relation to SFN of current cell according to subclause 8.5.15;

4> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;

4> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;

4> then submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH of the original serving cell;

4> increment counter V300;

4> restart timer T300 when the MAC layer indicates success or failure to transmit the message;

2> if V300 is greater than N300:

3> enter idle mode;

- 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 3> consider the RRC establishment procedure to be unsuccessful;
 - 3> the procedure ends.
- 1> if the IE "inter-RAT info" is present and:
- 2> if V300 is equal to or smaller than N300:
 - 3> select a suitable cell belonging to the selected PLMN or any PLMN indicated to be equivalent to that PLMN in the designated RAT;
 - 3> after having selected and camped on a suitable cell on the designated RAT:
 - 4> disable cell reselection to the original RAT until the time stated in the IE "wait time" has elapsed or until the UE successfully establishes a connection on the designated RAT, whichever occurs first.
 - 3> if no suitable cell in the designated RAT is found:
 - 4> wait at least the time stated in the IE "wait time";
 - 4> set CFN in relation to SFN of current cell according to subclause 8.5.15;
 - 4> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.2.
 - 4> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
 - 4> then submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
 - 4> increment counter V300;
 - 4> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
 - 2> if V300 is greater than N300:
 - 3> enter idle mode;
 - 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 3> consider the RRC establishment procedure to be unsuccessful;
 - 3> the procedure ends.
- 1> If neither the IEs "frequency info" nor "inter-RAT info" are present and:
- 2> if V300 is equal to or smaller than N300:
 - 3> wait at least the time stated in the IE "wait time";
 - 3> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.2;
 - 3> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
 - 3> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
 - 3> increment counter V300;
 - 3> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
 - 2> if V300 is greater than N300:
 - 3> enter idle mode;

- 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 3> consider the RRC establishment procedure to be unsuccessful;
 - 3> the procedure ends.
- 1> if the IE "wait time" = '0':
- 2> enter idle mode;
 - 2> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 2> consider the RRC establishment procedure to be unsuccessful;
 - 2> the procedure ends.

CHANGE REQUEST

25.331 CR 2271 # rev - # Current version: 6.0.1

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

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

Title:	# Handling of wait time in RRC connection reject		
Source:	# RAN WG2		
Work item code:	# TEI-5	Date:	# 09/02/2004
Category:	# A	Release:	# Rel-6
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	# Section 8.1.3.9 described the UE behaviour on reception of RRC CONNECTION REJECT. However, there are 2 aspects which are not fully specified: 1/ If the message directs a the UE to another RAT or to another frequency then the UE is required to: "disable cell reselection to the original RAT/original UTRA carrier until the time stated in the IE " wait time" has elapsed." This text does not specify whether this requirement to disable reselection to the original RAT/UTRA carrier applies only until the UE has successfully established a connection (either an RRC Connection or a connection on the indicated RAT), or whether it also applies after the connection has been established and potentially even after the UE has returned to idle mode again. 2/ If the UE receives an RRC Connection Reject message that directs the UE to another frequency the UE will move to that frequency and disable reselection to the original frequency until the wait time has elapsed. However the cell on the new frequency could also redirect the UE to a third frequency and require the UE to disable reselection to that frequency until the wait timer has expired. Also, the new frequency could redirect the UE to back to the original frequency which would be in conflict with the original redirection. It is not specified how the UE is intended to handle such scenarios.
Summary of change:	# 1/ It is proposed to clarify that the disabling of reselection to the original RAT or original UTRA frequency only applies until the RRC Connection establishment

procedure ends (either successfully or unsuccessfully) or the UE successfully establishes a connection on the target RAT.

2/ It is proposed to clarify that when the UE receives an RRC Connection Reject the UE can restart cell reselection to any frequency that is disabled. This newly received RRC Connection Reject could apply a redirection to a third frequency or back to the original frequency.

Although the proposed changes are introduced from the Rel-5 onwards, they apply to release 99 functionality and may be implemented in UEs from R99 onwards.

Consequences if not approved:

⌘ If the first aspect of the CR is not approved UEs may continue to disable cell reselections to a certain RAT or UTRA carrier after the RRC Connection Establishment procedure ends. This means, for example, that an RRC Connected mode UE may not perform expected cell reselections.

If the second aspect CR is not approved then UE behaviour will be unpredictable in the case of multiple redirections. UEs may implement an unnecessary requirement to handle multiple wait timers for multiple frequencies simultaneously.

Clauses affected: ⌘ 8.1.3.9

Other specs affected:

Y	N
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Other core specifications ⌘
Test specifications ⌘
O&M Specifications ⌘

Other comments: ⌘

How to create CRs using this form:

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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.
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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.

8.1.3.9 Reception of an RRC CONNECTION REJECT message by the UE

When the UE receives an RRC CONNECTION REJECT message on the downlink CCCH, it shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION REJECT message with the value of the variable INITIAL_UE_IDENTITY:

If the values are different, the UE shall ignore the rest of the message;

If the values are identical, the UE shall:

1> stop timer T300; and

1> clear the entry for the RRC CONNECTION REJECT message in the table "Accepted transactions" in the variable TRANSACTIONS;

1> if the UE has disabled cell reselection to a UTRA carrier due to an earlier RRC CONNECTION REJECT message, the UE shall resume cell reselection to that UTRA carrier;

1> if the IE "wait time" \neq '0'; and

1> if the IE "frequency info" is present and:

2> if V300 is equal to or smaller than N300:

3> select a suitable cell belonging to the selected PLMN or any PLMN indicated to be equivalent to that PLMN on the designated UTRA carrier;

3> after having selected and camped on a suitable cell on the designated UTRA carrier:

4> set CFN in relation to SFN of current cell according to subclause 8.5.15;

4> set the contents of the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;

4> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;

4> transmit an RRC CONNECTION REQUEST message on the uplink CCCH;

4> reset counter V300;

4> start timer T300 when the MAC layer indicates success or failure in transmitting the message;

4> disable cell reselection to original UTRA carrier until the time stated in the IE "wait time" has elapsed or until the RRC connection establishment procedure ends, whichever occurs first;

3> if no suitable cell on the designated UTRA carrier is found:

4> wait for at least the time stated in the IE "wait time";

4> set CFN in relation to SFN of current cell according to subclause 8.5.15;

4> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;

4> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;

4> then submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH of the original serving cell;

4> increment counter V300;

4> restart timer T300 when the MAC layer indicates success or failure to transmit the message;

2> if V300 is greater than N300:

3> enter idle mode;

- 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 3> consider the RRC establishment procedure to be unsuccessful;
 - 3> the procedure ends.
- 1> if the IE "inter-RAT info" is present and:
- 2> if V300 is equal to or smaller than N300:
 - 3> select a suitable cell belonging to the selected PLMN or any PLMN indicated to be equivalent to that PLMN in the designated RAT;
 - 3> after having selected and camped on a suitable cell on the designated RAT:
 - 4> disable cell reselection to the original RAT until the time stated in the IE "wait time" has elapsed or until the UE successfully establishes a connection on the designated RAT, whichever occurs first.
 - 3> if no suitable cell in the designated RAT is found:
 - 4> wait at least the time stated in the IE "wait time";
 - 4> set CFN in relation to SFN of current cell according to subclause 8.5.15;
 - 4> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.2.
 - 4> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
 - 4> then submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
 - 4> increment counter V300;
 - 4> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
 - 2> if V300 is greater than N300:
 - 3> enter idle mode;
 - 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 3> consider the RRC establishment procedure to be unsuccessful;
 - 3> the procedure ends.
- 1> If neither the IEs "frequency info" nor "inter-RAT info" are present and:
- 2> if V300 is equal to or smaller than N300:
 - 3> wait at least the time stated in the IE "wait time";
 - 3> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.2;
 - 3> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
 - 3> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
 - 3> increment counter V300;
 - 3> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
 - 2> if V300 is greater than N300:
 - 3> enter idle mode;

- 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 3> consider the RRC establishment procedure to be unsuccessful;
 - 3> the procedure ends.
- 1> if the IE "wait time" = '0':
- 2> enter idle mode;
 - 2> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 2> consider the RRC establishment procedure to be unsuccessful;
 - 2> the procedure ends.

CHANGE REQUEST

⌘ 25.331 CR 2273 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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

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

Title:	⌘ Misalignments between R'99 and Rel-5 procedures		
Source:	⌘ RAN WG2		
Work item code:	⌘ TEI-5	Date:	⌘ February 16 2004
Category:	⌘ F	Release:	⌘ Rel-5
Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:	
F (correction)		2 (GSM Phase 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)		R98 (Release 1998)	
D (editorial modification)		R99 (Release 1999)	
Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)	
		Rel-5 (Release 5)	
		Rel-6 (Release 6)	

Reason for change: ⌘ A comparison of the procedural sections of TS 25.331 Rel-5 and R'99 has revealed minor misalignments in the Rel-5 version of the specifications. Below follows a list of the errors found in the Rel-5 version:

Major misalignments:

M1) 8.1.1.1.2, In table 8.1.1 it is removed the possibility to read SIB 12 while in idle mode.

This is not necessary, since the UE should be free to read and store SIB 12 for a later use in the same cell.

M2) 8.2.2.3, hard handover correction

The following sentence is removed in Rel-5:

In case the reconfiguration procedure is used to remove all existing RL(s) in the active set while new RL(s) are established the UE shall:

This sentence is followed by:

perform a hard handover and apply physical layer synchronisation procedure A as specified in [29]

The removal of the first sentence could cause synch procedure A to be applied even if it is not a hard handover

M3) 8.2.2.3 Multiple occurrences, use of the variable **TIMERS_AND_CONSTANTS**

In R'99 T305 is configured based on the value included in *system*

*information block type 1 instead than in the variable
TIMERS_AND_CONSTANTS*

M4) 8.2.2.3: No reason could be found for the removal of "COUNT-C" from the sentences below in Rel-5.

2> set the new uplink and downlink HFN component of COUNT-C of RB2 to MAX(uplink HFN component of COUNT-C of RB2, downlink HFN component of COUNT-C of RB2);

2> increment by one the downlink and uplink HFN values of the HFN component of COUNT-C for RB2;

M5) 8.2.2.14, The case of radio link failure in the new configuration without change of ciphering and/or integrity is not treated. In R'99 the UE should go to idle, in Rel-5 nothing is stated.

M7) 8.4.1.6.7, UE Positioning at state transition

UE Positioning measurements for transitions from CELL_DCH to CELL_PCH or URA_PCH are not supported:

Upon transition from CELL_DCH to CELL_FACH, [deleted part: or upon transition from CELL_DCH to CELL_PCH or URA_PCH and if the UE supports UE positioning assisted GPS measurement validity in CELL_PCH and URA_PCH states as indicated in the IE "UE positioning capability" included in the IE "UE Radio Access Capability",] the UE shall:

M9) 8.5.22, Storing of START values in the UE

The UE was incorrectly replaced by USIM.

1> if the SIM is present, for each CN domain:

2> if a new security key was received for this CN domain but was not used either for integrity protection or ciphering during this RRC connection:

3> set the START value for this domain to zero and;

3> store this START value for this domain in the USIM [in R'99 it was: UE].

Additional (minor) misalignments:

m1) 8.2.2.14 (global), *Criteria* is the plural form of *criterion*

If the criteria for radio link failure is met

m2) 8.5.17 (global), The use of *SIB* and *System Information Block* is inconsistent.

1> *select a "PRACH system information" from the ones indicated in the IE "PRACH system information list" in System Information Block type 5 (applicable in Idle Mode and Connected Mode) or System Information Block type 6 (applicable in Connected Mode only), as follows:*

2> *if in connected mode and System Information Block type 6 is defined and includes PRACH info:*

3> *compile a list of candidate PRACHs that consists of the PRACH system information listed in SIB 6, in the order of appearance as in SIB 6.*

2> *otherwise:*

3> compile a list of candidate PRACHs that consists of the PRACH system information listed in SIB 5, in the order of appearance as in SIB 5.

m3) 8.5.17, The word *range* below should be reinstated.

"rand" is a random number uniformly distributed in the $0 \leq rand < 1$

m4) 8.5.18.1, The *if* below was erroneously deleted from Rel-5.

The UE shall:

1> only RACHs with one particular TTI length are included in the list of candidate PRACH(s):

2> select this TTI length and proceed as specified in subclause 8.5.17.

m5) 8.6.6.26a, Title *Uplink synchronisation parameters* does not indicate (TDD only) as the previous clause

m6) 8.6.6.1, The words "*stored active*" are redundant.

2> if the frequency is the same as the currently used frequency:

3> continue to use the stored active currently used frequency;

3> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

m7) 8.6.6.28, The *of* is misspelled.

include the IE "COUNT-C activation time" in the response message and specify a CFN value for this IE other than the default, "Now", that is a multiple of 8 frames ($CFN \bmod 8 = 0$) and lies at least 200 frames ahead off the CFN in which the response message is first transmitted;

m8) 13.4.24, The following information elements in the variable TFC_SUBSET, which were added in Rel-4, are not marked as Rel-4:

>>TFC subset list

>>>TFC subset

...

>>TFC subset list

>>>TFCS identity

>>>TFC subset

m9) 13.4.27b, Same as above for [Rel-5]:

>sent reports

Cells recently triggered

>primary CPICH

>sent reports

Periodical reporting running

m10) 13.4.27f19, Same as above [Rel-4] for:

1.28 Mcps TDD

>> T_{ADV}

Summary of change: ☼ M1) Align Rel-5 to R'99, i.e. allow reading of SIB 12 in idle mode

M2) Correct the text in Rel-5 so that synch procedure A is not triggered unintentionally. It could be enough to modify the sentence:

be able to perform a hard handover and apply physical layer synchronisation procedure A as specified in [29]

M3) Align Rel-5 to R'99, i.e. replace SIB 1 with the appropriate variable.

M4) Reinstate the R'99 text

M5) Reinstate the R'99 text, i.e. in case of radio link failure in the new configuration without change of ciphering and/or integrity the UE should go to idle mode.

M7) Reinstate the deleted sentence, but with a "and" instead of "or" and remove the condition on the "UE positioning capability" since in Rel-5 the UE is required to support transitions to CELL_PCH/URA_PCH for UE assisted GPS measurements, i.e.:

...and upon transition from CELL_DCH to CELL_PCH or URA_PCH for UE assisted GPS measurements, the UE shall:

M9) Align Rel-5 to R'99, i.e. replace USIM with UE.

m1) Align Rel-5 to R'99, i.e. use the plural verb form.

m2) Replace *SIB* with *System Information Block* in Rel-5, except than in tabular and ASN.1.

m3) Align Rel-5 to R'99 and reinstate the word *range*.

m4) Align Rel-5 to R'99 and reinstate the word *if*.

m5) Add (*TDD only*) to the title

m6) Delete "*stored active*" from Rel-5.

m7) Replace *off* with *in* in Rel-5.

m8) Add the Version column specifying that these IEs are Rel-4.

m9) Same as above [Rel-5]

m10) Same as above [Rel-4]

Consequences if not approved:

- ⌘ M1) The UE would be forbidden from reading and storing SIB 12 while in idle mode. This could delay common channel procedures and reduce the battery life.
- M2) The UE may always perform a hard handover procedure whenever a reconfiguration is initiated by UTRAN. This may lead to reduced QoS or to dropped calls.
- M3) The UE would not use the value of the timer sent by UTRAN in dedicated signalling, and the UE state maintained by UTRAN may go out of sync with respect to the actual UE state. The UE may become unreachable.
- M4) Ambiguity between COUNT-C and COUNT-I could lead of failure of the security procedure
- M5) The UE behaviour would be unspecified and the UE may go out of service or become unreachable after such a radio link failure.
- M7) The UE may stop reporting measurement reports (UE assisted GPS)
- M9) The START values may not be stored resulting in the reuse of the same HFN at the next RRC connection. This would weaken the protection provided by the message integrity.
- m1, m2, m3, m4, m5, m6, m7, m8, m9, m10) The Rel-5 version of TS 25.331 would be inconsistent with the R-99 version for no technical reasons.

Clauses affected: ⌘ 8.1.1.1.2, 8.1.1.6.15.2, 8.1.1.6.15.3, 8.1.1.6.16, 8.1.3.4, 8.1.3.6, 8.1.4.5, 8.2.2.3, 8.2.2.14, 8.3.1.2, 8.4.1.6.7, 8.5.12, 8.5.17, 8.5.18.1, 8.5.22, 8.6.4.8, 8.6.5.2, 8.6.6.1, 8.6.6.26a, 8.6.6.28, 8.6.7.9, 12.1.3, 13.4.24, 13.4.27b, 13.4.27f19, 14.8

Other specs affected:

Y	N
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

⌘ Other core specifications

⌘ Test specifications

⌘ O&M Specifications

Other comments: ⌘

How to create CRs using this form:

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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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- 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.

[...]

8.1.1.1.2 System information blocks

Table 8.1.1 specifies all system information blocks and their characteristics.

The *area scope column* in table 8.1.1 specifies the area where a system information block's value tag is valid. If the area scope is *cell*, the UE shall consider the system information block to be valid only in the cell in which it was read. If system information blocks have been previously stored for this cell, the UE shall check whether the value tag for the system information block in the entered cell is different compared to the stored value tag. If the area scope is *PLMN* or *Equivalent PLMN*, the UE shall check the value tag for the system information block when a new cell is selected. If the value tag for the system information block in the new cell is different compared to the value tag for the system information block stored in the UE, the UE shall re-read the system information block. If the area scope is *PLMN*, the UE shall consider the system information block to be valid only within the PLMN in which it was read. If the area scope is *Equivalent PLMN*, the UE shall consider the system information block to be valid within the PLMN in which it was received and all PLMNs which are indicated by higher layers to be equivalent.

For System information block types 15.2, 15.3 and 16, which may have multiple occurrences, each occurrence has its own independent value tag. The UE shall re-read a particular occurrence if the value tag of this occurrence has changed compared to that stored in the UE.

The *UE mode/state column when block is valid* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block shall be regarded as valid by the UE. In other words, the indicated system information block becomes invalid upon change to a mode/state that is not included in this column. System Information Block Type 16 remains also valid upon transition to or from GSM/GPRS. In some cases, the states are inserted in brackets to indicate that the validity is dependent on the broadcast of the associated System Information Blocks by the network as explained in the relevant procedure subclause.

The *UE mode/state column when block is read* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block may be read by the UE. The UE shall have the necessary information prior to execution of any procedure requiring information to be obtained from the appropriate system information block. The requirements on the UE in terms of when to read the system information may therefore be derived from the procedure specifications that specify which IEs are required in the different UE modes/states in conjunction with the different performance requirements that are specified.

System Information Block type 10 shall only be read by the UE while in CELL_DCH.

The UE shall:

- 1> if System Information Block type 11 is referenced in the master information block or in the scheduling blocks:
 - 2> if System Information Block type 12 is not referenced in the master information block or in the scheduling blocks, or broadcast of System Information Block type 12 is not indicated in System Information Block type 11:
 - 3> have read and acted upon System Information Block type 11 in a cell when the UE transmits an RRC message on RACH.
 - 2> else:
 - 3> have read and acted upon System Information Block type 11 in a cell before the UE transmits the RRC CONNECTION REQUEST message.
 - 3> have read and acted upon both System Information Block type 11 and System Information Block type 12 in a cell when:
 - 4> the UE transmits an RRC message on RACH in RRC connected mode; or
 - 4> the UE receives a message commanding to enter Cell_DCH state.

NOTE 1: There are a number of system information blocks that include the same IEs while the UE mode/state in which the information is valid differs. This approach is intended to allow the use of different IE values in different UE mode/states.

NOTE 2: System Information Block Type 16 is also obtained by a UE while in GSM/GPRS. The details of this are not within the scope of this specification.

The *Scheduling information* column in table 8.1.1 specifies the position and repetition period for the [SIB System Information Block](#).

The *modification of system information* column in table 8.1.1 specifies the update mechanisms applicable for a certain system information block. For system information blocks with a value tag, the UE shall update the information according to subclause 8.1.1.7.1 or 8.1.1.7.2. For system information blocks with an expiration timer, the UE shall, when the timer expires, perform an update of the information according to subclause 8.1.1.7.4.

Table 8.1.1: Specification of system information block characteristics

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
Master information block	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	SIB_POS = 0 SIB_REP = 8 (FDD) SIB_REP = 8, 16, 32 (TDD) SIB_OFF=2	Value tag	
Scheduling block 1	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information" in MIB	Value tag	
Scheduling block 2	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information" in MIB	Value tag	
System information block type 1	PLMN	Idle mode CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 2	Cell	URA_PCH	URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 3	Cell	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH)	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH)	Specified by the IE "Scheduling information"	Value tag	
System information block type 4	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	If System information block type 4 is not broadcast in a cell, the connected mode UE shall apply information in System information block type 3 in connected mode.
System information block type 5	Cell	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only))	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only))	Specified by the IE "Scheduling information"	Value tag	

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 6	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Specified by the IE "Scheduling information"	Value tag	<p>If system information block type 6 is not broadcast in a cell, the connected mode UE shall read System information block type 5.</p> <p>If some of the optional IEs are not included in System information block type 6, the UE shall read the corresponding IEs in System information block type 5</p> <p>In TDD mode system information block 6 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7 and/or if shared transport channels are assigned to the UE. If in these cases system information block type 6 is not broadcast the UE shall read system information block type 5.</p>
System information block type 7	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Specified by the IE "Scheduling information"	Expiration timer = MAX(32 , SIB_REP * ExpirationTimeFactor)	In TDD mode system information block type 7 shall only be read in CELL_DCH if shared transport channels are assigned to the UE.
System information block type 8	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 9	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	
System information block type 10	Cell	CELL_DCH	CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	
System information block type 11	Cell	Idle mode (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH)	Idle mode (CELL_FACH, CELL_PCH, URA_PCH)	Specified by the IE "Scheduling information"	Value tag	

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 12	Cell	Idle mode , CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	If system information block type 12 is not broadcast in a cell, the connected mode UE shall read System information block type 11. If some of the optional IEs are not included in System information block type 12, the UE shall read the corresponding IEs in System information block type 11.
System information block type 13	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.1	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.2	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.3	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.4	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 14	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = MAX(32, SIB_REP * ExpirationTimeFactor)	This system information block is used in 3.84 Mcps TDD mode only. System information block type 14 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7.
System information block type 15	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.1	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.2	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences
System information block type 15.3	PLMN	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 15.4	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.5	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 16	Equivalent PLMN	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences. This system information block is also valid while in GSM/GPRS.
System information block type 17	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	This system information block is used in TDD mode only. System information block type 17 shall only be read if shared transport channels are assigned to the UE.
System Information Block type 18	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	

The UE shall acquire all system information blocks except system information block type 10 on BCH. System Information Block type 10 shall be acquired on the FACH and only by UEs with support for simultaneous reception of one SCCPCH and one DPCH. If System Information Block type 10 is not broadcast in a cell, the DRAC procedures do not apply in this cell. System Information Block type 10 is used in FDD mode only.

[...]

8.1.1.6.15.2 System Information Block type 15.2

For System Information Block type 15.2 multiple occurrences may be used; one occurrence for one satellite. To identify the different occurrences, the scheduling information for System Information Block type 15.2 includes IE "SIB occurrence identity and value tag". The UE should store all the relevant IEs included in this system information block in variable UE_POSITIONING_GPS_DATA. The UE shall:

1> compare for each occurrence the value tag of the stored occurrence, if any, with the occurrence value tag included in the IE "SIB occurrence identity and value tag" for the occurrence of the ~~SIB~~[System Information Block](#) with the same occurrence identity;

1> in case the UE has no SIB occurrence stored with the same identity or in case the occurrence value tag is different:

2> store the occurrence information together with its identity and value tag for later use.

1> in case an occurrence with the same identity but different value tag was stored:

2> overwrite this one with the new occurrence read via system information for later use.

1> interpret IE "Transmission TOW" as a very coarse estimate of the current time, i.e., the approximate GPS time-of-week when the message is broadcast;

1> interpret IE "SatID" as the satellite ID of the data from which this message was obtained;

- 1> act upon the received IEs "Sat ID" and "GPS Ephemeris and Clock Corrections Parameter" as specified in subclause 8.6.7.19.3.4.

The IE "Transmission TOW" may be different each time a particular SIB occurrence is transmitted. The UTRAN should not increment the value tag of the SIB occurrence if the IE "Transmission TOW" is the only IE that is changed.

The UE may not need to receive all occurrences before it can use the information from any one occurrence.

8.1.1.6.15.3 System Information Block type 15.3

For System Information Block type 15.3 multiple occurrences may be used; one occurrence for each set of satellite data. To identify the different occurrences, the scheduling information for System Information Block type 15.3 includes IE "SIB occurrence identity and value tag". The UE should store all the relevant IEs included in this system information block in variable UE_POSITIONING_GPS_DATA. The UE shall:

- 1> compare for each occurrence the value tag of the stored occurrence, if any, with the occurrence value tag included in the IE "SIB occurrence identity and value tag" for the occurrence of the [SIB System Information Block](#) with the same occurrence identity;
- 1> in case the UE has no SIB occurrence stored with the same identity or in case the occurrence value tag is different:
 - 2> store the occurrence information together with its identity and value tag for later use.
- 1> in case an occurrence with the same identity but different value tag was stored:
 - 2> overwrite this one with the new occurrence read via system information for later use.
- 1> interpret IE "Transmission TOW" as a very coarse estimate of the current time, i.e., the approximate GPS time-of-week when the message is broadcast;
- 1> if the IE "GPS Almanac and Satellite Health" is included:
 - 2> interpret IE "SatMask" as the satellites that contain the pages being broadcast in this message;
 - 2> interpret IE "LSB TOW" as the least significant 8 bits of the TOW ([12]);
 - 2> act upon the received IE "GPS Almanac and Satellite Health" as specified in subclause 8.6.7.19.3.2.
- 1> if the IE "GPS ionospheric model" is included:
 - 2> act upon the received IE "GPS ionospheric model" as specified in subclause 8.6.7.19.3.5.
- 1> if the IE "GPS UTC model" is included:
 - 2> act upon the received IE "GPS UTC model" as specified in subclause 8.6.7.19.3.9.

The IE "Transmission TOW" may be different each time a particular SIB occurrence is transmitted. The UTRAN should not increment the value tag of the SIB occurrence if the IE "Transmission TOW" is the only IE that is changed. One SIB occurrence value tag is assigned to the table of subclause 10.2.48.8.18.3.

The UE may not need to receive all occurrences before it can use the information for any one occurrence.

[...]

8.1.1.6.16 System Information Block type 16

For System Information Block type 16 multiple occurrences may be used; one occurrence for each predefined configuration. To identify the different predefined configurations, the scheduling information for System Information Block type 16 includes IE "Predefined configuration identity and value tag".

The UE should store all relevant IEs included in this system information block. The UE shall:

- 1> compare for each predefined configuration the value tag of the stored predefined configuration with the predefined configuration value tag included in the IE "Predefined configuration identity and value tag" for the occurrence of the [SIB System Information Block](#) with the same predefined configuration identity;

- 1> in case the UE has no predefined configuration stored with the same identity or in case the predefined configuration value tag is different:
 - 2> store the predefined configuration information together with its identity and value tag for later use e.g. during handover to UTRAN.
- 1> in case a predefined configuration with the same identity but different value tag was stored:
 - 2> overwrite this one with the new configuration read via system information for later use e.g. during handover to UTRAN.

The above handling applies regardless of whether the previously stored predefined configuration information has been obtained via UTRA or via another RAT.

The UE is not required to complete reading of all occurrences of System Information Block type 16 before initiating RRC connection establishment.

The UE is not required to store more than maxPredefConfig preconfigurations even in the case of multiple equivalent PLMNs.

[...]

8.1.3.4 Reception of an RRC CONNECTION REQUEST message by the UTRAN

Upon receiving an RRC CONNECTION REQUEST message, UTRAN should either:

- 1> accept the request and use a predefined or default radio configuration, in which case it should:
 - 2> include the following information in the RRC CONNECTION SETUP message:
 - 3> the IE "Predefined configuration identity", to indicate which pre-defined configuration of RB and transport channel parameters shall be used; or
 - 3> the IE "Default configuration mode" and IE "Default configuration identity", to indicate which default configuration of RB and transport channel parameters shall be used;
 - 3> PhyCH information elements.
 - 2> submit the RRC CONNECTION SETUP message to the lower layers for transmission on the downlink CCCH.

NOTE 1: UTRAN should only apply a predefined radio configuration in case it orders the UE to enter CELL_DCH. This is because the predefined configuration information included in [SIB System Information Block](#) 16 mandatorily includes information only required in CELL_DCH state.

- 1> accept the request without using a predefined or default radio configuration, in which case it should:
 - 2> include in the RRC CONNECTION SETUP message the complete set of RB, TrCH and PhyCH information elements to be used;
 - 2> submit the RRC CONNECTION SETUP message to the lower layers for transmission on the downlink CCCH;

NOTE 2: In R'99, the RRC CONNECTION SETUP message always includes the IEs "Added or Reconfigured TrCH information list", both for uplink and downlink transport channels, even if UTRAN orders the UE to move to CELL_FACH and hence need not configure any transport channels. In these cases, UTRAN may include a configuration that adds little to the encoded message size e.g. a DCH with a single zero size transport format. At a later stage, UTRAN may either remove or reconfigure this configuration.

- 1> submit an RRC CONNECTION REJECT message on the downlink CCCH. In the RRC CONNECTION REJECT message, the UTRAN may direct the UE to another UTRA carrier or to another system. After the RRC CONNECTION REJECT message has been sent, all context information for the UE may be deleted in UTRAN.

[...]

8.1.3.6 Reception of an RRC CONNECTION SETUP message by the UE

The UE shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION SETUP message with the value of the variable INITIAL_UE_IDENTITY.

If the values are different, the UE shall:

- 1> ignore the rest of the message.

If the values are identical, the UE shall:

- 2> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":
 - 3> initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity" with the following exception;
 - 4> ignore the IE "RB to setup list" and the IE "Re-establishment timer".

NOTE: IE above IEs are mandatory to include in IE "Predefined RB configuration" that is included in [SIB System Information Block 16](#) but should be ignored since it is not possible to establish a RAB during RRC connection establishment.

- 3> initiate the physical channels in accordance with the received physical channel information elements;
- 2> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":
 - 3> 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";
 - 3> initiate the physical channels in accordance with 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> if IE "Specification mode" is set to "Complete specification":
 - 3> 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> clear the variable ESTABLISHMENT_CAUSE;
- 1> stop timer T300, and act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:
 - 2> if the UE, according to subclause 8.6.3.3, will be in the CELL_FACH state at the conclusion of this procedure:
 - 3> if the IE "Frequency info" is included:
 - 4> select a suitable UTRA cell according to [4] on that frequency.
 - 3> enter UTRA RRC connected mode;
 - 3> select PRACH according to subclause 8.5.17;
 - 3> select Secondary CCPCH according to subclause 8.5.19;
 - 3> ignore the IE "UTRAN DRX cycle length coefficient" and stop using DRX.
 - 1> if the UE, according to subclause 8.6.3.3, will be in the CELL_DCH state at the conclusion of this procedure:
 - 2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);
 - 2> enter UTRA RRC connected mode.

- 1> submit an RRC CONNECTION SETUP COMPLETE message to the lower layers on the uplink DCCH after successful state transition per subclause 8.6.3.3, with the contents set as specified below:
 - 2> set the IE "RRC transaction identifier" to:
 - 3> the value of "RRC transaction identifier" in the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 3> clear that entry.
 - 2> if the USIM or SIM is present:
 - 3> set the "START" for each CN domain in the IE "START list" in the RRC CONNECTION SETUP COMPLETE message with the corresponding START value that is stored in the USIM [50] if present, or as stored in the UE if the SIM is present; and then
 - 3> set the START value stored in the USIM [50] if present, and as stored in the UE if the SIM is present for any CN domain to the value "THRESHOLD" of the variable START_THRESHOLD.
 - 2> if neither the USIM nor SIM is present:
 - 3> set the "START" for each CN domain in the IE "START list" in the RRC CONNECTION SETUP COMPLETE message to zero;
 - 3> set the value of "THRESHOLD" in the variable "START_THRESHOLD" to the default value [40].
 - 2> retrieve its UTRA UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and then
 - 2> include this in IE "UE radio access capability" and IE "UE radio access capability extension", provided this IE is included in variable UE_CAPABILITY_REQUESTED;
 - 2> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and then
 - 2> include this in IE "UE system specific capability".

When the RRC CONNECTION SETUP COMPLETE message has been submitted to lower layers for transmission the UE shall:

- 1> if the UE has entered CELL_FACH state:
 - 2> start timer T305 using its initial value if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS.
- 1> store the contents of the variable UE_CAPABILITY_REQUESTED in the variable UE_CAPABILITY_TRANSFERRED;
- 1> initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
- 1> consider the procedure to be successful;

And the procedure ends.

[...]

8.1.4.5 Cell re-selection or radio link failure

If the UE performs cell re-selection or the radio link failure criteria in subclause 8.5.6 ~~is~~are met at any time during the RRC connection release procedure and the UE has not yet entered idle mode, the UE shall:

- 1> if cell re-selection occurred (CELL_FACH state):
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection".
- 1> if radio link failure occurred (CELL_DCH state):

- 2> release all its radio resources;
- 2> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
- 2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
- 2> clear the variable ESTABLISHED_RABS;
- 2> enter idle mode;
- 2> perform the actions specified in subclause 8.5.2 when entering idle mode;
- 2> and the procedure ends.

[...]

8.2.2.3 Reception of RADIO BEARER SETUP or RADIO BEARER RECONFIGURATION or RADIO BEARER RELEASE or TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION message by the UE

The UE shall:

- 1> be able to receive any of the following messages:
 - 2> RADIO BEARER SETUP message; or
 - 2> RADIO BEARER RECONFIGURATION message; or
 - 2> RADIO BEARER RELEASE message; or
 - 2> TRANSPORT CHANNEL RECONFIGURATION message; or
 - 2> PHYSICAL CHANNEL RECONFIGURATION message;
- 1> [be able to](#) perform a hard handover and apply physical layer synchronisation procedure A as specified in [29], even if no prior UE measurements have been performed on the target cell and/or frequency.

If the UE receives:

- a RADIO BEARER SETUP message; or
- a RADIO BEARER RECONFIGURATION message; or
- a RADIO BEARER RELEASE message; or
- a TRANSPORT CHANNEL RECONFIGURATION message; or
- a PHYSICAL CHANNEL RECONFIGURATION message;

it shall:

- 1> set the variable ORDERED_RECONFIGURATION to TRUE;
- 1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:
 - 2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).
- 1> act upon all received information elements as specified in subclause 8.6, unless specified in the following and perform the actions below.

The UE may:

- 1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

- 1> in FDD, if the IE "PDSCH code mapping" is included but the IE "PDSCH with SHO DCH Info" is not included and if the DCH has only one link in its active set:
 - 2> act upon the IE "PDSCH code mapping" as specified in subclause 8.6; and
 - 2> infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted.
- 1> enter a state according to subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

- 1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

- 1> in FDD; or
- 1> in TDD when "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 2> remove any C-RNTI from MAC;
 - 2> clear the variable C_RNTI.

If after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> stop any HS-DSCH reception procedures according to the stored HS-PDSCH configuration;
- 1> clear any stored HS-PDSCH configuration;
- 1> remove any H-RNTI stored;
- 1> clear the variable H_RNTI;
- 1> set the variable HS_DSCH_RECEPTION to FALSE.

In FDD, if after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> remove any DSCH-RNTI from MAC;
- 1> clear the variable DSCH_RNTI.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> in TDD:
 - 2> if "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 3> remove any C-RNTI from MAC;
 - 3> clear the variable C_RNTI.
- 1> if "DPCH frame offset" is included for one or more RLS in the active set:
 - 2> use its value to determine the beginning of the DPCH frame in accordance with the following:
 - 3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH frame offset currently used by the UE:

- 4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).
- 3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:
 - 4> set the variable INVALID_CONFIGURATION to TRUE.
- 3> and the procedure ends.
- 2> adjust the radio link timing accordingly.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the UE finds a suitable UTRA cell on that frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4];
 - 2> if the UE finds a suitable UTRA cell on the current frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on the current frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:

- 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in [the variable TIMERS AND CONSTANTS](#)~~system information block type 1~~;
 - 1> select PRACH according to subclause 8.5.17;
 - 1> select Secondary CCPCH according to subclause 8.5.19;
 - 1> use the transport format set given in system information;
 - 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.
 - 1> if the contents of the variable C_RNTI is empty:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.

If the UE was in CELL_FACH state upon reception of the reconfiguration message and remains in CELL_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the UE finds a suitable UTRA cell on that frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> if the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) is included the UE shall either:

3> ignore the content of the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) and proceed as below;

2> or:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CPCH info" (for TDD), and it is different from the current cell:

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> when the cell update procedure completed successfully:

5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

If after state transition the UE enters CELL_PCH or URA_PCH state, the UE shall:

1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:

2> set the variable INVALID_CONFIGURATION to TRUE.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or

1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:

2> if the variable PDCP_SN_INFO is empty:

3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".

2> else:

3> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "stop";

3> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "stop".

2> re-establish RB2;

2> for the downlink and the uplink, apply the ciphering configuration as follows:

3> if the received re-configuration message included the IE "Ciphering Mode Info":

4> use the ciphering configuration in the received message when transmitting the response message.

3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:

4> if the previous SECURITY MODE COMMAND was received due to new keys being received:

5> consider the new ciphering configuration to include the received new keys;

5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in subclause 8.1.12.3.1.

4> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST_CONFIGURED_CN_DOMAIN:

5> consider the new ciphering configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN;

- 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the LATEST_CONFIGURED_CN_DOMAIN at the reception of the previous SECURITY MODE COMMAND.
- 4> apply the new ciphering configuration immediately following RLC re-establishment.
- 3> else:
 - 4> continue using the current ciphering configuration.
- 2> set the new uplink and downlink [component of COUNT-C](#) HFN of RB2 to MAX(uplink HFN of RB2, downlink [component of COUNT-C](#) HFN of RB2);
- 2> increment by one the downlink and uplink HFN values for RB2;
- 2> calculate the START value according to subclause 8.5.9;
- 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
 - 2> if the variable START_VALUE_TO_TRANSMIT is set:
 - 3> include and set the IE "START" to the value of that variable.
 - 2> if the variable START_VALUE_TO_TRANSMIT is not set and the IE "New U-RNTI" is included:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
 - 2> if the received reconfiguration message caused a change in the RLC size for any RB using RLC-AM:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for the CN domain associated with the corresponding RB identity in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
 - 2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info":
 - 2> include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- 1> if the received reconfiguration message did not contain the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info":
 - 2> if prior to this procedure there exist no transparent mode RLC radio bearers:
 - 3> if, at the conclusion of this procedure, the UE will be in CELL_DCH state; and
 - 3> if, at the conclusion of this procedure, at least one transparent mode RLC radio bearer exists:
 - 4> include the IE "COUNT-C activation time" and specify a CFN value for this IE that is a multiple of 8 frames ($CFN \bmod 8 = 0$) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted.

NOTE: UTRAN should not include the IE "Ciphering mode info" in any reconfiguration message unless it is also used to perform an SRNS relocation with change of ciphering algorithm.

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> if the variable PDCP_SN_INFO is not empty:
 - 2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_INFO.
- 1> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):
 - 2> set the IE "Uplink Timing Advance" according to subclause 8.6.6.26.
- 1> if the IE "Integrity protection mode info" was present in the received reconfiguration message:
 - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.

If after state transition the UE enters URA_PCH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4].
- 1> prohibit periodical status transmission in RLC;
- 1> remove any C-RNTI from MAC;
- 1> clear the variable C_RNTI;
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in [the variable TIMERS AND CONSTANTS](#)~~system information block type 1;~~
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- 1> if the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 ~~is~~[are](#) fulfilled after cell selection:
 - 2> initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";
 - 2> when the URA update procedure is successfully completed:
 - 3> the procedure ends.

If after state transition the UE enters CELL_PCH state from CELL_DCH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
 - 2> if the UE finds a suitable UTRA cell on that frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received

reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> proceed as below.

2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:

3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

3> proceed as below.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4].

2> if the UE finds a suitable UTRA cell on the current frequency:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> proceed as below.

2> else, if the UE can not find a suitable UTRA cell on the current frequency but it finds a suitable UTRA cell on another frequency:

3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

3> proceed as below.

1> prohibit periodical status transmission in RLC;

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI;

1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;

1> select Secondary CCPCH according to subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.

1> the procedure ends.

If after state transition the UE enters CELL_PCH state from CELL_FACH state, the UE shall, after the state transition and transmission of the response message:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4] on that frequency.

2> if the UE finds a suitable UTRA cell on that frequency:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received

reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";

4> proceed as below.

2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:

3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

3> proceed as below.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> if the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) is included the UE shall either:

3> ignore the content of the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) and proceed as below;

2> or:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CPCH info" (for TDD), and it is different from the current cell:

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> proceed as below.

1> prohibit periodical status transmission in RLC;

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI;

1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;

1> select Secondary CCPCH according to subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.

1> the procedure ends.

[...]

8.2.2.14 Radio link failure

If the criteria for radio link failure are met in the old configuration during the reconfiguration procedure as specified in subclause 8.5.6, the UE shall:

1> if UE would have entered CELL_PCH or URA_PCH as a result of this reconfiguration procedure and UE has already submitted a response message to lower layers:

2> act as if the reconfiguration message was not received;

2> initiate a cell update procedure according to subclause 8.3.1, using the cause "radio link failure";

2> the procedure ends.

NOTE: UTRAN should consider the reconfiguration procedure as unsuccessful in this case even if a success response message had been received.

- 1> if the UE would have remained in CELL_DCH state as a result of this reconfiguration procedure:
 - 2> initiate a cell update procedure according to subclause 8.3.1, using the cause "radio link failure";
 - 2> after the cell update procedure has completed successfully:
 - 3> transmit a failure response message as specified in subclause 8.2.2.9, setting the information elements as specified below:
 - 4> include the IE "RRC transaction identifier"; and
 - 4> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 4> clear that entry;
 - 4> set the IE "failure cause" to "physical channel failure".
 - 3> act as if the reconfiguration message was not received;
 - 3> the procedure ends.

If the criteria for radio link failure ~~is~~ are met in the new configuration during the reconfiguration procedure (i.e. while UE is waiting for RLC acknowledgement for a response message.) as specified in subclause 8.5.6, the UE shall:

- 1> if the received reconfiguration causes either:
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS to be set to TRUE; and/or
 - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to be set to TRUE;
- 2> perform the actions specified in subclause 8.2.2.12b.

1> else, the UE should:

2> release all its radio resources;

2> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;

2> clear any entry for the RRC CONNECTION RELEASE message in the tables "Accepted transactions" and "Rejected transactions" in the variable TRANSACTIONS;

2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

2> clear the variable ESTABLISHED_RABS;

2> enter idle mode;

2> perform the actions specified in subclause 8.5.2 when entering idle mode; and

2> the procedure ends.

[...]

8.3.1.2 Initiation

A UE shall initiate the cell update procedure in the following cases:

- 1> Uplink data transmission:
 - 2> if the UE is in URA_PCH or CELL_PCH state; and

2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:

3> perform cell update using the cause "uplink data transmission".

1> Paging response:

2> if the criteria for performing cell update with the cause specified above in the current subclause ~~is-are~~ not met; and

2> if the UE in URA_PCH or CELL_PCH state, receives a PAGING TYPE 1 message fulfilling the conditions for initiating a cell update procedure specified in subclause 8.1.2.3:

3> perform cell update using the cause "paging response".

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_DCH state and the criteria for radio link failure ~~is-are~~ met as specified in subclause 8.5.6; or

3> if the transmission of the UE CAPABILITY INFORMATION message fails as specified in subclause 8.1.6.6:

4> perform cell update using the cause "radio link failure".

1> Re-entering service area:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL_FACH or CELL_PCH state; and

2> if the UE has been out of service area and re-enters service area before T307 or T317 expires:

3> perform cell update using the cause "re-entering service area".

1> RLC unrecoverable error:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE detects RLC unrecoverable error [16] in an AM RLC entity:

3> perform cell update using the cause "RLC unrecoverable error".

1> Cell reselection:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or

3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:

4> perform cell update using the cause "cell reselection".

1> Periodical cell update:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL_FACH or CELL_PCH state; and

2> if the timer T305 expires; and

2> if the criteria for "in service area" as specified in subclause 8.5.5.2 ~~is-are~~ fulfilled; and

- 2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":
 - 3> perform cell update using the cause "periodical cell update".

A UE in URA_PCH state shall initiate the URA update procedure in the following cases:

1> URA reselection:

- 2> if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or
- 2> if the list of URA identities in system information block type 2 is empty; or
- 2> if the system information block type 2 can not be found:
 - 3> perform URA update using the cause "change of URA".

1> Periodic URA update:

- 2> if the criteria for performing URA update with the causes as specified above in the current subclause are not met; and
- 2> if the timer T305 expires while the UE is in the service area; and
- 2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":
 - 3> perform URA update using the cause "periodic URA update".

When initiating the URA update or cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL_DCH state:

- 2> in the variable RB_TIMER_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;
- 2> if the stored values of the timer T314 and timer T315 are both equal to zero; or
- 2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":
 - 3> release all its radio resources;
 - 3> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - 3> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - 3> clear the variable ESTABLISHED_RABS;
 - 3> enter idle mode;
 - 3> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2;
 - 3> and the procedure ends.
- 2> if the stored value of the timer T314 is equal to zero:
 - 3> release all radio bearers, associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314";
 - 3> in the variable RB_TIMER_INDICATOR set the IE "T314 expired" to TRUE.
- 2> if the stored value of the timer T315 is equal to zero:

- 3> release all radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315";
- 3> in the variable RB_TIMER_INDICATOR set the IE "T315 expired" to TRUE.
- 2> if the stored value of the timer T314 is greater than zero:
 - 3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314":
 - 4> start timer T314.
 - 3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":
 - 4> start timer T314.
- 2> if the stored value of the timer T315 is greater than zero:
 - 3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":
 - 4> start timer T315.
- 2> for the released radio bearer(s):
 - 3> delete the information about the radio bearer from the variable ESTABLISHED_RABS;
 - 3> when all radio bearers belonging to the same radio access bearer have been released:
 - 4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED_RABS;
 - 4> delete all information about the radio access bearer from the variable ESTABLISHED_RABS.
- 2> select a suitable UTRA cell according to [4];
- 2> set the variable ORDERED_RECONFIGURATION to FALSE.
- 1> set the variables PROTOCOL_ERROR_INDICATOR, FAILURE_INDICATOR, UNSUPPORTED_CONFIGURATION and INVALID_CONFIGURATION to FALSE;
- 1> set the variable CELL_UPDATE_STARTED to TRUE;
- 1> if the UE is not already in CELL_FACH state:
 - 2> move to CELL_FACH state;
 - 2> select PRACH according to subclause 8.5.17;
 - 2> select Secondary CCPCH according to subclause 8.5.19;
 - 2> use the transport format set given in system information as specified in subclause 8.6.5.1.
- 1> if the UE performs cell re-selection:
 - 2> clear the variable C_RNTI; and
 - 2> stop using that C_RNTI just cleared from the variable C_RNTI in MAC.
- 1> set CFN in relation to SFN of current cell according to subclause 8.5.15;
- 1> in case of a cell update procedure:
 - 2> set the contents of the CELL UPDATE message according to subclause 8.3.1.3;
 - 2> submit the CELL UPDATE message for transmission on the uplink CCCH.

- 1> in case of a URA update procedure:
 - 2> set the contents of the URA UPDATE message according to subclause 8.3.1.3;
 - 2> submit the URA UPDATE message for transmission on the uplink CCCH.
- 1> set counter V302 to 1;
- 1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

[...]

8.4.1.6.7 UE positioning measurement

Upon transition from CELL_DCH to CELL_FACH and upon transition from CELL_DCH to CELL_PCH or URA_PCH for UE assisted GPS measurements, the UE shall:

- 1> retrieve each set of measurement control information of measurement type "UE positioning" stored in the variable MEASUREMENT_IDENTITY; and
 - 2> if the optional IE "measurement validity" for this measurement has not been included:
 - 3> delete the measurement associated with the variable MEASUREMENT_IDENTITY.
 - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "CELL_DCH":
 - 3> stop measurement reporting;
 - 3> store the measurement associated with the variable MEASUREMENT_IDENTITY to be used after the next transition to CELL_DCH state.
 - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":
 - 3> upon transition from CELL_DCH to CELL_PCH or URA_PCH:
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval" included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Measurement interval " as being 64 seconds;
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Reporting Interval" as being 64 seconds
 - 3> continue measurement reporting according to its UE positioning measurement reporting capability.
 - 2> if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "all states except CELL_DCH":
 - 3> upon transition from CELL_DCH to CELL_PCH or URA_PCH:
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval " included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Measurement interval " as being 64 seconds.
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Reporting Interval" as being 64 seconds.

- 3> resume this measurement and associated reporting according to its UE Positioning measurement reporting capability.
- 1> if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE; or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or
- 1> if the transition is due to a reconfiguration message which included the IE "Frequency info", and the UE selects a cell on another frequency than that indicated by this IE; or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Frequency info", and the UE can not find a cell on the current frequency, but it selects a cell on another frequency; or
- 1> if the transition is not due to a reconfiguration message:
 - 2> delete the assistance data included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED and UE_POSITIONING_OTDOA_DATA_UE_ASSISTED.
- 1> if the IE "Positioning Methods" stored in the variable MEASUREMENT_IDENTITY is set to "OTDOA" or "OTDOA or GPS":
 - 2> if the IE "Method type" stored in the variable MEASUREMENT_IDENTITY is set to "UE-based" or "UE assisted preferred but UE-based allowed" or "UE-based preferred but UE-assisted allowed":
 - 3> begin monitoring assistance data received in System Information Block type 15.4 and System Information Block type 15.5 according to subclause 8.1.1.6.15.
 - 2> if the IE "Method type" stored in the variable MEASUREMENT_IDENTITY is set to "UE-assisted":
 - 3> begin monitoring assistance data received in System Information Block type 15.4 according to subclause 8.1.1.6.15.
- 1> if the UE is in CELL_FACH state:
 - 2> if the IE "UE positioning OTDOA neighbour cell list for UE assisted" stored in the variable UE_POSITIONING_OTDOA_DATA_UE_ASSISTED or UE_POSITIONING_OTDOA_DATA_UE_BASED contains neighbour cells on other frequencies than the current frequency:
 - 3> perform measurements on other frequencies according to the IE "FACH measurement occasion info".

The UE may:

- 1> if the IE "Positioning Methods" stored in the variable MEASUREMENT_IDENTITY is set to "GPS" or "OTDOA or GPS":
 - 2> begin monitoring assistance data received in System Information Block type 15 and/or System Information Block type 15.1 and/or System Information Block type 15.2 and/or System Information Block type 15.3 according to subclause 8.1.1.6.15.

[...]

8.5.12 Establishment of Access Service Classes

The PRACH resources (i.e. access slots and preamble signatures for FDD), timeslot (with specific frame allocation and channelisation code for 3.84 Mcps TDD and SYNC_UL codes (with specific frame allocation) for 1.28 Mcps TDD) may be divided between different Access Service Classes in order to provide different priorities of RACH usage. It is possible for more than one ASC or for all ASCs to be assigned to the same access slot/signature space in FDD or frame allocation/channelisation codes in 3.84 Mcps TDD or frame allocation/SYNC_UL codes in 1.28 Mcps TDD.

Access Service Classes shall be numbered in the range $0 \leq i \leq \text{NumASC} \leq 7$ (i.e. the maximum number of ASCs is 8). An ASC is defined by an identifier, i , that defines a certain partition of the PRACH resources (SYNC_UL resources in

1.28 Mcps TDD) and an associated persistence value P_i . A set of ASC parameters consists of "NumASC+1" such parameters (i, P_i), $i = 0, \dots, \text{NumASC}$.

PRACH partitions shall be established using the information element "PRACH partitioning". The persistence values P_i to be associated with each ASC shall be derived from the dynamic persistence level $N = 1, \dots, 8$ which is broadcast in [SIB System Information Block 7](#), and the persistence scaling factors s_i , broadcast in System Information Block Type 5 and possibly also in System Information Block Type 6, as follows:

$$P(N) = 2^{-(N-1)}$$

ASC # i	0	1	2	3	4	5	6	7
P_i	1	$P(N)$	$s_2 P(N)$	$s_3 P(N)$	$s_4 P(N)$	$s_5 P(N)$	$s_6 P(N)$	$s_7 P(N)$

Scaling factors s_i are provided optionally for $i = 2, \dots, \text{NumASC}$, where NumASC+1 is the number of ASCs as defined by PRACH partitioning. If no scaling factors are broadcast, default value 1 shall be used if NumASC ≥ 2 .

If $k \geq 1$ scaling factors are broadcast and NumASC $\geq k+2$ then the last scaling factor s_{k+1} shall be used as default for the ASCs where $i > k+1$.

The set of ASC parameters is provided to MAC with the CMAC-Config-REQ primitive (see [15]), the PRACH partitioning is provided to PHY using the CPHY-RL-Setup-REQ primitive (see [34]).

The ASC enumeration shall be such that it corresponds to the order of priority (ASC 0 = highest priority, ASC 7 = lowest priority). ASC 0 shall be used in case of Emergency Call or for reasons with equivalent priority.

ASCs are numbered according to the order in which the IEs "ASC Setting" appear in the IE "PRACH partitioning", where the first IE "ASC Setting" describes ASC 0, the second IE "ASC Setting" describes ASC 1, etc.

At radio bearer setup/reconfiguration each involved logical channel is assigned a MAC Logical channel Priority (MLP) in the range 1, ..., 8. When the MAC sublayer is configured for RACH transmission in the UE, these MLP levels shall be employed for ASC selection on MAC.

[...]

8.5.17 PRACH selection

For this version of the specification, when a UE selects a cell, the uplink frequency to be used for the initial PRACH transmission shall have a default duplex frequency spacing offset from the downlink frequency that the cell was selected on. The default duplex frequency separation to be used by the UE is specified in [35] (for FDD only).

NOTE: The PRACH selection scheme assumes that all PRACHs configured in System Information Block type 5 and System Information Block type 6 support all (implicitly or explicitly) configurable RLC sizes of the cell, i.e. at least the transport formats corresponding to a single transport block of each applicable RLC size of the cell must be defined for each PRACH.

The UE shall select a "PRACH system information" according to the following rule. The UE shall:

- 1> select a "PRACH system information" from the ones indicated in the IE "PRACH system information list" in System Information Block type 5 (applicable in Idle Mode and Connected Mode) or System Information Block type 6 (applicable in Connected Mode only), as follows:
 - 2> if in connected mode and System Information Block type 6 is defined and includes PRACH info:
 - 3> compile a list of candidate PRACHs that consists of the PRACH system information listed in [SIB System Information Block 6](#), in the order of appearance as in [SIB System Information Block 6](#).
 - 2> otherwise:
 - 3> compile a list of candidate PRACHs that consists of the PRACH system information listed in [SIB System Information Block 5](#), in the order of appearance as in [SIB System Information Block 5](#).
- 2> in FDD:
 - 3> perform RACH TTI selection as specified in subclause 8.5.18.1.

- 2> in 1.28 Mcps TDD:
 - 3> perform RACH TTI selection according to subclause 8.5.18.2.
- 2> remove from the list of candidate PRACHs those PRACHs that have a TTI length different from the selected value;
- 2> select a PRACH randomly from the list of candidate PRACHs as follows:

$$\text{"Index of selected PRACH"} = \text{floor}(\text{rand} * K)$$

where K is equal to the number of candidate PRACH system informations, "rand" is a random number uniformly distributed in the [range](#) $0 \leq \text{rand} < 1$ and "floor" refers to rounding down to nearest integer. The candidate PRACH system informations shall be indexed from 0 to K-1. The random number generator is left to implementation. The scheme shall be implemented such that one of the available PRACH system informations is randomly selected with uniform probability. At start-up of the random number generator in the UE the seed shall be dependent on the IMSI of the UE or time, thereby avoiding that all UEs select the same RACH;

- 2> use the TFCS of the selected PRACH when performing TFC selection (see [15]);
- 2> reselect the PRACH system information when a new cell is selected. RACH reselection may also be performed after each transmission of a Transport Block Set on RACH.
- 1> for emergency call, the UE is allowed to select any of the available PRACH system informations.

After selecting a PRACH system information, the RRC in the UE shall configure the MAC and the physical layer for the RACH access according to the parameters included in the selected "PRACH system information" IE.

8.5.18 Selection of RACH TTI

8.5.18.1 FDD

In FDD mode, a RACH may employ either 10 or 20 ms TTI. The supported TTI is indicated as a semi-static parameter of the RACH Transport Format in system information. The UE shall select an appropriate TTI length from the RACHs included in the list of candidate PRACH(s) according to the following rule.

The UE shall:

- 1> [if](#) only RACHs with one particular TTI length are included in the list of candidate PRACH(s):
 - 2> select this TTI length and proceed as specified in subclause 8.5.17.
- 1> if both PRACHs with 10ms and 20ms TTI lengths are included in the list of candidate PRACH(s):
 - 2> perform TTI selection as follows:
 - 3> when the UE calculates the initial preamble transmit power ("Preamble_Initial_Power") as specified in subclause 8.5.7:
 - 4> select a TF to be employed for calculation of a transmit power margin as follows:
 - 5> from the TFs supported by all candidate PRACHs keep those which correspond to a single transport block of all configured RLC sizes (i.e., in idle mode, the RLC size applicable for RB0, in connected mode, the RLC sizes configured with explicit "RB mapping info"). If more than a single TF remain applicable, the UE may select any of these. Preferably the UE should select the TF which is intended to be used at the next transmission or, if such information is not available, the TF corresponding to the largest configured RLC size.
 - 4> calculate a transmit power margin,

$$\text{Margin} = \{ \min(\text{Maximum allowed UL tx power, } P_{\text{MAX}}) - \max(\text{Preamble_Initial_Power, Preamble_Initial_Power} + \Delta P_{p-m} + 10 * \log_{10}(1 + (\beta_d / \beta_c)^2)) \}$$

where "Maximum allowed UL tx power" is the maximum allowed uplink transmit power indicated in system information (in dBm), and P_MAX is the maximum RF output power of the UE (dBm). The margin shall be calculated for the gain factors β_d and β_c of the TF selected in the step above, using 10ms TTI length.

NOTE: the expression $\text{Preamble_Initial_Power} + \Delta P_{p-m} + 10 \cdot \log_{10}(1 + (\beta_d / \beta_c)^2)$ represents the total RACH message power if the message would be sent after the initial preamble.

- 3> if the resulting "Margin" value is less than 6 dB:
 - 4> select RACH with 20 ms TTI, and proceed as specified in subclause 8.5.17.
- 3> otherwise, if the last L1 message transmission on PRACH failed (see [15]):
 - 4> the UE may select RACH with 20ms TTI length and proceed as specified in subclause 8.5.17.
- 3> otherwise:
 - 4> select RACH with 10ms TTI length and proceed as specified in subclause 8.5.17.

[...]

8.5.22 Actions when entering another RAT from connected mode

NOTE: This section does not apply when entering GERAN Iu mode from UTRAN connected mode.

When entering another RAT from connected mode (due to Inter-RAT handover from UTRAN, Inter-RAT cell change order from UTRAN or Inter-RAT cell reselection from UTRAN), after successful completion of the procedure causing the transition to the other RAT, the UE shall:

- 1> if the USIM is present, for each CN domain:
 - 2> if a new security key set was received for this CN domain but was not used either for integrity protection or ciphering during this RRC connection:
 - 3> set the START value for this domain to zero and;
 - 3> store this START value for this domain in the USIM;
 - 2> else:
 - 3> store the current START value for every CN domain in the USIM [50].

NOTE: Prior to storing the START value, the UE should calculate this START value according to subclause 8.5.9.

- 1> if the SIM is present, for each CN domain:
 - 2> if a new security key was received for this CN domain but was not used either for integrity protection or ciphering during this RRC connection:
 - 3> set the START value for this domain to zero and;
 - 3> store this START value for this domain in the ~~USIM~~UE.
 - 2> else:
 - 3> store the current START value for this CN domain in the UE.

NOTE: Prior to storing the START value, the UE should calculate this START value according to subclause 8.5.9.

[...]

8.6.4.8 RB mapping info

If the IE "RB mapping info" is included, the UE shall:

- 1> for each multiplexing option of the RB:
 - 2> if a transport channel that would not exist as a result of the message (i.e. removed in the same message in IE "Deleted DL TrCH information" and IE "Deleted UL TrCH information") is referred to:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if a multiplexing option that maps a logical channel corresponding to a TM-RLC entity onto RACH, CPCH, FACH or DSCH or HS-DSCH is included:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if the multiplexing option realises the radio bearer on the uplink (resp. on the downlink) using two logical channels with different values of the IE "Uplink transport channel type" (resp. of the IE "Downlink transport channel type"):
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if that RB is using TM and the IE "Segmentation indication" is set to TRUE and, based on the multiplexing configuration resulting from this message, the logical channel corresponding to it is mapped onto the same transport channel as another logical channel:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if the transport channel considered in that multiplexing option is different from RACH and if that RB is using AM and the set of RLC sizes applicable to the logical channel transferring data PDUs has more than one element not equal to zero:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if that RB is using UM or TM and the multiplexing option realises it using two logical channels:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
- 2> for each logical channel in that multiplexing option:
 - 3> if the value of the IE "RLC size list" is set to "Explicit list":
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value (index) of any IE "RLC size index" in the IE "Explicit list" does not correspond to an "RLC size" in the IE transport format set of that transport channel given in the message; or
 - 4> if the transport channel this logical channel is mapped on in this multiplexing option is different from RACH, and if a "Transport format set" for that transport channel is not included in the same message, and the value (index) of any IE "RLC size index" in the IE "Explicit list" does not correspond to an "RLC size" in the stored transport format set of that transport channel; or
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value of any IE "Logical channel list" in the transport format set is not set to "Configured"; or
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and the value of any IE "Logical channel list" in the stored transport format set of that transport channel is not set to "Configured":
 - 5> set the variable INVALID_CONFIGURATION to TRUE.
 - 3> if the value of the IE "RLC size list" is set to "All":
 - 4> if the transport channel this logical channel is mapped on is RACH; or

- 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value of any IE "Logical channel list" in the transport format set is not set to "Configured"; or
- 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and the value of any IE "Logical channel list" in the stored transport format set of that transport channel is not set to "Configured":
 - 5> set the variable INVALID_CONFIGURATION to TRUE.
- 3> if the value of the IE "RLC size list" is set to "Configured":
 - 4> if the transport channel this logical channel is mapped on is RACH; or
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and for none of the RLC sizes defined for that transport channel in the "Transport format set", the "Logical Channel List" is set to "All" or given as an "Explicit List" which contains this logical channel; or
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and for none of the RLC sizes defined in the transport format set stored for that transport channel, the "Logical Channel List" is set to "All" or given as an "Explicit List" which contains this logical channel:
 - 5> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if, as a result of the message this IE is included in, several radio bearers can be mapped onto the same transport channel, and the IE "Logical Channel Identity" was not included in the RB mapping info of any of those radio bearers for a multiplexing option on that transport channel or the same "Logical Channel Identity" was used more than once in the RB mapping info of those radio bearers for the multiplexing options on that transport channel:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the "RB mapping info" is considered as valid according to the rules above:
 - 2> delete all previously stored multiplexing options for that radio bearer;
 - 2> store each new multiplexing option for that radio bearer;
 - 2> perform the actions as specified in subclause 8.5.21.
- 1> if the IE "Uplink transport channel type" is set to the value "RACH":
 - 2> in FDD:
 - 3> refer the IE "RLC size index" to the RACH Transport Format Set of the first PRACH received in the IE "PRACH system information list" received in [SIB5 System Information Block 5](#) or [SIB6 System Information Block 6](#).
 - 2> in TDD:
 - 3> use the first Transport Format of the PRACH of the IE "PRACH system information list" at the position equal to the value in the IE "RLC size index".

In case IE "RLC info" includes IE "Downlink RLC mode" ("DL RLC logical channel info" is mandatory present) but IE "Number of downlink RLC logical channels" is absent in the corresponding IE "RB mapping info", the parameter values are exactly the same as for the corresponding UL logical channels. In case two multiplexing options are specified for the UL, the first options shall be used as default for the DL. As regards the IE "Channel type", the following rule should be applied to derive the DL channel type from the UL channel included in the IE:

Channel used in UL	DL channel type implied by "same as"
DCH	DCH
RACH	FACH
CPCH	FACH
USCH	DSCH

If ciphering is applied, UTRAN should not map Transparent Mode RBs of different CN domains on the same transport channel and it should not map transparent mode SRBs and RBs onto the same transport channel. In such cases the UE behaviour is not specified.

[...]

8.6.5.2 Transport format combination set

If the IE "Transport format combination set" is included, the UE shall for that direction (uplink or downlink):

- 1> store the new transport format combination set, or (if this exists) modify a previously stored transport format combination set according to IEs included in IE "Transport format combination set";
- 1> start to respect those transport format combinations;
- 1> if IE "Transport format combination subset" is received in this message:
 - 2> perform the actions as specified in subclause 8.6.5.3.
- 1> if IE "Transport format combination subset" is not received in this message:
 - 2> clear the IE "Duration" in the variable TFC_SUBSET;
 - 2> set both the IE "Current TFC subset" and the IE "Default TFC subset" in the variable TFC_SUBSET to the value indicating "full transport format combination set".

If the IE "Transport format combination set" is not included and if there is no addition, removal or reconfiguration of transport channels, the UE shall for that direction (uplink or downlink):

- 1> use a previously stored transport format combination set if this exists.

If the IE "Transport format combination set" is not included; and

- 1> if no transport format combination set is stored in the UE; or
- 1> if transport channels are added or removed in the message; or
- 1> if any transport channel is reconfigured in the message such that the size of the transport format set is changed:

the UE shall:

- 1> set the variable INVALID_CONFIGURATION to TRUE.

In the uplink TFCS the minimum set of TFCs is the set of TFCs that is needed for the TFC selection algorithm defined in [15] to give a predictable result. This set should always be included in the TFCS, and its use should never be restricted using the IE "TFC Subset". In the definition of the minimum set of TFCs below, only logical channels for which the TFCS or the TFC subset include at least one TFC with non-empty TF for the corresponding transport channel should be considered.

The minimum set of TFCs consists of the following:

- 1> for each UM logical channel:
 - 2> a TFC with one transport block for this transport channel and empty TFs (see [34]) for all the others. If more than one TFC fulfils ~~this~~ [these](#) criteria, only the TFC with the lowest number of bits should be included in the minimum set of TFCs.
- 1> for each AM logical channel:

- 2> a TFC with a non-empty TF for the corresponding transport channel and empty TFs for all other transport channels, where the non-empty TF includes one transport block with "Configured RLC Size" equal to the RLC PDU size.
- 1> for each set of "synchronous" TM logical channels (see the definition below) and for each set of SDU sizes associated with it:
 - 2> a TFC with TFs corresponding to any combination of SDU sizes that can be received in a TTI from higher layers on the corresponding transport channels and empty TFs for all other transport channels.
- 1> for each TM logical channel that is not part of a set of "synchronous" TM logical channels (see the definition below):
 - 2> a TFC with non-empty TFs for the corresponding transport channel, and empty TFs for all other transport channels, where
 - 3> for non-segmented mode TM-RLC logical channels the non-empty TFs include, for the smallest SDU size that can be received in a single TTI from higher layer:
 - 4> a TF with non-zero number of transport blocks with "Configured RLC Size" equal to the corresponding SDU size. If more than one TFC fulfils ~~this~~ [these](#) criteria, only the TFC with the lowest number of bits in the TFC is included in the minimum set of TFCs.
 - 3> for segmented mode TM-RLC, the non-empty TFs include any TF such that the number of transport blocks multiplied by the "Configured RLC Size" is equal to the smallest SDU size that can be received in a single TTI from higher layer.
 - 1> an "empty" TFC (see [34]).

Furthermore, the UTRAN should ensure that the uplink TFCS and any configured TFC Subset satisfies the following rules:

- 1> for each TTI length with which at least one transport channel is configured:
 - 2> for each combination of TFs for the transport channels configured with this TTI length included in the TFCS:
 - 3> a TFC with these TFs for the transport channels configured with this TTI length and empty TFs on all transport channels configured with shorter TTI lengths is also included in the TFCS.

For TDD, the TFCS of a CCTrCH should include those of the above combinations, which include a TF with one transport block for a transport channel used in that CCTrCH, and the "empty" TFC should be included in the TFCS of every CCTrCH.

Synchronous TM logical channels are logical channels on which higher layer traffic is generated in a perfectly correlated fashion (e.g. AMR RAB).

NOTE: The "Configured RLC Size" is defined as the transport block size minus the MAC header size.

[...]

8.6.6.1 Frequency info

If, after completion of the procedure, the UE will be in CELL_DCH state, the UE shall:

- 1> if the IE "Frequency info" is included:
 - 2> if the frequency is different from the currently used frequency:
 - 3> store and use the frequency indicated by the IE "Frequency Info"; and
 - 3> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).
 - 2> if the frequency is the same as the currently used frequency:
 - 3> continue to use the ~~stored-active~~ currently used frequency;

3> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

1> if the IE "Frequency info" is not included and the UE has a currently used frequency:

2> continue to use the currently used frequency.

[...]

8.6.6.26a Uplink synchronisation parameters [\(TDD only\)](#)

The UE shall apply uplink synchronisation using the values of the IEs "Uplink synchronisation step size" and "Uplink synchronisation frequency" as specified in [33].

[...]

8.6.6.28 Downlink DPCH info common for all radio links

If the IE "Downlink DPCH info common for all RL" is included the UE shall:

1> if the IE "Downlink DPCH info common for all RL" is included in a message used to perform a hard handover:

2> perform actions for the IE "Timing indication" as specified in subclause 8.5.15.2, and subclause 8.3.5.1 or 8.3.5.2.

1> ignore the value received in IE "CFN-targetSFN frame offset";

1> if the IE "Downlink DPCH power control information" is included:

2> in the case of FDD:

3> perform actions for the IE "DPC Mode" according to [29].

2> in the case of TDD:

3> perform actions for the IE "TPC Step Size" according to [33].

1> if the IE choice "mode" is set to 'FDD':

2> if the IE "Downlink rate matching restriction information" is included:

3> set the variable INVALID_CONFIGURATION to TRUE.

2> perform actions for the IE "spreading factor";

2> perform actions for the IE "Fixed or Flexible position";

2> perform actions for the IE "TFCI existence";

2> if the IE choice "SF" is set to 256:

3> store the value of the IE "Number of bits for pilot bits".

2> if the IE choice "SF" is set to 128:

3> store the value of the IE "Number of bits for pilot bits".

If the IE "Downlink DPCH info common for all RL" is included in a message used to perform a Timing re-initialised hard handover or the IE "Downlink DPCH info common for all RL" is included in a message other than RB SETUP used to transfer the UE from a state different from Cell_DCH to Cell_DCH, and ciphering is active for any radio bearer using RLC-TM, the UE shall, after having activated the dedicated physical channels indicated by that IE:

1> if any ciphering configuration for a radio bearer using RLC-TM has not been applied, due to that the activation time from a previous procedure has not elapsed:

2> apply the ciphering configuration immediately and consider the activation time from the previous procedure to be elapsed;

- 1> if the IE "MAC-d HFN initial value" is included in the IE "Downlink DPCH info common for all RL":
 - 2> set the HFN component of COUNT-C for TM-RLC to the value of the IE "MAC-d HFN initial value", while not incrementing the value of the HFN component of COUNT-C at each CFN cycle.
- NOTE: The UTRAN should choose a value for the IE "MAC-d HFN initial value" using the COUNT-C value of the RBs using RLC-TM indicated by the Source RNC to the Target RNC in the IE "SRNS Relocation Info" and include some margin in such a way that no values of COUNT-C are repeated after the handover.
- 1> else:
 - 2> set the 20 MSB of the HFN component of COUNT-C for TM-RLC to the value of the latest transmitted IE "START" or "START List" for this CN domain, while not incrementing the value of the HFN component of COUNT-C at each CFN cycle; and
 - 2> set the remaining LSBs of the HFN component of COUNT-C to zero.
- 1> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN;
- 1> include the IE "COUNT-C activation time" in the response message and specify a CFN value for this IE other than the default, "Now", that is a multiple of 8 frames ($CFN \bmod 8 = 0$) and lies at least 200 frames ahead ~~off of~~ the CFN in which the response message is first transmitted;
- 1> calculate the START value according to subclause 8.5.9;
- 1> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the response message;
- 1> at the CFN value as indicated in the response message in the IE "COUNT-C activation time":
 - 2> 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
 - 2> set the remaining LSBs of the HFN component of COUNT-C to zero;
 - 2> increment the HFN component of the COUNT-C variable by one even if the "COUNT-C activation time" is equal to zero;
 - 2> 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;
 - 2> step the COUNT-C variable, as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.

[...]

8.6.7.9 Reporting Cell Status

If the IE "Reporting Cell Status" is received, the UE shall set the IE "Measured Results" in MEASUREMENT REPORT as follows. The UE shall:

- 1> for intra-frequency measurement and inter-frequency measurement:
 - 2> include the IE "Cell Measured Results" for cells (excluding cells of another RAT) that satisfy the condition (such as "Report cells within active set") specified in the IE "Reporting Cell Status", in descending order by the measurement quantity.
 - 2> the maximum number of the IE "Cell Measured Results" to be included in the IE "Measured Results" per reported frequency is the number specified in the IE "Reporting Cell Status".
- 1> for periodic inter-frequency measurement:
 - 2> include in the IE "Inter-frequency measured results list" the measured results for all non-used frequencies.

1> for inter-RAT measurement:

- 2> include the measurement results for cells of other RAT (e.g., GSM) that satisfy the condition specified in the IE "Reporting Cell Status", in descending order by the measurement quantity.
- 2> the maximum number of the IE "Measured GSM Cells" to be included in the IE "Measured Results" is the number specified in the IE "Reporting Cell Status".

If the IE "Reporting Cell Status" is not received for intra-frequency, inter-frequency measurement, or inter-RAT measurement, the UE shall:

1> for intra-frequency measurement, inter-frequency measurement and inter-RAT measurement:

- 2> exclude the IE "Measured Results" in MEASUREMENT REPORT.

NOTE: The IE "Reporting Cell Status" within "Event Criteria List" defines whether "Cell Measured Results" is present for event-based reporting.

The IE "Reporting Cell Status" is not included in [SIB System Information Block](#) 11/12 for periodic intra-frequency measurements. In this case the UE shall assume the default values "Report cells within active set and/or monitored set on used frequency " and "6".

[...]

12.1.3 Padding

Emitters compliant with this version of the specification of the protocol shall, unless indicated otherwise on a PDU type basis, pad the basic production with the smallest number of bits required to meet the size constraints of the lower layers. Padding bits shall be set to 0.

Receivers compliant with this version of the specification have no need to distinguish the extension and padding parts, and shall, unless indicated otherwise on a PDU type basis, accept RRC PDUs with any bit string in the extension and padding parts.

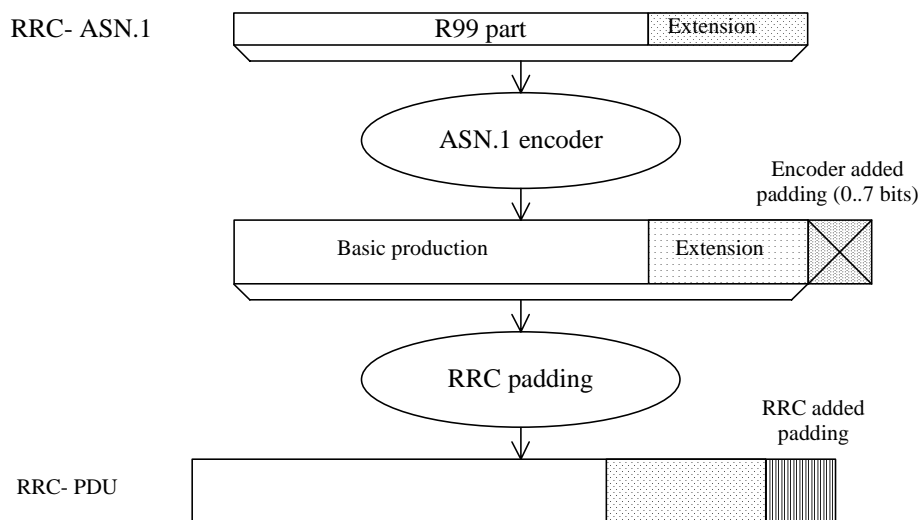


Figure 12.1.3-1: Padding

When using AM or UM mode, RLC requires that the RRC PDU length is a multiple of 8 bits.

When using Tr mode, RLC does neither impose size requirements nor perform padding. This implies that RRC has to take into account the transport format set defined for the transport channel across which the message is to be sent. RRC shall add the lowest number of padding bits required to fit the size specified for the selected transport format.

For system information blocks, building the PDU involves two steps. The first step is the building of the [SIB System Information Blocks](#), in which step padding is not applied (the rules for extension apply). The second step is the building

of the RRC PDUs, involving segmentation and concatenation of **SIB System Information Blocks**, and then padding as described above for Tr mode. The procedure is shown by means of an example as described in Figure 12.1.3-2. The example includes two **SIB System Information Blocks**, SIBn and SIBn+1, of which only SIBn includes a protocol extension. The two **SIBs-System Information Blocks** used in the example do not require segmentation and are concatenated into one SYSTEM INFORMATION message.

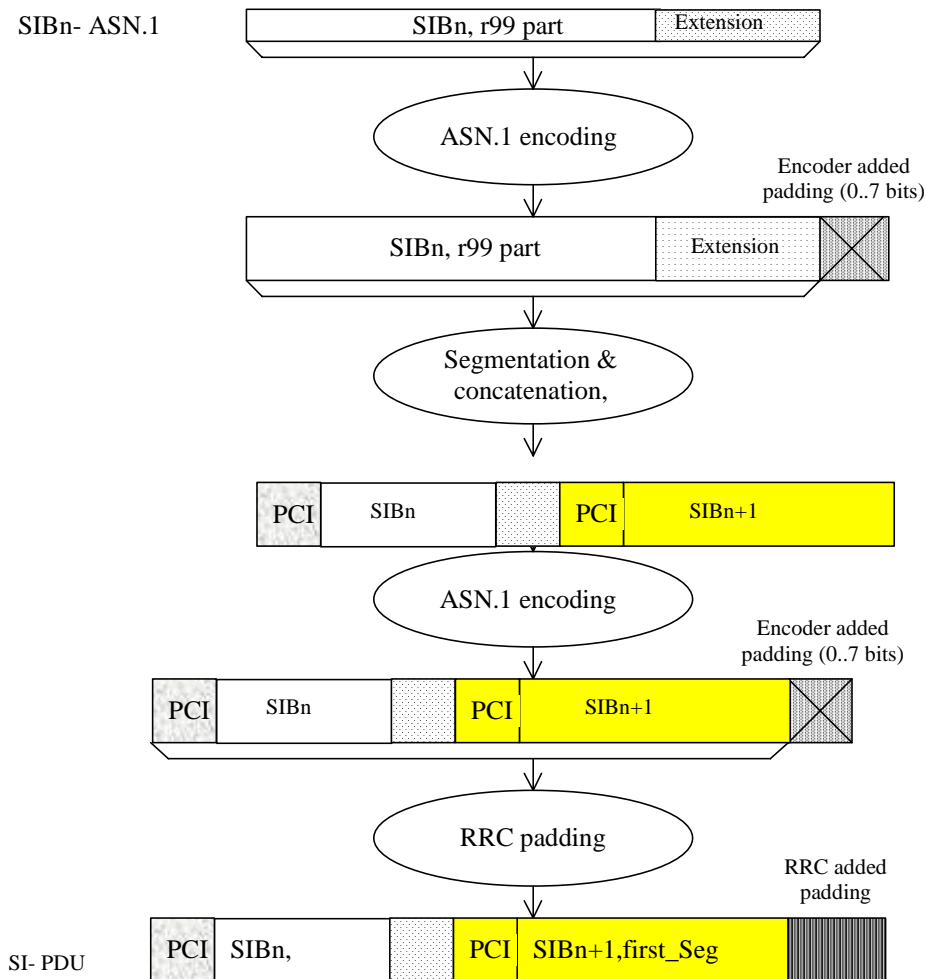


Figure 12.1.3-2: Padding for System Information

PCI: Protocol control information at SYSTEM INFORMATION message level

SI: SYSTEM INFORMATION message

For system information blocks, RRC may also add padding information at the end of IE "SIB data fixed", used both within IE "Last segment" and IE "Complete SIB". The IE "SIB data fixed" has a fixed length i.e. no length denominator used. In case the remaining amount of "SIB data" information is insufficient to fill the IE completely, RRC includes padding bits.

Since no length denominator is included, the receiving RRC cannot remove the padding added by the sender. However, since the padding used is the same as the padding added by the PER encoder to achieve octet alignment, the receiver can handle it.

NOTE 1 The mechanism described above implies that the PDU provided to the ASN.1 decoder may have more than 7 padding bits included. For a complete [SIB System Information Block](#) of length 215 bits, 11 padding bits are added by RRC. Since the decoder requires an octet aligned input, 6 additional bits need to be added. In this (worst) case, a total of 17 padding bits is included.

NOTE 2 For the above cases, use of padding bits is possible and more efficient than including a length denominator.

When using the RRC padding described above, the segment has a fixed length, which completely fills the transport block. Therefore, in this case no RRC padding is added within the SYSTEM INFORMATION message. This is illustrated by means of the following figure.

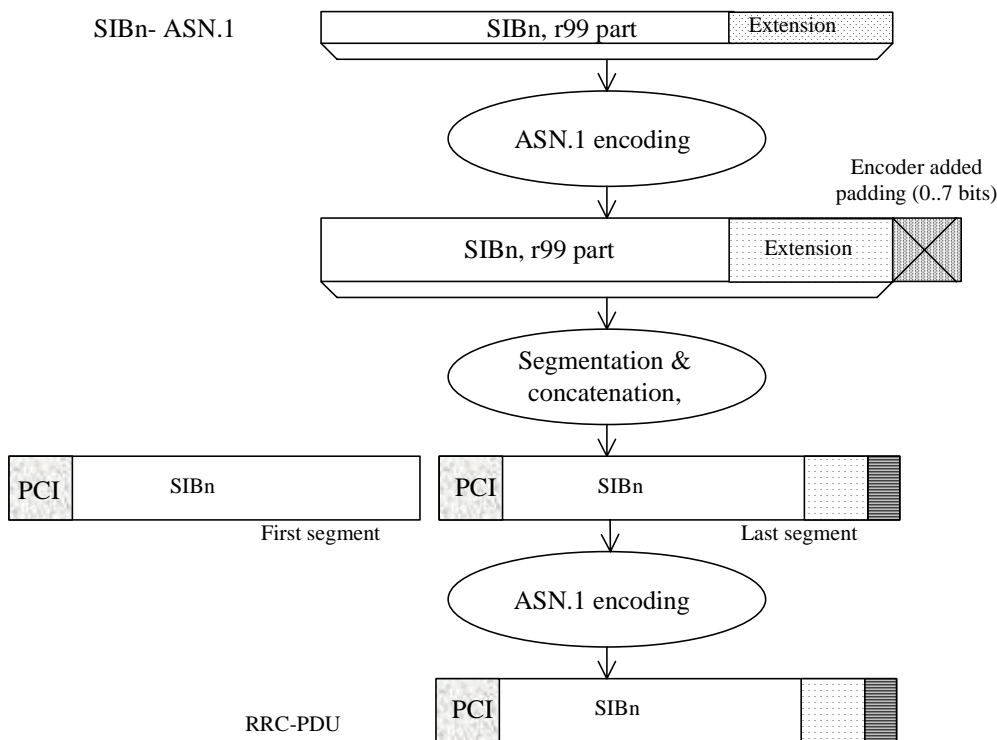


Figure 12.1.3-3: No RRC padding for System Information

[...]

13.4.24 TFC_SUBSET

This variable contains information about the TFC subset(s) applicable to the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE <i>mode</i>	MP				
>FDD					
>>Current TFC subset	MP		Transport Format Combination Subset 10.3.5.22	Set to "Full transport format set" when entering UTRA RRC connected mode when not stated otherwise in the procedure.	
>>Duration	OP		TFC Control duration 10.3.6.80	Cleared when entering UTRA RRC connected mode. Cleared when leaving	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
				UTRA RRC connected mode.	
>>Default TFC subset	OP		Transport Format Combination Subset 10.3.5.22	The TFC subset to go back to when any temporary limitation is released. Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.	
>>TFC subset list	MP	1 to <maxTFCs ub>			REL-4
>>>TFC subset	MP		Transport Format Combination Subset 10.3.5.22		REL-4
>TDD					
>>TFCS list	MP	1 to <maxCCTrC H >		One TFCS is created when entering UTRA RRC connected mode when not stated otherwise in the procedure.	
>>>TFCS identity	MP		Transport Format Combination Set Identity 10.3.5.21	"TFCS ID" is set to 1 when entering UTRA RRC connected mode when not stated otherwise in the procedure. "Shared channel indicator" is set to FALSE when entering UTRA RRC connected mode when not stated otherwise in the procedure.	
>>>Current TFC subset	MP		Transport Format Combination Subset 10.3.5.22	Set to "Full transport format set" when entering UTRA RRC connected mode when not stated otherwise in the procedure.	
>>>>Duration	OP		TFC Control duration 10.3.6.80	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.	
>>>>Default TFC subset	OP		Transport Format Combination Subset 10.3.5.22	The TFC subset to go back to when any temporary limitation is released. Cleared when	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
				entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.	
>>TFC subset list	MP	1 to <maxTFCs ub>			REL-4
>>>TFCS identity	MP		Transport Format Combination Set Identity 10.3.5.21		REL-4
>>>TFC subset	MP		Transport Format Combination Subset 10.3.5.22		REL-4

[...]

13.4.27b TRIGGERED_1B_EVENT

This variable contains information about a 1b event that has been triggered in the UE. There is one such variable per 1b event configured in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Cells triggered	OP	1 to <maxCellMeas>		Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.	
>primary CPICH	MP		Primary CPICH info 10.3.6.60		
>sent reports	MP		Integer(1..Infinity)	Number of reports sent to UTRAN in case of event triggered periodical reporting	REL-5
Cells recently triggered	OP	1 to <maxCellMeas>			REL-5
>primary CPICH	MP		Primary CPICH info 10.3.6.60		REL-5
>sent reports	MP		Integer(1..Infinity)	Number of reports sent to UTRAN in case of event triggered periodical reporting.	REL-5
Periodical reporting running	MP		Boolean		REL-5

[...]

13.4.27f19 TRIGGERED_6F_EVENT

This variable contains information about a 6f event that has been configured in the UE. There is one such variable per 6f event configured in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE mode					
>FDD					
Event triggered_RL	OP	<maxRL>	Boolean		
>1.28 Mcps TDD					REL-4
>>T _{ADV}	MP		TADV info 10.3.7.112		REL-4

[...]

14.8 Dynamic Resource Allocation Control of Uplink DCH (FDD only)

The network uses this procedure to dynamically control the allocation of resources on an uplink DCH.

This procedure shall be activated in the UE when it has been allocated an uplink DCH with DRAC static information elements. Such uplink DCHs can be established through RB establishment procedure, RB reconfiguration procedure, RB release procedure or Transport Channel Reconfiguration procedure by setting the DRAC static information elements to indicate that the DCH is controlled by the DRAC procedure.

The UE shall periodically listen to the [SIB System Information Block 10](#) of each cell in its Active Set. The scheduling information of [SIB System Information Block 10](#) and the SCCPCH info on which the [SIB System Information Block 10](#) is transmitted are provided to the UE when the DCH is set up and when a cell is added in its active set. In case several [SIB System Information Block 10](#) messages from different cells are scheduled at the same time, the UE shall only listen to the [SIB System Information Block 10](#) broadcast in the cell of its Active Set having the best CPICH measurements.

Upon reception of a SYSTEM INFORMATION message comprising a [SIB System Information Block 10](#), the UE shall:

1. Determine and store the most stringent DRAC parameters from the last received values from each cell of its active set (i.e. select the lowest product $p_i \cdot \text{maximum bit rate}$ corresponding to its DRAC class identity)
2. Determine the allowed subset of TFCS according to the selected maximum bit rate value, and store it for later usage.
The allowed subset of TFCS are the ones of the TFCS for which the sum of bit rates of the DCH controlled by DRAC is lower than Maximum Bit Rate IE, i.e.

$$\sum_{\text{DCH}_i \text{ controlled by DRAC}} TBSsize_i / TTI_i < \text{MaximumBitRate}$$

After the first [SIB System Information Block 10](#) has been received, the UE shall start the following process:

1. At the start of the next TTI, the UE shall randomly select $p \in [0,1]$.
2. If $p < p_{tr}$, the UE shall transmit on the DCH controlled by DRAC during T_{validity} frames using the last stored allowed subset of TFCS and comes back to step 1, otherwise the UE shall stop transmission on these DCH during T_{retry} frames and then comes back to step 1.

Transmission time validity (T_{validity}) and Time duration before retry (T_{retry}) are indicated to the UE at the establishment of a DCH controlled by this procedure and may be changed through RB or transport channel reconfiguration. The UE shall always use the latest received DRAC static parameters.

A UE that supports the simultaneous reception of one SCCPCH and one DPCH shall support the DRAC procedure.

[...]

CHANGE REQUEST

25.331 CR 2274 # rev **-** # Current version: **6.0.1**

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

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

Title:	# Misalignments between R'99 and Rel-5 procedures		
Source:	# RAN WG2		
Work item code:	# TEI-5	Date:	# February 16 2004
Category:	# A	Release:	# Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 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)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# A comparison of the procedural sections of TS 25.331 Rel-5 and R'99 has revealed minor misalignments in the Rel-5 version of the specifications. Below follows a list of the errors found in the Rel-5 version:
	Major misalignments:
	M1) 8.1.1.1.2, In table 8.1.1 it is removed the possibility to read SIB 12 while in idle mode.
	This is not necessary, since the UE should be free to read and store SIB 12 for a later use in the same cell.
	M2) 8.2.2.3, hard handover correction
	The following sentence is removed in Rel-5:
	<i>In case the reconfiguration procedure is used to remove all existing RL(s) in the active set while new RL(s) are established the UE shall:</i>
	This sentence is followed by:
	<i>perform a hard handover and apply physical layer synchronisation procedure A as specified in [29]</i>
	The removal of the first sentence could cause synch procedure A to be applied even if it is not a hard handover
	M3) 8.2.2.3 Multiple occurrences, use of the variable TIMERS_AND_CONSTANTS
	In R'99 T305 is configured based on the value included in <i>system</i>

*information block type 1 instead than in the variable
TIMERS_AND_CONSTANTS*

M4) 8.2.2.3: No reason could be found for the removal of "COUNT-C" from the sentences below in Rel-5.

2> set the new uplink and downlink HFN component of COUNT-C of RB2 to MAX(uplink HFN component of COUNT-C of RB2, downlink HFN component of COUNT-C of RB2);

2> increment by one the downlink and uplink HFN values of the HFN component of COUNT-C for RB2;

M5) 8.2.2.14, The case of radio link failure in the new configuration without change of ciphering and/or integrity is not treated. In R'99 the UE should go to idle, in Rel-5 nothing is stated.

M7) 8.4.1.6.7, UE Positioning at state transition

UE Positioning measurements for transitions from CELL_DCH to CELL_PCH or URA_PCH are not supported:

Upon transition from CELL_DCH to CELL_FACH, [deleted part: or upon transition from CELL_DCH to CELL_PCH or URA_PCH and if the UE supports UE positioning assisted GPS measurement validity in CELL_PCH and URA_PCH states as indicated in the IE "UE positioning capability" included in the IE "UE Radio Access Capability",] the UE shall:

M9) 8.5.22, Storing of START values in the UE

The UE was incorrectly replaced by USIM.

1> if the SIM is present, for each CN domain:

2> if a new security key was received for this CN domain but was not used either for integrity protection or ciphering during this RRC connection:

3> set the START value for this domain to zero and;

3> store this START value for this domain in the USIM [in R'99 it was: UE].

Additional (minor) misalignments:

m1) 8.2.2.14 (global), *Criteria* is the plural form of *criterion*

If the criteria for radio link failure is met

m2) 8.5.17 (global), The use of *SIB* and *System Information Block* is inconsistent.

1> *select a "PRACH system information" from the ones indicated in the IE "PRACH system information list" in System Information Block type 5 (applicable in Idle Mode and Connected Mode) or System Information Block type 6 (applicable in Connected Mode only), as follows:*

2> *if in connected mode and System Information Block type 6 is defined and includes PRACH info:*

3> *compile a list of candidate PRACHs that consists of the PRACH system information listed in SIB 6, in the order of appearance as in SIB 6.*

2> *otherwise:*

3> compile a list of candidate PRACHs that consists of the PRACH system information listed in SIB 5, in the order of appearance as in SIB 5.

m3) 8.5.17, The word *range* below should be reinstated.

"rand" is a random number uniformly distributed in the $0 \leq rand < 1$

m4) 8.5.18.1, The *if* below was erroneously deleted from Rel-5.

The UE shall:

1> only RACHs with one particular TTI length are included in the list of candidate PRACH(s):

2> select this TTI length and proceed as specified in subclause 8.5.17.

m5) 8.6.6.26a, Title *Uplink synchronisation parameters* does not indicate (TDD only) as the previous clause

m6) 8.6.6.1, The words "*stored active*" are redundant.

2> if the frequency is the same as the currently used frequency:

3> continue to use the stored active currently used frequency;

3> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

m7) 8.6.6.28, The *of* is misspelled.

include the IE "COUNT-C activation time" in the response message and specify a CFN value for this IE other than the default, "Now", that is a multiple of 8 frames ($CFN \bmod 8 = 0$) and lies at least 200 frames ahead off the CFN in which the response message is first transmitted;

m8) 13.4.24, The following information elements in the variable TFC_SUBSET, which were added in Rel-4, are not marked as Rel-4:

>>TFC subset list

>>>TFC subset

...

>>TFC subset list

>>>TFCS identity

>>>TFC subset

m9) 13.4.27b, Same as above for [Rel-5]:

>sent reports

Cells recently triggered

>primary CPICH

>sent reports

Periodical reporting running

m10) 13.4.27f19, Same as above [Rel-4] for:

1.28 Mcps TDD

>> T_{ADV}

Summary of change: ☼ M1) Align Rel-5 to R'99, i.e. allow reading of SIB 12 in idle mode

M2) Correct the text in Rel-5 so that synch procedure A is not triggered unintentionally. It could be enough to modify the sentence:

be able to perform a hard handover and apply physical layer synchronisation procedure A as specified in [29]

M3) Align Rel-5 to R'99, i.e. replace SIB 1 with the appropriate variable.

M4) Reinstate the R'99 text

M5) Reinstate the R'99 text, i.e. in case of radio link failure in the new configuration without change of ciphering and/or integrity the UE should go to idle mode.

M7) Reinstate the deleted sentence, but with a "and" instead of "or" and remove the condition on the "UE positioning capability" since in Rel-5 the UE is required to support transitions to CELL_PCH/URA_PCH for UE assisted GPS measurements, i.e.:

...and upon transition from CELL_DCH to CELL_PCH or URA_PCH for UE assisted GPS measurements, the UE shall:

M9) Align Rel-5 to R'99, i.e. replace USIM with UE.

m1) Align Rel-5 to R'99, i.e. use the plural verb form.

m2) Replace *SIB* with *System Information Block* in Rel-5, except than in tabular and ASN.1.

m3) Align Rel-5 to R'99 and reinstate the word *range*.

m4) Align Rel-5 to R'99 and reinstate the word *if*.

m5) Add (*TDD only*) to the title

m6) Delete "*stored active*" from Rel-5.

m7) Replace *off* with *in* in Rel-5.

m8) Add the Version column specifying that these IEs are Rel-4.

m9) Same as above [Rel-5]

m10) Same as above [Rel-4]

Consequences if not approved:

- ⌘ M1) The UE would be forbidden from reading and storing SIB 12 while in idle mode. This could delay common channel procedures and reduce the battery life.
- M2) The UE may always perform a hard handover procedure whenever a reconfiguration is initiated by UTRAN. This may lead to reduced QoS or to dropped calls.
- M3) The UE would not use the value of the timer sent by UTRAN in dedicated signalling, and the UE state maintained by UTRAN may go out of sync with respect to the actual UE state. The UE may become unreachable.
- M4) Ambiguity between COUNT-C and COUNT-I could lead of failure of the security procedure
- M5) The UE behaviour would be unspecified and the UE may go out of service or become unreachable after such a radio link failure.
- M7) The UE may stop reporting measurement reports (UE assisted GPS)
- M9) The START values may not be stored resulting in the reuse of the same HFN at the next RRC connection. This would weaken the protection provided by the message integrity.
- m1, m2, m3, m4, m5, m6, m7, m8, m9, m10) The Rel-5 version of TS 25.331 would be inconsistent with the R-99 version for no technical reasons.

Clauses affected: ⌘ 8.1.1.1.2, 8.1.1.6.15.2, 8.1.1.6.15.3, 8.1.1.6.16, 8.1.3.4, 8.1.3.6, 8.1.4.5, 8.2.2.3, 8.2.2.14, 8.3.1.2, 8.4.1.6.7, 8.5.12, 8.5.17, 8.5.18.1, 8.5.22, 8.6.4.8, 8.6.5.2, 8.6.6.1, 8.6.6.26a, 8.6.6.28, 8.6.7.9, 12.1.3, 13.4.24, 13.4.27b, 13.4.27f19, 14.8

Other specs affected:

Y	N
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

⌘ 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 <http://www.3gpp.org/specs/CR.htm>.

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 <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.

[...]

8.1.1.1.2 System information blocks

Table 8.1.1 specifies all system information blocks and their characteristics.

The *area scope column* in table 8.1.1 specifies the area where a system information block's value tag is valid. If the area scope is *cell*, the UE shall consider the system information block to be valid only in the cell in which it was read. If system information blocks have been previously stored for this cell, the UE shall check whether the value tag for the system information block in the entered cell is different compared to the stored value tag. If the area scope is *PLMN* or *Equivalent PLMN*, the UE shall check the value tag for the system information block when a new cell is selected. If the value tag for the system information block in the new cell is different compared to the value tag for the system information block stored in the UE, the UE shall re-read the system information block. If the area scope is *PLMN*, the UE shall consider the system information block to be valid only within the PLMN in which it was read. If the area scope is *Equivalent PLMN*, the UE shall consider the system information block to be valid within the PLMN in which it was received and all PLMNs which are indicated by higher layers to be equivalent.

For System information block types 15.2, 15.3 and 16, which may have multiple occurrences, each occurrence has its own independent value tag. The UE shall re-read a particular occurrence if the value tag of this occurrence has changed compared to that stored in the UE.

The *UE mode/state column when block is valid* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block shall be regarded as valid by the UE. In other words, the indicated system information block becomes invalid upon change to a mode/state that is not included in this column. System Information Block Type 16 remains also valid upon transition to or from GSM/GPRS. In some cases, the states are inserted in brackets to indicate that the validity is dependent on the broadcast of the associated System Information Blocks by the network as explained in the relevant procedure subclause.

The *UE mode/state column when block is read* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block may be read by the UE. The UE shall have the necessary information prior to execution of any procedure requiring information to be obtained from the appropriate system information block. The requirements on the UE in terms of when to read the system information may therefore be derived from the procedure specifications that specify which IEs are required in the different UE modes/states in conjunction with the different performance requirements that are specified.

System Information Block type 10 shall only be read by the UE while in CELL_DCH.

The UE shall:

- 1> if System Information Block type 11 is referenced in the master information block or in the scheduling blocks:
 - 2> if System Information Block type 12 is not referenced in the master information block or in the scheduling blocks, or broadcast of System Information Block type 12 is not indicated in System Information Block type 11:
 - 3> have read and acted upon System Information Block type 11 in a cell when the UE transmits an RRC message on RACH.
 - 2> else:
 - 3> have read and acted upon System Information Block type 11 in a cell before the UE transmits the RRC CONNECTION REQUEST message.
 - 3> have read and acted upon both System Information Block type 11 and System Information Block type 12 in a cell when:
 - 4> the UE transmits an RRC message on RACH in RRC connected mode; or
 - 4> the UE receives a message commanding to enter Cell_DCH state.

NOTE 1: There are a number of system information blocks that include the same IEs while the UE mode/state in which the information is valid differs. This approach is intended to allow the use of different IE values in different UE mode/states.

NOTE 2: System Information Block Type 16 is also obtained by a UE while in GSM/GPRS. The details of this are not within the scope of this specification.

The *Scheduling information* column in table 8.1.1 specifies the position and repetition period for the [SIB System Information Block](#).

The *modification of system information* column in table 8.1.1 specifies the update mechanisms applicable for a certain system information block. For system information blocks with a value tag, the UE shall update the information according to subclause 8.1.1.7.1 or 8.1.1.7.2. For system information blocks with an expiration timer, the UE shall, when the timer expires, perform an update of the information according to subclause 8.1.1.7.4.

Table 8.1.1: Specification of system information block characteristics

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
Master information block	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	SIB_POS = 0 SIB_REP = 8 (FDD) SIB_REP = 8, 16, 32 (TDD) SIB_OFF=2	Value tag	
Scheduling block 1	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information" in MIB	Value tag	
Scheduling block 2	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information" in MIB	Value tag	
System information block type 1	PLMN	Idle mode CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 2	Cell	URA_PCH	URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 3	Cell	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH)	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH)	Specified by the IE "Scheduling information"	Value tag	
System information block type 4	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	If System information block type 4 is not broadcast in a cell, the connected mode UE shall apply information in System information block type 3 in connected mode.
System information block type 5	Cell	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only))	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only))	Specified by the IE "Scheduling information"	Value tag	

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 6	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Specified by the IE "Scheduling information"	Value tag	<p>If system information block type 6 is not broadcast in a cell, the connected mode UE shall read System information block type 5.</p> <p>If some of the optional IEs are not included in System information block type 6, the UE shall read the corresponding IEs in System information block type 5</p> <p>In TDD mode system information block 6 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7 and/or if shared transport channels are assigned to the UE. If in these cases system information block type 6 is not broadcast the UE shall read system information block type 5.</p>
System information block type 7	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Specified by the IE "Scheduling information"	Expiration timer = MAX(32 , SIB_REP * ExpirationTimeFactor)	In TDD mode system information block type 7 shall only be read in CELL_DCH if shared transport channels are assigned to the UE.
System information block type 8	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 9	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	
System information block type 10	Cell	CELL_DCH	CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	
System information block type 11	Cell	Idle mode (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH)	Idle mode (CELL_FACH, CELL_PCH, URA_PCH)	Specified by the IE "Scheduling information"	Value tag	

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 12	Cell	Idle mode , CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	If system information block type 12 is not broadcast in a cell, the connected mode UE shall read System information block type 11. If some of the optional IEs are not included in System information block type 12, the UE shall read the corresponding IEs in System information block type 11.
System information block type 13	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.1	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.2	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.3	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.4	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 14	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = MAX(32, SIB_REP * ExpirationTimeFactor)	This system information block is used in 3.84 Mcps TDD mode only. System information block type 14 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7.
System information block type 15	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.1	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.2	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences
System information block type 15.3	PLMN	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 15.4	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.5	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 16	Equivalent PLMN	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences. This system information block is also valid while in GSM/GPRS.
System information block type 17	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	This system information block is used in TDD mode only. System information block type 17 shall only be read if shared transport channels are assigned to the UE.
System Information Block type 18	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	

The UE shall acquire all system information blocks except system information block type 10 on BCH. System Information Block type 10 shall be acquired on the FACH and only by UEs with support for simultaneous reception of one SCCPCH and one DPCH. If System Information Block type 10 is not broadcast in a cell, the DRAC procedures do not apply in this cell. System Information Block type 10 is used in FDD mode only.

[...]

8.1.1.6.15.2 System Information Block type 15.2

For System Information Block type 15.2 multiple occurrences may be used; one occurrence for one satellite. To identify the different occurrences, the scheduling information for System Information Block type 15.2 includes IE "SIB occurrence identity and value tag". The UE should store all the relevant IEs included in this system information block in variable UE_POSITIONING_GPS_DATA. The UE shall:

1> compare for each occurrence the value tag of the stored occurrence, if any, with the occurrence value tag included in the IE "SIB occurrence identity and value tag" for the occurrence of the ~~SIB~~[System Information Block](#) with the same occurrence identity;

1> in case the UE has no SIB occurrence stored with the same identity or in case the occurrence value tag is different:

2> store the occurrence information together with its identity and value tag for later use.

1> in case an occurrence with the same identity but different value tag was stored:

2> overwrite this one with the new occurrence read via system information for later use.

1> interpret IE "Transmission TOW" as a very coarse estimate of the current time, i.e., the approximate GPS time-of-week when the message is broadcast;

1> interpret IE "SatID" as the satellite ID of the data from which this message was obtained;

- 1> act upon the received IEs "Sat ID" and "GPS Ephemeris and Clock Corrections Parameter" as specified in subclause 8.6.7.19.3.4.

The IE "Transmission TOW" may be different each time a particular SIB occurrence is transmitted. The UTRAN should not increment the value tag of the SIB occurrence if the IE "Transmission TOW" is the only IE that is changed.

The UE may not need to receive all occurrences before it can use the information from any one occurrence.

8.1.1.6.15.3 System Information Block type 15.3

For System Information Block type 15.3 multiple occurrences may be used; one occurrence for each set of satellite data. To identify the different occurrences, the scheduling information for System Information Block type 15.3 includes IE "SIB occurrence identity and value tag". The UE should store all the relevant IEs included in this system information block in variable UE_POSITIONING_GPS_DATA. The UE shall:

- 1> compare for each occurrence the value tag of the stored occurrence, if any, with the occurrence value tag included in the IE "SIB occurrence identity and value tag" for the occurrence of the [SIB System Information Block](#) with the same occurrence identity;
- 1> in case the UE has no SIB occurrence stored with the same identity or in case the occurrence value tag is different:
 - 2> store the occurrence information together with its identity and value tag for later use.
- 1> in case an occurrence with the same identity but different value tag was stored:
 - 2> overwrite this one with the new occurrence read via system information for later use.
- 1> interpret IE "Transmission TOW" as a very coarse estimate of the current time, i.e., the approximate GPS time-of-week when the message is broadcast;
- 1> if the IE "GPS Almanac and Satellite Health" is included:
 - 2> interpret IE "SatMask" as the satellites that contain the pages being broadcast in this message;
 - 2> interpret IE "LSB TOW" as the least significant 8 bits of the TOW ([12]);
 - 2> act upon the received IE "GPS Almanac and Satellite Health" as specified in subclause 8.6.7.19.3.2.
- 1> if the IE "GPS ionospheric model" is included:
 - 2> act upon the received IE "GPS ionospheric model" as specified in subclause 8.6.7.19.3.5.
- 1> if the IE "GPS UTC model" is included:
 - 2> act upon the received IE "GPS UTC model" as specified in subclause 8.6.7.19.3.9.

The IE "Transmission TOW" may be different each time a particular SIB occurrence is transmitted. The UTRAN should not increment the value tag of the SIB occurrence if the IE "Transmission TOW" is the only IE that is changed. One SIB occurrence value tag is assigned to the table of subclause 10.2.48.8.18.3.

The UE may not need to receive all occurrences before it can use the information for any one occurrence.

[...]

8.1.1.6.16 System Information Block type 16

For System Information Block type 16 multiple occurrences may be used; one occurrence for each predefined configuration. To identify the different predefined configurations, the scheduling information for System Information Block type 16 includes IE "Predefined configuration identity and value tag".

The UE should store all relevant IEs included in this system information block. The UE shall:

- 1> compare for each predefined configuration the value tag of the stored predefined configuration with the preconfiguration value tag included in the IE "Predefined configuration identity and value tag" for the occurrence of the [SIB System Information Block](#) with the same predefined configuration identity;

- 1> in case the UE has no predefined configuration stored with the same identity or in case the predefined configuration value tag is different:
 - 2> store the predefined configuration information together with its identity and value tag for later use e.g. during handover to UTRAN.
- 1> in case a predefined configuration with the same identity but different value tag was stored:
 - 2> overwrite this one with the new configuration read via system information for later use e.g. during handover to UTRAN.

The above handling applies regardless of whether the previously stored predefined configuration information has been obtained via UTRA or via another RAT.

The UE is not required to complete reading of all occurrences of System Information Block type 16 before initiating RRC connection establishment.

The UE is not required to store more than maxPredefConfig preconfigurations even in the case of multiple equivalent PLMNs.

[...]

8.1.3.4 Reception of an RRC CONNECTION REQUEST message by the UTRAN

Upon receiving an RRC CONNECTION REQUEST message, UTRAN should either:

- 1> accept the request and use a predefined or default radio configuration, in which case it should:
 - 2> include the following information in the RRC CONNECTION SETUP message:
 - 3> the IE "Predefined configuration identity", to indicate which pre-defined configuration of RB and transport channel parameters shall be used; or
 - 3> the IE "Default configuration mode" and IE "Default configuration identity", to indicate which default configuration of RB and transport channel parameters shall be used;
 - 3> PhyCH information elements.
 - 2> submit the RRC CONNECTION SETUP message to the lower layers for transmission on the downlink CCCH.

NOTE 1: UTRAN should only apply a predefined radio configuration in case it orders the UE to enter CELL_DCH. This is because the predefined configuration information included in [SIB System Information Block](#) 16 mandatorily includes information only required in CELL_DCH state.

- 1> accept the request without using a predefined or default radio configuration, in which case it should:
 - 2> include in the RRC CONNECTION SETUP message the complete set of RB, TrCH and PhyCH information elements to be used;
 - 2> submit the RRC CONNECTION SETUP message to the lower layers for transmission on the downlink CCCH;

NOTE 2: In R'99, the RRC CONNECTION SETUP message always includes the IEs "Added or Reconfigured TrCH information list", both for uplink and downlink transport channels, even if UTRAN orders the UE to move to CELL_FACH and hence need not configure any transport channels. In these cases, UTRAN may include a configuration that adds little to the encoded message size e.g. a DCH with a single zero size transport format. At a later stage, UTRAN may either remove or reconfigure this configuration.

- 1> submit an RRC CONNECTION REJECT message on the downlink CCCH. In the RRC CONNECTION REJECT message, the UTRAN may direct the UE to another UTRA carrier or to another system. After the RRC CONNECTION REJECT message has been sent, all context information for the UE may be deleted in UTRAN.

[...]

8.1.3.6 Reception of an RRC CONNECTION SETUP message by the UE

The UE shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION SETUP message with the value of the variable INITIAL_UE_IDENTITY.

If the values are different, the UE shall:

- 1> ignore the rest of the message.

If the values are identical, the UE shall:

- 2> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":
 - 3> initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity" with the following exception;
 - 4> ignore the IE "RB to setup list" and the IE "Re-establishment timer".

NOTE: IE above IEs are mandatory to include in IE "Predefined RB configuration" that is included in [SIB System Information Block](#) 16 but should be ignored since it is not possible to establish a RAB during RRC connection establishment.

- 3> initiate the physical channels in accordance with the received physical channel information elements;
- 2> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":
 - 3> 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";
 - 3> initiate the physical channels in accordance with 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> if IE "Specification mode" is set to "Complete specification":
 - 3> 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> clear the variable ESTABLISHMENT_CAUSE;
- 1> stop timer T300, and act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:
 - 2> if the UE, according to subclause 8.6.3.3, will be in the CELL_FACH state at the conclusion of this procedure:
 - 3> if the IE "Frequency info" is included:
 - 4> select a suitable UTRA cell according to [4] on that frequency.
 - 3> enter UTRA RRC connected mode;
 - 3> select PRACH according to subclause 8.5.17;
 - 3> select Secondary CCPCH according to subclause 8.5.19;
 - 3> ignore the IE "UTRAN DRX cycle length coefficient" and stop using DRX.
 - 1> if the UE, according to subclause 8.6.3.3, will be in the CELL_DCH state at the conclusion of this procedure:
 - 2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);
 - 2> enter UTRA RRC connected mode.

- 1> submit an RRC CONNECTION SETUP COMPLETE message to the lower layers on the uplink DCCH after successful state transition per subclause 8.6.3.3, with the contents set as specified below:
 - 2> set the IE "RRC transaction identifier" to:
 - 3> the value of "RRC transaction identifier" in the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 3> clear that entry.
 - 2> if the USIM or SIM is present:
 - 3> set the "START" for each CN domain in the IE "START list" in the RRC CONNECTION SETUP COMPLETE message with the corresponding START value that is stored in the USIM [50] if present, or as stored in the UE if the SIM is present; and then
 - 3> set the START value stored in the USIM [50] if present, and as stored in the UE if the SIM is present for any CN domain to the value "THRESHOLD" of the variable START_THRESHOLD.
 - 2> if neither the USIM nor SIM is present:
 - 3> set the "START" for each CN domain in the IE "START list" in the RRC CONNECTION SETUP COMPLETE message to zero;
 - 3> set the value of "THRESHOLD" in the variable "START_THRESHOLD" to the default value [40].
 - 2> retrieve its UTRA UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and then
 - 2> include this in IE "UE radio access capability" and IE "UE radio access capability extension", provided this IE is included in variable UE_CAPABILITY_REQUESTED;
 - 2> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and then
 - 2> include this in IE "UE system specific capability".

When the RRC CONNECTION SETUP COMPLETE message has been submitted to lower layers for transmission the UE shall:

- 1> if the UE has entered CELL_FACH state:
 - 2> start timer T305 using its initial value if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS.
- 1> store the contents of the variable UE_CAPABILITY_REQUESTED in the variable UE_CAPABILITY_TRANSFERRED;
- 1> initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
- 1> consider the procedure to be successful;

And the procedure ends.

[...]

8.1.4.5 Cell re-selection or radio link failure

If the UE performs cell re-selection or the radio link failure criteria in subclause 8.5.6 ~~is~~are met at any time during the RRC connection release procedure and the UE has not yet entered idle mode, the UE shall:

- 1> if cell re-selection occurred (CELL_FACH state):
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection".
- 1> if radio link failure occurred (CELL_DCH state):

- 2> release all its radio resources;
- 2> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
- 2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
- 2> clear the variable ESTABLISHED_RABS;
- 2> enter idle mode;
- 2> perform the actions specified in subclause 8.5.2 when entering idle mode;
- 2> and the procedure ends.

[...]

8.2.2.3 Reception of RADIO BEARER SETUP or RADIO BEARER RECONFIGURATION or RADIO BEARER RELEASE or TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION message by the UE

The UE shall:

- 1> be able to receive any of the following messages:
 - 2> RADIO BEARER SETUP message; or
 - 2> RADIO BEARER RECONFIGURATION message; or
 - 2> RADIO BEARER RELEASE message; or
 - 2> TRANSPORT CHANNEL RECONFIGURATION message; or
 - 2> PHYSICAL CHANNEL RECONFIGURATION message;
- 1> [be able to](#) perform a hard handover and apply physical layer synchronisation procedure A as specified in [29], even if no prior UE measurements have been performed on the target cell and/or frequency.

If the UE receives:

- a RADIO BEARER SETUP message; or
- a RADIO BEARER RECONFIGURATION message; or
- a RADIO BEARER RELEASE message; or
- a TRANSPORT CHANNEL RECONFIGURATION message; or
- a PHYSICAL CHANNEL RECONFIGURATION message;

it shall:

- 1> set the variable ORDERED_RECONFIGURATION to TRUE;
- 1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:
 - 2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).
- 1> act upon all received information elements as specified in subclause 8.6, unless specified in the following and perform the actions below.

The UE may:

- 1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

- 1> in FDD, if the IE "PDSCH code mapping" is included but the IE "PDSCH with SHO DCH Info" is not included and if the DCH has only one link in its active set:
 - 2> act upon the IE "PDSCH code mapping" as specified in subclause 8.6; and
 - 2> infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted.
- 1> enter a state according to subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

- 1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

- 1> in FDD; or
- 1> in TDD when "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 2> remove any C-RNTI from MAC;
 - 2> clear the variable C_RNTI.

If after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> stop any HS-DSCH reception procedures according to the stored HS-PDSCH configuration;
- 1> clear any stored HS-PDSCH configuration;
- 1> remove any H-RNTI stored;
- 1> clear the variable H_RNTI;
- 1> set the variable HS_DSCH_RECEPTION to FALSE.

In FDD, if after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> remove any DSCH-RNTI from MAC;
- 1> clear the variable DSCH_RNTI.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> in TDD:
 - 2> if "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 3> remove any C-RNTI from MAC;
 - 3> clear the variable C_RNTI.
- 1> if "DPCH frame offset" is included for one or more RLS in the active set:
 - 2> use its value to determine the beginning of the DPCH frame in accordance with the following:
 - 3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH frame offset currently used by the UE:

- 4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).
- 3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:
 - 4> set the variable INVALID_CONFIGURATION to TRUE.
- 3> and the procedure ends.
- 2> adjust the radio link timing accordingly.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the UE finds a suitable UTRA cell on that frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4];
 - 2> if the UE finds a suitable UTRA cell on the current frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on the current frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:

- 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in [the variable TIMERS AND CONSTANTS](#)~~system information block type 1~~;
 - 1> select PRACH according to subclause 8.5.17;
 - 1> select Secondary CCPCH according to subclause 8.5.19;
 - 1> use the transport format set given in system information;
 - 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.
 - 1> if the contents of the variable C_RNTI is empty:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.

If the UE was in CELL_FACH state upon reception of the reconfiguration message and remains in CELL_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the UE finds a suitable UTRA cell on that frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> if the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) is included the UE shall either:

3> ignore the content of the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) and proceed as below;

2> or:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CPCH info" (for TDD), and it is different from the current cell:

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> when the cell update procedure completed successfully:

5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

If after state transition the UE enters CELL_PCH or URA_PCH state, the UE shall:

1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:

2> set the variable INVALID_CONFIGURATION to TRUE.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or

1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:

2> if the variable PDCP_SN_INFO is empty:

3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".

2> else:

3> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "stop";

3> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "stop".

2> re-establish RB2;

2> for the downlink and the uplink, apply the ciphering configuration as follows:

3> if the received re-configuration message included the IE "Ciphering Mode Info":

4> use the ciphering configuration in the received message when transmitting the response message.

3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:

4> if the previous SECURITY MODE COMMAND was received due to new keys being received:

5> consider the new ciphering configuration to include the received new keys;

5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in subclause 8.1.12.3.1.

4> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST_CONFIGURED_CN_DOMAIN:

5> consider the new ciphering configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN;

- 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the LATEST_CONFIGURED_CN_DOMAIN at the reception of the previous SECURITY MODE COMMAND.
- 4> apply the new ciphering configuration immediately following RLC re-establishment.
- 3> else:
 - 4> continue using the current ciphering configuration.
- 2> set the new uplink and downlink [component of COUNT-C](#) HFN of RB2 to MAX(uplink HFN of RB2, downlink [component of COUNT-C](#) HFN of RB2);
- 2> increment by one the downlink and uplink HFN values for RB2;
- 2> calculate the START value according to subclause 8.5.9;
- 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
 - 2> if the variable START_VALUE_TO_TRANSMIT is set:
 - 3> include and set the IE "START" to the value of that variable.
 - 2> if the variable START_VALUE_TO_TRANSMIT is not set and the IE "New U-RNTI" is included:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
 - 2> if the received reconfiguration message caused a change in the RLC size for any RB using RLC-AM:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for the CN domain associated with the corresponding RB identity in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
 - 2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info":
 - 2> include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- 1> if the received reconfiguration message did not contain the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info":
 - 2> if prior to this procedure there exist no transparent mode RLC radio bearers:
 - 3> if, at the conclusion of this procedure, the UE will be in CELL_DCH state; and
 - 3> if, at the conclusion of this procedure, at least one transparent mode RLC radio bearer exists:
 - 4> include the IE "COUNT-C activation time" and specify a CFN value for this IE that is a multiple of 8 frames ($CFN \bmod 8 = 0$) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted.

NOTE: UTRAN should not include the IE "Ciphering mode info" in any reconfiguration message unless it is also used to perform an SRNS relocation with change of ciphering algorithm.

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> if the variable PDCP_SN_INFO is not empty:
 - 2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_INFO.
- 1> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):
 - 2> set the IE "Uplink Timing Advance" according to subclause 8.6.6.26.
- 1> if the IE "Integrity protection mode info" was present in the received reconfiguration message:
 - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.

If after state transition the UE enters URA_PCH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4].
- 1> prohibit periodical status transmission in RLC;
- 1> remove any C-RNTI from MAC;
- 1> clear the variable C_RNTI;
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in [the variable TIMERS AND CONSTANTS](#)~~system information block type 1;~~
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- 1> if the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 ~~is~~[are](#) fulfilled after cell selection:
 - 2> initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";
 - 2> when the URA update procedure is successfully completed:
 - 3> the procedure ends.

If after state transition the UE enters CELL_PCH state from CELL_DCH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
 - 2> if the UE finds a suitable UTRA cell on that frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received

reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> proceed as below.

2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:

3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

3> proceed as below.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4].

2> if the UE finds a suitable UTRA cell on the current frequency:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> proceed as below.

2> else, if the UE can not find a suitable UTRA cell on the current frequency but it finds a suitable UTRA cell on another frequency:

3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

3> proceed as below.

1> prohibit periodical status transmission in RLC;

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI;

1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;

1> select Secondary CCPCH according to subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.

1> the procedure ends.

If after state transition the UE enters CELL_PCH state from CELL_FACH state, the UE shall, after the state transition and transmission of the response message:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4] on that frequency.

2> if the UE finds a suitable UTRA cell on that frequency:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received

reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";

4> proceed as below.

2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:

3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

3> proceed as below.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> if the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) is included the UE shall either:

3> ignore the content of the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) and proceed as below;

2> or:

3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CPCH info" (for TDD), and it is different from the current cell:

4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

4> proceed as below.

1> prohibit periodical status transmission in RLC;

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI;

1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;

1> select Secondary CCPCH according to subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.

1> the procedure ends.

[...]

8.2.2.14 Radio link failure

If the criteria for radio link failure are met in the old configuration during the reconfiguration procedure as specified in subclause 8.5.6, the UE shall:

1> if UE would have entered CELL_PCH or URA_PCH as a result of this reconfiguration procedure and UE has already submitted a response message to lower layers:

2> act as if the reconfiguration message was not received;

2> initiate a cell update procedure according to subclause 8.3.1, using the cause "radio link failure";

2> the procedure ends.

NOTE: UTRAN should consider the reconfiguration procedure as unsuccessful in this case even if a success response message had been received.

- 1> if the UE would have remained in CELL_DCH state as a result of this reconfiguration procedure:
 - 2> initiate a cell update procedure according to subclause 8.3.1, using the cause "radio link failure";
 - 2> after the cell update procedure has completed successfully:
 - 3> transmit a failure response message as specified in subclause 8.2.2.9, setting the information elements as specified below:
 - 4> include the IE "RRC transaction identifier"; and
 - 4> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 4> clear that entry;
 - 4> set the IE "failure cause" to "physical channel failure".
 - 3> act as if the reconfiguration message was not received;
 - 3> the procedure ends.

If the criteria for radio link failure ~~is~~ are met in the new configuration during the reconfiguration procedure (i.e. while UE is waiting for RLC acknowledgement for a response message.) as specified in subclause 8.5.6, the UE shall:

- 1> if the received reconfiguration causes either:
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS to be set to TRUE; and/or
 - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to be set to TRUE;
- 2> perform the actions specified in subclause 8.2.2.12b.

1> else, the UE should:

2> release all its radio resources;

2> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;

2> clear any entry for the RRC CONNECTION RELEASE message in the tables "Accepted transactions" and "Rejected transactions" in the variable TRANSACTIONS;

2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

2> clear the variable ESTABLISHED_RABS;

2> enter idle mode;

2> perform the actions specified in subclause 8.5.2 when entering idle mode; and

2> the procedure ends.

[...]

8.3.1.2 Initiation

A UE shall initiate the cell update procedure in the following cases:

- 1> Uplink data transmission:
 - 2> if the UE is in URA_PCH or CELL_PCH state; and

- 2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:
 - 3> perform cell update using the cause "uplink data transmission".

1> Paging response:

- 2> if the criteria for performing cell update with the cause specified above in the current subclause ~~is-are~~ not met; and
- 2> if the UE in URA_PCH or CELL_PCH state, receives a PAGING TYPE 1 message fulfilling the conditions for initiating a cell update procedure specified in subclause 8.1.2.3:
 - 3> perform cell update using the cause "paging response".

1> Radio link failure:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:
 - 3> if the UE is in CELL_DCH state and the criteria for radio link failure ~~is-are~~ met as specified in subclause 8.5.6; or
 - 3> if the transmission of the UE CAPABILITY INFORMATION message fails as specified in subclause 8.1.6.6:
 - 4> perform cell update using the cause "radio link failure".

1> Re-entering service area:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE is in CELL_FACH or CELL_PCH state; and
- 2> if the UE has been out of service area and re-enters service area before T307 or T317 expires:
 - 3> perform cell update using the cause "re-entering service area".

1> RLC unrecoverable error:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE detects RLC unrecoverable error [16] in an AM RLC entity:
 - 3> perform cell update using the cause "RLC unrecoverable error".

1> Cell reselection:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:
 - 3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or
 - 3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:
 - 4> perform cell update using the cause "cell reselection".

1> Periodical cell update:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE is in CELL_FACH or CELL_PCH state; and
- 2> if the timer T305 expires; and
- 2> if the criteria for "in service area" as specified in subclause 8.5.5.2 ~~is-are~~ fulfilled; and

- 2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":
 - 3> perform cell update using the cause "periodical cell update".

A UE in URA_PCH state shall initiate the URA update procedure in the following cases:

1> URA reselection:

- 2> if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or
- 2> if the list of URA identities in system information block type 2 is empty; or
- 2> if the system information block type 2 can not be found:
 - 3> perform URA update using the cause "change of URA".

1> Periodic URA update:

- 2> if the criteria for performing URA update with the causes as specified above in the current subclause are not met; and
- 2> if the timer T305 expires while the UE is in the service area; and
- 2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":
 - 3> perform URA update using the cause "periodic URA update".

When initiating the URA update or cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL_DCH state:

- 2> in the variable RB_TIMER_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;
- 2> if the stored values of the timer T314 and timer T315 are both equal to zero; or
- 2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":
 - 3> release all its radio resources;
 - 3> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - 3> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - 3> clear the variable ESTABLISHED_RABS;
 - 3> enter idle mode;
 - 3> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2;
 - 3> and the procedure ends.
- 2> if the stored value of the timer T314 is equal to zero:
 - 3> release all radio bearers, associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314";
 - 3> in the variable RB_TIMER_INDICATOR set the IE "T314 expired" to TRUE.
- 2> if the stored value of the timer T315 is equal to zero:

- 3> release all radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315";
- 3> in the variable RB_TIMER_INDICATOR set the IE "T315 expired" to TRUE.
- 2> if the stored value of the timer T314 is greater than zero:
 - 3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314":
 - 4> start timer T314.
 - 3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":
 - 4> start timer T314.
- 2> if the stored value of the timer T315 is greater than zero:
 - 3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":
 - 4> start timer T315.
- 2> for the released radio bearer(s):
 - 3> delete the information about the radio bearer from the variable ESTABLISHED_RABS;
 - 3> when all radio bearers belonging to the same radio access bearer have been released:
 - 4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED_RABS;
 - 4> delete all information about the radio access bearer from the variable ESTABLISHED_RABS.
- 2> select a suitable UTRA cell according to [4];
- 2> set the variable ORDERED_RECONFIGURATION to FALSE.
- 1> set the variables PROTOCOL_ERROR_INDICATOR, FAILURE_INDICATOR, UNSUPPORTED_CONFIGURATION and INVALID_CONFIGURATION to FALSE;
- 1> set the variable CELL_UPDATE_STARTED to TRUE;
- 1> if the UE is not already in CELL_FACH state:
 - 2> move to CELL_FACH state;
 - 2> select PRACH according to subclause 8.5.17;
 - 2> select Secondary CCPCH according to subclause 8.5.19;
 - 2> use the transport format set given in system information as specified in subclause 8.6.5.1.
- 1> if the UE performs cell re-selection:
 - 2> clear the variable C_RNTI; and
 - 2> stop using that C_RNTI just cleared from the variable C_RNTI in MAC.
- 1> set CFN in relation to SFN of current cell according to subclause 8.5.15;
- 1> in case of a cell update procedure:
 - 2> set the contents of the CELL UPDATE message according to subclause 8.3.1.3;
 - 2> submit the CELL UPDATE message for transmission on the uplink CCCH.

- 1> in case of a URA update procedure:
 - 2> set the contents of the URA UPDATE message according to subclause 8.3.1.3;
 - 2> submit the URA UPDATE message for transmission on the uplink CCCH.
- 1> set counter V302 to 1;
- 1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

[...]

8.4.1.6.7 UE positioning measurement

Upon transition from CELL_DCH to CELL_FACH and upon transition from CELL_DCH to CELL_PCH or URA_PCH for UE assisted GPS measurements, the UE shall:

- 1> retrieve each set of measurement control information of measurement type "UE positioning" stored in the variable MEASUREMENT_IDENTITY; and
 - 2> if the optional IE "measurement validity" for this measurement has not been included:
 - 3> delete the measurement associated with the variable MEASUREMENT_IDENTITY.
 - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "CELL_DCH":
 - 3> stop measurement reporting;
 - 3> store the measurement associated with the variable MEASUREMENT_IDENTITY to be used after the next transition to CELL_DCH state.
 - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":
 - 3> upon transition from CELL_DCH to CELL_PCH or URA_PCH:
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval" included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Measurement interval " as being 64 seconds;
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Reporting Interval" as being 64 seconds
 - 3> continue measurement reporting according to its UE positioning measurement reporting capability.
 - 2> if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "all states except CELL_DCH":
 - 3> upon transition from CELL_DCH to CELL_PCH or URA_PCH:
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval " included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Measurement interval " as being 64 seconds.
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Reporting Interval" as being 64 seconds.

- 3> resume this measurement and associated reporting according to its UE Positioning measurement reporting capability.
- 1> if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE; or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or
- 1> if the transition is due to a reconfiguration message which included the IE "Frequency info", and the UE selects a cell on another frequency than that indicated by this IE; or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Frequency info", and the UE can not find a cell on the current frequency, but it selects a cell on another frequency; or
- 1> if the transition is not due to a reconfiguration message:
 - 2> delete the assistance data included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED and UE_POSITIONING_OTDOA_DATA_UE_ASSISTED.
- 1> if the IE "Positioning Methods" stored in the variable MEASUREMENT_IDENTITY is set to "OTDOA" or "OTDOA or GPS":
 - 2> if the IE "Method type" stored in the variable MEASUREMENT_IDENTITY is set to "UE-based" or "UE assisted preferred but UE-based allowed" or "UE-based preferred but UE-assisted allowed":
 - 3> begin monitoring assistance data received in System Information Block type 15.4 and System Information Block type 15.5 according to subclause 8.1.1.6.15.
 - 2> if the IE "Method type" stored in the variable MEASUREMENT_IDENTITY is set to "UE-assisted":
 - 3> begin monitoring assistance data received in System Information Block type 15.4 according to subclause 8.1.1.6.15.
- 1> if the UE is in CELL_FACH state:
 - 2> if the IE "UE positioning OTDOA neighbour cell list for UE assisted" stored in the variable UE_POSITIONING_OTDOA_DATA_UE_ASSISTED or UE_POSITIONING_OTDOA_DATA_UE_BASED contains neighbour cells on other frequencies than the current frequency:
 - 3> perform measurements on other frequencies according to the IE "FACH measurement occasion info".

The UE may:

- 1> if the IE "Positioning Methods" stored in the variable MEASUREMENT_IDENTITY is set to "GPS" or "OTDOA or GPS":
 - 2> begin monitoring assistance data received in System Information Block type 15 and/or System Information Block type 15.1 and/or System Information Block type 15.2 and/or System Information Block type 15.3 according to subclause 8.1.1.6.15.

[...]

8.5.12 Establishment of Access Service Classes

The PRACH resources (i.e. access slots and preamble signatures for FDD), timeslot (with specific frame allocation and channelisation code for 3.84 Mcps TDD and SYNC_UL codes (with specific frame allocation) for 1.28 Mcps TDD) may be divided between different Access Service Classes in order to provide different priorities of RACH usage. It is possible for more than one ASC or for all ASCs to be assigned to the same access slot/signature space in FDD or frame allocation/channelisation codes in 3.84 Mcps TDD or frame allocation/SYNC_UL codes in 1.28 Mcps TDD.

Access Service Classes shall be numbered in the range $0 \leq i \leq \text{NumASC} \leq 7$ (i.e. the maximum number of ASCs is 8). An ASC is defined by an identifier, i , that defines a certain partition of the PRACH resources (SYNC_UL resources in

1.28 Mcps TDD) and an associated persistence value P_i . A set of ASC parameters consists of "NumASC+1" such parameters (i, P_i), $i = 0, \dots, \text{NumASC}$.

PRACH partitions shall be established using the information element "PRACH partitioning". The persistence values P_i to be associated with each ASC shall be derived from the dynamic persistence level $N = 1, \dots, 8$ which is broadcast in [SIB System Information Block 7](#), and the persistence scaling factors s_i , broadcast in System Information Block Type 5 and possibly also in System Information Block Type 6, as follows:

$$P(N) = 2^{-(N-1)}$$

ASC # i	0	1	2	3	4	5	6	7
P_i	1	$P(N)$	$s_2 P(N)$	$s_3 P(N)$	$s_4 P(N)$	$s_5 P(N)$	$s_6 P(N)$	$s_7 P(N)$

Scaling factors s_i are provided optionally for $i = 2, \dots, \text{NumASC}$, where NumASC+1 is the number of ASCs as defined by PRACH partitioning. If no scaling factors are broadcast, default value 1 shall be used if NumASC ≥ 2 .

If $k \geq 1$ scaling factors are broadcast and NumASC $\geq k+2$ then the last scaling factor s_{k+1} shall be used as default for the ASCs where $i > k+1$.

The set of ASC parameters is provided to MAC with the CMAC-Config-REQ primitive (see [15]), the PRACH partitioning is provided to PHY using the CPHY-RL-Setup-REQ primitive (see [34]).

The ASC enumeration shall be such that it corresponds to the order of priority (ASC 0 = highest priority, ASC 7 = lowest priority). ASC 0 shall be used in case of Emergency Call or for reasons with equivalent priority.

ASCs are numbered according to the order in which the IEs "ASC Setting" appear in the IE "PRACH partitioning", where the first IE "ASC Setting" describes ASC 0, the second IE "ASC Setting" describes ASC 1, etc.

At radio bearer setup/reconfiguration each involved logical channel is assigned a MAC Logical channel Priority (MLP) in the range 1, ..., 8. When the MAC sublayer is configured for RACH transmission in the UE, these MLP levels shall be employed for ASC selection on MAC.

[...]

8.5.17 PRACH selection

For this version of the specification, when a UE selects a cell, the uplink frequency to be used for the initial PRACH transmission shall have a default duplex frequency spacing offset from the downlink frequency that the cell was selected on. The default duplex frequency separation to be used by the UE is specified in [35] (for FDD only).

NOTE: The PRACH selection scheme assumes that all PRACHs configured in System Information Block type 5 and System Information Block type 6 support all (implicitly or explicitly) configurable RLC sizes of the cell, i.e. at least the transport formats corresponding to a single transport block of each applicable RLC size of the cell must be defined for each PRACH.

The UE shall select a "PRACH system information" according to the following rule. The UE shall:

- 1> select a "PRACH system information" from the ones indicated in the IE "PRACH system information list" in System Information Block type 5 (applicable in Idle Mode and Connected Mode) or System Information Block type 6 (applicable in Connected Mode only), as follows:
 - 2> if in connected mode and System Information Block type 6 is defined and includes PRACH info:
 - 3> compile a list of candidate PRACHs that consists of the PRACH system information listed in [SIB System Information Block 6](#), in the order of appearance as in [SIB System Information Block 6](#).
 - 2> otherwise:
 - 3> compile a list of candidate PRACHs that consists of the PRACH system information listed in [SIB System Information Block 5](#), in the order of appearance as in [SIB System Information Block 5](#).
- 2> in FDD:
 - 3> perform RACH TTI selection as specified in subclause 8.5.18.1.

- 2> in 1.28 Mcps TDD:
 - 3> perform RACH TTI selection according to subclause 8.5.18.2.
- 2> remove from the list of candidate PRACHs those PRACHs that have a TTI length different from the selected value;
- 2> select a PRACH randomly from the list of candidate PRACHs as follows:

$$\text{"Index of selected PRACH"} = \text{floor}(\text{rand} * K)$$

where K is equal to the number of candidate PRACH system informations, "rand" is a random number uniformly distributed in the [range](#) $0 \leq \text{rand} < 1$ and "floor" refers to rounding down to nearest integer. The candidate PRACH system informations shall be indexed from 0 to K-1. The random number generator is left to implementation. The scheme shall be implemented such that one of the available PRACH system informations is randomly selected with uniform probability. At start-up of the random number generator in the UE the seed shall be dependent on the IMSI of the UE or time, thereby avoiding that all UEs select the same RACH;

- 2> use the TFCS of the selected PRACH when performing TFC selection (see [15]);
- 2> reselect the PRACH system information when a new cell is selected. RACH reselection may also be performed after each transmission of a Transport Block Set on RACH.
- 1> for emergency call, the UE is allowed to select any of the available PRACH system informations.

After selecting a PRACH system information, the RRC in the UE shall configure the MAC and the physical layer for the RACH access according to the parameters included in the selected "PRACH system information" IE.

8.5.18 Selection of RACH TTI

8.5.18.1 FDD

In FDD mode, a RACH may employ either 10 or 20 ms TTI. The supported TTI is indicated as a semi-static parameter of the RACH Transport Format in system information. The UE shall select an appropriate TTI length from the RACHs included in the list of candidate PRACH(s) according to the following rule.

The UE shall:

- 1> [if](#) only RACHs with one particular TTI length are included in the list of candidate PRACH(s):
 - 2> select this TTI length and proceed as specified in subclause 8.5.17.
- 1> if both PRACHs with 10ms and 20ms TTI lengths are included in the list of candidate PRACH(s):
 - 2> perform TTI selection as follows:
 - 3> when the UE calculates the initial preamble transmit power ("Preamble_Initial_Power") as specified in subclause 8.5.7:
 - 4> select a TF to be employed for calculation of a transmit power margin as follows:
 - 5> from the TFs supported by all candidate PRACHs keep those which correspond to a single transport block of all configured RLC sizes (i.e., in idle mode, the RLC size applicable for RB0, in connected mode, the RLC sizes configured with explicit "RB mapping info"). If more than a single TF remain applicable, the UE may select any of these. Preferably the UE should select the TF which is intended to be used at the next transmission or, if such information is not available, the TF corresponding to the largest configured RLC size.
 - 4> calculate a transmit power margin,

$$\text{Margin} = \{ \min(\text{Maximum allowed UL tx power, } P_{\text{MAX}}) - \max(\text{Preamble_Initial_Power, Preamble_Initial_Power} + \Delta P_{p-m} + 10 * \log_{10}(1 + (\beta_d / \beta_c)^2)) \}$$

where "Maximum allowed UL tx power" is the maximum allowed uplink transmit power indicated in system information (in dBm), and P_MAX is the maximum RF output power of the UE (dBm). The margin shall be calculated for the gain factors β_d and β_c of the TF selected in the step above, using 10ms TTI length.

NOTE: the expression $\text{Preamble_Initial_Power} + \Delta P_{p-m} + 10 \cdot \log_{10}(1 + (\beta_d / \beta_c)^2)$ represents the total RACH message power if the message would be sent after the initial preamble.

- 3> if the resulting "Margin" value is less than 6 dB:
 - 4> select RACH with 20 ms TTI, and proceed as specified in subclause 8.5.17.
- 3> otherwise, if the last L1 message transmission on PRACH failed (see [15]):
 - 4> the UE may select RACH with 20ms TTI length and proceed as specified in subclause 8.5.17.
- 3> otherwise:
 - 4> select RACH with 10ms TTI length and proceed as specified in subclause 8.5.17.

[...]

8.5.22 Actions when entering another RAT from connected mode

NOTE: This section does not apply when entering GERAN Iu mode from UTRAN connected mode.

When entering another RAT from connected mode (due to Inter-RAT handover from UTRAN, Inter-RAT cell change order from UTRAN or Inter-RAT cell reselection from UTRAN), after successful completion of the procedure causing the transition to the other RAT, the UE shall:

- 1> if the USIM is present, for each CN domain:
 - 2> if a new security key set was received for this CN domain but was not used either for integrity protection or ciphering during this RRC connection:
 - 3> set the START value for this domain to zero and;
 - 3> store this START value for this domain in the USIM;
 - 2> else:
 - 3> store the current START value for every CN domain in the USIM [50].

NOTE: Prior to storing the START value, the UE should calculate this START value according to subclause 8.5.9.

- 1> if the SIM is present, for each CN domain:
 - 2> if a new security key was received for this CN domain but was not used either for integrity protection or ciphering during this RRC connection:
 - 3> set the START value for this domain to zero and;
 - 3> store this START value for this domain in the ~~USIM~~UE.
 - 2> else:
 - 3> store the current START value for this CN domain in the UE.

NOTE: Prior to storing the START value, the UE should calculate this START value according to subclause 8.5.9.

[...]

8.6.4.8 RB mapping info

If the IE "RB mapping info" is included, the UE shall:

- 1> for each multiplexing option of the RB:
 - 2> if a transport channel that would not exist as a result of the message (i.e. removed in the same message in IE "Deleted DL TrCH information" and IE "Deleted UL TrCH information") is referred to:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if a multiplexing option that maps a logical channel corresponding to a TM-RLC entity onto RACH, CPCH, FACH or DSCH or HS-DSCH is included:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if the multiplexing option realises the radio bearer on the uplink (resp. on the downlink) using two logical channels with different values of the IE "Uplink transport channel type" (resp. of the IE "Downlink transport channel type"):
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if that RB is using TM and the IE "Segmentation indication" is set to TRUE and, based on the multiplexing configuration resulting from this message, the logical channel corresponding to it is mapped onto the same transport channel as another logical channel:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if the transport channel considered in that multiplexing option is different from RACH and if that RB is using AM and the set of RLC sizes applicable to the logical channel transferring data PDUs has more than one element not equal to zero:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if that RB is using UM or TM and the multiplexing option realises it using two logical channels:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
- 2> for each logical channel in that multiplexing option:
 - 3> if the value of the IE "RLC size list" is set to "Explicit list":
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value (index) of any IE "RLC size index" in the IE "Explicit list" does not correspond to an "RLC size" in the IE transport format set of that transport channel given in the message; or
 - 4> if the transport channel this logical channel is mapped on in this multiplexing option is different from RACH, and if a "Transport format set" for that transport channel is not included in the same message, and the value (index) of any IE "RLC size index" in the IE "Explicit list" does not correspond to an "RLC size" in the stored transport format set of that transport channel; or
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value of any IE "Logical channel list" in the transport format set is not set to "Configured"; or
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and the value of any IE "Logical channel list" in the stored transport format set of that transport channel is not set to "Configured":
 - 5> set the variable INVALID_CONFIGURATION to TRUE.
 - 3> if the value of the IE "RLC size list" is set to "All":
 - 4> if the transport channel this logical channel is mapped on is RACH; or

- 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value of any IE "Logical channel list" in the transport format set is not set to "Configured"; or
- 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and the value of any IE "Logical channel list" in the stored transport format set of that transport channel is not set to "Configured":
 - 5> set the variable INVALID_CONFIGURATION to TRUE.
- 3> if the value of the IE "RLC size list" is set to "Configured":
 - 4> if the transport channel this logical channel is mapped on is RACH; or
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and for none of the RLC sizes defined for that transport channel in the "Transport format set", the "Logical Channel List" is set to "All" or given as an "Explicit List" which contains this logical channel; or
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and for none of the RLC sizes defined in the transport format set stored for that transport channel, the "Logical Channel List" is set to "All" or given as an "Explicit List" which contains this logical channel:
 - 5> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if, as a result of the message this IE is included in, several radio bearers can be mapped onto the same transport channel, and the IE "Logical Channel Identity" was not included in the RB mapping info of any of those radio bearers for a multiplexing option on that transport channel or the same "Logical Channel Identity" was used more than once in the RB mapping info of those radio bearers for the multiplexing options on that transport channel:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the "RB mapping info" is considered as valid according to the rules above:
 - 2> delete all previously stored multiplexing options for that radio bearer;
 - 2> store each new multiplexing option for that radio bearer;
 - 2> perform the actions as specified in subclause 8.5.21.
- 1> if the IE "Uplink transport channel type" is set to the value "RACH":
 - 2> in FDD:
 - 3> refer the IE "RLC size index" to the RACH Transport Format Set of the first PRACH received in the IE "PRACH system information list" received in ~~SIB5~~[System Information Block 5](#) or ~~SIB6~~[System Information Block 6](#).
 - 2> in TDD:
 - 3> use the first Transport Format of the PRACH of the IE "PRACH system information list" at the position equal to the value in the IE "RLC size index".

In case IE "RLC info" includes IE "Downlink RLC mode" ("DL RLC logical channel info" is mandatory present) but IE "Number of downlink RLC logical channels" is absent in the corresponding IE "RB mapping info", the parameter values are exactly the same as for the corresponding UL logical channels. In case two multiplexing options are specified for the UL, the first options shall be used as default for the DL. As regards the IE "Channel type", the following rule should be applied to derive the DL channel type from the UL channel included in the IE:

Channel used in UL	DL channel type implied by "same as"
DCH	DCH
RACH	FACH
CPCH	FACH
USCH	DSCH

If ciphering is applied, UTRAN should not map Transparent Mode RBs of different CN domains on the same transport channel and it should not map transparent mode SRBs and RBs onto the same transport channel. In such cases the UE behaviour is not specified.

[...]

8.6.5.2 Transport format combination set

If the IE "Transport format combination set" is included, the UE shall for that direction (uplink or downlink):

- 1> store the new transport format combination set, or (if this exists) modify a previously stored transport format combination set according to IEs included in IE "Transport format combination set";
- 1> start to respect those transport format combinations;
- 1> if IE "Transport format combination subset" is received in this message:
 - 2> perform the actions as specified in subclause 8.6.5.3.
- 1> if IE "Transport format combination subset" is not received in this message:
 - 2> clear the IE "Duration" in the variable TFC_SUBSET;
 - 2> set both the IE "Current TFC subset" and the IE "Default TFC subset" in the variable TFC_SUBSET to the value indicating "full transport format combination set".

If the IE "Transport format combination set" is not included and if there is no addition, removal or reconfiguration of transport channels, the UE shall for that direction (uplink or downlink):

- 1> use a previously stored transport format combination set if this exists.

If the IE "Transport format combination set" is not included; and

- 1> if no transport format combination set is stored in the UE; or
- 1> if transport channels are added or removed in the message; or
- 1> if any transport channel is reconfigured in the message such that the size of the transport format set is changed:

the UE shall:

- 1> set the variable INVALID_CONFIGURATION to TRUE.

In the uplink TFCS the minimum set of TFCs is the set of TFCs that is needed for the TFC selection algorithm defined in [15] to give a predictable result. This set should always be included in the TFCS, and its use should never be restricted using the IE "TFC Subset". In the definition of the minimum set of TFCs below, only logical channels for which the TFCS or the TFC subset include at least one TFC with non-empty TF for the corresponding transport channel should be considered.

The minimum set of TFCs consists of the following:

- 1> for each UM logical channel:
 - 2> a TFC with one transport block for this transport channel and empty TFs (see [34]) for all the others. If more than one TFC fulfils ~~this~~ [these](#) criteria, only the TFC with the lowest number of bits should be included in the minimum set of TFCs.
- 1> for each AM logical channel:

- 2> a TFC with a non-empty TF for the corresponding transport channel and empty TFs for all other transport channels, where the non-empty TF includes one transport block with "Configured RLC Size" equal to the RLC PDU size.
- 1> for each set of "synchronous" TM logical channels (see the definition below) and for each set of SDU sizes associated with it:
 - 2> a TFC with TFs corresponding to any combination of SDU sizes that can be received in a TTI from higher layers on the corresponding transport channels and empty TFs for all other transport channels.
- 1> for each TM logical channel that is not part of a set of "synchronous" TM logical channels (see the definition below):
 - 2> a TFC with non-empty TFs for the corresponding transport channel, and empty TFs for all other transport channels, where
 - 3> for non-segmented mode TM-RLC logical channels the non-empty TFs include, for the smallest SDU size that can be received in a single TTI from higher layer:
 - 4> a TF with non-zero number of transport blocks with "Configured RLC Size" equal to the corresponding SDU size. If more than one TFC fulfils ~~this~~ [these](#) criteria, only the TFC with the lowest number of bits in the TFC is included in the minimum set of TFCs.
 - 3> for segmented mode TM-RLC, the non-empty TFs include any TF such that the number of transport blocks multiplied by the "Configured RLC Size" is equal to the smallest SDU size that can be received in a single TTI from higher layer.
 - 1> an "empty" TFC (see [34]).

Furthermore, the UTRAN should ensure that the uplink TFCS and any configured TFC Subset satisfies the following rules:

- 1> for each TTI length with which at least one transport channel is configured:
 - 2> for each combination of TFs for the transport channels configured with this TTI length included in the TFCS:
 - 3> a TFC with these TFs for the transport channels configured with this TTI length and empty TFs on all transport channels configured with shorter TTI lengths is also included in the TFCS.

For TDD, the TFCS of a CCTrCH should include those of the above combinations, which include a TF with one transport block for a transport channel used in that CCTrCH, and the "empty" TFC should be included in the TFCS of every CCTrCH.

Synchronous TM logical channels are logical channels on which higher layer traffic is generated in a perfectly correlated fashion (e.g. AMR RAB).

NOTE: The "Configured RLC Size" is defined as the transport block size minus the MAC header size.

[...]

8.6.6.1 Frequency info

If, after completion of the procedure, the UE will be in CELL_DCH state, the UE shall:

- 1> if the IE "Frequency info" is included:
 - 2> if the frequency is different from the currently used frequency:
 - 3> store and use the frequency indicated by the IE "Frequency Info"; and
 - 3> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).
 - 2> if the frequency is the same as the currently used frequency:
 - 3> continue to use the ~~stored-active~~ currently used frequency;

3> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

1> if the IE "Frequency info" is not included and the UE has a currently used frequency:

2> continue to use the currently used frequency.

[...]

8.6.6.26a Uplink synchronisation parameters (TDD only)

The UE shall apply uplink synchronisation using the values of the IEs "Uplink synchronisation step size" and "Uplink synchronisation frequency" as specified in [33].

[...]

8.6.6.28 Downlink DPCH info common for all radio links

If the IE "Downlink DPCH info common for all RL" is included the UE shall:

1> if the IE "Downlink DPCH info common for all RL" is included in a message used to perform a hard handover:

2> perform actions for the IE "Timing indication" as specified in subclause 8.5.15.2, and subclause 8.3.5.1 or 8.3.5.2.

1> ignore the value received in IE "CFN-targetSFN frame offset";

1> if the IE "Downlink DPCH power control information" is included:

2> in the case of FDD:

3> perform actions for the IE "DPC Mode" according to [29].

2> in the case of TDD:

3> perform actions for the IE "TPC Step Size" according to [33].

1> if the IE choice "mode" is set to 'FDD':

2> if the IE "Downlink rate matching restriction information" is included:

3> set the variable INVALID_CONFIGURATION to TRUE.

2> perform actions for the IE "spreading factor";

2> perform actions for the IE "Fixed or Flexible position";

2> perform actions for the IE "TFCI existence";

2> if the IE choice "SF" is set to 256:

3> store the value of the IE "Number of bits for pilot bits".

2> if the IE choice "SF" is set to 128:

3> store the value of the IE "Number of bits for pilot bits".

If the IE "Downlink DPCH info common for all RL" is included in a message used to perform a Timing re-initialised hard handover or the IE "Downlink DPCH info common for all RL" is included in a message other than RB SETUP used to transfer the UE from a state different from Cell_DCH to Cell_DCH, and ciphering is active for any radio bearer using RLC-TM, the UE shall, after having activated the dedicated physical channels indicated by that IE:

1> if any ciphering configuration for a radio bearer using RLC-TM has not been applied, due to that the activation time from a previous procedure has not elapsed:

2> apply the ciphering configuration immediately and consider the activation time from the previous procedure to be elapsed;

- 1> if the IE "MAC-d HFN initial value" is included in the IE "Downlink DPCH info common for all RL":
 - 2> set the HFN component of COUNT-C for TM-RLC to the value of the IE "MAC-d HFN initial value", while not incrementing the value of the HFN component of COUNT-C at each CFN cycle.
- NOTE: The UTRAN should choose a value for the IE "MAC-d HFN initial value" using the COUNT-C value of the RBs using RLC-TM indicated by the Source RNC to the Target RNC in the IE "SRNS Relocation Info" and include some margin in such a way that no values of COUNT-C are repeated after the handover.
- 1> else:
 - 2> set the 20 MSB of the HFN component of COUNT-C for TM-RLC to the value of the latest transmitted IE "START" or "START List" for this CN domain, while not incrementing the value of the HFN component of COUNT-C at each CFN cycle; and
 - 2> set the remaining LSBs of the HFN component of COUNT-C to zero.
- 1> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN;
- 1> include the IE "COUNT-C activation time" in the response message and specify a CFN value for this IE other than the default, "Now", that is a multiple of 8 frames ($CFN \bmod 8 = 0$) and lies at least 200 frames ahead ~~off of~~ the CFN in which the response message is first transmitted;
- 1> calculate the START value according to subclause 8.5.9;
- 1> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the response message;
- 1> at the CFN value as indicated in the response message in the IE "COUNT-C activation time":
 - 2> 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
 - 2> set the remaining LSBs of the HFN component of COUNT-C to zero;
 - 2> increment the HFN component of the COUNT-C variable by one even if the "COUNT-C activation time" is equal to zero;
 - 2> 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;
 - 2> step the COUNT-C variable, as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.

[...]

8.6.7.9 Reporting Cell Status

If the IE "Reporting Cell Status" is received, the UE shall set the IE "Measured Results" in MEASUREMENT REPORT as follows. The UE shall:

- 1> for intra-frequency measurement and inter-frequency measurement:
 - 2> include the IE "Cell Measured Results" for cells (excluding cells of another RAT) that satisfy the condition (such as "Report cells within active set") specified in the IE "Reporting Cell Status", in descending order by the measurement quantity.
 - 2> the maximum number of the IE "Cell Measured Results" to be included in the IE "Measured Results" per reported frequency is the number specified in the IE "Reporting Cell Status".
- 1> for periodic inter-frequency measurement:
 - 2> include in the IE "Inter-frequency measured results list" the measured results for all non-used frequencies.

1> for inter-RAT measurement:

- 2> include the measurement results for cells of other RAT (e.g., GSM) that satisfy the condition specified in the IE "Reporting Cell Status", in descending order by the measurement quantity.
- 2> the maximum number of the IE "Measured GSM Cells" to be included in the IE "Measured Results" is the number specified in the IE "Reporting Cell Status".

If the IE "Reporting Cell Status" is not received for intra-frequency, inter-frequency measurement, or inter-RAT measurement, the UE shall:

1> for intra-frequency measurement, inter-frequency measurement and inter-RAT measurement:

- 2> exclude the IE "Measured Results" in MEASUREMENT REPORT.

NOTE: The IE "Reporting Cell Status" within "Event Criteria List" defines whether "Cell Measured Results" is present for event-based reporting.

The IE "Reporting Cell Status" is not included in [SIB System Information Block](#) 11/12 for periodic intra-frequency measurements. In this case the UE shall assume the default values "Report cells within active set and/or monitored set on used frequency " and "6".

[...]

12.1.3 Padding

Emitters compliant with this version of the specification of the protocol shall, unless indicated otherwise on a PDU type basis, pad the basic production with the smallest number of bits required to meet the size constraints of the lower layers. Padding bits shall be set to 0.

Receivers compliant with this version of the specification have no need to distinguish the extension and padding parts, and shall, unless indicated otherwise on a PDU type basis, accept RRC PDUs with any bit string in the extension and padding parts.

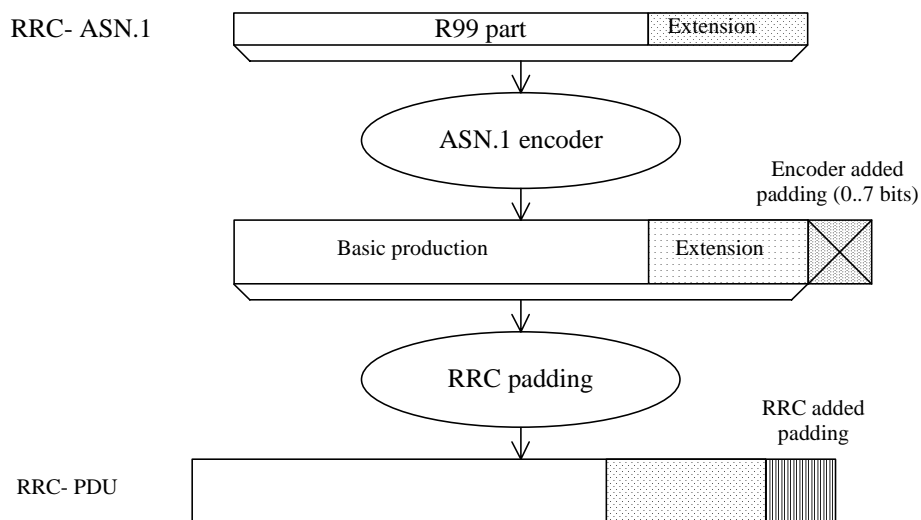


Figure 12.1.3-1: Padding

When using AM or UM mode, RLC requires that the RRC PDU length is a multiple of 8 bits.

When using Tr mode, RLC does neither impose size requirements nor perform padding. This implies that RRC has to take into account the transport format set defined for the transport channel across which the message is to be sent. RRC shall add the lowest number of padding bits required to fit the size specified for the selected transport format.

For system information blocks, building the PDU involves two steps. The first step is the building of the [SIB System Information Blocks](#), in which step padding is not applied (the rules for extension apply). The second step is the building

of the RRC PDUs, involving segmentation and concatenation of **SIB System Information Blocks**, and then padding as described above for Tr mode. The procedure is shown by means of an example as described in Figure 12.1.3-2. The example includes two **SIB System Information Blocks**, SIBn and SIBn+1, of which only SIBn includes a protocol extension. The two **SIBs System Information Blocks** used in the example do not require segmentation and are concatenated into one SYSTEM INFORMATION message.

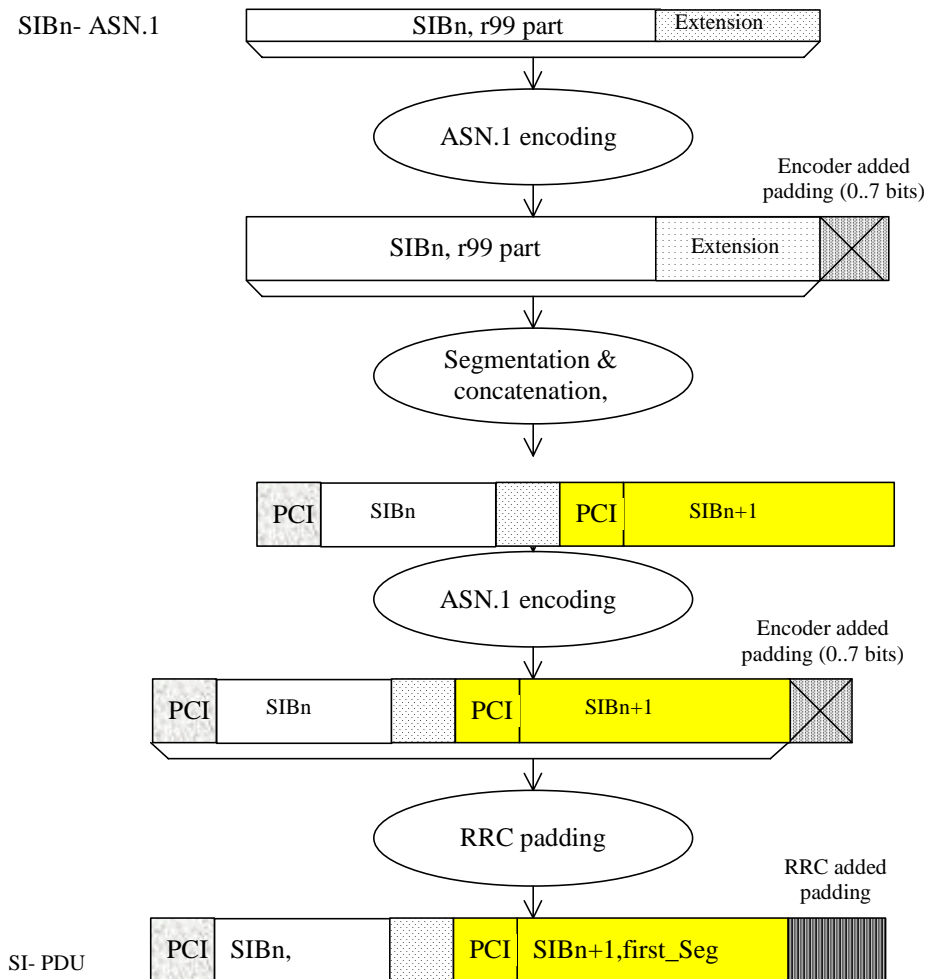


Figure 12.1.3-2: Padding for System Information

PCI: Protocol control information at SYSTEM INFORMATION message level

SI: SYSTEM INFORMATION message

For system information blocks, RRC may also add padding information at the end of IE "SIB data fixed", used both within IE "Last segment" and IE "Complete SIB". The IE "SIB data fixed" has a fixed length i.e. no length denominator used. In case the remaining amount of "SIB data" information is insufficient to fill the IE completely, RRC includes padding bits.

Since no length denominator is included, the receiving RRC cannot remove the padding added by the sender. However, since the padding used is the same as the padding added by the PER encoder to achieve octet alignment, the receiver can handle it.

NOTE 1 The mechanism described above implies that the PDU provided to the ASN.1 decoder may have more than 7 padding bits included. For a complete [SIB System Information Block](#) of length 215 bits, 11 padding bits are added by RRC. Since the decoder requires an octet aligned input, 6 additional bits need to be added. In this (worst) case, a total of 17 padding bits is included.

NOTE 2 For the above cases, use of padding bits is possible and more efficient than including a length denominator.

When using the RRC padding described above, the segment has a fixed length, which completely fills the transport block. Therefore, in this case no RRC padding is added within the SYSTEM INFORMATION message. This is illustrated by means of the following figure.

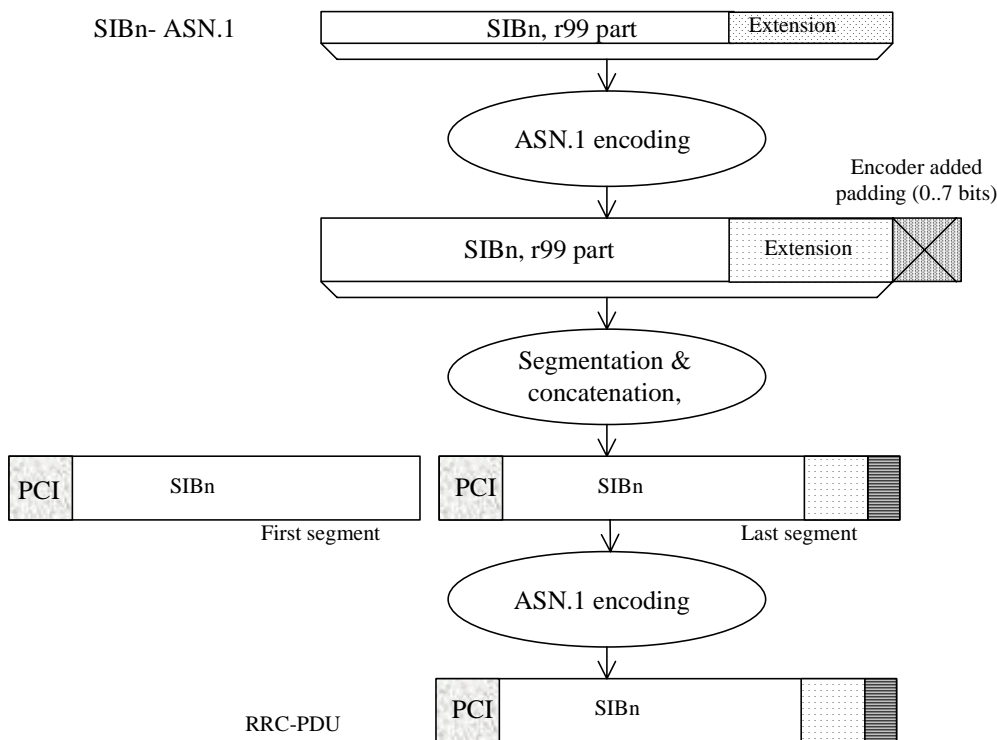


Figure 12.1.3-3: No RRC padding for System Information

[...]

13.4.24 TFC_SUBSET

This variable contains information about the TFC subset(s) applicable to the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE <i>mode</i>	MP				
>FDD					
>>Current TFC subset	MP		Transport Format Combination Subset 10.3.5.22	Set to "Full transport format set" when entering UTRA RRC connected mode when not stated otherwise in the procedure.	
>>Duration	OP		TFC Control duration 10.3.6.80	Cleared when entering UTRA RRC connected mode. Cleared when leaving	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
				UTRA RRC connected mode.	
>>Default TFC subset	OP		Transport Format Combination Subset 10.3.5.22	The TFC subset to go back to when any temporary limitation is released. Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.	
>>TFC subset list	MP	1 to <maxTFCs ub>			REL-4
>>>TFC subset	MP		Transport Format Combination Subset 10.3.5.22		REL-4
>TDD					
>>TFCS list	MP	1 to <maxCCTrC H >		One TFCS is created when entering UTRA RRC connected mode when not stated otherwise in the procedure.	
>>>TFCS identity	MP		Transport Format Combination Set Identity 10.3.5.21	"TFCS ID" is set to 1 when entering UTRA RRC connected mode when not stated otherwise in the procedure. "Shared channel indicator" is set to FALSE when entering UTRA RRC connected mode when not stated otherwise in the procedure.	
>>>Current TFC subset	MP		Transport Format Combination Subset 10.3.5.22	Set to "Full transport format set" when entering UTRA RRC connected mode when not stated otherwise in the procedure.	
>>>>Duration	OP		TFC Control duration 10.3.6.80	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.	
>>>>Default TFC subset	OP		Transport Format Combination Subset 10.3.5.22	The TFC subset to go back to when any temporary limitation is released. Cleared when	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
				entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.	
>>TFC subset list	MP	1 to <maxTFCs ub>			REL-4
>>>TFCS identity	MP		Transport Format Combination Set Identity 10.3.5.21		REL-4
>>>TFC subset	MP		Transport Format Combination Subset 10.3.5.22		REL-4

[...]

13.4.27b TRIGGERED_1B_EVENT

This variable contains information about a 1b event that has been triggered in the UE. There is one such variable per 1b event configured in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Cells triggered	OP	1 to <maxCellMeas>		Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.	
>primary CPICH	MP		Primary CPICH info 10.3.6.60		
>sent reports	MP		Integer(1..Infinity)	Number of reports sent to UTRAN in case of event triggered periodical reporting	REL-5
Cells recently triggered	OP	1 to <maxCellMeas>			REL-5
>primary CPICH	MP		Primary CPICH info 10.3.6.60		REL-5
>sent reports	MP		Integer(1..Infinity)	Number of reports sent to UTRAN in case of event triggered periodical reporting.	REL-5
Periodical reporting running	MP		Boolean		REL-5

[...]

13.4.27f19 TRIGGERED_6F_EVENT

This variable contains information about a 6f event that has been configured in the UE. There is one such variable per 6f event configured in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE mode					
>FDD					
Event triggered_RL	OP	<maxRL>	Boolean		
>1.28 Mcps TDD					REL-4
>>T _{ADV}	MP		TADV info 10.3.7.112		REL-4

[...]

14.8 Dynamic Resource Allocation Control of Uplink DCH (FDD only)

The network uses this procedure to dynamically control the allocation of resources on an uplink DCH.

This procedure shall be activated in the UE when it has been allocated an uplink DCH with DRAC static information elements. Such uplink DCHs can be established through RB establishment procedure, RB reconfiguration procedure, RB release procedure or Transport Channel Reconfiguration procedure by setting the DRAC static information elements to indicate that the DCH is controlled by the DRAC procedure.

The UE shall periodically listen to the [SIB System Information Block 10](#) of each cell in its Active Set. The scheduling information of [SIB System Information Block 10](#) and the SCCPCH info on which the [SIB System Information Block 10](#) is transmitted are provided to the UE when the DCH is set up and when a cell is added in its active set. In case several [SIB System Information Block 10](#) messages from different cells are scheduled at the same time, the UE shall only listen to the [SIB System Information Block 10](#) broadcast in the cell of its Active Set having the best CPICH measurements.

Upon reception of a SYSTEM INFORMATION message comprising a [SIB System Information Block 10](#), the UE shall:

1. Determine and store the most stringent DRAC parameters from the last received values from each cell of its active set (i.e. select the lowest product $p_i \cdot \text{maximum bit rate}$ corresponding to its DRAC class identity)
2. Determine the allowed subset of TFCS according to the selected maximum bit rate value, and store it for later usage.
The allowed subset of TFCS are the ones of the TFCS for which the sum of bit rates of the DCH controlled by DRAC is lower than Maximum Bit Rate IE, i.e.

$$\sum_{\text{DCH}_i \text{ controlled by DRAC}} TBSsize_i / TTI_i < \text{MaximumBitRate}$$

After the first [SIB System Information Block 10](#) has been received, the UE shall start the following process:

1. At the start of the next TTI, the UE shall randomly select $p \in [0,1]$.
2. If $p < p_{tr}$, the UE shall transmit on the DCH controlled by DRAC during T_{validity} frames using the last stored allowed subset of TFCS and comes back to step 1, otherwise the UE shall stop transmission on these DCH during T_{retry} frames and then comes back to step 1.

Transmission time validity (T_{validity}) and Time duration before retry (T_{retry}) are indicated to the UE at the establishment of a DCH controlled by this procedure and may be changed through RB or transport channel reconfiguration. The UE shall always use the latest received DRAC static parameters.

A UE that supports the simultaneous reception of one SCCPCH and one DPCH shall support the DRAC procedure.

[...]