TSG-RAN Meeting #22   **RP-030625**
Maui, USA, 09-12 December 2003

Title: **25.331 CRs to Rel-5**

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	2076	-	Rel-5	START value calculation for RLC size change	F	5.6.0	5.7.0	R2-032241	TEI5
25.331	2103	-	Rel-5	Initialisation of virtual active set	F	5.6.0	5.7.0	R2-032543	TEI5
25.331	2139	1	Rel-5	RRM in PCH/FACH	B	5.6.0	5.7.0	R2-032687	TEI5
25.331	2140	-	Rel-5	Correction of operating band reference	F	5.6.0	5.7.0	R2-032625	TEI5
25.331	2142	-	Rel-5	Correction to the procedural description: Reconfiguration of MAC-d flow	F	5.6.0	5.7.0	R2-032627	HSDPA-L23
25.331	2143	1	Rel-5	Enhancement of RRC transaction identifier for measurement control message	C	5.6.0	5.7.0	R2-032688	TEI5
25.331	2145	-	Rel-5	TDD C-RNTI in Cell DCH	F	5.6.0	5.7.0	R2-032633	TEI5
25.331	2149	-	Rel-5	IP activation time for RB0	F	5.6.0	5.7.0	R2-032638	TEI5
25.331	2159	-	Rel-5	COUNT-I reverting in case Security Mode Control procedure failure	F	5.6.0	5.7.0	R2-032638	TEI5

<div style="text-align:right">*CR-Form-v7*</div>

CHANGE REQUEST

| ⌘ | **25.331** | CR | **2076** | ⌘rev | **-** | ⌘ | Current version: | **5.6.0** | ⌘ |

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

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

Title: ⌘	START value calculation for RLC size change
Source: ⌘	RAN WG2
Work item code: ⌘ TEI5	***Date:*** ⌘ 07/10/2003
Category: ⌘ **F**	***Release:*** ⌘ Rel-5

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

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

Reason for change: ⌘	1) Currently, if the RLC AM sizes are reconfigured, section 8.2.2.3 mandates the UE to calculate the START values according to section 8.5.9 and include them in the response message. Furthermore, section 8.5.21 mandates the UE to set the HFN of the corresponding RLC entity to the values indicated in the confirmation message. However, it is not clear how the network can decipher the response message if the SRB2 sizes are changed. 2) During an SRNS Relocation performed upon receipt of Cell Update Confirm, the UE is mandated to set the new uplink and downlink HFN component of the COUNT-C of RB2 to MAX(uplink HFN component of the COUNT-C of RB2, downlink HFN component of the COUNT-C of RB2), according to section 8.3.1.6. However, if the Cell Update Confirm also changes the sizes of SRB2, section 8.5.21 mandates the UE to use the HFN values transmitted in the Cell Update. Therefore, the two sections mandate clashing actions for the UE.
Summary of change: ⌘	Added a note stating that for this version of the specification, the UTRAN should not change the RLC size of RB2 in any reconfiguration message or Cell Update Confirm message. **Impact Analysis:** The CR will affect UTRAN implementations that are currently attempting to change RLC Size for RB2 in reconfiguration messages or Cell update confirm messages. The CR will not affect UTRAN implementations otherwise.
Consequences if not approved: ⌘	1) Changing the RB2 RLC size will cause security failure on all messages in RB2. 2) Changing RB2 RLC Size with SRNS Relocation in Cell Update Confirm will

	remain unclear and security on RB2 will fail after this.			

Clauses affected:	⌘	8.5.21		

		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:

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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.

8.5.21   Actions related to Radio Bearer mapping

When the UE receives the IE "RB mapping info" and/or the IE "Transport format set", when the UE performs a cell reselection or a state transition, or when the UE releases a RB, the UE shall for each of the configured Radio Bearers:

1> upon moving to CELL_FACH after detecting a radio link failure (see subclause 8.5.6) and upon subsequent cell reselections until the first successfully completed cell update procedure, perform the actions defined in the remainder of this subclause only for signalling radio bearers;

1> configure the MAC with the appropriate transport format set (with computed transport block sizes) for the transport channel used by that RB;

1> determine the sets of RLC sizes that apply to the logical channels used by that RB, based on the IEs "RLC size list" and/or the IEs "Logical Channel List" included in the applicable "Transport format set" (either the ones received in the same message or the ones stored if none were received);

1> in case the selected multiplexing option is a multiplexing option on RACH:

2> ignore the RLC size indexes that do not correspond to any RLC size within the Transport Format Set stored for RACH.

2> if there is no remaining RLC size index corresponding to an RLC size within the Transport Format Set stored for RACH:

3> set the variable INVALID_CONFIGURATION to TRUE.

1> if RACH is the transport channel to be used on the uplink, if that RB has a multiplexing option on RACH and if it is using AM:

2> apply the largest size amongst the ones derived according to the previous bullet for the RLC size (or RLC sizes in case the RB is realised using two logical channels) for the corresponding RLC entity.

NOTE: The IE "RB mapping info" is only included in the IE "Predefined RB configurations" in system information when used for Inter-RAT handover to UTRAN and there is no AM RLC size change involved in this case.

1> if that RB is using AM and the RLC size applicable to the logical channel transporting data PDUs is different from the one derived from the previously stored configuration:

2> re-establish the corresponding RLC entity;

2> configure the corresponding RLC entity with the new RLC size;

2> for each AM RLC radio bearer in the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS whose RLC size is changed; and

2> for each AM RLC signalling radio bearer in the CN domain as indicated in the IE "CN domain identity" in the variable LATEST_CONFIGURED_CN_DOMAIN whose RLC size is changed:

3> if the IE "Status" in the variable CIPHERING_STATUS of this CN domain is set to "Started":

4> if the information causing the RLC re-establishment was included in system information:

5> set the HFN values for the corresponding RLC entity equal to the value of the IE "START" for this CN domain that will be included in the CELL UPDATE message following cell reselection.

NOTE: Since the UE cannot predict the START value at the time of the next CELL UPDATE transmission in the future, UTRAN should desist from changing the RLC size for a signalling radio bearer within a cell. Other than this case the change in RLC size for a signalling radio bearer is known to the UE when reading system information following cell reselection.

4> if the RLC re-establishment is caused by a CELL UPDATE CONFIRM:

5> set the HFN values for the corresponding RLC entity equal to the value of the IE "START" included in the latest transmitted CELL UPDATE message for this CN domain.

4> if the RLC re-establishment is caused by a reconfiguration message:

5> set the HFN values for the corresponding RLC entity equal to the value of the IE "START" that will be included in the reconfiguration complete message for this CN domain.

NOTE: If the UTRAN modifies the RLC size for RB2 on any reconfiguration message or Cell Update Confirm message, the UE behaviour is unspecified in this version of the specification.

1> if that RB is using UM:

2> indicate the largest applicable RLC size to the corresponding RLC entity.

1> configure MAC multiplexing according to the selected multiplexing option (MAC multiplexing shall only be configured for a logical channel if the transport channel it is mapped on according to the selected multiplexing option is the same as the transport channel another logical channel is mapped on according to the multiplexing option selected for it);

1> configure the MAC with the logical channel priorities according to selected multiplexing option;

1> configure the MAC with the set of applicable RLC Sizes for each of the logical channels used for that RB;

1> if there is no multiplexing option applicable for the transport channels to be used:

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if there is more than one multiplexing option applicable for the transport channels to be used:

2> set the variable INVALID_CONFIGURATION to TRUE.

If upon cell re-selection or upon moving to CELL_FACH after detecting a radio link failure the UE sets variable INVALID_CONFIGURATION to TRUE as a result of the actions defined in this subclause, the UE should:

1> move to idle mode;

1> release (locally) the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and the established radio access bearers (as stored in the variable ESTABLISHED_RABS) and indicate this to upper layers;

1> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2103** | ⌘**rev** | **-** | ⌘ | Current version: | **5.6.0** | ⌘ |

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

Title: ⌘	Initialisation of virtual active set		
Source: ⌘	RAN WG2		
Work item code:⌘	TEI5	***Date:*** ⌘	26/09/2003
Category: ⌘	**F**	***Release:*** ⌘	Rel-5

Use <u>one</u> of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
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R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘	1/ Section 14.11.1 defines the initialisation of the virtual active set. The initialisation can use parameters that are provided as part of the inter-frequency measurement, or in the case that they are not provided then it uses parameters that are inherited from an intra-frequency measurement. The section has the following structure:

1> if the IE "Intra-Frequency measurement reporting criteria" is included in the MEASUREMENT CONTROL message; or

1> if it was previously stored and if the IE "Inter-frequency set update" was included in the MEASUREMENT CONTROL message:

the virtual active set is initialised based on the provided or stored parameters

1> if the IE "Intra-Frequency measurement reporting criteria" was not included in the MEASUREMENT CONTROL message:

the virtual active set is initialised based on the parameters inherited from an intra-frequency measurement

From this structure it can be seen that if the MEASUREMENT CONTROL message does not include the IE "Intra-Frequency measurement reporting criteria" but it is previously stored, and it does include the IE "Inter-frequency set update" then both conditions can be true. This would mean that the UE would have to initialise the virtual active set in 2 different ways. This is clearly not correct and the intended behaviour is that the second condition only applies when the IE "Intra-frequency measurement reporting criteria" is not present and it not previously stored. |

2/ If the "autonomous update mode" is off then the UTRAN is responsible for maintaining the virtual active set in the mobile by sending MEASUREMENT CONTROL messages containing the IE "Inter frequency set update" to add/delete radio links. For the case that the parameters for initialising/maintaining the virtual active set are provided as part of the inter-frequency measurement then the spec clearly defines the behaviour for addition/deletion of radio links based on the information received from the UTRAN. However, the case that the parameters for initialising/maintaining the virtual active set are inherited from the an intra-frequency measurement the spec just says that the UE always initialises the set according to the received information - i.e. the UE will not do the add/delete as intended.

3/ The final 2 bullets of section 14.11.1 are only executed if the IE "Intra-Frequency measurement reporting criteria" is not received and is not previously stored and the IE "Inter frequency set update" is received. However, these bullets contain a condition 'if the IE "Inter frequency set update" is not received'. Hence these 2 bullets are never executed and are redundant.

4/ Due to limitations in the message structure the UTRAN may need to include the IE "Intra-Frequency measurement reporting criteria" but omitting the sub IE "Parameters required for each event" in many measurement control messages even if they are just updating the CELL_INFO_LIST. This limitation is described in the note in section 8.4.1.3. According to 14.11.1 every message such as this would cause the virtual active set to be initialised which is not the intended behaviour.

Note also that the first paragraph of 14.11.1 states that the section only applies if the IE "Inter frequency set update" or "Intra frequency reporting quantity" are included. The IE "Intra frequency reporting quantity" does not exist for inter frequency measurements but it is assumed that this is a typing mistake and it was intended to refer to "Intra frequency reporting criteria.

5/ The presence or previous storage of the IE "Intra-Frequency measurement reporting criteria" is used to determine whether the UE uses parameters inherited from an intra-frequency event configuration or not. However, according to the note in section 8.4.1.3, the UTRAN may need to include this IE even if it wants to use inherited parameters and so this can not be used as the only factor in determining whether inherited parameters should be used - the presence of the IE "Parameters required for each event should also be used".

| *Summary of change:* ⌘ | 1/ The condition is corrected so the virtual active set is initialised with the parameters inherited from the intra-frequency measurement only in the case that the IE "Intra-Frequency measurement reporting criteria" is not included and is not previously stored.

2/ The spec if corrected so that the UE adds/deletes radio links in the virtual active set according to the information received from the UTRAN. The same text is used as for the case that the parameters for initialising/maintaining the virtual active set are provided for the inter-frequency measurement.

3/ The redundant bullets are deleted.

4/ The spec is changed so that the actions in section 14.11.1 are only performed when the IE "Inter-frequency set update" is included in the received message. This removes the requirement to initialise the virtual active set due to the inclusion of the IE "Intra-Frequency measurement criteria". This correction also resolves any ambiguity introduced by the apparent typing mistake in the first paragraph of 14.11.1. Note this with this change some of the checks and conditions in the current text become unnecessary and are deleted. |

		5/ The checks which are used to determine whether the UE uses inherited parameters or not are corrected to also check whether the IE 'parameters required for each event' is present or previously stored.
Consequences if not approved:	⌘	1/ If this change is not approved then the spec will be ambiguous in the case that the network sends a measurement control not containing the IE "Intra-frequency measurement reporting criteria" but it is previously stored in the UE and containing the IE "Inter-frequency set update". The UTRAN will not be able to reliably use the configuration option to specify intra frequency parameters for the inter frequency measurement - it will have to use the configuration option to inherit the intra frequency parameters from an intra-frequency measurement.
		2/ If this change is not approved then the UTRAN will not be able use the autonomous update mode set to off when the intra-frequency parameters are inherited from an intra-frequency measurement.
		3/ If this change is not approved the spec will contain redundant requirements but there will be no system consequences.
		4/ If this change is not approved the virtual active set will be updated initialised whenever the IE "Intra-frequency measurement reporting criteria" is included. This will be quite frequent as the IE needs to be included even for the case that the CELL_INFO_LIST is being updated. The UTRAN will not be able to use the autonomous update mode set to on or on with no reporting (if autonomous update mode set to off the UTRAN could avoid the virtual active set from being updated by not listing any radio links to add/delete).
		5/ If this change is not approved, UTRAN would not be able to use an inherited intra frequency event configuration as the UTRAN is forced to include the IE 'Intra-frequency measurement reporting criteria" just to update the CELL_INFO_LIST.
		In summary, the combined consequence of these issues is that event triggered inter-frequency measurement reporting using the virtual active set can not be used (this applies to events 2a, 2b, 2c, 2e).

Clauses affected:	⌘	14.11.1

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
		X		Test specifications		34.123
			X	O&M Specifications		

Other comments:	⌘	

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8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

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

The UE shall:

1> read the IE "Measurement command";

1> if the IE "Measurement command" has the value "setup":

2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:

3> if the UE is in CELL_FACH state:

4> the UE behaviour is not specified.

2> for measurement types "inter-RAT measurement" or "inter-frequency measurement" 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 navigation model", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS almanac", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:

4> if measurement type is set to "traffic volume measurement", for any of the optional IEs "Traffic volume measurement Object", "Traffic volume measurement quantity", "Traffic volume reporting quantity", "Measurement Validity" and "parameters required for each event" (given "report criteria" is set to "traffic volume measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:

4> if measurement type is set to "quality measurement", for any of the optional IE "Quality reporting quantity" that is present in the MEASUREMENT CONTROL message:

4> if measurement type is set to "UE internal measurement", for any of the optional IEs "UE internal measurement quantity", "UE internal reporting quantity" and "parameters required for each event" (given "report criteria" is set to "UE internal measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:

          5> replace 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 report criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":

          4> leave the currently stored "inter-frequency report criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency report criteria" and intra-frequency reporting criteria.

      3> otherwise:

          4> clear the variables associated with the CHOICE "report criteria" and store the received "report criteria" choice;

          4> if the IE "inter-frequency measurement quantity" is present:

              5> clear the variables associated with the choice "reporting criteria" in "inter-frequency measurement quantity" and store the received "reporting criteria" choice.

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".

    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 identitifed in IE "TGPSI" in the received message.

1> if the UE in CELL_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT_IDENTITY:

2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT_IDENTITY; and

2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.

1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE_CAPABILITY_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):

2> set the variable CONFIGURATION_INCOMPLETE to TRUE.

1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS.

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.

14.11 UE autonomous update of virtual active set on non-used frequency (FDD only)

In the text that follows:

- a "non-used frequency" is a frequency that the UE has been ordered to measure upon but is not used for the connection. A "used frequency" is a frequency that the UE has been ordered to measure upon and is also currently used for the connection;

- a "non-used frequency (resp. cell) considered in an inter-frequency measurement" shall be understood as a non-used frequency (resp. cell) included in the list of cells pointed at in the IE "cells for measurement" if it was received for that measurement, or otherwise as a non-used frequency (resp. cell) included in the "Inter-frequency cell info" part of the variable CELL_INFO_LIST.

For event-triggered inter frequency measurements it is possible to specify intra-frequency measurements reporting events for support of maintenance of an active set associated with a non-used frequency considered in that measurement, a "virtual active set" and used in the evaluation of the frequency quality estimates. The "initial virtual active set" for a frequency is the virtual active set that is associated to that frequency just after a message was received that sets up or modifies the inter-frequency measurement.

The way the virtual active sets are initiated and updated for the non-used frequencies considered in an inter-frequency measurement is described in the two subclauses below, and depends on whether the IE "intra-frequency reporting criteria" is stored for the inter-frequency measurement or not. In case that IE is not stored, the IE "intra-frequency measurement" stored in other measurements of type intra-frequency shall be used.

14.11.1 Initial virtual active set

~~The way the UE shall act when~~ If the UE receives a MEASUREMENT CONTROL message ~~is received~~ that sets up or modifies an inter-frequency measurement~~,~~ and ~~that~~ includes the IE "Inter-frequency set update"~~,~~. ~~and/or the IE "Intra-Frequency reporting quantity" is described below. T~~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 ~~it was previously~~ stored for this measurement in the variable MEASUREMENT_IDENTITY~~and if the IE "Inter-frequency set update" was included in the MEASUREMENT CONTROL message~~:

2> if the IE "UE autonomous update mode" ~~received or previously stored~~ 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":

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

where:

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

$N_{Cells\ Fi}$ 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.

2> if the IE "UE autonomous update mode" ~~received or previously stored~~ 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 "Inter-frequency set update" is included in the message and~~ 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" ~~and if the IE "Intra-frequency measurement reporting criteria" was not included in the message~~:

      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.

2> ~~if the IE "Inter-frequency set update" is not included in the message and if the IE "UE autonomous update mode" stored for the inter-frequency measurement is set to "Off":~~

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

   3> ~~consider the virtual active set for it as empty.~~

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

1> <u>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</u>:

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

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.

$N_{Cells\ Fi}$ 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;

        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> set the initial virtual active set of the non-used frequency considered in that inter-frequency measurement according to what is included in the IE "Inter-frequency set update" included in the message; and~~

  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.

  ~~3> if the IE "Inter-frequency set update" was not received:~~

    ~~4> set the initial virtual active set for the frequencies considered in that measurement to be empty.~~

CR-Form-v7

CHANGE REQUEST

⌘	**25.331** CR **2139**	⌘**rev** **1**	⌘	Current version:	**5.6.0**	⌘

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

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

Title:	⌘	RRM in PCH/FACH

Source:	⌘	RAN WG2

Work item code:⌘	TEI5	**Date:** ⌘	05/11/2003

Category:	⌘	**B**		**Release:** ⌘	Rel-5

	Use one of the following categories:	*Use one 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	Rel-4 (Release 4)
	be found in 3GPP TR 21.900.	Rel-5 (Release 5)
		Rel-6 (Release 6)

Reason for change:	⌘	At the establishment of an RRC connection the UE conveys an establishment cause given by NAS to the UTRAN to indicate why the UE wants to establish the Iu connection. If the UE has already an RRC connection (e.g. because one Iu connection to a CN domain is already established) and the UE wants to establish another Iu connection the UE can not indicate to the RNC the cause value that is given to the AS by NAS. This means the RNC can not handle the establishment of the Iu connection with the correct priority, and has no information for RRM purposes.

Summary of change:⌘	For CELL_PCH/URA_PCH: In case the Cell Update procedure is initiated by a UE in CELL_PCH or URA_PCH state in order to transmit the "Initial direct transfer" message the UE shall include the IE "Establishment cause" similarly to the case of the RRC Connection Request. For CELL_FACH/CELL_DCH: The UE shall include the IE "Establishment cause" in the case of transmitting the Initial direct transfer message.

Consequences if not approved:	⌘	If the CR is not approved in the case the UE has already an RRC Connection and the user wants to establish a new call the network can not give the adequate priority to this call.

Clauses affected:	⌘	8.1.3.6, 8.1.8, 8.3.1.3, 10.2.7, 10.2.16c 11.2, 13.4.6

		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.

8.1.3.6   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 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.

8.1.8   Initial Direct transfer
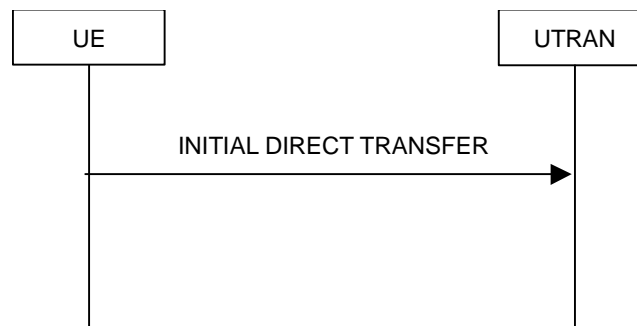
Figure 8.1.8-1: Initial Direct transfer in the uplink, normal flow

8.1.8.1   General

The initial direct transfer procedure is used in the uplink to establish a signalling connection. It is also used to carry an initial upper layer (NAS) message over the radio interface.

8.1.8.2   Initiation of Initial direct transfer procedure in the UE

In the UE, the initial direct transfer procedure shall be initiated, when the upper layers request establishment of a signalling connection. This request also includes a request for the transfer of a NAS message.

Upon initiation of the initial direct transfer procedure the UE shall:

1> set the variable ESTABLISHMENT_CAUSE to the cause for establishment indicated by upper layers;

Upon initiation of the initial direct transfer procedure when the UE is in idle mode, the UE shall:

1> set the variable ESTABLISHMENT_CAUSE to the cause for establishment indicated by upper layers;

1> perform an RRC connection establishment procedure, according to subclause 8.1.3;

1> if the RRC connection establishment procedure was not successful:

2> indicate failure to establish the signalling connection to upper layers and end the procedure.

1> when the RRC connection establishment procedure is completed successfully:

2> continue with the initial direct transfer procedure as below.

Upon initiation of the initial direct transfer procedure when the UE is in CELL_PCH or URA_PCH state, the UE shall:

1> perform a cell update procedure, according to subclause 8.3.1, using the cause "uplink data transmission";

1> when the cell update procedure completed successfully:

2> continue with the initial direct transfer procedure as below.

The UE shall, in the INITIAL DIRECT TRANSFER message:

1> set the IE "NAS message" as received from upper layers; and

1> set the IE "CN domain identity" as indicated by the upper layers; and

1> set the IE "Intra Domain NAS Node Selector" as follows:

2> derive the IE "Intra Domain NAS Node Selector" from TMSI/PMTSI, IMSI, or IMEI; and

2> provide the coding of the IE "Intra Domain NAS Node Selector" according to the following priorities:

1. derive the routing parameter for IDNNS from TMSI (CS domain) or PTMSI (PS domain) whenever a valid TMSI/PTMSI is available;

2. base the routing parameter for IDNNS on IMSI when no valid TMSI/PTMSI is available;

3. base the routing parameter for IDNNS on IMEI only if no (U)SIM is inserted in the UE.

1> if the variable ESTABLISHMENT_CAUSE_ is initialized:

2> set the IE "Establishment cause" to the value of the variable ESTABLISHMENT_CAUSE;

2> clear the variable ESTABLISHMENT_CAUSE.

1> calculate the START according to subclause 8.5.9 for the CN domain as set in the IE "CN Domain Identity"; and

1> include the calculated START value for that CN domain in the IE "START".

In CELL_FACH state, the UE shall:

1> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 12 (or "System Information Block Type 11" if "System Information Block Type 12" is not being broadcast);

1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported.

The UE shall:

1> transmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3;

1> when the INITIAL DIRECT TRANSFER message has been submitted to lower layers for transmission:

2> confirm the establishment of a signalling connection to upper layers; and

2> add the signalling connection with the identity indicated by the IE "CN domain identity" in the variable ESTABLISHED_SIGNALLING_CONNECTIONS.

1> when the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC:

2> the procedure ends.

When not stated otherwise elsewhere, the UE may also initiate the initial direct transfer procedure when another procedure is ongoing, and in that case the state of the latter procedure shall not be affected.

A new signalling connection request may be received from upper layers during transition to idle mode. In those cases, from the time of the indication of release to upper layers until the UE has entered idle mode, any such upper layer request to establish a new signalling connection shall be queued. This request shall be processed after the UE has entered idle mode.

********************NEXT modified Section********************

8.3.1.3 CELL UPDATE / URA UPDATE message contents to set

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

In case of URA update procedure the UE shall transmit a URA UPDATE message.

The UE shall set the IEs in the CELL UPDATE message as follows:

1> set the IE "Cell update cause" corresponding to the cause specified in subclause 8.3.1.2 that is valid when the CELL UPDATE message is submitted to lower layers for transmission;

NOTE: During the time period starting from when a cell update procedure is initiated by the UE until when the procedure ends, additional CELL UPDATE messages may be transmitted by the UE with different causes.

1> set the IE "U-RNTI" to the value of the variable U_RNTI;

1> if the value of the variable PROTOCOL_ERROR_INDICATOR is TRUE:

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

        3> set it to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.

    2> include and set the IE "failure cause" to the cause value "protocol error";

    2> set the IE "Protocol error information" set to the value of the variable PROTOCOL_ERROR_INFORMATION.

1> if the value of the variable FAILURE_INDICATOR is TRUE:

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

        3> set it to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS.

    2> include and set the IE "failure cause" to the value of the variable FAILURE_CAUSE.

1> include the START values for each CN domain, calculated according to subclause 8.5.9;

1> if an unrecoverable error [16] in any of the AM RLC entities for the signalling radio bearers RB2, RB3 or RB4 is detected:

    2> set the IE "AM_RLC error indication (RB2, RB3 or RB4)" to TRUE.

1> otherwise:

    2> set the IE "AM_RLC error indication (RB2, RB3 or RB4)" to FALSE.

1> if an unrecoverable error [16] in any of the AM RLC entities for the RB5 or upward is detected:

    2> set the IE "AM_RLC error indication (RB>4)" to TRUE.

1> otherwise:

    2> set the IE "AM_RLC error indication (RB>4)" to FALSE.

1> set the IE "RB Timer indicator" to the value of the variable RB_TIMER_INDICATOR;

1> if the variable ESTABLISHMENT_CAUSE is initialized:

    2> include the IE "Establishment cause" and set it to the value of the variable ESTABLISHMENT_CAUSE;

1> include an intra-frequency measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in system information block type 12 (or System Information Block type 11, if System Information Block type 12 is not being broadcast); and

1> include in the IE "Measured results on RACH" all requested reporting quantities for all included measurement objects; and

1> take care that the maximum allowed message size is not exceeded when forming the IE "Measured results on RACH".

The UE shall set the IEs in the URA UPDATE message as follows:

1> set the IE "U-RNTI" to the value of the variable U_RNTI;

1> set the IE "URA update cause" corresponding to which cause as specified in subclause 8.3.1.2 that is valid when the URA UPDATE message is submitted to lower layers for transmission;

    NOTE: During the time period starting from when a URA update procedure is initiated by the UE until when the procedure ends, additional URA UPDATE messages may be transmitted by the UE with different causes, depending on which causes are valid for the respective URA UPDATE message.

    2> if the value of the variable PROTOCOL_ERROR_INDICATOR is TRUE:

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

            4> set it to the value of "RRC transaction identifier" in the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;

        3> set the IE "Protocol error indicator" to TRUE;

        3> include the IE "Protocol error information" set to the value of the variable PROTOCOL_ERROR_INFORMATION.

    2> if the value of the variable PROTOCOL_ERROR_INDICATOR is FALSE:

        3> if the value of the variable INVALID_CONFIGURATION is TRUE:

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

            4> set it to the value of "RRC transaction identifier" in the entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS;

            4> set the IE "Protocol error indicator" to TRUE;

            4> include the IE "Protocol error information" set to "Information element value not comprehended";

        3> if the value of the variable INVALID_CONFIGURATION is FALSE:

            4> set the IE "Protocol error indicator" to FALSE.

*******************NEXT modified Section*******************

8.3.1.6   Reception of the CELL UPDATE CONFIRM/URA UPDATE CONFIRM message by the UE

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

-    if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or

-    if the message is received on DCCH:

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 shall:

    1> stop timer T302;

    1> in case of a cell update procedure and the CELL UPDATE CONFIRM message:

        2> includes "RB information elements"; and/or

        2> includes "Transport channel information elements"; and/or

        2> includes "Physical channel information elements"; and

        2> if the variable ORDERED_RECONFIGURATION is set to FALSE:

            3> set the variable ORDERED_RECONFIGURATION to TRUE.

    1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

        2> if the IE "Frequency info" is included in the message:

            3> if the IE "RRC State Indicator" is set to the value "CELL_FACH" or "CELL_PCH" or URA_PCH":

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

        4> act as specified in subclause 8.3.1.12.

      3> if the IE "RRC State Indicator" is set to the value "CELL_DCH":

        4> act on the IE "Frequency info" as specified in subclause 8.6.6.1.

  2> use the transport channel(s) applicable for the physical channel types that is used; and

  2> if the IE "TFS" is neither included nor previously stored in the UE for that transport channel(s):

    3> use the TFS given in system information.

  2> if none of the TFS stored is compatible with the physical channel:

    3> delete the stored TFS;

    3> use the TFS given in system information.

  2> if the IE "RLC re-establish indicator (RB2, RB3 and RB4)" in the CELL UPDATE CONFIRM message is set to TRUE:

    3> re-establish the RLC entities for signalling radio bearer RB2, signalling radio bearer RB3 and signalling radio bearer RB4 (if established);

    3> if the value of the IE "Status" in the variable CIPHERING_STATUS of the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN is set to "Started":

      4> set the HFN component of the respective COUNT-C values for AM RLC entities with RB identity 2,RB identity 3 and RB identity 4 (if established) equal to the START value included in the latest transmitted CELL UPDATE message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN.

  2> if the IE "RLC re-establish indicator (RB5 and upwards)" in the CELL UPDATE CONFIRM message is set to TRUE:

    3> for radio bearers with RB identity 5 and upwards:

      4> re-establish the AM RLC entities;

      4> if the value of the IE "Status" in the variable CIPHERING_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS is set to "Started":

        5> set the HFN component of the respective COUNT-C values for AM RLC entities equal to the START value included in this CELL UPDATE message for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS.

1> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM 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 variable ESTABLISHMENT_CAUSE is set:

  2> clear the variable ESTABLISHMENT_CAUSE.

1> enter a state according to subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.

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

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

1> not prohibit periodical status transmission in RLC.

If the UE after state transition remains in CELL_FACH state, it shall

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

1> select PRACH according to subclause 8.5.17;

1> select Secondary CCPCH according to subclause 8.5.19;

1> not prohibit periodical status transmission in RLC;

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

2> ignore that IE and stop using DRX.

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

1> prohibit periodical status transmission in RLC;

1> clear the variable C_RNTI;

1> stop using that C_RNTI just cleared from the variable C_RNTI in MAC;

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

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

2> set the variable INVALID_CONFIGURATION to TRUE.

If the UE after the state transition remains in CELL_FACH state; and

1> the contents of the variable C_RNTI are empty:

it shall check the value of V302; and:

1> if V302 is equal to or smaller than N302:

2> if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:

3> the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or

3> the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:

4> abort the ongoing integrity and/or ciphering reconfiguration;

4> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":

5> set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and

5> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.

4> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":

5> set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and

5> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.

    2> in case of a URA update procedure:

        3> stop the URA update procedure;

        3> clear any entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

        3> continue with a cell update procedure.

    2> set the contents of the CELL UPDATE message according to subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "cell reselection";

    2> submit the CELL UPDATE message for transmission on the uplink CCCH;

    2> increment counter V302;

    2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

    2> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

    2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

    2> in case of a cell update procedure:

        3> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.

    2> in case of a URA update procedure:

        3> clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.

    2> release all its radio resources;

    2> 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;

    2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

    2> clear the variable ESTABLISHED_RABS;

    2> enter idle mode;

    2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;

    2> and the procedure ends.

If the UE after the state transition remains in CELL_FACH state; and

-   a C-RNTI is stored in the variable C_RNTI;

or

-   the UE after the state transition moves to another state than the CELL_FACH state:

the UE shall:

1> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":

    2> include and set the IE "Radio bearer uplink ciphering activation time info" in any response message transmitted below to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.

1> in case cell reselection interrupted an ongoing cell update procedure and a CELL UPDATE CONFIRM/URA UPDATE CONFIRM was received with the IE "Downlink counter synchronisation info" present and the response to which was not submitted to the lower layers due to the cell re-selection:

    2> include the IE "START list" in the response message transmitted according to subclause 8.3.1.7;

    2> if the CELL UPDATE CONFIRM/URA UPDATE CONFIRM, the response to which was not delivered to the lower layers, due to the cell re-selection, included the IE "RB with PDCP information list":

        3> include the IE "RB with PDCP information list" in the response message transmitted according to subclause 8.3.1.7.

1> in case of a cell update procedure:

    2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

    2> clear that entry.

1> in case of a URA update procedure:

    2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

    2> clear that entry;

1> if the variable PDCP_SN_INFO is non-empty:

    2> include the IE "RB with PDCP information list" in any response message transmitted below and set it to the value of the variable PDCP_SN_INFO.

1> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message included the IE "Downlink counter synchronisation info":

    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-configuation 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.

            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.

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

> 2> increment by one the downlink and uplink values of the HFN component of the COUNT-C 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" in any response message transmitted below.

1> transmit a response message as specified in subclause 8.3.1.7;

1> if the IE "Integrity protection mode info" was present in the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:

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

1> if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:

> 2> set the variable ORDERED_RECONFIGURATION to FALSE.

1> clear the variable PDCP_SN_INFO;

1> when the response message transmitted per subclause 8.3.1.7 to the UTRAN has been confirmed by RLC:

> 2> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":

>> 3> resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;

>> 3> set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and

>> 3> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.

> 2> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":

>> 3> set "Uplink RRC Message sequence number" for signalling radio bearer RB0 in the variable INTEGRITY_PROTECTION_INFO to a value such that next RRC message to be sent on uplink RB0 will use the new integrity protection configuration;

>> 3> allow the transmission of RRC messages on all signalling radio bearers with any RRC SN;

>> 3> set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE.

> 2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.

1> in case of a cell update procedure:

> 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.

1> in case of a URA update procedure:

> > 2> clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.

> 1> set the variable CELL_UPDATE_STARTED to FALSE;

> 1> clear the variable SECURITY_MODIFICATION.

The procedure ends.

10.2.7   CELL UPDATE

This message is used by the UE to initiate a cell update procedure.

>   RLC-SAP: TM

>   Logical channel: CCCH

>   Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description	**Version**
Message Type	MP		Message Type		
UE information elements					
U-RNTI	MP		U-RNTI 10.3.3.47		
RRC transaction identifier	CV-*Failure*		RRC transaction identifier 10.3.3.36		
Integrity check info	CH		Integrity check info 10.3.3.16		
START list	MP	1 to <maxCNdomains>		START [40] values for all CN domains.	
>CN domain identity	MP		CN domain identity 10.3.1.1		
>START	MP		START 10.3.3.38	START value to be used in this CN domain.	
AM_RLC error indication(RB2, RB3 or RB4)	MP		Boolean	TRUE indicates AM_RLC unrecoverable error [16] occurred on RB2, RB3 or RB4 in the UE	
AM_RLC error indication(RB>4)	MP		Boolean	TRUE indicates AM_RLC unrecoverable error [16] occurred on RB>4 in the UE	
Cell update cause	MP		Cell update cause 10.3.3.3		
Failure cause	OP		Failure cause and error information 10.3.3.14		
RB timer indicator	MP		RB timer indicator 10.3.3.28		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Establishment cause	OP		Establishment cause 10.3.3.11		Rel-5
Measurement information elements					
Measured results on RACH	OP		Measured results on RACH 10.3.7.45		

Condition	Explanation
Failure	This IE is mandatory present if the IE "Failure cause" is present and not needed otherwise.

*************************** Next modified section ***************************

10.2.16c INITIAL DIRECT TRANSFER

This message is used to initiate a signalling connection based on indication from the upper layers, and to transfer a NAS message.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE -> UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE information elements					
Integrity check info	CH		Integrity check info 10.3.3.16		
CN information elements					
CN domain identity	MP		CN domain identity 10.3.1.1		
Intra Domain NAS Node Selector	MP		Intra Domain NAS Node Selector 10.3.1.6		
NAS message	MP		NAS message 10.3.1.8		
START	OP		START 10.3.3.38	START value to be used in the CN domain as indicated in the IE "CN domain identity". This IE shall always be present in this version of the protocol.	
Establishment cause	OP		Establishment cause 10.3.3.11		Rel-5

Measurement information elements					
Measured results on RACH	OP		Measured results on RACH 10.3.7.45		

***************************** Next modified section *****************************

```
-- **************************************************
--
-- CELL UPDATE
--
-- **************************************************

CellUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        startList       STARTList,
        am-RLC-ErrorIndicationRb2-3or4      BOOLEAN,
        am-RLC-ErrorIndicationRb5orAbove    BOOLEAN,
        cellUpdateCause                 CellUpdateCause,
        -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
        failureCause                    FailureCauseWithProtErrTrId       OPTIONAL,
        rb-timer-indicator              Rb-timer-indicator,
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH             OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            cellUpdate-r3-add-ext           BIT STRING  OPTIONAL,
            v5xyNonCriticalExtensions   SEQUENCE {
                cellUpdate-v5xy60ext    CellUpdate-v5xyext,
                nonCriticalExtensions               SEQUENCE {} OPTIONAL
            }       OPTIONAL
        } OPTIONAL
}

CellUpdate-v5xyext      ::= SEQUENCE {
    establishmentCause              EstablishmentCause  OPTIONAL,
}
```

***************************** Next modified section *****************************

```
-- **************************************************
--
-- INITIAL DIRECT TRANSFER
--
-- **************************************************

InitialDirectTransfer ::= SEQUENCE {
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
        intraDomainNasNodeSelector      IntraDomainNasNodeSelector,
        nas-Message                     NAS-Message,
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH            OPTIONAL,
        v3a0NonCriticalExtensions       SEQUENCE {
        initialDirectTransfer-v3a0ext   InitialDirectTransfer-v3a0ext,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            initialDirectTransfer-r3-add-ext        BIT STRING  OPTIONAL,
            v5xyNonCriticalExtensions       SEQUENCE {
                initialDirectTransfer-v5xyext   InitialDirectTransfer-v5xyext,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            }       OPTIONAL
        } OPTIONAL
    } OPTIONAL
}

InitialDirectTransfer-v3a0ext ::= SEQUENCE {
    -- start-value shall always be included in this version of the protocol
    start-Value                     START-Value                         OPTIONAL
}
```

```
InitialDirectTransfer-v5xyext       ::= SEQUENCE {
    establishmentCause      EstablishmentCause  OPTIONAL
}
```

*********************NEXT modified Section********************

13.4.6   ESTABLISHMENT_CAUSE

This variable is used to store the cause for establishment of a signalling connection received by upper layers, to be used at RRC connection establishment or Initial Direct Transfer.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Establishment cause	OP		Establishment cause 10.3.3.11	Cleared when leaving UTRA RRC connected mode.

```
InitialDirectTransfer-v5xyext       ::= SEQUENCE {
    establishmentCause      EstablishmentCause  OPTIONAL
}
```

CR-Form-v7

CHANGE REQUEST

⌘ **25.331** CR **2140** ⌘**rev** **-** ⌘ Current version: **5.6.0** ⌘

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

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

Title: ⌘	Correction of operating band reference	
Source: ⌘	RAN WG2	
Work item code:⌘	TEI5	**Date:** ⌘ 20/11/2003
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: ⌘	Reference is made to an operating band that is not defined. In document 25.101 the operating bands are denoted by I,II, and III, see the table below, taken from Section 5.2 of document 25.101.

Table 5.0: UTRA FDD frequency bands

Operating Band	UL Frequencies UE transmit, Node B receive	DL frequencies UE receive, Node B transmit	
I	1920 – 1980 MHz	2110 –2170 MHz	
II	1850 –1910 MHz	1930 –1990 MHz	
III	1710-1785 MHz	1805-1880 MHz	

In document 25.331 references are made to operating band "a". This is not conform to the above definition and should be changed to "I". (Band designation a, b, and c is used for TDD).

Summary of change:⌘	In the text "Not applicable if UE is not operating in frequency band a (as defined in [21])", "band a" is changed to "band I". This is done at three places.
Consequences if not approved: ⌘	Since no operating band "a" is specified for UMTS FDD, it will remain unclear which operating band is meant.
Clauses affected: ⌘	10.3.3.32a, 10.3.3.33, 10.3.3.33a

Other specs ⌘	Y	N		
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.

--------------- First changed section -------------------

10.3.3.32a   RF Capability Compressed

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE *FDD*	MP				REL-5
>Supported					REL-5
>>RF capability band FDD list Compressed	MP	1..<maxfreqbandsFDD>			REL-5
>>>RF Capability Band FDD Compressed	MP		Enumerated (not supported, 190, 174.8-205.2, 134.8-245.2)	In MHz adefined in [21]. NOTE: Not applicable if UE is not operating in frequency band la (as defined in [21]).	REL-5
>Not supported			NULL		REL-5
CHOICE *TDD*	MP				REL-5
>Supported					REL-5
>>Chip Rate Capability	MP		Enumerated (3.84Mcps, 1.28Mcps)	As defined in [22]	REL-5
>>Radio Frequency Band TDD List	MP		Enumerated (a, b, c, a+b, a+c, b+c, a+b+c)	As defined in [22]. One spare value needed	REL-5
>Not supported			NULL		REL-5

--------------- Next changed section -------------------

10.3.3.33   RF capability FDD

Information Element/Group name	Need	Multi	Type and Reference	Semantics description	Version
UE power class	MP		Enumerated(1..4)	as defined in [21]	
Tx/Rx frequency separation	MP		Enumerated(190, 174.8-205.2, 134.8-245.2)	In MHz as defined in [21]. NOTE: Not applicable if UE is not operating in frequency band al (as defined in [21]).	

--------------- Next changed section -------------------

10.3.3.33a RF capability FDD extension

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
UE power class extension	MP		Enumerated(1..4)	as defined in [21]. Four spare values are needed
Tx/Rx frequency separation	MP		Enumerated(190, 174.8-205.2, 134.8-245.2)	In MHz as defined in [21]. NOTE: Not applicable if UE is not operating in frequency band a~~ ~~l (as defined in [21]).

---------------- End --------------------

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CHANGE REQUEST

⌘ | **25.331 CR 2142** | ⌘**rev** | **-** | ⌘ | Current version: | **5.6.0** | ⌘

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

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

Title: ⌘	Correction to the procedural description: Reconfiguration of MAC-d flow	
Source: ⌘	RAN WG2	
Work item code: ⌘	HSDPA-L23.	***Date:*** ⌘ 17/11/2003
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: ⌘	In the CR 2028 to 25.331 the IE "MAC-hs queue" was renamed to IE "MAC-hs queue to add or reconfigure list". In the procedural description this IE is once used as IE "MAC-hs queue to add or reconfigure list" and once as IE "MAC-hs queue to add or reconfigure". The same applys to IE "MAC-hs queue delete list". In the procedural description this IE is once used as IE "MAC-hs queue delete list" and once as IE "MAC-hs queue delete".
Summary of change: ⌘	Change of the IE "MAC-hs queue to add or reconfigure" to IE "MAC-hs queue to add or reconfigure list". Change of the IE "MAC-hs queue to delete" to IE "MAC-hs queue delete list".
Consequences if not approved: ⌘	Two different notations behalf two IEs with the same functionality

Clauses affected: ⌘	8.6.5.5a

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

Other comments: ⌘	

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

8.6.5.5a   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> 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";

 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, 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".

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2143** | ⌘**rev** | **1** | ⌘ | Current version: | **5.6.0** | ⌘ |

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

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

Title: ⌘	Enhancement of RRC transaction identifier for measurement control message	
Source: ⌘	RAN WG2	
Work item code: ⌘	TEI5	***Date:*** ⌘ 17/11/2003
Category: ⌘ **C**		***Release:*** ⌘ Rel-5

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

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

Reason for change: ⌘	The size of RRC transaction identifier is currently 2 bits, which allows only up to 4 messages to be sent in immediate sequence. In complex cell scenarios and complex measurement configurations it is likely to happen, that more than 4 MEASUREMENT_CONTROL messages are to be sent by UTRAN in immediate sequence as UE carries out mobility. Since for MEASUREMENT_CONTROL message, there is no feedback for successful processing of the message, UTRAN in this case has to wait after 4 messages until it safely can reuse RRC transaction identifiers, if it doesn't receive a failure message. Therefore, the size of RRC transaction identifier is increased by 2 bits for MEASUREMENT_CONTROL message and MEASUREMENT_CONTROL_FAILURE message accordingly.
Summary of change: ⌘	The size of the RRC transaction identifier is increased by 2 bits for MEASUREMENT_CONTROL message and MEASUREMENT_CONTROL_FAILURE message. This is done by adding an optional 2 Bit IE "RRC transaction identifier MPS" to the MEASUREMENT CONTROL and the MEASUREMENT CONTROL FAILURE message. The actual value of the enhanced 4 Bit RRC transaction identifier is signalled, using the already available 2 bit IE "RRC transaction identifier" for the lower 2 bits (least significant part) and the new 2 Bit IE "RRC transaction identifier MSP" for the higher 2 bits (most significant part). The enhancement required changes in the following clauses:

Clause 10.3.3.36:

4 bit RRC transaction identifier is introduced for MEASUREMENT_CONTROL message and MEASUREMENT_CONTROL_FAILURE message

Clause 11.2:

The ASN.1 IE RRC-TransactionIdentifier is updated accordingly using non critical extension mechanism. Since the enhancement doubles the range of the RRC Transaction identifier, the implementation in ASN1 is done by doubling the Rel-99 IE RRC-Transactionidentifier and implementing it in 2 parts of each 2 bits:

- For the lower part of the RRC-TransactionIdentifier (LSB), the currently specified RRC-TransactionIdentifier of size 2 bits is used

- For the higher part of the RRC-TransactionIdentifier (MSP), a new IE of the existing type of RRC-TransactionIdentifier of size 2 bits is appended as non critical extension and an appropriate comment is added.

- The calculation of the RRC-TransactionIdentifier from the two parts (MSP, LSP) is described in ASN.1 as a comment.

Consequences if not approved:	⌘	UTRAN cannot send more than 4 MEASUREMENT_CONTROL messages in immediate sequence, but it has to wait after 4 messages until it safely can reuse a RRC transaction identifier, which will not be efficient in case of complex cell scenarios and complex measurement configurations.

Clauses affected:	⌘	11.2, 10.3.3.36	

		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:

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10.3.3.36 RRC transaction identifier

This IE contains an identification of the RRC procedure transaction local for the type of the message this IE was included within.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
RRC transaction identifier	MP		Integer (0..3)		
	CV-Measurement		Integer (0..15)		REL-5

Condition	Explanation
Measurement	This IE is mandatory present if used in MEASUREMENT_CONTROL or MEASUREMENT_CONTROL_FAILURE message otherwise it is absent

11.2 PDU definitions

```
MeasurementControl ::= CHOICE {
    r3                              SEQUENCE {
        measurementControl-r3           MeasurementControl-r3-IEs,
        v390nonCriticalExtensions       SEQUENCE {
            measurementControl-v390ext      MeasurementControl-v390ext,
            v3a0NonCriticalExtensions           SEQUENCE {
                measurementControl-v3a0ext          MeasurementControl-v3a0ext,
                laterNonCriticalExtensions      SEQUENCE {
                    -- Container for additional R99 extensions
                    measurementControl-r3-add-ext       BIT STRING  OPTIONAL,
                    v4xyNonCriticalExtensions           SEQUENCE{
                        measurementControl-v4xyext          MeasurementControl-v4xyext-IEs,
                        v5xyNonCriticalExtensions       SEQUENCE {
                            measurementControl-v5xyext      MeasurementControl-v5xyext-IEs,
                            nonCriticalExtensions               SEQUENCE {}
    OPTIONAL
                        }                               OPTIONAL
                    }                               OPTIONAL
                }                               OPTIONAL
            }                               OPTIONAL
        }                           OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                measurementControl-r4           MeasurementControl-r4-IEs,
                v5xyNonCriticalExtensions       SEQUENCE{
                    measurementControl-v5xyext      MeasurementControl-v5xyext-IEs,
                    nonCriticalExtensions           SEQUENCE {}      OPTIONAL
                }   OPTIONAL
            },
            criticalExtensions              SEQUENCE {}
        }
    }
}
```

[…]

```
MeasurementControl-v5xyext-IEs ::= SEQUENCE {
    easurementCommand-v5xyext           CHOICE {
        -- the choice "intra-frequency" shall be used for the case of intra-frequency measurement,
        -- as well as when intra-frequency events are configured for inter-frequency measurement
        intra-frequency                     Intra-FreqEventCriteriaList-v5xyext,
        inter-frequency                     Inter-FreqEventCriteriaList-v5xyext
```

```
    }         OPTIONAL,
    intraFreqReportingCriteria-1b-r5ext        IntraFreqReportingCriteria-1b-r5ext        OPTIONAL,
    intraFreqEvent-1d-r5ext                    IntraFreqEvent-1d-r5ext                    OPTIONAL,
    -- most significant part of "RRC transaction identifier" (MSP),
    -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v5xyext * 4 +
    -- rrc-TransactionIdentifier
    rrc-TransactionIdentifier-MSP-v5xyext    RRC-TransactionIdentifier
}
```

[…]

```
MeasurementControlFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier          RRC-TransactionIdentifier,
        failureCause                       FailureCauseWithProtErr,
        laterNonCriticalExtensions         SEQUENCE {
            -- Container for additional R99 extensions
            measurementControlFailure-r3-add-ext        BIT STRING        OPTIONAL,
            v5xyNonCriticalExtensions          SEQUENCE {
                measurementControlFailure-v5xyext        MeasurementControlFailure-v5xyext-IEs,
                nonCriticalExtensions              SEQUENCE {}        OPTIONAL
            }    OPTIONAL
        }    OPTIONAL
}
```

```
MeasurementControlFailure-v5xyext-IEs ::= SEQUENCE {
    -- most significant part of "RRC transaction identifier" (MSP),
    -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v5xyext * 4 +
    -- rrc-TransactionIdentifier
    -- If the rrc-TransactionIdentifier-MSP-v5xyext was not received in the MEASUREMENT CONTROL
    -- message, then the rrc-TransactionIdentifier-MSP-v5xyext shall be set to zero
    rrc-TransactionIdentifier-MSP-v5xyext    RRC-TransactionIdentifier
}
```

CR-Form-v7

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

Title: ⌘	TDD C-RNTI in Cell DCH	
Source: ⌘	RAN WG2	
Work item code: ⌘	TEI5	***Date:*** ⌘ 17/11/2003
Category: ⌘	**F**	***Release:*** ⌘ Rel-5

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Rel-4　(Release 4)
Rel-5　(Release 5)
Rel-6　(Release 6)

Reason for change: ⌘	Agreed CR 1441 to 25.331 is missing in the current version of this specification.

In TDD mode deletion of C-RNTI in Cell DCH is only necessary if P-CCPCH is updated indicating change of cell. Deletion of C-RNTI results in unnecessary initiation of Cell Update procedure and PRACH and S-CCPCH overhead |
| ***Summary of change:*** ⌘ | In TDD Cell DCH the C-RNTI is only removed when signalled P-CCPCH indicates cell change without specified New C-RNTI. |
| ***Consequences if not approved:*** ⌘ | Release 5 TDD operation withy not be consistent with earlier releases.

Unnecessary initiation of Cell Update procedures and overhead on common channels.

<u>Isolated impact analysis:</u> UEs without this feature initiate Cell Update unnecessarily when there is no change in cell and reassign the same C-RNTI. Correction to a function where the specification was found erroneous and contained contradictions. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

<u>Impacted Functionality:</u> Initiation of Cell Update procedure upon return to Cell FACH is reduced to when UE selects a cell other then the cell indicated by P-CCPCH info. |
| ***Clauses affected:*** ⌘ | 8.2.2.3 |

		Y	N		
Other specs	⌘		X	Other core specifications	⌘

affected:		X	Test specifications	
		X	O&M Specifications	
Other comments:	⌘			

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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>1> remove any C-RNTI from MAC;

2>1> 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 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-configuation 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.

>>> 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;

>>> 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 mod 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.

8.2.2.3a Reception of RADIO BEARER RECONFIGURATION message by the UE performing handover from GERAN *Iu mode*

If the UE is performing handover from GERAN *Iu mode*, the UE shall, in addition to the actions in 8.2.2.3:

1> if the IE "Specification mode" is set to "Preconfiguration" and the IE "Preconfiguration mode" is set to "Predefined configuration":

2> initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity";

2> initiate the physical channels in accordance with the predefined parameters identified by the IE "Predefined radio configuration identity" and the received physical channel information elements;

2> store information about the established radio access bearers and radio bearers according to the IE "Predefined configuration identity"; and

1> if the IE "Specification mode" is set to "Preconfiguration" and the IE "Preconfiguration mode" is set to "Default configuration":

2> initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and the IE "Default configuration identity";

2> initiate the physical channels in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" and the received physical channel information elements;

NOTE: The IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used.

1> if IE "Specification mode" is set to "Complete specification":

2> initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.

1> perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;

1> set the following variables equal to the corresponding variables in GERAN *Iu mode:*

CIPHERING_STATUS

ESTABLISHED_RABS

ESTABLISHED_SIGNALLING_CONNECTIONS

INTEGRITY_PROTECTION_INFO

INTER_RAT_HANDOVER_INFO_TRANSFERRED

LATEST_CONFIGURED_CN_DOMAIN

START_THRESHOLD

UE_CAPABILITY_TRANSFERRED.

1> set the new uplink and downlink HFN of RB2 to MSB_{20}(MAX(uplink HFN of RB2, downlink HFN of RB2));

NOTE:	MSB_{20}() operation provides the HFN mapping from GERAN *Iu mode* to UTRAN. In GERAN *Iu mode* the length of HFN component of the COUNT-C of RB2 is longer than 20 bits.

1> initialise the variable TIMERS_AND_CONSTANTS to the default values and start to use those timer and constants values.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2149** | ⌘**rev** | **-** | ⌘ | Current version: | **5.6.0** | ⌘ |

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

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

Title:	⌘	IP activation time for RB0

Source:	⌘	RAN WG2

Work item code: ⌘	TEI5		*Date:* ⌘	21/Nov/2003

Category:	⌘	**F**		*Release:* ⌘	Rel-5

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

Reason for change:	⌘	It is stated in the section 8.6.3.5.3 that UE shall set IP activation time to greater than or equal to the current RRC MSN plus N302+1. However if UE sets IP activation time to equal to the the current RRC MSN plus N302+1, the very last retransmission of CELL UPDATE would be sent with the RRC MSN that was indicated as the activation time for RB0 to UTRAN, but using old IP configuration. If UTRAN has already received SECURITY MODE COMPLETE, the UTRAN will use the new configuration for the IP check. The very last CELL UPDATE would therefore be discarded by UTRAN and UE eventually goes to idle mode due to T302 expiry after N302 times retransmission. See R2-032505 for detail.

Summary of change: ⌘	It is stated that UE shall set IP activation time to greater than or equal to the current RRC MSN plus N302+2.

Consequences if not approved:	⌘	The very last CELL UPDATE would incorrectly be discarded by UTRAN and UE goes to idle mode due to T302 expiry after N302 times retransmission. Incorrect description remains in the specification. **Isolated impact analysis:** This CR has isolated impact to Integrity Protection modification procedure by SECURITY MODE COMMAND. **Impact on test specifications:** No impact.

Clauses affected:	⌘	8.5.10.2, 8.6.3.5.3

	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.

8.5.10.2 Integrity protection in uplink

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

1> increment "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO with 1, even if the message is a retransmission of a previously transmitted message.

1> if the "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO equals zero:

2> increment "Uplink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO by one.

NOTE 1: The actions above imply that also for the case the "Uplink RRC HFN" is re-initialised by a security mode control procedure, this "Uplink RRC HFN" is incremented before it is applied in the integrity protection of any transmitted message if the conditions above are fulfilled.

NOTE 2: For SRB0, this is also valid in case the Message Sequence Number has been increased by N302 +~~1~~2 resulting in a wrap around. Then the uplink RRC HFN is incremented by 1.

1> calculate the message authentication code in accordance with subclause 8.5.10.3;

1> replace the "Message authentication code" in the IE "Integrity check info" in the message with the calculated message authentication code;

1> replace the "RRC Message sequence number" in the IE "Integrity check info" in the message with contents set to the new value of the "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO.

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

8.6.3.5.3 Integrity Protection modification in case of new keys or initialisation of signalling connection

The UE shall:

1> if the IE "Integrity protection mode command" has the value "modify" and the IE "Status" in the variable INTEGRITY_PROTECTION_INFO has the value "Started" and this IE was included in SECURITY MODE COMMAND:

2> store the (oldest currently used) integrity protection configuration until activation times have elapsed for the new integrity protection configuration to be applied on all signalling radio bearers;

2> start applying the new integrity protection configuration in the downlink for each signalling radio bearer n, at the first received message with RRC Sequence number greater than or equal to the RRC sequence number indicated by the entry for signalling radio bearer n in the "RRC message sequence number list" in the IE "Downlink integrity protection activation info", included in the IE "Integrity protection mode info";

2> perform integrity protection on the received message, applying the new integrity protection configuration, as described in subclause 8.5.10.1;

3> if present, use the algorithm indicated by the IE "Integrity protection algorithm" (UIA [40]);

2> set the content of the variable INTEGRITY_PROTECTION_ACTIVATION_INFO according to the following:

3> for each established signalling radio bearer, stored in the variable ESTABLISHED_RABS:

4> select a value of the RRC sequence number at which (activation) time the new integrity protection configuration shall be applied in uplink for that signalling radio bearer according to the following:

5> for each signalling radio bearer except RB0:

6> set the activation time for the new integrity protection configuration to the next RRC SN.

4> for signalling radio bearer RB0:

5> set the value of the included RRC sequence number to greater than or equal to the current value of the RRC sequence number for signalling radio bearer RB0 in the variable INTEGRITY_PROTECTION_INFO, plus the value of the constant N302 plus ~~one~~two.

4> prohibit the transmission of RRC messages on all signalling radio bearers, except for RB2, with RRC SN greater than or equal to the value in the "RRC message sequence number list" for the signalling radio bearer in the IE "Uplink integrity protection activation info" of the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.

2> start applying the new integrity protection configuration in the uplink at the RRC sequence number, for each RBn, except for signalling radio bearer RB2, indicated by the entry for signalling radio bearer n in the "RRC message sequence number list" in the IE "Uplink integrity protection activation info", included in the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

2> start applying the new integrity protection configuration in the uplink at the RRC sequence number for signalling radio bearer RB2, as specified for the procedure initiating the integrity protection reconfiguration;

2> start applying the new integrity protection configuration in the downlink at the RRC sequence number, for each RBn, except for signalling radio bearer RB2, indicated by the entry for signalling radio bearer n in the "RRC message sequence number list" in the IE "Downlink integrity protection activation info";

NOTE: For signalling radio bearers that have a pending activation time as set for integrity protection by a previous procedure changing the integrity protection configuration, UTRAN should set this value in IE "Downlink integrity protection activation info".

2> start applying the new integrity protection configuration in the downlink at the RRC sequence number for signalling radio bearer RB2, as specified for the procedure initiating the integrity protection reconfiguration.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331 CR 2159** | ⌘ **rev** | | ⌘ | Current version: | **5.6.0** | ⌘ |

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

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

Title: ⌘	COUNT-I reverting in case Security Mode Control procedure failure	
Source: ⌘	RAN WG2	
Work item code:⌘	TEI5	***Date:*** ⌘ November 2003
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: ⌘	It is currently not completely clear in what way to continue after an SMC failure, when it comes to the COUNT-I to be used when reverting back to the old configuration.
Summary of change:⌘	<u>In chapter 8.1.12.4 a, b and c, and in 8.1.12.6:</u> It is clarified that the UE shall be prepared to receive a message on SRB 2, with a COUNT-I which is higher than the COUNT-I used prior to receiving the SECURITY MODE COMMAND message; and which does not take into account the HFN from the received SECURITY MODE COMMAND message. <u>In chapter 8.1.12.4b:</u> In addition it is clarified that if the UE has already submitted a positive SECURITY MODE COMPLETE message, the UE shall in UL use a COUNT-I value for transmission of the next message on SRB2 which is equal to the value used prior to transmission of the SECURITY MODE COMPLETE message plus 2; **Isolated impact analysis:** In case UE or UTRAN does not behaive as decribed in the UL/DL, depending on what alternative behaviour the UE/UTRAN has implemented, in the worst case a desynchronisation of the SRB2 COUNT-I in UL/DL between UE and UTRAN can occur. This will probably result in an RRC connection release. **Impact on test specifications:** No impact on test specification.

Consequences if not approved:	⌘	There is a risk that the UE and UTRAN have a different assumption on what way to continue with the SRB2 COUNT-I after an SMC failure, leading to that Integrity protection might fail.

Clauses affected:	⌘	

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

Other comments:	⌘	

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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.

8.1.12.4a Incompatible simultaneous security reconfiguration

If the variable INCOMPATIBLE_SECURITY_RECONFIGURATION becomes set to TRUE of the received SECURITY MODE COMMAND message, the UE shall:

1> transmit a SECURITY MODE FAILURE message on the uplink DCCH using AM RLC, using the ciphering and integrity protection configurations prior to the reception of this SECURITY MODE COMMAND;

1> set the IE "RRC transaction identifier" in the SECURITY MODE FAILURE message to the value of "RRC transaction identifier" in the entry for the SECURITY MODE COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> set the IE "failure cause" to the cause value "incompatible simultaneous reconfiguration";

1> when the response message has been submitted to lower layers for transmission:

2> set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to FALSE;

2> continue with any ongoing processes and procedures as if the invalid SECURITY MODE COMMAND message has not been received;

2> only accept a message on SRB 2, with a COUNT-I that:

3> is higher than the COUNT-I used prior to receiving the SECURITY MODE COMMAND message incremented by one; and

3> does not take into account the HFN from the received SECURITY MODE COMMAND message.

2> and the procedure ends.

8.1.12.4b Cell update procedure during security reconfiguration

If:
- a cell update procedure according to subclause 8.3.1 is initiated; and

- the received SECURITY MODE COMMAND message 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:

the UE shall:
1> abort the ongoing integrity and/or ciphering reconfiguration;

1> resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;

1> allow the transmission of RRC messages on all signalling radio bearers with any RRC SN;

1> when the CELL UPDATE message has been submitted to lower layers for transmission:

2> if the SECURITY MODE COMMAND message contained the IE "Ciphering mode info":

   3> set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and

   3> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

2> if the SECURITY MODE COMMAND message contained the IE "Integrity protection mode info":

   3> set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and

   3> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.

2> continue with any ongoing processes and procedures as if the invalid SECURITY MODE COMMAND message has not been received; and

2> only accept a message on SRB 2, with a COUNT-I that:

   3> is higher than the COUNT-I used prior to receiving the SECURITY MODE COMMAND message incremented by one; and

   3> does not take into account the HFN from the received SECURITY MODE COMMAND message.

2> if the UE has already submitted the SECURITY MODE COMPLETE message, use a COUNT-I value for transmission of the next message on SRB2 as stated below:

   3> take the COUNT-I used prior to the transmission of the SECURITY MODE COMPLETE message;

   3> increment that COUNT-I with 2;

   3> apply that COUNT-I on the next message to transmit.

2> clear the variable SECURITY_MODIFICATION;

2> the procedure ends.

8.1.12.4c Invalid configuration

If the variable INVALID_CONFIGURATION is set to TRUE due to the received SECURITY MODE COMMAND message, the UE shall:

   1> transmit a SECURITY MODE FAILURE message on the DCCH using AM RLC after setting the IEs as specified below:

   2> set the IE "RRC transaction identifier" in the SECURITY MODE FAILURE message to the value of "RRC transaction identifier" in the entry for the SECURITY MODE COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

   2> clear that entry;

   2> set the IE "failure cause" to the cause value "invalid configuration".

   1> when the response message has been submitted to lower layers for transmission:

   2> set the variable INVALID_CONFIGURATION to FALSE;

2> set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE;

2> continue with any ongoing processes and procedures as if the invalid SECURITY MODE COMMAND message has not been received;

2> only accept a message on SRB 2, with a COUNT-I that:

3> is higher than the COUNT-I used prior to receiving the SECURITY MODE COMMAND message incremented by one; and

3> does not take into account the HFN from the received SECURITY MODE COMMAND message.

2> and the procedure ends.

8.1.12.6   Invalid SECURITY MODE COMMAND message

If the SECURITY MODE COMMAND message contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows:

1> transmit a SECURITY MODE FAILURE message on the uplink DCCH using AM RLC;

1> set the IE "RRC transaction identifier" in the SECURITY MODE FAILURE message to the value of "RRC transaction identifier" in the entry for the SECURITY MODE COMMAND message in the table "Rejected transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> set the IE "failure cause" to the cause value "protocol error";

1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION;

1> when the response message has been submitted to lower layers for transmission:

2> continue with any ongoing processes and procedures as if the invalid SECURITY MODE COMMAND message has not been received;

2> only accept a message on SRB 2, with a COUNT-I that:

3> is higher than the COUNT-I used prior to receiving the SECURITY MODE COMMAND message incremented by one; and

3> does not take into account the HFN from the received SECURITY MODE COMMAND message.

2> and the procedure ends.