

**TSG-RAN Meeting #12
Stockholm, Sweden, 12 - 15 June 2001**

RP-010316

Title: Agreed CRs (Release '99 and Rel-4 category A) to TS 25.331 (6)

Source: TSG-RAN WG2

Agenda item: 8.2.3

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio
R2-011243	agreed	25.331	874		R99	Clarification on IE 'Downlink rate matching restriction information'	F	3.6.0	3.7.0
R2-011456	agreed	25.331	875		Rel-4	Clarification on IE 'Downlink rate matching restriction information'	A	4.0.0	4.1.0
R2-011491	agreed	25.331	876	1	R99	Corrections on Tabular/ASN.1	F	3.6.0	3.7.0
R2-011492	agreed	25.331	877		Rel-4	Corrections on Tabular/ASN.1	A	4.0.0	4.1.0
R2-011493	agreed	25.331	878	2	R99	Corrections on Tabular and ASN.1 inconsistencies	F	3.6.0	3.7.0
R2-011494	agreed	25.331	879		Rel-4	Corrections on Tabular and ASN.1 inconsistencies	A	4.0.0	4.1.0
R2-011495	agreed	25.331	880	1	R99	Editorial corrections on Tabular and ASN.1 inconsistencies	F	3.6.0	3.7.0
R2-011496	agreed	25.331	881		Rel-4	Editorial corrections on Tabular and ASN.1 inconsistencies	A	4.0.0	4.1.0
R2-011497	agreed	25.331	882	1	R99	UE Positioning corrections to ASN.1 and tabular	F	3.6.0	3.7.0
R2-011498	agreed	25.331	883		Rel-4	UE Positioning corrections to ASN.1 and tabular	A	4.0.0	4.1.0
R2-011499	agreed	25.331	884	1	R99	Corrections to resolve inconsistencies between Tabular and ASN.1	F	3.6.0	3.7.0
R2-011500	agreed	25.331	885		Rel-4	Corrections to resolve inconsistencies between Tabular and ASN.1	A	4.0.0	4.1.0
R2-011463	agreed	25.331	886	1	R99	UE positioning OTDOA Neighbour Cell Info	F	3.6.0	3.7.0
R2-011464	agreed	25.331	887		Rel-4	UE positioning OTDOA Neighbour Cell Info	A	4.0.0	4.1.0
R2-011465	agreed	25.331	888	3	R99	DRAC corrections	F	3.6.0	3.7.0
R2-011466	agreed	25.331	889		Rel-4	DRAC corrections	A	4.0.0	4.1.0
R2-011467	agreed	25.331	892	1	R99	ASN.1 Correction of IE TFCS ID	F	3.6.0	3.7.0
R2-011468	agreed	25.331	893		Rel-4	ASN.1 Correction of IE TFCS ID	A	4.0.0	4.1.0
R2-011379	agreed	25.331	894		R99	Correction of IE IODE range in AGPS Positioning	F	3.6.0	3.7.0
R2-011469	agreed	25.331	895		Rel-4	Correction of IE IODE range in AGPS Positioning	A	4.0.0	4.1.0

Busan, Korea, May 21st-25th 2001

CR-Form-v3	
CHANGE REQUEST	
⌘ 25.331 CR 874 ⌘ rev - ⌘	Current version: 3.6.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification on IE 'Downlink rate matching restriction information'		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 2001-05-22
Category:	⌘ F	Release:	⌘ R99
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ <u>Background of this CR</u>
	<p>The mechanism of 'Downlink rate matching restriction' was approved in CR449 rev1. This mechanism is initially proposed to support "Physical CH Reconfiguration procedure with increasing/decreasing the spreading factor of the physical dedicated channel due to the fluctuation of user data traffic" in TR25.922 "RRM Strategies".</p> <p>Since the downlink rate matching will always be initiated according to the indicated DL TFCS (DL TFC which has a largest bit size) regardless of the indicated DL SF, there is a need to reconfigure DL TFCS according to the change in DL SF. However, there is no such TFCS information in PHYSICAL CHANNEL RECONFIGURATION message.</p> <p>It is possible to use TRANSPORT CHANNEL RECONFIGURATION message to support "procedure with increasing/decreasing the spreading factor of the physical dedicated channel due to the fluctuation of user data traffic". However, to indicate DL TFCS at every procedure by using Transport Channel Reconfiguration procedure seems too much redundant in the air interface. Therefore CR449 rev1 was proposed to add new IE "DL rate matching restriction information" in Physical CH IE. If the TF in the TFS is restricted, related TFC in the given TFCS will be restricted. UE shall initiate the downlink rate matching based on the TFCs composed of 'all the TFIs of the non-restricted Transport channel' and 'allowed TFIs in the restricted Transport channel' within given TFCS.</p> <p><u>Rationale</u></p> <p>In the current specification, It is not clearly described how the UE shall act on receiving the IE 'Downlink rate matching restriction information'. Therefore the clarification is proposed in this CR.</p>

		<u>Backward compatibility</u>	
		Correction to a function where the specification was : - Ambiguous or not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.	
Summary of change:	⌘	Ambiguous description in section 10.3.6.31 is removed and clearly defined in section 8.6.6.28 how the UE shall act upon the reception of the IE "Downlink rate matching restriction information".	
Consequences if not approved:	⌘	The following problem is foreseen: • Downlink rate matching will not work correctly when initiating the Physical CH Reconfiguration procedure with increasing/decreasing the spreading factor of the physical dedicated channel due to the fluctuation of user data traffic.	
Clauses affected:	⌘	8.6.6.28, 10.3.6.31	
Other specs Affected:	⌘	<input type="checkbox"/> Other core specifications	⌘
		<input type="checkbox"/> Test specifications	
		<input type="checkbox"/> 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/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.6.28 Downlink DPCH info common for all radio links

If the IE "Downlink DPCH info common for all radio links" is included the UE shall:

- perform actions for the IE "Timing indicator" and the IE "CFN-targetSFN frame offset" as specified in subclause 8.5.15.2;
- if the IE choice "mode" is set to FDD:
 - if the IE "Downlink DPCH power control information" is included:
 - perform actions for the IE "DPC Mode" according to [29];
 - if the IE "Downlink rate matching restriction information" is included:
 - ~~— store the transport channels that have restrictions on the allowed transport formats;~~
 - ~~- perform downlink rate matching based on the TFCs composed of 'all the TFIs of the non-restricted Transport channel' and 'allowed TFIs in the restricted Transport channel' within given TFCS;~~
 - ~~- if the IE "Downlink rate matching restriction information" is not included:~~
 - ~~- cancel all the transport format restrictions if any and initiate the downlink rate matching based on all the TFCs in given TFCS;~~
- perform actions for the IE "spreading factor";
- perform actions for the IE "Fixed or Flexible position";
- perform actions for the IE "TFCI existence";
- if the IE choice "SF" is set to 256:
 - store the value of the IE "Number of bits for pilot bits";
- if the IE choice "SF" set to 128:
 - store the value of the IE "Number of bits for pilot bits";
- if the IE choice "mode" is set to TDD:
 - perform actions for the IE "Common timeslot info".

If the IE "Downlink DPCH info common for all radio links" is included in a message used to perform a Timing re-initialised hard handover, and ciphering is active for any radio bearer using RLC-TM, the UE shall, after having activated the dedicated physical channels indicated by that IE:

- increment HFN for RLC-TM by '1'.

NEXT MODIFICATION

10.3.6.31 Downlink rate matching restriction information

This IE indicates which TrCH is restricted in TFI. ~~DL rate matching should be done based on the TFCS that is the subset of the "DL TFCS with no restricted Transport channel".~~

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Restricted TrCH information	OP	1 to <maxTrCH>		
>Downlink transport channel type	MP		Enumerated(D CH,DSCH)	
>Restricted DL TrCH identity	MP		Transport channel identity 10.3.5.18	
>Allowed TFIs	MP	1 to <maxTF>		
>>Allowed TFI	MP		Integer(0..31)	

Busan, Korea, May 21st-25th 2001

CR-Form-v3
CHANGE REQUEST
⌘ 25.331 CR 875 ⌘ rev - ⌘ Current version: 4.0.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification on IE 'Downlink rate matching restriction information'		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 2001-05-22
Category:	⌘ A	Release:	⌘ REL-4
	<i>Use one of the following categories:</i> F (essential 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.		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ <u>Background of this CR</u> <p>The mechanism of 'Downlink rate matching restriction' was approved in CR449 rev1. This mechanism is initially proposed to support "Physical CH Reconfiguration procedure with increasing/decreasing the spreading factor of the physical dedicated channel due to the fluctuation of user data traffic" in TR25.922 "RRM Strategies".</p> <p>Since the downlink rate matching will always be initiated according to the indicated DL TFCS (DL TFC which has a largest bit size) regardless of the indicated DL SF, there is a need to reconfigure DL TFCS according to the change in DL SF. However, there is no such TFCS information in PHYSICAL CHANNEL RECONFIGURATION message.</p> <p>It is possible to use TRANSPORT CHANNEL RECONFIGURATION message to support "procedure with increasing/decreasing the spreading factor of the physical dedicated channel due to the fluctuation of user data traffic". However, to indicate DL TFCS at every procedure by using Transport Channel Reconfiguration procedure seems too much redundant in the air interface. Therefore CR449 rev1 was proposed to add new IE "DL rate matching restriction information" in Physical CH IE. If the TF in the TFS is restricted, related TFC in the given TFCS will be restricted. UE shall initiate the downlink rate matching based on the TFCs composed of 'all the TFIs of the non-restricted Transport channel' and 'allowed TFIs in the restricted Transport channel' within given TFCS.</p> <p><u>Rationale</u></p> <p>In the current specification, It is not clearly described how the UE shall act on receiving the IE 'Downlink rate matching restriction information'. Therefore the clarification is proposed in this CR.</p>
---------------------------	---

	<u>Backward compatibility</u> Correction to a function where the specification was : - Ambiguous or not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.	
Summary of change:	⌘	Ambiguous description in section 10.3.6.31 is removed and clearly defined in section 8.6.6.28 how the UE shall act upon the reception of the IE "Downlink rate matching restriction information".
Consequences if not approved:	⌘	The following problem is foreseen: <ul style="list-style-type: none"> Downlink rate matching will not work correctly when initiating the Physical CH Reconfiguration procedure with increasing/decreasing the spreading factor of the physical dedicated channel due to the fluctuation of user data traffic.
Clauses affected:	⌘	8.6.6.28, 10.3.6.31
Other specs Affected:	⌘	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.6.28 Downlink DPCH info common for all radio links

If the IE "Downlink DPCH info common for all radio links" is included the UE shall:

- perform actions for the IE "Timing indicator" and the IE "CFN-targetSFN frame offset" as specified in subclause 8.5.15.2;
- if the IE choice "mode" is set to FDD:
 - if the IE "Downlink DPCH power control information" is included:
 - perform actions for the IE "DPC Mode" according to [29];
 - if the IE "Downlink rate matching restriction information" is included:
 - ~~— store the transport channels that have restrictions on the allowed transport formats;~~
 - ~~- perform downlink rate matching based on the TFCs composed of 'all the TFIs of the non-restricted Transport channel' and 'allowed TFIs in the restricted Transport channel' within given TFCS;~~
 - ~~- if the IE "Downlink rate matching restriction information" is not included:~~
 - ~~- cancel all the transport format restrictions if any and initiate the downlink rate matching based on all the TFCs in given TFCS;~~
- perform actions for the IE "spreading factor";
- perform actions for the IE "Fixed or Flexible position";
- perform actions for the IE "TFI existence";
- if the IE choice "SF" is set to 256:
 - store the value of the IE "Number of bits for pilot bits";
- if the IE choice "SF" set to 128:
 - store the value of the IE "Number of bits for pilot bits";
- if the IE choice "mode" is set to TDD:
 - perform actions for the IE "Common timeslot info".

If the IE "Downlink DPCH info common for all radio links" is included in a message used to perform a Timing re-initialised hard handover, and ciphering is active for any radio bearer using RLC-TM, the UE shall, after having activated the dedicated physical channels indicated by that IE:

- increment HFN for RLC-TM by '1'.

NEXT MODIFICATION

10.3.6.31 Downlink rate matching restriction information

This IE indicates which TrCH is restricted in TFI. ~~DL rate matching should be done based on the TFCS that is the subset of the "DL TFCS with no restricted Transport channel".~~

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Restricted TrCH information	OP	1 to <maxTrCH>		
>Downlink transport channel type	MP		Enumerated(D CH,DSCH)	
>Restricted DL TrCH identity	MP		Transport channel identity 10.3.5.18	
>Allowed TFIs	MP	1 to <maxTF>		
>>Allowed TFI	MP		Integer(0..31)	

3GPP TSG-RAN WG2 Meeting #21
 Busan, Korea, May 21st-25th, 2001

Tdoc R2-011491

CR-Form-v4

CHANGE REQUEST

⌘ **25.331 CR 876** ⌘ ev **r1** ⌘ Current version: **3.6.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections on Tabular/ASN1		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI Date: ⌘ 2001-05-14		
Category:	<table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> ⌘ F Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900. </td> <td style="width: 50%; vertical-align: top;"> Release: ⌘ R99 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) </td> </tr> </table>	⌘ F Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Release: ⌘ R99 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)
⌘ F Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Release: ⌘ R99 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)		

Reason for change:	⌘ Inconsistencies between ASN1 and Tabular
Summary of change:	<p>⌘ (numbers refer to Identified problems in R2-011034)</p> <p>In Yellow: Tabular correction not mentioned in R2-011034</p> <p>29- 10.3.7.47 : InterRATMeasurementSysInfo-HCS and InterRATMeasurementSysInfo are mixed in ASN1. There is no problem regarding features but ASN1 is confusing <u>Correction</u> : Rename the "XXX-HCS" involved elements to "XXX-B" in ASN1 for inter-RAT Cells IEs. BC (editorial)</p> <p>10.3.2.4 : In Tabular, "Qoffset2_{s,n}" IE is CV-FDD-Quality-Measure. Qoffset2_{s,n} IE is OPTIONAL in ASN1 for Inter RAT cells. It is not used in this case. The FDD-Quality-Measure option is not applicable for inter RAT cells (see ASN1). The CV rule is not the same as the one in "cell selection and reselection info for SIB 3/4". <u>Correction</u> : Change CV-FDD-Quality-Measure to CV-FDD-Quality-Measure-intra/inter. Add description for CV-FDD-Quality-Measure-intra/inter. BC (clarification)</p> <p>10.3.7.10 : "Temporary_offset2" is not present in ASN1 for Inter-RAT cells. The CV rule is not the same as the one in "cell selection and reselection info for SIB 3/4". For Inter/Intra-Frequency cells, the rule is in line with ASN1 and text description. <u>Correction</u> : Change CV-FDD-Quality-Measure to CV-FDD-Quality-Measure-intra/inter. Add description for CV-FDD-Quality-Measure-intra/inter. BC (clarification)</p> <p>10.3.7.2 <u>Correction</u> : CV-BCHopt description is added. BC (editorial)</p> <p>77- 10.3.7.11 : HCS Cell Re-selection Information is OPTIONAL in tabular, but it is</p>

a mandatory parameter in ASN.1.

Correction : Tabular is modified. BC (editorial)

80- 10.3.7.13 : CHOICE “Inter-frequency cell removal” is MP in tabular but OPTIONAL in ASN.1. OPTIONAL is consistent with text specification(8.6.7.3).

Correction : Tabular is modified. BC (editorial)

80bis- 10.3.7.13 : Removal of All Cells is not described in section 8.6.7.3

Correction : Description is added in 8.6.7.3. BC (feature not described previously).

81- 10.3.7.13 : <MaxInterCell> is used in tabular but defined nowhere

Correction : <maxCellMeas> is used instead, according to ASN1. BC (editorial)

81bis In Some IEs (ASN1 and Tabular), Cell ID is Integer (0..MaxCellMeas). The maximum value is MaxCellMeas-1

Correction : The value: MaxCellMeas is signalled as forbidden in ASN1 **and Tabular**. **In Tabular, range is corrected to 0..MaxCellMeas-1** BC (feature correction, the use of this value should anyway trigger an error)

82- 10.3.7.13 : “Cell for measurement” IE is not included when this IE is in SIB11/12 in ASN.1.

Correction : As the ASN1 elements are different for SIBs and dedicated messages, CV-BCHopt can be used in tabular. BC (editorial)

83- 10.3.7.23 : Cell Selection and reselection Info is OPTIONAL in ASN.1, when it may be present only when this IE is included into SIB type 11/12 (inconsistent with intra/inter-frequency cell info list)

The ASN1 Element is used both by SI and dedicated messages: CV-BCHopt can not be used. UE behaviour is added in tabular 8.6.7.3. This IE is OPTIONAL in all cases in ASN1 for Inter RAT cells.

Correction → No correction : OP is kept in Tabular. Clarification is added in 8.6.7.3 BC (Clarification)

10.3.7.23 “ Cell for measurement” IE is OPTIONAL in ASN1 when in Measurement control Message. In SIB 11/12, the IE is OPTIONAL or absent depending on the “use of HCS” IE.

Section 8.6.7.3 covers all the cases. Confusion comes from Inter RAT cells which use the same ASN1 elements when in a SIB or Measurement control Message

Correction : No correction if OP is correct in tabular(The IE may be absent).

84- 10.3.7.23 : InterRATCellIndividualOffset has MD Default 0 in table, but MP in ASN1. Value 0 can be signalled

Correction : Tabular is aligned with ASN1(MP). Some bits are wasted. BC (editorial)

85- 10.3.7.23 : “NewInterRATCell” – “interRATCellID MD” without default value in tabular, OP in ASN1. ASN1 is correct regarding section 8.6.7.3.

Correction : Tabular is modified. BC (editorial)

88- 10.3.7.33 : same as 80

88bis 10.3.7.33 : Same as 80bis

89- 10.3.7.33 : Same as 82

Consequences if not approved: ☒

Clauses affected:	⌘	8.6.7.3, 10.3.2.4, 10.3.7.2, 10.3.7.10, 10.3.7.11, 10.3.7.13, 10.3.7.23, 10.3.7.26, 10.3.7.28, 10.3.7.33, 11.3	
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.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.

8.6.7.3 Intra-frequency/Inter-frequency/Inter-RAT cell info list

If the IE "Intra-frequency cell info list" is received in System Information Block Type 11, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Intra-frequency cells" is received:
 - ignore the IE;
 - if the IE "Remove all intra-frequency cells" is received:
 - ignore the IE
- if the IE "New Intra-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Intra-frequency cell id" is received:
 - store received cell information at this position in the Intra-frequency cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Intra-frequency cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Intra-frequency cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
 - if the IE "Cells for measurement" is received:
 - ignore the IE.

If the IE "Intra-frequency cell info list" is received in System Information Block Type 12, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Intra-frequency cells" is received:
 - at the position indicated by the IE "Intra-frequency cell id" clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
 - if the IE "Remove all intra-frequency cells" is received:
 - for each position referring to an intra frequency cell in the variable CELL_INFO_LIST :
 - mark the position "vacant";
- if the IE "New Intra-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Intra-frequency cell id" is received:
 - store received cell information at this position in the Intra-frequency cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";

- if the IE "Intra-frequency cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Intra-frequency cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
- if the IE "Cells for measurement" is received:
 - ignore the IE.

If the IE "Intra-frequency cell info list" is received in a MEASUREMENT CONTROL message, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Intra-frequency cells" is received, at the position indicated by the IE "Intra-frequency cell id":
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";

- if the IE "Remove all intra-frequency cells" is received:

- for each position referring to an intra frequency cell in the variable CELL_INFO_LIST :

- mark the position "vacant";

- if the IE "New Intra-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Intra-frequency cell id" is received:
 - store received cell information at this position in the Intra-frequency cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Intra-frequency cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Intra-frequency cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
 - if the IE "Cells for measurement" is received, in the measurement configured by this message only:
 - consider Intra-frequency cells whose cell information is stored at the position indicated by the IE "Intra-frequency cell id" in the variable CELL_INFO_LIST;
 - if the IE "Cells for measurement" is not received, in the measurement configured by this message:
 - consider all Intra-frequency cells whose cell information is stored in CELL_INFO_LIST.

If the IE "Inter-frequency cell info list" is received in System Information Block Type 11 update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-frequency cells" is received:
 - ignore the IE;

- if the IE "Remove all inter-frequency cells" is received:

- ignore the IE

- if the IE "New Inter-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:

- update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-frequency cell id" is received:
 - store received cell information at this position in the Inter-frequency cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Inter-frequency cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-frequency cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
- if the IE "Cells for measurement" is received:
 - ignore the IE.

If the IE "Inter-frequency cell info list" is received in System Information Block Type 12, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-frequency cells" is received, at the position indicated by the IE "Inter-frequency cell id":
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "Remove all inter-frequency cells" is received:
 - for each position referring to an inter-frequency cell in the variable CELL_INFO_LIST :
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "New Inter-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-frequency cell id" is received:
 - store received cell information at this position in the Inter-frequency cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Inter-frequency cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-frequency cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
 - if the IE "Cells for measurement" is received:
 - ignore the IE.

If the IE "Inter-frequency cell info list" is received in a MEASUREMENT CONTROL message, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order:

- if the IE "Removed Inter-frequency cells" is received, at the position indicated by the IE "Inter-frequency cell id":
 - clear the cell information stored in the variable CELL_INFO_LIST; and

- mark the position "vacant";
- if the IE "Remove all inter-frequency cells" is received:
 - for each position referring to an inter-frequency cell in the variable CELL_INFO_LIST :
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "New Inter-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-frequency cell id" is received:
 - store received cell information at this position in the Inter-frequency cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Inter-frequency cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-frequency cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
 - if the IE "Cells for measurement" is received, in the measurement configured by this message only:
 - consider Inter-frequency cells whose cell information is stored at the position indicated by the IE "Inter-frequency cell id" in the variable CELL_INFO_LIST;
 - if the IE "Cells for measurement" is not received, in the measurement configured by this message:
 - consider all Inter-frequency cells whose cell information is stored in CELL_INFO_LIST.

If the IE "Inter-RAT cell info list" is received in System Information Block Type 11, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-RAT cells" is received:
 - ignore the IE;
- if the IE "Remove all inter-RAT cells" is received:
 - ignore the IE
- if the IE "New Inter-RAT cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-RAT cell id" is received:
 - store received cell information at this position in the Inter-RAT cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Inter-RAT cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
 - if the IE "Cells for measurement" is received:

- ignore the IE;

If the IE "Inter-RAT cell info list" is received in System Information Block Type 12, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-RAT cells" is received, at the position indicated by the IE "Inter-RAT cell id":
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "Remove all inter-RAT cells" is received:
 - for each position referring to an inter-RAT cell in the variable CELL_INFO_LIST :
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "New Inter-RAT cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-RAT cell id" is received:
 - store received cell information at this position in the Inter-RAT cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Inter-RAT cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
 - if the IE "Cells for measurement" is received:
 - ignore the IE.

If the IE "Inter-RAT cell info list" is received in a MEASUREMENT CONTROL message, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-RAT cells" is received, at the position indicated by the IE "Inter-RAT cell id":
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "Remove all inter-RAT cells" is received:
 - for each position referring to an inter-RAT cell in the variable CELL_INFO_LIST :
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "New Inter-RAT cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-RAT cell id" is received:
 - store received cell information at this position in the Inter-RAT cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";

- if the IE "Inter-RAT cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
- if the IE "Cells for measurement" is received, in the measurement configured by this message only:
 - consider Inter-RAT cells whose cell information is stored at the position indicated by the IE "Inter-RAT cell id" in the variable CELL_INFO_LIST;
- if the IE "Cells for measurement" is not received, in the measurement configured by this message:
 - consider all Inter-RAT cells whose cell information is stored in CELL_INFO_LIST.
- if the IE "Cell selection and re-selection info for SIB11/12" is present, the UE shall:
 - ignore the IE

*****NEXT MODIFIED SECTION*****

10.3.2.4 Cell selection and re-selection info for SIB11/12

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Qoffset1 _{s,n}	MD		Real(-50.0..50.0 by step of 1)	Default value is 0.
Qoffset2 _{s,n}	CV-FDD-Quality-Measure intra-inter		Real(-50.0..50.0 by step of 1)	Default value is 0.
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	[dBm] UE_TXPWR_MAX_RACH in [4]. Default is the Maximum allowed UL TX power for the serving cell
HCS neighbouring cell information	OP		HCS Neighbouring cell information 10.3.7.11	
CHOICE mode	MP			
>FDD				
>>Qqualmin	MD		Integer (-20..0)	Ec/N0, [dB] Default value is Qqualmin for the serving cell
>>Qrxlevmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell
>TDD				
>>Qrxlevmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell
>GSM				
>>Qrxlevmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell

Condition	Explanation
FDD-Quality-Measure-Intra/Inter	This IE is mandatory and has a default value for Intra/Inter Frequency Cells if the IE "Cell selection and reselection quality measure" has the value CPICH Ec/No. Otherwise the IE is Optional Presence is not allowed if the IE "Cell selection and reselection quality measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value.

*****NEXT MODIFIED SECTION*****

10.3.7.2 Cell info

Includes non-frequency related cell info used in the IE "inter-frequency cell info list" and "intra frequency cell info list".

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell individual offset	MD		Real(-10..10 by step of 0.5)	In dB Default value is 0 dB Used to offset measured quantity value
Reference time difference to cell	OP		Reference time difference to cell 10.3.7.60	In chips. This IE is absent for serving cell.
Read SFN indicator	MP		Boolean	TRUE indicates that read of SFN is requested for the target cell
CHOICE mode	MP			
>FDD				
>>Primary CPICH info	OP		Primary CPICH info 10.3.6.60	This IE is absent only if measuring RSSI only (broadband measurement.)
>>>Primary CPICH Tx power	OP		Primary CPICH Tx power 10.3.6.61	Required if calculating pathloss.
>>>TX Diversity Indicator	MP		Boolean	
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57	
>>>Primary CCPCH TX power	OP		Primary CCPCH TX power 10.3.6.59	
>>>Timeslot list	OP	1 to <maxTS>		The UE shall report Timeslot ISCP values according the order of the listed Timeslot numbers
>>>>Timeslot number	MP		Integer (0...14)	Timeslot numbers, for which the UE shall report Timeslot ISCP
>>>>Burst Type	MD		Enumerated (Type1, Type2)	Use for Timeslot ISCP measurements only. Default value is "Type1"
Cell Selection and Re-selection Info	CV-BCHopt		Cell Selection and Re-selection for SIB11/12Info 10.3.2.4	Only when sent in system information. This IE is absent for serving cell. For neighbouring cell, if HCS is not used and all the parameters in cell selection and re-selection info are default value, this IE is absent.

Condition	Explanation
CV-BCHopt	This IE is Optional when sent in SYSTEM INFORMATION, Otherwise, the IE is not needed

*****NEXT MODIFIED SECTION*****

10.3.7.10 HCS Cell re-selection information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Penalty_time	MD		Integer(0, 10, 20, 30, 40, 50, 60)	Default value is 0 which means = not used In seconds
Temporary_offsets	CV-Penalty used			
>Temporary_offset1	MP		Integer(10, 20, 30, 40, 50, 60, 70, infinity)	
>Temporary_offset2	CV-FDD-Quality-Measure <i>intra/inter</i>		Integer(10, 20, 30, 40, 50, 60, 70, infinity)	Default value is Temporary_offset1

Condition	Explanation
Penalty used	Not allowed if IE Penalty time equals 'not used' else MP
FDD-Quality-Measure <i>intra/inter</i>	This IE is mandatory for Intra/Inter-Frequency Cells if the IE "Cell-selection-and-reselection-quality-measure" has the value CPICH Ec/No. Otherwise, the IE is not needed. Presence is not allowed if the IE "Cell-selection-and-reselection-quality-measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value.

*****NEXT MODIFIED SECTION*****

10.3.7.11 HCS neighbouring cell information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
HCS_PRIO	MD		Integer (0..7)	Default value = 0
Q _{HCS}	MD		Integer (-0..99)	Default value = 0
HCS Cell Re-selection Information	MPOP		HCS Cell Re-selection Information 10.3.7.10	

*****NEXT MODIFIED SECTION*****

10.3.7.13 Inter-frequency cell info list

Contains the measurement object information for an inter-frequency measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Inter-frequency cell removal	OPMP			
>Remove all inter-frequency cells				No data
>Remove some inter-frequency cells				
>>Removed inter-frequency cells	MP	1 .. <maxCellMeas>		
>>>Inter-frequency cell id	MP		Integer(0 .. <maxCellMeas>-1<MaxInterCells>)	
>No inter-frequency cells removed				No data
New inter-frequency cells	OP	1 to <maxCellMeas>		
>Inter-frequency cell id	MD		Integer(0 .. <maxCellMeas>-1<MaxInterCells>)	
>Frequency info	MD		Frequency info 10.3.6.36	Default value is the value of the previous "frequency info" in the list (note : the first occurrence is then MP)
>Cell info	MP		Cell info 10.3.7.2	
Cell for measurement	CV-BCHoptOP	1 to <maxCellMeas>		
>Inter-frequency cell id	MP		Integer(0 .. <maxCellMeas>-1<MaxInterCells>)	

Condition	Explanation
CV-BCHopt	This IE is not needed when sent in SYSTEM INFORMATION. Otherwise, the IE is Optional

*****NEXT MODIFIED SECTION*****

10.3.7.23 Inter-RAT cell info list

Contains the measurement object information for an inter-RAT measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Inter-RAT cell removal	MP			
>Remove all inter-RAT cells				No data
>Remove some inter-RAT cells				
>>Removed inter-RAT cells	MP	1 to <maxCellMeas>		
>>>Inter-RAT cell id	MP		Integer(0 .. <maxCellMeas> - 1)	
>Remove no inter-RAT cells				
New inter-RAT cells	OP	1 to <maxCellMeas>		
>Inter-RAT cell id	OPMD		Integer(0 .. <maxCellMeas> - 1)	
>CHOICE Radio Access Technology	MP			
>>GSM				
>>>Cell individual offset	MPMD		Integer (-50..50)	In dB Default value is 0 dB Used to offset measured quantity value
>>>Cell selection and re-selection info	OPCV-BCHopt		Cell selection and re-selection info for SIB11/12 10.3.2.4	see 8.6.7.3 Only when sent in system information. If HCS is not used and all the parameters in cell selection and re-selection info are default values, this IE is absent.
>>>BSIC	MP		BSIC 10.3.8.2	
>>>Band indicator	MP		Enumerated (DCS 1800 band used, PCS 1900 band used)	Indicates how to interpret the BCCH ARFCN
>>>BCCH ARFCN	MP		Integer (0..1023)	[45]
>>>Output power	OP			
>>IS-2000				
>>>System specific measurement info			enumerated (frequency, timeslot, colour code, output power, PN offset)	For IS-2000, use fields from TIA/EIA/IS-2000.5, Subclause 3. 7.3.3.2.27, Candidate Frequency Neighbour List Message
Cell for measurement	OP	1 to <maxCellMeas>		
>Inter-RAT cell id	MP		Integer(0 .. <maxCellMeas> - 1<MaxInterCells>)	

*****NEXT MODIFIED SECTION*****

10.3.7.26 Inter-RAT measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT measurement results	OP	1 to <maxOther RAT>		
>CHOICE system				At least one spare value needed
>>GSM				
>>>Measured GSM cells	MP	1 to <maxReportedGSMCells>		
>>>>GSM carrier RSSI	OP		bit string(6)	RXLEV, [46]
>>>>Pathloss	OP		Integer(46..158)	In dB
>>>>CHOICE BSIC	MP			
>>>>>Verified BSIC				
>>>>>>inter-RAT cell id			Integer(0..<maxCellMeasurements>-1)	The value maxCellMeas is not allowed
>>>>>>Non verified BSIC				
>>>>>>>BCCH ARFCN			Integer (0..1023)	[45]
>>>>Observed time difference to GSM cell	OP		Observed time difference to GSM cell 10.3.7.52	

*****NEXT MODIFIED SECTION*****

10.3.7.28 Inter-RAT measurement event results

This IE contains the measurement event results that are reported to UTRAN for inter-RAT measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT event identity	MP		Inter-RAT event identity 10.3.7.24	
Cells to report	MP	1 to <maxCellMeas>		
>CHOICE BSIC	MP			
>>Verified BSIC				
>>>inter-RAT cell id			Integer(0..<maxCellMeasurements>-1)	The value maxCellMeas is not allowed
>>>Non verified BSIC				
>>>>BCCH ARFCN			Integer (0..1023)	[45]

*****NEXT MODIFIED SECTION*****

10.3.7.33 Intra-frequency cell info list

Contains the measurement object information for an intra-frequency measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Intra-frequency cell removal	OPMP			
>Remove all intra-frequency cells				No data
>Remove some intra-frequency cells				
>>Removed intra-frequency cells	MP	1 to <maxCellMeas>		
>>>Intra-frequency cell id	MP		Integer(0 .. <maxCellMeas> - 1)	
>Remove no intra-frequency cells				
New intra-frequency cell	OP	1 to <maxCellMeas>		This information element must be present when "Intra-frequency cell info list" is included in the system information
>Intra-frequency cell id	MD		Integer(0 .. <maxCellMeas> - 1)	
>Cell info	MP		Cell info 10.3.7.2	
Cell for measurement	CV-BCHoptOP	1 to <maxCellMeas>		
>Intra-frequency cell id	MP		Integer(0 .. <maxCellMeas> - 1<MaxInterCells>)	

Condition	Explanation
CV-BCHopt	This IE is not needed when sent in SYSTEM INFORMATION. Otherwise, the IE is Optional

*****NEXT MODIFIED SECTION*****

11.3 Information element definitions

```

BSICReported ::= CHOICE {
  -- Value maxCellMeas is not allowed for verifiedBSIC
  verifiedBSIC          INTEGER (0..maxCellMeas),
  nonVerifiedBSIC      BCCH-ARFCN
}
    
```

*****NEXT MODIFIED SECTION*****

```

InterRATCellInfoList-BHCS ::= SEQUENCE {
  removedInterRATCellList
  newInterRATCellList      NewInterRATCellList-BHCS
}
    
```

*****NEXT MODIFIED SECTION*****

```

InterRATMeasurementSysInfo-BHCS ::= SEQUENCE {
    
```

```

interRATCellInfoList          InterRATCellInfoList-BHCS          OPTIONAL
}

*****NEXT MODIFIED SECTION*****

MeasurementControlSysInfo ::=          SEQUENCE {
  use-of-HCS                    CHOICE {
    hcs-not-used                SEQUENCE {
      cellSelectQualityMeasure  CHOICE {
        cpich-RSCP              SEQUENCE {
          intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-RSCP
        }
      }
    },
    interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-RSCP      OPTIONAL
  },
  cpich-Ec-No                    SEQUENCE {
    intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-ECNO
  },
  interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-ECNO      OPTIONAL
},
interRATMeasurementSysInfo        InterRATMeasurementSysInfo-BHCS      OPTIONAL
},
hcs-used                          SEQUENCE {
  cellSelectQualityMeasure        CHOICE {
    cpich-RSCP                    SEQUENCE {
      intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-HCS-RSCP
    }
  },
  interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-HCS-RSCP
},
cpich-Ec-No                      SEQUENCE {
  intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-HCS-ECNO
},
interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-HCS-ECNO
},
interRATMeasurementSysInfo        InterRATMeasurementSysInfo          OPTIONAL
},
},
trafficVolumeMeasSysInfo          TrafficVolumeMeasSysInfo          OPTIONAL,
ue-InternalMeasurementSysInfo      UE-InternalMeasurementSysInfo      OPTIONAL
}

*****NEXT MODIFIED SECTION*****

NewInterRATCell-BHCS ::=          SEQUENCE {
  interRATCellID                  InterRATCellID                      OPTIONAL,
  technologySpecificInfo          CHOICE {
    gsm                            SEQUENCE {
      cellSelectionReselectionInfo  CellSelectReselectInfoSIB-11-12      OPTIONAL,
      interRATCellIndividualOffset  InterRATCellIndividualOffset,
      bsic                          BSIC,
      band-Indicator                Band-Indicator,
      bcch-ARFCN                    BCCH-ARFCN,
      gsm-OutputPower                GSM-OutputPower                      OPTIONAL
    },
    is-2000                          SEQUENCE {
      is-2000SpecificMeasInfo        IS-2000SpecificMeasInfo
    },
    spare1                          NULL,
    spare2                          NULL
  }
}

NewInterRATCellList ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                  NewInterRATCell

NewInterRATCellList-BHCS ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                  NewInterRATCell-BHCS

```

3GPP TSG-RAN WG2 Meeting #21
Busan, Korea, May 21st-25th, 2001

Tdoc R2-011492

<small>CR-Form-v4</small>
<h2 style="margin: 0;">CHANGE REQUEST</h2>
⌘ 25.331 CR 877 ⌘ ev - ⌘ Current version: 4.0.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections in Tabular/ASN1		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 2001-05-24
Category:	⌘ A	Release:	⌘ REL-4
	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)

Reason for change:	⌘ Inconsistencies between ASN1 and Tabular
Summary of change:	⌘ (numbers refer to Identified problems in R2-011034) In Yellow: Tabular correction not mentioned in R2-011034 29- 10.3.7.47 : InterRATMeasurementSysInfo-HCS and InterRATMeasurementSysInfo are mixed in ASN1. There is no problem regarding features but ASN1 is confusing <u>Correction</u> : Rename the "XXX-HCS" involved elements to "XXX-B" in ASN1 for inter-RAT Cells IEs. BC (editorial) 10.3.2.4 : In Tabular, "Qoffset2 _{s,n} " IE is CV-FDD-Quality-Measure. Qoffset2 _{s,n} IE is OPTIONAL in ASN1 for Inter RAT cells. It is not used in this case. The <i>FDD-Quality-Measure</i> option is not applicable for inter RAT cells (see ASN1). The CV rule is not the same as the one in "cell selection and reselection info for SIB 3/4". <u>Correction</u> : Change CV-FDD-Quality-Measure to CV-FDD-Quality-Measure-intra/inter . Add description for CV-FDD-Quality-Measure-intra/inter. BC (clarification) 10.3.7.10 : "Temporary_offset2" is not present in ASN1 for Inter-RAT cells. The CV rule is not the same as the one in "cell selection and reselection info for SIB 3/4". For Inter/Intra-Frequency cells, the rule is in line with ASN1 and text description. <u>Correction</u> : Change CV-FDD-Quality-Measure to CV-FDD-Quality-Measure-intra/inter. Add description for CV-FDD-Quality-Measure-intra/inter. BC (clarification) 10.3.7.2 <u>Correction</u> : CV-BCHopt description is added. BC (editorial) 77- 10.3.7.11 : HCS Cell Re-selection Information is OPTIONAL in tabular, but it is a mandatory parameter in ASN.1.

Correction : Tabular is modified. BC (editorial)

80- 10.3.7.13 : CHOICE “Inter-frequency cell removal” is MP in tabular but OPTIONAL in ASN.1. OPTIONAL is consistent with text specification(8.6.7.3).
Correction : Tabular is modified. BC (editorial)

80bis- 10.3.7.13 : Removal of All Cells is not described in section 8.6.7.3
Correction : Description is added in 8.6.7.3. BC (feature not described previously).

81- 10.3.7.13 : <MaxInterCell> is used in tabular but defined nowhere
Correction : <maxCellMeas> is used instead, according to ASN1. BC (editorial)

81bis In Some IEs (ASN1 and Tabular), Cell ID is Integer (0..MaxCellMeas). The maximum value is MaxCellMeas-1
Correction : The value: MaxCellMeas is signalled as forbidden in ASN1 ~~and Tabular~~. In Tabular, range is corrected to 0..MaxCellMeas-1 BC (feature correction, the use of this value should anyway trigger an error)

82- 10.3.7.13 : “Cell for measurement” IE is not included when this IE is in SIB11/12 in ASN.1.
Correction : As the ASN1 elements are different for SIBs and dedicated messages, CV-BCHopt can be used in tabular. BC (editorial)

83- 10.3.7.23 : Cell Selection and reselection Info is OPTIONAL in ASN.1, when it may be present only when this IE is included into SIB type 11/12 (inconsistent with intra/inter-frequency cell info list)
 The ASN1 Element is used both by SI and dedicated messages: CV-BCHopt can not be used. UE behaviour is added in tabular 8.6.7.3. This IE is OPTIONAL in all cases in ASN1 for Inter RAT cells.
Correction → No correction : OP is kept in Tabular. Clarification is added in 8.6.7.3 BC (Clarification)

10.3.7.23 “ Cell for measurement” IE is OPTIONAL in ASN1 when in Measurement control Message. In SIB 11/12, the IE is OPTIONAL or absent depending on the “use of HCS” IE.
 Section 8.6.7.3 covers all the cases. Confusion comes from Inter RAT cells which use the same ASN1 elements when in a SIB or Measurement control Message
Correction : No correction if OP is correct in tabular(The IE may be absent).

84- 10.3.7.23 : InterRATCellIndividualOffset has MD Default 0 in table, but MP in ASN1. Value 0 can be signalled
Correction : Tabular is aligned with ASN1(MP). Some bits are wasted. BC (editorial)

85- 10.3.7.23 : “NewInterRATCell” – “interRATCellID MD” without default value in tabular, OP in ASN1. ASN1 is correct regarding section 8.6.7.3.
Correction : Tabular is modified. BC (editorial)

88- 10.3.7.33 : same as 80

88bis 10.3.7.33 : Same as 80bis

89- 10.3.7.33 : Same as 82

Consequences if not approved: ☒

Clauses affected:	⌘	8.6.7.3, 10.3.2.4, 10.3.7.2, 10.3.7.10, 10.3.7.11, 10.3.7.13, 10.3.7.23, 10.3.7.26, 10.3.7.28, 10.3.7.33, 11.3									
Other specs affected:	⌘	<table border="1"> <tr> <td><input type="checkbox"/></td> <td>Other core specifications</td> <td>⌘</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Test specifications</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td>O&M Specifications</td> <td></td> </tr> </table>	<input type="checkbox"/>	Other core specifications	⌘	<input type="checkbox"/>	Test specifications		<input type="checkbox"/>	O&M Specifications	
<input type="checkbox"/>	Other core specifications	⌘									
<input type="checkbox"/>	Test specifications										
<input type="checkbox"/>	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/3G_Specs/CRs.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.

8.6.7.3 Intra-frequency/Inter-frequency/Inter-RAT cell info list

If the IE "Intra-frequency cell info list" is received in System Information Block Type 11, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Intra-frequency cells" is received:
 - ignore the IE;
- if the IE "Remove all intra-frequency cells" is received:
 - ignore the IE
- if the IE "New Intra-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Intra-frequency cell id" is received:
 - store received cell information at this position in the Intra-frequency cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Intra-frequency cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Intra-frequency cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
 - if the IE "Cells for measurement" is received:
 - ignore the IE.

If the IE "Intra-frequency cell info list" is received in System Information Block Type 12, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Intra-frequency cells" is received:

- at the position indicated by the IE "Intra-frequency cell id" clear the cell information stored in the variable CELL_INFO_LIST; and
- mark the position "vacant";
- if the IE "Remove all intra-frequency cells" is received:
 - for each position referring to an intra frequency cell in the variable CELL_INFO_LIST :
 - mark the position "vacant";
- if the IE "New Intra-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Intra-frequency cell id" is received:
 - store received cell information at this position in the Intra-frequency cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Intra-frequency cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Intra-frequency cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
 - if the IE "Cells for measurement" is received:
 - ignore the IE.

If the IE "Intra-frequency cell info list" is received in a MEASUREMENT CONTROL message, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Intra-frequency cells" is received, at the position indicated by the IE "Intra-frequency cell id":
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "Remove all intra-frequency cells" is received:
 - for each position referring to an intra frequency cell in the variable CELL_INFO_LIST :
 - mark the position "vacant";
- if the IE "New Intra-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Intra-frequency cell id" is received:
 - store received cell information at this position in the Intra-frequency cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Intra-frequency cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Intra-frequency cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";

- if the IE "Cells for measurement" is received, in the measurement configured by this message only:
 - consider Intra-frequency cells whose cell information is stored at the position indicated by the IE "Intra-frequency cell id" in the variable CELL_INFO_LIST;
- if the IE "Cells for measurement" is not received, in the measurement configured by this message:
 - consider all Intra-frequency cells whose cell information is stored in CELL_INFO_LIST.

If the IE "Inter-frequency cell info list" is received in System Information Block Type 11 update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-frequency cells" is received:
 - ignore the IE;
- if the IE "Remove all inter-frequency cells" is received:
 - ignore the IE
- if the IE "New Inter-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-frequency cell id" is received:
 - store received cell information at this position in the Inter-frequency cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Inter-frequency cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-frequency cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
 - if the IE "Cells for measurement" is received:
 - ignore the IE.

If the IE "Inter-frequency cell info list" is received in System Information Block Type 12, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-frequency cells" is received, at the position indicated by the IE "Inter-frequency cell id":
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "Remove all inter-frequency cells" is received:
 - for each position referring to an inter-frequency cell in the variable CELL_INFO_LIST :
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "New Inter-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-frequency cell id" is received:

- store received cell information at this position in the Inter-frequency cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
- mark the position "occupied";
- if the IE "Inter-frequency cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-frequency cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
- if the IE "Cells for measurement" is received:
 - ignore the IE.

If the IE "Inter-frequency cell info list" is received in a MEASUREMENT CONTROL message, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order:

- if the IE "Removed Inter-frequency cells" is received, at the position indicated by the IE "Inter-frequency cell id":
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "Remove all inter-frequency cells" is received:
 - for each position referring to an inter-frequency cell in the variable CELL_INFO_LIST :
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "New Inter-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-frequency cell id" is received:
 - store received cell information at this position in the Inter-frequency cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Inter-frequency cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-frequency cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
 - if the IE "Cells for measurement" is received, in the measurement configured by this message only:
 - consider Inter-frequency cells whose cell information is stored at the position indicated by the IE "Inter-frequency cell id" in the variable CELL_INFO_LIST;
 - if the IE "Cells for measurement" is not received, in the measurement configured by this message:
 - consider all Inter-frequency cells whose cell information is stored in CELL_INFO_LIST.

If the IE "Inter-RAT cell info list" is received in System Information Block Type 11, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-RAT cells" is received:
 - ignore the IE;

- if the IE "Remove all inter-RAT cells" is received:

- ignore the IE

- if the IE "New Inter-RAT cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-RAT cell id" is received:
 - store received cell information at this position in the Inter-RAT cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Inter-RAT cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
 - if the IE "Cells for measurement" is received:
 - ignore the IE;

If the IE "Inter-RAT cell info list" is received in System Information Block Type 12, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-RAT cells" is received, at the position indicated by the IE "Inter-RAT cell id":
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";

- if the IE "Remove all inter-RAT cells" is received:

- for each position referring to an inter-RAT cell in the variable CELL_INFO_LIST :

- clear the cell information stored in the variable CELL_INFO_LIST; and

- mark the position "vacant";

- if the IE "New Inter-RAT cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-RAT cell id" is received:
 - store received cell information at this position in the Inter-RAT cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Inter-RAT cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
 - if the IE "Cells for measurement" is received:
 - ignore the IE.

If the IE "Inter-RAT cell info list" is received in a MEASUREMENT CONTROL message, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-RAT cells" is received, at the position indicated by the IE "Inter-RAT cell id":
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "Remove all inter-RAT cells" is received:
 - for each position referring to an inter-RAT cell in the variable CELL_INFO_LIST :
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "New Inter-RAT cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-RAT cell id" is received:
 - store received cell information at this position in the Inter-RAT cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
 - mark the position "occupied";
 - if the IE "Inter-RAT cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL_INFO_LIST; and
 - mark the position as "occupied";
- if the IE "Cells for measurement" is received, in the measurement configured by this message only:
 - consider Inter-RAT cells whose cell information is stored at the position indicated by the IE "Inter-RAT cell id" in the variable CELL_INFO_LIST;
- if the IE "Cells for measurement" is not received, in the measurement configured by this message:
 - consider all Inter-RAT cells whose cell information is stored in CELL_INFO_LIST.
- if the IE "Cell selection and re-selection info for SIB11/12" is present, the UE shall:
 - ignore the IE

*****NEXT MODIFIED SECTION*****

10.3.2.4 Cell selection and re-selection info for SIB11/12

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Qoffset1 _{s,n}	MD		Real(-50.0..50.0 by step of 1)	Default value is 0.
Qoffset2 _{s,n}	CV-FDD-Quality-Measure _{intra/inter}		Real(-50.0..50.0 by step of 1)	Default value is 0.
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	[dBm] UE_TXPWR_MAX_RACH in [4]. Default is the Maximum allowed UL TX power for the serving cell
HCS neighbouring cell information	OP		HCS Neighbouring cell information 10.3.7.11	
CHOICE mode	MP			
>FDD				
>>Qqualmin	MD		Integer (-20..0)	Ec/NO, [dB] Default value is Qqualmin for the serving cell
>>Qrxlevmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell
>TDD				
>>Qrxlevmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell
>GSM				
>>Qrxlevmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell

Condition	Explanation
FDD-Quality-Measure _{intra/inter}	This IE is mandatory and has a default value for Intra/Inter Frequency Cells if the IE "Cell selection and reselection quality measure" has the value CPICH Ec/No. Otherwise the IE is Optional. Presence is not allowed if the IE "Cell selection and reselection quality measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value.

*****NEXT MODIFIED SECTION*****

10.3.7.2 Cell info

Includes non-frequency related cell info used in the IE "inter-frequency cell info list" and "intra frequency cell info list".

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Cell individual offset	MD		Real(-10..10 by step of 0.5)	In dB Default value is 0 dB Used to offset measured quantity value	
Reference time difference to cell	OP		Reference time difference to cell 10.3.7.60	In chips. This IE is absent for serving cell.	
Read SFN indicator	MP		Boolean	TRUE indicates that read of SFN is requested for the target cell	
CHOICE mode	MP				
>FDD					
>>Primary CPICH info	OP		Primary CPICH info 10.3.6.60	This IE is absent only if measuring RSSI only (broadband measurement.)	
>>Primary CPICH Tx power	OP		Primary CPICH Tx power 10.3.6.61	Required if calculating pathloss.	
>>TX Diversity Indicator	MP		Boolean		
>TDD					
>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57		
>>Primary CCPCH TX power	OP		Primary CCPCH TX power 10.3.6.59		
>>Timeslot list	OP	1 to <maxTS>		The UE shall report Timeslot ISCP values according the order of the listed Timeslot numbers	
>>>CHOICE TDD option	MP				REL-4
>>>>3.84 Mcps TDD					REL-4
>>>>>Timeslot number	MP		Integer (0...14)	Timeslot numbers, for which the UE shall report Timeslot ISCP	
>>>>>Burst Type	MD		Enumerated (Type1, Type2)	Use for Timeslot ISCP measurements only. Default value is "Type1"	
>>>>>1.28Mcps TDD					REL-4
>>>>>>Timeslot number	MP		Integer (1...6)	Timeslot numbers, for which the UE shall report Timeslot ISCP	REL-4
Cell Selection and Re-selection Info	CV- <i>BCHopt</i>		Cell Selection and Re-selection for SIB11/12Info 10.3.2.4	Only when sent in system information. This IE is absent for serving cell. For neighbouring cell, if HCS is not used and all the	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
				parameters in cell selection and re-selection info are default value, this IE is absent.	

Condition	Explanation
<u>CV-BCHopt</u>	This IE is Optional when sent in SYSTEM INFORMATION. Otherwise, the IE is not needed

*****NEXT MODIFIED SECTION*****

10.3.7.10 HCS Cell re-selection information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Penalty_time	MD		Integer(0, 10, 20, 30, 40, 50, 60)	Default value is 0 which means = not used In seconds
Temporary_offsets	CV-Penalty used			
>Temporary_offset1	MP		Integer(10, 20, 30, 40, 50, 60, 70, infinity)	
>Temporary_offset2	CV-FDD-Quality-Measure <i>intra/inter</i>		Integer(10, 20, 30, 40, 50, 60, 70, infinity)	Default value is Temporary_offset1

Condition	Explanation
Penalty used	Not allowed if IE Penalty time equals 'not used' else MP
FDD-Quality-Measure <i>intra/inter</i>	This IE is mandatory for Intra/Inter Frequency Cells if the IE "Cell_selection_and_reselection_quality_measure" has the value CPICH Ec/No. Otherwise, the IE is not needed. Presence is not allowed if the IE "Cell_selection_and_reselection_quality_measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value.

10.3.7.11 HCS neighbouring cell information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
HCS_PRIO	MD		Integer (0..7)	Default value = 0
Q _{HCS}	MD		Integer (-0..99)	Default value = 0
HCS Cell Re-selection Information	OPMP		HCS Cell Re-selection Information 10.3.7.10	

*****NEXT MODIFIED SECTION*****

10.3.7.13 Inter-frequency cell info list

Contains the measurement object information for an inter-frequency measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Inter-frequency cell removal	MPOP			
>Remove all inter-frequency cells				No data
>Remove some inter-frequency cells				
>>Removed inter-frequency cells	MP	1 .. <maxCellMeas>		
>>>Inter-frequency cell id	MP		Integer(0 .. <maxCellMeas>-1<MaxInterCells>)	
>No inter-frequency cells removed				No data
New inter-frequency cells	OP	1 to <maxCellMeas>		
>Inter-frequency cell id	MD		Integer(0 .. <maxCellMeas>-1<MaxInterCells>)	
>Frequency info	MD		Frequency info 10.3.6.36	Default value is the value of the previous "frequency info" in the list (note : the first occurrence is then MP)
>Cell info	MP		Cell info 10.3.7.2	
Cell for measurement	CV-BCHoptOP	1 to <maxCellMeas>		
>Inter-frequency cell id	MP		Integer(0 .. <maxCellMeas>-1<MaxInterCells>)	

Condition	Explanation
CV-BCHopt	This IE is not needed when sent in SYSTEM INFORMATION. Otherwise, the IE is Optional

*****NEXT MODIFIED SECTION*****

10.3.7.23 Inter-RAT cell info list

Contains the measurement object information for an inter-RAT measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Inter-RAT cell removal	MP			
>Remove all inter-RAT cells				No data
>Remove some inter-RAT cells				
>>Removed inter-RAT cells	MP	1 to <maxCellMeas>		
>>>Inter-RAT cell id	MP		Integer(0 .. <maxCellMeas> - 1)	
>Remove no inter-RAT cells				
New inter-RAT cells	OP	1 to <maxCellMeas>		
>Inter-RAT cell id	MDOP		Integer(0 .. <maxCellMeas> - 1)	
>CHOICE Radio Access Technology	MP			
>>GSM				
>>>Cell individual offset	MDMP		Integer (-50..50)	In dB Default value is 0 dB Used to offset measured quantity value
>>>Cell selection and re-selection info	CV-BCHoptOP		Cell selection and re-selection info for SIB11/12 10.3.2.4	see 8.6.7.3 Only when sent in system information. If HCS is not used and all the parameters in cell selection and re-selection info are default values, this IE is absent.
>>>BSIC	MP		BSIC 10.3.8.2	
>>>Band indicator	MP		Enumerated (DCS 1800 band used, PCS 1900 band used)	Indicates how to interpret the BCCH ARFCN
>>>BCCH ARFCN	MP		Integer (0..1023)	[45]
>>>Output power	OP			
>>IS-2000				
>>>System specific measurement info			enumerated (frequency, timeslot, colour code, output power, PN offset)	For IS-2000, use fields from TIA/EIA/IS-2000.5, Subclause 3. 7.3.3.2.27, <i>Candidate Frequency Neighbour List Message</i>
Cell for measurement	OP	1 to <maxCellMeas>		
>Inter-RAT cell id	MP		Integer(0 .. <maxCellMeas> - 1 - <MaxInterCells>)	

*****NEXT MODIFIED SECTION*****

10.3.7.26 Inter-RAT measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT measurement results	OP	1 to <maxOther RAT>		
>CHOICE system				At least one spare value needed
>>GSM				
>>>Measured GSM cells	MP	1 to <maxReportedGSMCells>		
>>>>GSM carrier RSSI	OP		bit string(6)	RXLEV, [46]
>>>>Pathloss	OP		Integer(46..158)	In dB
>>>>CHOICE BSIC	MP			
>>>>>Verified BSIC				
>>>>>>inter-RAT cell id			Integer(0..<maxCellMeas>-1)	The value maxCellMeas is not allowed
>>>>>>Non verified BSIC				
>>>>>>>BCCH ARFCN			Integer (0..1023)	[45]
>>>>Observed time difference to GSM cell	OP		Observed time difference to GSM cell 10.3.7.52	

*****NEXT MODIFIED SECTION*****

10.3.7.28 Inter-RAT measurement event results

This IE contains the measurement event results that are reported to UTRAN for inter-RAT measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT event identity	MP		Inter-RAT event identity 10.3.7.24	
Cells to report	MP	1 to <maxCellMeas>		
>CHOICE BSIC	MP			
>>Verified BSIC				
>>>inter-RAT cell id			Integer(0..<maxCellMeas>-1)	The value maxCellMeas is not allowed
>>>Non verified BSIC				
>>>>BCCH ARFCN			Integer (0..1023)	[45]

*****NEXT MODIFIED SECTION*****

10.3.7.33 Intra-frequency cell info list

Contains the measurement object information for an intra-frequency measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Intra-frequency cell removal	MPOP			
>Remove all intra-frequency cells				No data
>Remove some intra-frequency cells				
>>Removed intra-frequency cells	MP	1 to <maxCellMeas>		
>>>Intra-frequency cell id	MP		Integer(0 .. <maxCellMeas> - 1)	
>Remove no intra-frequency cells				
New intra-frequency cell	OP	1 to <maxCellMeas>		This information element must be present when "Intra-frequency cell info list" is included in the system information
>Intra-frequency cell id	MD		Integer(0 .. <maxCellMeas> - 1)	
>Cell info	MP		Cell info 10.3.7.2	
Cell for measurement	CV-BCHoptOP	1 to <maxCellMeas>		
>Intra-frequency cell id	MP		Integer(0 .. <maxCellMeas> - 1)	

Condition	Explanation
CV-BCHopt	This IE is not needed when sent in SYSTEM INFORMATION. Otherwise, the IE is Optional

*****NEXT MODIFIED SECTION*****

11.3 Information element definitions

*****NEXT MODIFIED SECTION*****

```
BSICReported ::= CHOICE {
  -- Value maxCellMeas is not allowed for verifiedBSIC
  verifiedBSIC          INTEGER (0..maxCellMeas),
  nonVerifiedBSIC      BCCH-ARFCN
}
```

```
InterRATCellInfoList-BHES ::= SEQUENCE {
  removedInterRATCellList  RemovedInterRATCellList,
  newInterRATCellList      NewInterRATCellList-BHES
}
```

*****NEXT MODIFIED SECTION*****

```
InterRATMeasurementSysInfo-BHES ::= SEQUENCE {
  interRATCellInfoList      InterRATCellInfoList-BHES          OPTIONAL
}
```

*****NEXT MODIFIED SECTION*****

```

MeasurementControlSysInfo ::=          SEQUENCE {
  use-of-HCS                            CHOICE {
    hcs-not-used                          SEQUENCE {
      cellSelectQualityMeasure           CHOICE {
        cpich-RSCP                        SEQUENCE {
          intraFreqMeasurementSysInfo     IntraFreqMeasurementSysInfo-RSCP
        }
      },
      interFreqMeasurementSysInfo         InterFreqMeasurementSysInfo-RSCP   OPTIONAL
    },
    cpich-Ec-No                          SEQUENCE {
      intraFreqMeasurementSysInfo         IntraFreqMeasurementSysInfo-ECN0
    }
  },
  interFreqMeasurementSysInfo             InterFreqMeasurementSysInfo-ECN0   OPTIONAL
},
interRATMeasurementSysInfo               InterRATMeasurementSysInfo-BHCS   OPTIONAL
},
hcs-used                                  SEQUENCE {
  cellSelectQualityMeasure               CHOICE {
    cpich-RSCP                            SEQUENCE {
      intraFreqMeasurementSysInfo         IntraFreqMeasurementSysInfo-HCS-RSCP
    }
  },
  interFreqMeasurementSysInfo             InterFreqMeasurementSysInfo-HCS-RSCP
},
cpich-Ec-No                              SEQUENCE {
  intraFreqMeasurementSysInfo             IntraFreqMeasurementSysInfo-HCS-ECN0
},
interFreqMeasurementSysInfo               InterFreqMeasurementSysInfo-HCS-ECN0
},
interRATMeasurementSysInfo               InterRATMeasurementSysInfo           OPTIONAL
},
},
trafficVolumeMeasSysInfo                 TrafficVolumeMeasSysInfo             OPTIONAL,
ue-InternalMeasurementSysInfo             UE-InternalMeasurementSysInfo        OPTIONAL
}

```

*****NEXT MODIFIED SECTION*****

```

NewInterRATCell-BHCS ::=          SEQUENCE {
  interRATCellID                          InterRATCellID                       OPTIONAL,
  technologySpecificInfo                   CHOICE {
    gsm                                     SEQUENCE {
      cellSelectionReselectionInfo         CellSelectReselectInfoSIB-11-12     OPTIONAL,
      interRATCellIndividualOffset         InterRATCellIndividualOffset,
      bsic                                  BSIC,
      band-Indicator                       Band-Indicator,
      bcch-ARFCN                           BCCH-ARFCN,
      gsm-OutputPower                      GSM-OutputPower                     OPTIONAL
    },
    is-2000                                 SEQUENCE {
      is-2000SpecificMeasInfo              IS-2000SpecificMeasInfo
    },
    spare1                                  NULL,
    spare2                                  NULL
  }
}

```

```

NewInterRATCellList ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                  NewInterRATCell

```

```

NewInterRATCellList-BHCS ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                  NewInterRATCell-BHCS

```

CHANGE REQUEST

⌘ **25.331 CR 878** ⌘ ev **r2** ⌘ Current version: **3.6.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections on ASN.1 and tabular inconsistencies		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 24.5.2001
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change: ⌘ In multiple places the tabular notation and the ASN.1 in TS 25.331 are not aligned in v. 3.6.0. This CR captures a number of corrections, which have no impact on the ASN.1 encoding or procedural aspects and thus should be seen as editorial modifications to align the two notations.

Backwards Compatibility Analysis: This CR doesn't need to be implemented into products and has therefore no impact on backwards compatibility.

Summary of change: ⌘

10.2.5 CELL CHANGE ORDER FROM UTRAN

10.2.6 CELL CHANGE ORDER FROM UTRAN FAILURE

The ASN.1 definition includes an IE Integrity protection mode info which is not shown in the tabular, the ASN.1 has been aligned.

10.2.6 CELL CHANGE ORDER FROM UTRAN FAILURE

Inter-RAT change failure changed from MD to MP to align with ASN.1

10.3.8.5 Inter-RAT change failure

Inter-RAT change failure cause changed from MD to MP to align with ASN.1. Semantics description of default value removed.

10.2.8 CELL UPDATE CONFIRM

CHOICE mode in UL transport channel information elements changed from OP to MP to align with ASN.1. All IE:s inside the CHOICE are optional.

10.2.29 RADIO BEARER RECONFIGURATION FAILURE

10.2.32 RADIO BEARER RELEASE FAILURE

10.2.35 RADIO BEARER SETUP FAILURE

Editorial correction to range notation.

10.2.48.8.21 System Information Block type 18

Idle mode PLMN identities changed from MP to OP to align with ASN.1

10.3.2.3 Cell selection and re-selection info for SIB3/4

Under Choice mode / FDD the ranges for Ssearch, RAT and SHCS,RAT the ranges have been swapped to align with ASN.1, which had the correct values. Second FDD/TDD choice has been merged with the first as in ASN.1. Indentation and spelling of SlimitshearchRAT has been corrected in the FDD branch.

10.3.2.4 Cell selection and re-selection info for SIB11/12

Under Choice mode / FDD the range of Qqualmin (-20..0) aligned with ASN.1 (-24..0).

10.3.4.2 PDCP info

Default value removed from tabular semantics in "Max PDCP SN window size" as it had a default value which couldn't be implemented in ASN.1

~~10.3.4.18 RB information to reconfigure~~

~~Typo corrected in PDCP SN info need "C PDCP" -> "CV PDCP".~~

10.3.4.21 RB mapping info

IE Downlink transport channel type "FACH/PCH" changed to "FACH" to align with ASN.1

10.3.6.13 CPCH set info

Multiplicity of Channel request parameters for UCSM aligned with ASN.1.

10.3.6.18 Downlink DPCH info common for all RL

Missing text for CHOICE and FDD option added. Clarifying text added to semantics column to explain use of CHOICE SF. Downlink DPCH power control information moved to common section. Corresponding change made in 8.6.6.28 Downlink DPCH info common for all radio links.

10.3.7.10 HCS Cell re-selection information

To align with ASN.1 Temporary_offset2 default value removed from semantics. A note has also been added to Condition FDD-Quality-Measure to clarify how this conditionality is achieved.

10.3.7.11 HCS neighbouring cell information

"-" removed from "-0" in QHCS range.

10.3.7.12 HCS Serving cell information

Tabular aligned with ASN.1. Also in ASN.1 TCRmax changed from OPTIONAL to DEFAULT notUsed.

ASN.1 describing these tables has been modified with no impact to encoding (tables not included in CR):

10.3.6.21 Downlink DPCH info for each RL Post

Name of ASN.1 definition for TDD-> Downlink DPCH timeslots and codes

changed to be consistent with Tabular.

10.3.6.42 PDSCH Capacity Allocation info

Comment added to ASN.1 to state PDSCH Power Control Info is conditional in New Configuration choice.

10.3.6.70 SCCPCH Information for FACH,

10.3.6.71 Secondary CCPCH info

10.3.10 Multiplicity values and type constraint values

In ASN.1 name of constant maxFACH changed to maxFACHPCH for consistency with Tabular definitions.

Changes to revision 2 (original distributed version was rev 1):

(- Specification number added to page header)

(- In ASN.1 section headline for 11.2 had been missed, the same edits were shown in the first version, but as part of 11.3)

10.3.4.2 PDCP info

The type of IE "Max PDCP Window Size" was specified as "Integer(255,65535)". ASN.1 implements it correctly as enumerated, tabular aligned to ASN.1 by replacing integer with "Enumerated(sn255,sn65535)".

10.3.6.8a Cell and Channel Identity info

Midamble Shift value aligned with ASN.1 definition. Also, ASN.1 definition for Burst Type aligned with Tabular (this also affects 10.3.7.2)

Changes to revision 3

Change to table 10.3.4.18 is withdrawn as this is in conflict with another CR.

Consequences if not approved: ☹ Inconsistencies between tabular and ASN.1 notation are not corrected.

Clauses affected: ☹ 8.6.6.28, 10.2.6, 10.2.8, 10.2.29, 10.2.32, 10.2.35, 10.2.48.8.21, 10.3.2.3, 10.3.2.4, 10.3.4.2, 10.3.4.18, 10.3.4.21, 10.3.6.8a, 10.3.6.13, 10.3.6.18, 10.3.7.10, 10.3.7.11, 10.3.7.12, 10.3.8.5, 11.2, 11.3, 11.4

Other specs affected: ☹ Other core specifications ☹ Test specifications O&M Specifications

Other comments: ☹

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

8.6.6.28 Downlink DPCH info common for all radio links

If the IE "Downlink DPCH info common for all radio links" is included the UE shall:

- perform actions for the IE "Timing indicator" and the IE "CFN-targetSFN frame offset" as specified in subclause 8.5.15.2;
- if the IE "Downlink DPCH power control information" is included:
 - perform actions for the IE "DPC Mode" according to [29];
- if the IE choice "mode" is set to 'FDD':
 - ~~— if the IE "Downlink DPCH power control information" is included:~~
 - ~~— perform actions for the IE "DPC Mode" according to [29];~~
 - if the IE "Downlink rate matching restriction information" is included:
 - store the transport channels that have restrictions on the allowed transport formats;
 - perform actions for the IE "spreading factor";
 - perform actions for the IE "Fixed or Flexible position";
 - perform actions for the IE "TFCI existence";
 - if the IE choice "SF" is set to 256:
 - store the value of the IE "Number of bits for pilot bits";
 - if the IE choice "SF" set to 128:
 - store the value of the IE "Number of bits for pilot bits";
- if the IE choice "mode" is set to 'TDD':
 - perform actions for the IE "Common timeslot info".

If the IE "Downlink DPCH info common for all radio links" is included in a message used to perform a Timing re-initialised hard handover, and ciphering is active for any radio bearer using RLC-TM, the UE shall, after having activated the dedicated physical channels indicated by that IE:

- increment HFN for RLC-TM by '1'.

10.2.6 CELL CHANGE ORDER FROM UTRAN FAILURE

This message is sent on the RRC connection used before the Cell change order from UTRAN was executed. The message indicates that the UE has failed to seize the new channel in the other system.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Other information elements				
Inter-RAT change failure	<u>MDMP</u>		Inter-RAT change failure 10.3.8.5	

10.2.8 CELL UPDATE CONFIRM

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

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements				
U-RNTI	CV-CCCH		U-RNTI 10.3.3.47	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
RRC State Indicator	MP		RRC State Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MD		UTRAN DRX cycle length coefficient 10.3.3.49	Default value is the existing DRX cycle length coefficient
RLC re-establish indicator (RB2 and RB3)	MP		RLC re-establish indicator 10.3.3.35	
RLC re-establish indicator (RB4 and upwards)	MP		RLC re-establish indicator 10.3.3.35	
CN Information Elements				
CN Information info	OP		CN Information info 10.3.1.3	
UTRAN Information Elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements				
RB information to release list	OP	1 to <maxRB>		
>RB information to release	MP		RB information to release 10.3.4.19	
RB information to reconfigure list	OP	1 to <maxRB>		
>RB information to reconfigure	MP		RB information to reconfigure 10.3.4.18	
RB information to be affected list	OP	1 to <maxRB>		
>RB information to be affected	MP		RB information	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			to be affected 10.3.4.17	
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxRBall RABs>		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels				
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxTrCH >		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
CHOICE <i>mode</i>	OPMP			
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH >		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxTrCH >		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >		

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

Condition	Explanation
CCCH	This IE is mandatory when CCCH is used and ciphering is not required. Otherwise it is absent.

10.2.29 RADIO BEARER RECONFIGURATION FAILURE

This message is sent by UE if the configuration given by UTRAN is unacceptable or if the UE failed to establish the physical channel(s).

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Failure cause	MP		Failure cause and error information 10.3.3.14	
RB information elements				
Radio bearers for which reconfiguration would have succeeded List	OP	1_ to-≤ ≤maxRB>		
>Radio bearer for which reconfiguration would have succeeded	MP		RB identity, 10.3.4.16	

10.2.32 RADIO BEARER RELEASE FAILURE

This message is sent by UE if the configuration given by UTRAN is unacceptable or if radio bearer can not be released.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Failure cause	MP		Failure cause and error information 10.3.3.14	
RB information elements				
Radio bearers for which reconfiguration would have succeeded	OP	1_ to_<maxRB>		
>Radio bearer for which reconfiguration would have been succeeded	MP		RB identity, 10.3.4.16	

10.2.35 RADIO BEARER SETUP FAILURE

This message is sent by UE, if it does not support the configuration given by UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Failure cause	MP		Failure cause and error information 10.3.3.14	
RB information elements				
Radio bearers for which reconfiguration would have succeeded	OP	1_ to_<maxRB>		
>Radio bearer for which reconfiguration would have succeeded	MP		RB identity, 10.3.4.16	

10.2.48.8.21 System Information Block type 18

The System Information Block type 18 contains PLMN identities of neighbouring cells to be considered in idle mode as well as in connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Idle mode PLMN identities	MPOP		PLMN identities of neighbour cells 10.3.7.53a	
Connected mode PLMN identities	OP		PLMN identities of neighbour cells 10.3.7.53a	

10.3.2.3 Cell selection and re-selection info for SIB3/4

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Mapping Info	MD		Mapping info 10.3.2.5	Contains mapping function for quality measurements. Default is an implicit mapping: $Q_{map} = Q_{meas,LEV}$, [4].
Cell_selection_and_reselection_quality_measure	MP		Enumerated (CPICH Ec/N0, CPICH RSCP)	Choice of measurement (CPICH Ec/N0 or CPICH RSCP) to use as quality measure Q for FDD cells.
CHOICE <i>mode</i>	MP			
>FDD				
>>S _{intrasearch}	OP		Integer (-32..20 by step of 2)	[4] [dB]
>>S _{intersearch}	OP		Integer (-32..20 by step of 2)	[4] [dB]
>>S _{searchHCS}	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>RAT List	OP	1 to <maxOther RAT>		
>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	
>>>S _{search,RAT}	MP		Integer (-32..20 by step of 2-105..91 by step of 2)	[4] [dB]
>>>S _{HCS,RAT}	OP		Integer (-32..20 by step of 2-105..91 by step of 2)	[4] [dB]
>>>S _{limit,SsearchRAT}	OP		Integer (-32..20 by step of 2)	[4] [dB]
>>Q _{qualmin}	MP		Integer (-24..0)	Ec/N0, [dB]
>>Q _{rxlevmin}	MP		Integer (-115..-25 by step of 2)	RSCP, [dBm]
>TDD				
>>S _{intrasearch}	OP		Integer (-105..91 by step of 2)	[4] [dB]

>>S _{intersearch}	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>S _{searchHCS}	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>>RAT List	OP	1 to <maxOther RAT>		
>>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	
>>>>S _{search,RAT}	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>>>S _{HCS,RAT}	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>>>S _{limit,SearchRAT}	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>Q _{rxlevmin}	MP		Integer (-115..-25 by step of 2)	RSCP, [dBm]
Q _{hyst1s}	MP		Integer (0..40 by step of 2)	[4]
Q _{hyst2s}	CV-FDD-Quality-Measure		Integer (0..40 by step of 2)	Default value is Q _{hyst1s} [4]
T _{reselections}	MP		Integer (0..31)	[s]
HCS Serving cell Information	OP		HCS Serving cell information 10.3.7.12	
Maximum allowed UL TX power	MP		Maximum allowed UL TX power 10.3.6.39	[dBm] UE_TXPWR_MAX_RACH in [4].
CHOICE <i>mode</i>	MP			
>FDD				
>>Q _{qualmin}	MP		Integer (-20..0)	E _c /N ₀ , [dB]
>>Q _{rxlevmin}	MP		Integer (-115..-25 by step of 2)	RSCP, [dBm]
>TDD				
>>Q _{rxlevmin}	MP		Integer (-115..-25 by step of 2)	RSCP, [dBm]

Condition	Explanation
CV-FDD-Quality-Measure	Presence is not allowed if the IE "Cell_selection_and_reselection_quality_measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value.

10.3.2.4 Cell selection and re-selection info for SIB11/12

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Qoffset1 _{s,n}	MD		Real(-50.0..50.0 by step of 1)	Default value is 0.
Qoffset2 _{s,n}	CV-FDD-Quality-Measure		Real(-50.0..50.0 by step of 1)	Default value is 0.
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	[dBm] UE_TXPWR_MAX_RACH in [4]. Default is the Maximum allowed UL TX power for the serving cell
HCS neighbouring cell information	OP		HCS Neighbouring cell information 10.3.7.11	
CHOICE mode	MP			
>FDD				
>>Qqualmin	MD		Integer (-2024..0)	Ec/N0, [dB] Default value is Qqualmin for the serving cell
>>Qrxlevmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell
>TDD				
>>Qrxlevmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell
>GSM				
>>Qrxlevmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell

Condition	Explanation
FDD-Quality-Measure	Presence is not allowed if the IE "Cell_selection_and_reselection_quality_measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value.

10.3.4.2 PDCP info

The purpose of the PDCP info IE is to indicate which algorithms shall be established and to configure the parameters of each of the algorithms.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Support for lossless SRNS relocation	CV- <i>LosslessCriteria</i>		Boolean	TRUE means support
Max PDCP SN window size	CV <i>Lossless</i>		Integer Enumerated (sn255, sn65535)	Maximum PDCP sequence number window size. The handling of sequence number when the Max PDCP SN window size is 255 is specified in [23]. Default value is 65535.
PDCP PDU header	MD		Enumerated (present, absent)	Whether a PDCP PDU header is existent or not. Default value is "present"
Header compression information	OP	1 to <maxPDC PAlgoType >		
>CHOICE <i>algorithm type</i> >>RFC2507	MP			Header compression according to IETF standard RFC2507
>>>F_MAX_PERIOD	MD		Integer (1..65535)	Largest number of compressed non-TCP headers that may be sent without sending a full header. Default value is 256.
>>>F_MAX_TIME	MD		Integer (1..255)	Compressed headers may not be sent more than F_MAX_TIME seconds after sending last full header. Default value is 5.
>>>MAX_HEADER	MD		Integer (60..65535)	The largest header size in octets that may be compressed. Default value is 168.
>>>TCP_SPACE	MD		Integer (3..255)	Maximum CID value for TCP connections. Default value is 15.
>>>NON_TCP_SPACE	MD		Integer (3..65535)	Maximum CID value for non-TCP connections. Default value is 15.
>>>EXPECT_REORDERING	MD		Enumerated (reordering not expected, reordering expected)	Whether the algorithm shall reorder PDCP SDUs or not. Default value is "reordering not expected".

Condition	Explanation
<i>LosslessCriteria</i>	This IE is present only if the IE "RLC mode" is "Acknowledged" and the IE "In-sequence delivery " is "True".
<i>Lossless</i>	This IE shall be present if the IE "Support for lossless SRNS relocation" is TRUE, otherwise it shall be absent.

10.3.4.18 RB information to reconfigure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.16	
PDCP info	OP		PDCP info 10.3.4.2	
PDCP SN info	CV PDCP		PDCP SN info 10.3.4.3	PDCP sequence number info from the network. Present only in case of lossless SRNS relocation.
CHOICE <i>RLC info type</i>	OP			
>RLC info			RLC info 10.3.4.23	
>Same as RB			RB identity 10.3.4.16	Identity of RB with exactly the same values for IE "RLC info"
RB mapping info	OP		RB mapping info 10.3.4.21	
RB stop/continue	OP		Enumerated(stop, continue)	

Condition	Explanation
<i>PDCP</i>	This IE is optional only if "PDCP info" is present. Otherwise it is absent.

10.3.4.21 RB mapping info

A multiplexing option for each possible transport channel this RB can be multiplexed on.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Information for each multiplexing option	MP	1 to <maxRBMuxOptions>		
>RLC logical channel mapping indicator	CV-UL-RLCLogicalChannels		Boolean	TRUE indicates that the first logical channel shall be used for data PDUs and the second logical channel shall be used for control PDUs. FALSE indicates that control and data PDUs can be sent on either of the two logical channels. This parameter is not used in this release and shall be set to TRUE.
>Number of uplink RLC logical channels	CV-UL-RLC info	1 to MaxLoCHperRLC		1 or 2 logical channels per RLC entity or radio bearer RLC [16]
>>Uplink transport channel type	MP		Enumerated(DCH,RACH, CPCH,USCH)	CPCH is FDD only USCH is TDD only
>>ULTransport channel identity	CV-UL-DCH/USCH		Transport channel identity 10.3.5.18	This is the ID of a DCH or USCH (TDD only) that this RB could be mapped onto.
>>Logical channel identity	OP		Integer(1..15)	This parameter is used to distinguish logical channels multiplexed by MAC on a transport channel.
>>CHOICE RLC size list	MP			The RLC sizes that are allowed for this logical channel For radio bearers mapped to RACH, "Explicit list" is the only valid choice. The UE shall regard all other choices as undefined IE values and handle these as specified in clause 9.
>>>All			Null	All RLC sizes listed in the <i>Transport Format Set</i> . 10.3.5.23
>>>Configured			Null	The RLC sizes configured for this logical channel in the <i>Transport Format Set</i> . 10.3.5.23 if present in this message or in the previously stored configuration otherwise
>>>Explicit List		1 to <maxTF>		Lists the RLC sizes that are valid for the logical channel.
>>>>RLC size index	MP		Integer(1..maxTF)	The integer number is a reference to the <i>RLC size</i> which arrived at that position in the <i>Transport Format Set</i> 10.3.5.23
>>MAC logical channel priority	MP		Integer(1..8)	This is priority between a user's different RBs (or logical channels). [15]
>Downlink RLC logical channel info	CV-DL-RLC info			
>>Number of downlink RLC logical channels	MD	1 to MaxLoCHperRLC		1 or 2 logical channels per RLC entity or radio bearer RLC [16] Default value is that parameter values for DL are exactly the same as for corresponding UL

				logical channel. In case two multiplexing options are specified for the UL, the first options shall be used as default for the DL. As regards to the IE "Channel type", rule is specified in 8.6.4.8.
>>>Downlink transport channel type	MP		Enumerated(DCH,FACH/PCH,DSCH,DCH+DSCH)	
>>>DL DCH Transport channel identity	CV-DL-DCH		Transport channel identity 10.3.5.18	
>>>DL DSCH Transport channel identity	CV-DL-DSCH		Transport channel identity 10.3.5.18	
>>>Logical channel identity	OP		Integer(1..15)	16 is reserved

Condition	Explanation
<i>UL-RLC info</i>	If "CHOICE Uplink RLC mode" in IE "RLC info" is present this IE is MP. Otherwise the IE is not needed.
<i>DL-RLC info</i>	If "CHOICE Downlink RLC mode" in IE "RLC info" is present this IE is MP. Otherwise the IE is not needed.
<i>UL-RLCLogicalChannels</i>	If "Number of uplink RLC logical channels" in IE "RB mapping info" is 2, then this is present. Otherwise this IE is not needed.
<i>UL-DCH/USCH</i>	If IE "Uplink transport channel type" is equal to "DCH" or "USCH" (TDD only) this IE is MP. Otherwise the IE is not needed.
<i>DL-DCH</i>	If IE "Downlink transport channel type" is equal to "DCH" or "DCH+DSCH" this IE is MP. Otherwise the IE is not needed.
<i>DL-DSCH</i>	If IE "Downlink transport channel type" is equal to "DSCH" or "DCH+DSCH" this IE is MP. Otherwise the IE is not needed.

10.3.6.8a Cell and Channel Identity info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Burst type	MP		Enumerated (Type1, Type2)	Identifies the channel in combination with the Offset
Midamble Shift	MP		Integer (04...1516)	
Basic Midamble Number	MP		Integer (0...127)	Identifies the cell

10.3.6.13 CPCH set info

NOTE: Only for FDD.

This IE may be broadcast in the System Information message or assigned by SRNC. It is pseudo-static in a cell.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CPCH set ID	MP		CPCH set ID 10.3.5.3	Indicates the ID number for a particular CPCH set allocated to a cell.
TFS	MP		Transport Format Set 10.3.5.23	Transport Format Set Information allocated to this CPCH set.
TFCS	MP		Transport Format Combination Set 10.3.5.20	Transport Format Set Information allocated to this CPCH set
AP preamble scrambling code	MP		Integer (0..79)	Preamble scrambling code for AP in UL
AP-AICH channelisation code	MP		Integer(0..255)	Channelisation code for AP-AICH in DL
CD preamble scrambling code	MP		Integer (0..79)	Preamble scrambling code for CD in UL
CD/CA-ICH channelisation code	MP		Integer (0..255)	Channelisation code for CD/CA-ICH in DL
Available CD access slot subchannel	CV- CDSigPresent	1 to <maxPCPCH-CDsubCh>		Lists the set of subchannels to be used for CD access preambles. Note: if not present, all subchannels are to be used without access delays.
>CD access slot subchannel	MP		Integer (0..11)	
Available CD signatures	OP	1 to <maxPCPCH-CDsig>		Signatures for CD preamble in UL. Note: if not present, all signatures are available for use.
>CD signatures	MP		Integer (0..15)	
DeltaPp-m	MP		Integer (-10..10)	In dB. Power offset between the transmitted CD preamble and UL DPCCH of the power control preamble or message part (added to the preamble power to calculate the power of the UL DPCCH)
UL DPCCH Slot Format	MP		Enumerated (0,1,2)	Slot format for UL DPCCH in power control preamble and in message part
N_start_message	MP		Integer (1..8)	Number of Frames for start of message indication
N_EOT	MP		Integer(0..7)	Actual number of appended EOT indicators is $T_EOT = N_TTI * \text{ceil}(N_EOT/N_TTI)$, where N_TTI is the number of frames per TTI and "ceil" refers to rounding up to nearest integer.
Channel Assignment Active	OP		Boolean	When present, indicates that Node B send a CA message and VCAM mapping rule (14.11) shall be used.
CPCH status indication mode	MP		CPCH status indication mode 10.3.6.14	
PCPCH Channel Info.	MP	1 to <maxPCPCHs>		
>UL scrambling code	MP		Integer (0..79)	For PCPCH message part

>DL channelisation code	MP		Integer (0...511)	For DL DPCCH for PCPCH message part
>DL scrambling code	MD		Secondary Scrambling Code 10.3.6.74	Default is the same scrambling code as for the primary CPICH.
>PCP length	MP		Enumerated (0, 8)	Indicates length of power control preamble, 0slots (no preamble used) or 8 slots
>UCSM Info	CV-NCAA			
>>Minimum Spreading Factor	MP		Integer (4,8,16,32,64,128,256)	The UE may use this PCPCH at any Spreading Factor equal to or greater than the indicated minimum Spreading Factor. The Spreading Factor for initial access is the minimum Spreading Factor.
>>NF_max	MP		Integer (1...64)	Maximum number of frames for PCPCH message part
>>>Channel request parameters for UCSM	MP	1 to <maxSig>		Required in UE channel selection mode.
>>>>Available AP signature	MP	1 to <maxPCP CH-APsig>		AP preamble signature codes for selection of this PCPCH channel.
>>>>>AP signature	MP		Integer (0..15)	
>>>>>Available AP access slot subchannel	OP	1 to <maxPCP CH-APsubCh>		Lists the set of subchannels to be used for AP access preambles in combination with the above AP signature(s). Note: if not present, all subchannels are to be used without access delays.
>>>>>>AP access slot subchannel	MP		Integer (0..11)	
VCAM info	CV-CAA			
>Available Minimum Spreading Factor	MP	1 to <maxPCP CH-SF>		
>>Minimum Spreading Factor	MP		Enumerated (4,8,16,32,64,128,256)	
>>NF_max	MP		Integer (1..64)	Maximum number of frames for PCPCH message part
>>>Maximum available number of PCPCH	MP		Integer (1..64)	Maximum available number of PCPCH for the indicated Spreading Factor.
>>>>Available AP signatures	MP	1 to <maxPCP CH-APsig>		Signatures for AP preamble in UL.
>>>>>AP signature			Integer (0..15)	
>>>>>>Available AP sub-channel	OP	1 to <maxPCP CH-APsubCh>		AP sub-channels for the given AP signature in UL. Note: if not present, all subchannels are to be used without access delays.
>>>>>>>AP sub-channel	MP		Integer (0..11)	

Condition	Explanation
<i>CDSigPresent</i>	This IE may be included if IE "Available CD signatures" is present.
<i>NCAA</i>	This IE is included if IE "Channel Assignment Active" is not present
<i>CAA</i>	This IE is included if IE ""Channel Assignment Active" is present.

10.3.6.18 Downlink DPCH info common for all RL

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timing Indication	MP		Enumerated(Initialise, Maintain)	
CFN-targetSFN frame offset	CV TimInd		Integer(0..255)	In frame
<u>Downlink DPCH power control information</u>	<u>OP</u>		<u>Downlink DPCH power control information 10.3.6.23</u>	
<u>CHOICE mode</u>				
>FDD				
>>Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.23	
>>Power offset $P_{Pilot-DPCH}$	MP		Integer(0..24)	Power offset equals $P_{Pilot} - P_{DPCH}$, range 0..6 dB, in steps of 0.25 dB
>>Downlink rate matching restriction information	OP		Downlink rate matching restriction information 10.3.6.31	If this IE is set to "absent", no Transport CH is restricted in TFI.
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	
>>Fixed or Flexible Position	MP		Enumerated (Fixed, Flexible)	
>>TFCI existence	MP		Boolean	TRUE indicates that TFCI exists
>>CHOICE SF	MP			
>>>SF = 256				
>>>>Number of bits for Pilot bits	MP		Integer (2,4,8)	In bits
>>>>SF = 128				
>>>>Number of bits for Pilot bits	MP		Integer(4,8)	In bits
>>>>Otherwise				(no data). In ASN.1 choice "Otherwise" is not explicitly available as all values available, it is implied by the use of any value other than 128 or 256.
>TDD				
>>Common timeslot info	MD		Common Timeslot Info 10.3.6.10	Default is the current Common timeslot info

CHOICE SF	Condition under which the given SF is chosen
SF=128	"Spreading factor" is set to 128
SF=256	"Spreading factor" is set to 256
Otherwise	"Spreading factor" is set to a value distinct from 128 and 256

Condition	Explanation
<i>TimInd</i>	This IE is OPTIONAL if the IE "Timing Indication" is set to "Initialise". Otherwise it is absent.

10.3.7.10 HCS Cell re-selection information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Penalty_time	MD		Integer(0, 10, 20, 30, 40, 50, 60)	Default value is 0 which means = not used In seconds
Temporary_offsets	<i>CV-Penalty used</i>			
>Temporary_offset1	MP		Integer(10, 20, 30, 40, 50, 60, 70, infinity)	
>Temporary_offset2	<i>CV-FDD Quality-Measure</i>		Integer(10, 20, 30, 40, 50, 60, 70, infinity)	Default value is Temporary_offset1

Condition	Explanation
<i>Penalty used</i>	Not allowed if IE Penalty time equals 'not used' else MP
<i>FDD-Quality-Measure</i>	Presence is not allowed if the IE "Cell_selection_and_reselection_quality_measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value. <u>This conditional presence is implemented in ASN.1 by the use of a specific RSCP and HCN0 variants of 10.3.7.10.</u>

10.3.7.11 HCS neighbouring cell information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
HCS_PRIO	MD		Integer (0..7)	Default value = 0
Q _{HCS}	MD		Integer (-0..99)	Default value = 0
HCS Cell Re-selection Information	OP		HCS Cell Re-selection Information 10.3.7.10	

10.3.7.12 HCS Serving cell information

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
HCS_PRIO	MD		Integer (0..7)	Default value = 0
Q _{HCS}	MD		Integer(0..99)	Default value = 0
T _{CRmax}	MD		IntegerEnum(0 not used, 30, 60, 120, 180, 240)	[s] Default value is 0 which means = not used
N _{CR}	CV-UE speed detector		Integer(1..16)	Default value = 8
T _{CRmaxHyst}	CV-UE speed detector		IntegerEnum(not used, 10, 20, 30, 40, 50, 60, 70..70 by step of 10)	[s] Default value is 0 which means = not used

Condition	Explanation
UE Speed detector	Not allowed if T _{CRmax} equals 'not used' else <u>MPMandatory</u>

10.3.8.5 Inter-RAT change failure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT change failure cause	<u>MDMP</u>		Enumerated(Configuration unacceptable, physical channel failure, protocol error)	Default value is "unspecified". At least 3 spare values, criticality = default, are required
Protocol error information	<i>CV-ProtErr</i>		Protocol error information 10.3.8.12	

Condition	Explanation
<i>ProtErr</i>	If the IE "Inter-RAT handover failure cause" has the value "Protocol error"

11.2 PDU definitions ~~11.3 Information element definitions~~

```

-- *****
--
-- CELL CHANGE ORDER FROM UTRAN
--
-- *****

CellChangeOrderFromUTRAN-r3 ::= CHOICE {
  r3
    SEQUENCE {
      cellChangeOrderFromUTRAN-IEs          CellChangeOrderFromUTRAN-r3-IEs,
      nonCriticalExtensions                  SEQUENCE {} OPTIONAL
    },
    criticalExtensions                      SEQUENCE {}
}

CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier                RRC-TransactionIdentifier,
  -- not used in this release of the specification
  integrityProtectionModeInfoDummy        IntegrityProtectionModeInfo          OPTIONAL,
  activationTime                          ActivationTime                        OPTIONAL,
  rab-InformationList                      RAB-InformationList                  OPTIONAL,
  interRAT-TargetCellDescription          InterRAT-TargetCellDescription
}

-- *****
--
-- CELL CHANGE ORDER FROM UTRAN FAILURE
--
-- *****

CellChangeOrderFromUTRANFailure ::= CHOICE {
  r3
    SEQUENCE {
      r3-IEs                                CellChangeOrderFromUTRANFailure-r3-IEs,
      nonCriticalExtensions                  SEQUENCE {} OPTIONAL
    },
    criticalExtensions                      SEQUENCE {}
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier                RRC-TransactionIdentifier,
  -- not used in this release of the specification
  integrityProtectionModeInfoDummy        IntegrityProtectionModeInfo          OPTIONAL,
  interRAT-ChangeFailureCause            InterRAT-ChangeFailureCause
}

```

11.3 Information element definitions

```
InformationElements DEFINITIONS AUTOMATIC TAGS ::=
```

```
-- *****
--
-- CORE NETWORK INFORMATION ELEMENTS (10.3.1)
--
-- *****
```

```
BEGIN
```

```
IMPORTS
```

```

    hiPDSCHidentities,
    hiPUSCHidentities,
    hiRM,
    maxAC,
    maxAdditionalMeas,
    maxASC,
    maxASCmap,
    maxASCPersist,
    maxCCTrCH,
    maxCellMeas,
    maxCellMeas-1,
    maxCNdomains,
    maxCPCHsets,
    maxDPCH-DLchan,
    maxDPCHcodesPerTS,
    maxDPDCH-UL,
    maxDRACclasses,
    maxFACHPCH,
    maxFreq,
    maxFrequencybands,
    maxInterSysMessages,
    maxLoCHperRLC,
    maxMeasEvent,
    maxMeasIntervals,
    maxMeasParEvent,
    maxNumCDMA2000Freqs,
    maxNumFDDFreqs,
    maxNumGSMFreqRanges,
    maxNumTDDFreqs,
    maxOtherRAT,
    maxPage1,
    maxPCPCH-APsig,
    maxPCPCH-APsubCh,
    maxPCPCH-CDsig,
    maxPCPCH-CDSUBch,
    maxPCPCH-SF,
    maxPCPCHs,
    maxPDCPAlgoType,
    maxPDSCH,
    maxPDSCH-TFCIgroups,
    maxPRACH,
    maxPUSCH,
    maxRABsetup,
    maxRAT,
    maxRB,
    maxRBallRABs,
    maxRBMuxOptions,
    maxRBperRAB,
    maxReportedGSMCells,
    maxSRBsetup,
    maxRL,
    maxRL-1,
    maxSCCPCH,
    maxSat,
    maxSIB,
    maxSIB-FACH,
    maxSig,
    maxSubCh,
    maxSystemCapability,
    maxTF,
    maxTF-CPCH,
    maxTFC,
```

```

maxTFCI-2-Combs,
maxTGPS,
maxTrCH,
maxTS,
maxTS-1,
maxURA
FROM Constant-definitions;

```

```

- - - - -

```

```

BurstType ::= ENUMERATED {
| shortType1, longType2 }

```

```

- - - - -

```

```

DL-DPCH-InfoPerRL-PostTDD ::= SEQUENCE {
| dl-CT-CHDPCH-TimeslotsCodes DownlinkTimeslotsCodes
| }

```

```

- - - - -

```

```

FACH-PCH-InformationList ::= SEQUENCE (SIZE (1..maxFACHPCH)) OF
| FACH-PCH-Information

```

```

- - - - -

```

```

PDSCH-CapacityAllocationInfo ::= SEQUENCE {
| pdsch-PowerControlInfo PDSCH-PowerControlInfo OPTIONAL,
| -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
| -- selected the IE is OPTIONAL otherwise it should not be sent
| pdsch-AllocationPeriodInfo AllocationPeriodInfo,
| tfcs-Identity TFCS-IdentityPlain OPTIONAL,
| configuration CHOICE {
| old-Configuration SEQUENCE {
| pdsch-Identity PDSCH-Identity
| },
| new-Configuration SEQUENCE {
| pdsch-Info PDSCH-Info,
| pdsch-Identity PDSCH-Identity OPTIONAL
| }
| }
| }

```

11.4 Constant definitions

Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

```

hiPDSCHidentities          INTEGER ::= 64
hiPUSCHidentities          INTEGER ::= 64
hiRM                        INTEGER ::= 256
maxAC                       INTEGER ::= 16
maxAdditionalMeas           INTEGER ::= 4
maxASC                      INTEGER ::= 8
maxASCmap                   INTEGER ::= 7
maxASCPersist              INTEGER ::= 6
maxCCTrCH                   INTEGER ::= 8
maxCellMeas                 INTEGER ::= 32
maxCellMeas-1              INTEGER ::= 31
maxCNDomains                INTEGER ::= 4
maxCPCHsets                 INTEGER ::= 16
maxDPCH-DLchan              INTEGER ::= 8
maxDPCHcodesPerTS          INTEGER ::= 16
-- **TODO**
maxDPDCH-UL                 INTEGER ::= 6
maxDRACclasses              INTEGER ::= 8
-- **TODO**
maxFACHPCH                  INTEGER ::= 8
maxFreq                     INTEGER ::= 8
maxFrequencybands           INTEGER ::= 4
maxInterSysMessages         INTEGER ::= 4
maxLoCHperRLC               INTEGER ::= 2
maxMeasEvent                INTEGER ::= 8
maxMeasIntervals            INTEGER ::= 3
maxMeasParEvent             INTEGER ::= 2
maxNumCDMA2000Freqs         INTEGER ::= 8
maxNumGSMFreqRanges         INTEGER ::= 32
maxNumFDDFreqs              INTEGER ::= 8
maxNumTDDFreqs              INTEGER ::= 8
maxNoOfMeas                 INTEGER ::= 16
maxOtherRAT                 INTEGER ::= 15
maxPage1                    INTEGER ::= 8
maxPCPCH-APsig              INTEGER ::= 16
maxPCPCH-APsubCh            INTEGER ::= 12
maxPCPCH-CDSig              INTEGER ::= 16
maxPCPCH-CDSUBch            INTEGER ::= 12
maxPCPCH-SF                  INTEGER ::= 7
maxPCPCHs                   INTEGER ::= 64
maxPDCPAlgoType             INTEGER ::= 8
maxPDSCH                    INTEGER ::= 8
maxPDSCH-TFCIgroups         INTEGER ::= 256
maxPRACH                    INTEGER ::= 16
maxPredefConfig             INTEGER ::= 16
maxPUSCH                     INTEGER ::= 8
maxRABsetup                  INTEGER ::= 16
maxRAT                       INTEGER ::= 16
maxRB                        INTEGER ::= 32
maxRBallRABs                INTEGER ::= 27
maxRBMuxOptions              INTEGER ::= 8
maxRBperRAB                  INTEGER ::= 8
maxReportedGSMCells         INTEGER ::= 6
maxRL                        INTEGER ::= 8
maxRL-1                      INTEGER ::= 7
maxSat                       INTEGER ::= 16
maxSCCPCH                   INTEGER ::= 16
maxSIB                       INTEGER ::= 32
-- **TODO**
maxSIB-FACH                  INTEGER ::= 8
maxSIBperMsg                 INTEGER ::= 16
maxSig                       INTEGER ::= 16
maxSRBsetup                  INTEGER ::= 8
maxSubCh                     INTEGER ::= 12
maxSystemCapability          INTEGER ::= 16
maxTF                        INTEGER ::= 32
maxTF-CPCH                   INTEGER ::= 16
maxTFC                       INTEGER ::= 1024
maxTFCI-2-Combs              INTEGER ::= 512

```

```
maxTGPS          INTEGER ::= 6
maxTrCH          INTEGER ::= 32
maxTrCHpreconf   INTEGER ::= 16
maxTS            INTEGER ::= 14
maxTS-1          INTEGER ::= 13
maxURA          INTEGER ::= 8
```

END

CHANGE REQUEST

⌘ **25.331 CR 879** ⌘ ev **-** ⌘ Current version: **4.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections to ASN.1 and tabular inconsistencies		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 26.5.2001
Category:	⌘ A	Release:	⌘ REL-4
	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)

Reason for change: ⌘ In multiple places the tabular notation and the ASN.1 in TS 25.331 are not aligned in v. 4.0.0. This CR captures a number of corrections, which have no impact on the ASN.1 encoding or procedural aspects and thus should be seen as editorial modifications to align the two notations.

Summary of change: ⌘

10.2.5 CELL CHANGE ORDER FROM UTRAN

10.2.6 CELL CHANGE ORDER FROM UTRAN FAILURE

The ASN.1 definition includes an IE Integrity protection mode info which is not shown in the tabular, the ASN.1 has been aligned.

10.2.6 CELL CHANGE ORDER FROM UTRAN FAILURE

Inter-RAT change failure changed from MD to MP to align with ASN.1

10.3.8.5 Inter-RAT change failure

Inter-RAT change failure cause changed from MD to MP to align with ASN.1. Semantics description of default value removed.

10.2.8 CELL UPDATE CONFIRM

CHOICE mode in UL transport channel information elements changed from OP to MP to align with ASN.1. All IE:s inside the CHOICE are optional.

10.2.29 RADIO BEARER RECONFIGURATION FAILURE

10.2.32 RADIO BEARER RELEASE FAILURE

10.2.35 RADIO BEARER SETUP FAILURE

Editorial correction to range notation.

10.2.48.8.21 System Information Block type 18

Idle mode PLMN identities changed from MP to OP to align with ASN.1

10.3.2.3 Cell selection and re-selection info for SIB3/4

Under Choice mode / FDD the ranges for Ssearch, RAT and SHCS,RAT the ranges have been swapped to align with ASN.1, which had the correct values. Second FDD/TDD choice has been merged with the first as in ASN.1. Indentation and spelling of SlimitshearchRAT has been corrected in the FDD branch.

10.3.2.4 Cell selection and re-selection info for SIB11/12

Under Choice mode / FDD the range of Qqualmin (-20..0) aligned with ASN.1 (-24..0).

10.3.4.2 PDCP info

Default value removed from tabular semantics in "Max PDCP SN window size" as it had a default value which couldn't be implemented in ASN.1. The type was specified as "Integer(255,65535)". ASN.1 implements it correctly as enumerated, tabular aligned to ASN.1 by replacing integer with "Enumerated(sn255,sn65535)".

10.3.4.21 RB mapping info

IE Downlink transport channel type "FACH/PCH" changed to "FACH" to align with ASN.1

10.3.6.8a Cell and Channel Identity info

Midamble Shift value aligned with ASN.1 definition. Also, ASN.1 definition for Burst Type aligned with Tabular (this also affects 10.3.7.2)

10.3.6.13 CPCH set info

Multiplicity of Channel request parameters for UCSM aligned with ASN.1.

10.3.6.18 Downlink DPCH info common for all RL

Missing text for CHOICE and FDD option added. Clarifying text added to semantics column to explain use of CHOICE SF. Downlink DPCH power control information moved to common section. Corresponding change made in 8.6.6.28 Downlink DPCH info common for all radio links.

10.3.7.10 HCS Cell re-selection information

To align with ASN.1 Temporary_offset2 default value removed from semantics. A note has also been added to Condition FDD-Quality-Measure to clarify how this conditionality is achieved.

10.3.7.11 HCS neighbouring cell information

"-" removed from "-0" in QHCS range.

10.3.7.12 HCS Serving cell information

Tabular aligned with ASN.1. Also in ASN.1 TCRmax changed from OPTIONAL to DEFAULT notUsed.

ASN.1 describing these tables has been modified with no impact to encoding (tables not included in CR):

10.3.6.21 Downlink DPCH info for each RL Post

Name of ASN.1 definition for TDD-> Downlink DPCH timeslots and codes changed to be consistent with Tabular.

10.3.6.42 PDSCH Capacity Allocation info

Comment added to ASN.1 to state PDSCH Power Control Info is conditional in New Configuration choice.

10.3.6.70 SCCPCH Information for FACH,

10.3.6.71 Secondary CCPCH info

10.3.10 Multiplicity values and type constraint values

In ASN.1 name of constant maxFACH changed to maxFACHPCH for consistency with Tabular definitions.

Consequences if not approved: ⌘ Inconsistencies between tabular and ASN.1 notation are not corrected.

Clauses affected: ⌘ 8.6.6.28, 10.2.6, 10.2.8, 10.2.29, 10.2.32, 10.2.35, 10.2.48.8.21, 10.3.2.3, 10.3.2.4, 10.3.4.2, 10.3.4.18, 10.3.4.21, 10.3.6.8a, 10.3.6.13, 10.3.6.18, 10.3.7.10, 10.3.7.11, 10.3.7.12, 10.3.8.5, 11.2, 11.3, 11.4

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

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

8.6.6.28 Downlink DPCH info common for all radio links

If the IE "Downlink DPCH info common for all radio links" is included the UE shall:

- perform actions for the IE "Timing indicator" and the IE "CFN-targetSFN frame offset" as specified in subclause 8.5.15.2;
- if the IE "Downlink DPCH power control information" is included:
 - perform actions for the IE "DPC Mode" according to [29];
- if the IE choice "mode" is set to 'FDD':
 - ~~— if the IE "Downlink DPCH power control information" is included:~~
 - ~~— perform actions for the IE "DPC Mode" according to [29];~~
- if the IE "Downlink rate matching restriction information" is included:
 - store the transport channels that have restrictions on the allowed transport formats;
 - perform actions for the IE "spreading factor";
 - perform actions for the IE "Fixed or Flexible position";
 - perform actions for the IE "TFCI existence";
 - if the IE choice "SF" is set to 256:
 - store the value of the IE "Number of bits for pilot bits";
 - if the IE choice "SF" set to 128:
 - store the value of the IE "Number of bits for pilot bits";
- if the IE choice "mode" is set to 'TDD':
 - perform actions for the IE "Common timeslot info".

If the IE "Downlink DPCH info common for all radio links" is included in a message used to perform a Timing re-initialised hard handover, and ciphering is active for any radio bearer using RLC-TM, the UE shall, after having activated the dedicated physical channels indicated by that IE:

- increment HFN for RLC-TM by '1'.

10.2.6 CELL CHANGE ORDER FROM UTRAN FAILURE

This message is sent on the RRC connection used before the Cell change order from UTRAN was executed. The message indicates that the UE has failed to seize the new channel in the other system.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Other information elements				
Inter-RAT change failure	MDMP		Inter-RAT change failure 10.3.8.5	

10.2.8 CELL UPDATE CONFIRM

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

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements				
U-RNTI	CV-CCCH		U-RNTI 10.3.3.47	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
RRC State Indicator	MP		RRC State Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MD		UTRAN DRX cycle length coefficient 10.3.3.49	Default value is the existing DRX cycle length coefficient
RLC re-establish indicator (RB2 and RB3)	MP		RLC re-establish indicator 10.3.3.35	
RLC re-establish indicator (RB4 and upwards)	MP		RLC re-establish indicator 10.3.3.35	
CN Information Elements				
CN Information info	OP		CN Information info 10.3.1.3	
UTRAN Information Elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements				
RB information to release list	OP	1 to <maxRB>		
>RB information to release	MP		RB information to release 10.3.4.19	
RB information to reconfigure list	OP	1 to <maxRB>		
>RB information to reconfigure	MP		RB information to reconfigure 10.3.4.18	
RB information to be affected list	OP	1 to <maxRB>		
>RB information to be affected	MP		RB information	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			to be affected 10.3.4.17	
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxRBall RABs>		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels				
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxTrCH >		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
CHOICE <i>mode</i>	OP MP			
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH >		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxTrCH >		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >		

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

Condition	Explanation
CCCH	This IE is mandatory when CCCH is used and ciphering is not required. Otherwise it is absent.

10.2.29 RADIO BEARER RECONFIGURATION FAILURE

This message is sent by UE if the configuration given by UTRAN is unacceptable or if the UE failed to establish the physical channel(s).

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Failure cause	MP		Failure cause and error information 10.3.3.14	
RB information elements				
Radio bearers for which reconfiguration would have succeeded List	OP	1..to-<maxRB>		
>Radio bearer for which reconfiguration would have succeeded	MP		RB identity, 10.3.4.16	

10.2.32 RADIO BEARER RELEASE FAILURE

This message is sent by UE if the configuration given by UTRAN is unacceptable or if radio bearer can not be released.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Failure cause	MP		Failure cause and error information 10.3.3.14	
RB information elements				
Radio bearers for which reconfiguration would have succeeded	OP	1..to.<maxRB>		
>Radio bearer for which reconfiguration would have been succeeded	MP		RB identity, 10.3.4.16	

10.2.35 RADIO BEARER SETUP FAILURE

This message is sent by UE, if it does not support the configuration given by UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Failure cause	MP		Failure cause and error information 10.3.3.14	
RB information elements				
Radio bearers for which reconfiguration would have succeeded	OP	1..to.<maxRB>		
>Radio bearer for which reconfiguration would have succeeded	MP		RB identity, 10.3.4.16	

10.2.48.8.21 System Information Block type 18

The System Information Block type 18 contains PLMN identities of neighbouring cells to be considered in idle mode as well as in connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Idle mode PLMN identities	<u>MPOP</u>		PLMN identities of neighbour cells 10.3.7.53a	
Connected mode PLMN identities	OP		PLMN identities of neighbour cells 10.3.7.53a	

10.3.2.3 Cell selection and re-selection info for SIB3/4

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Mapping Info	MD		Mapping info 10.3.2.5	Contains mapping function for quality measurements. Default is an implicit mapping: $Q_{map} = Q_{meas,LEV}$, [4].
Cell_selection_and_reselection_quality_measure	MP		Enumerated (CPICH Ec/N0, CPICH RSCP)	Choice of measurement (CPICH Ec/N0 or CPICH RSCP) to use as quality measure Q for FDD cells.
CHOICE <i>mode</i>	MP			
>FDD				
>>S _{intrasearch}	OP		Integer (-32..20 by step of 2)	[4] [dB]
>>S _{intersearch}	OP		Integer (-32..20 by step of 2)	[4] [dB]
>>S _{searchHCS}	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>RAT List	OP	1 to <maxOther RAT>		
>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	
>>>S _{search,RAT}	MP		Integer (-32..20 by step of 2-105..91 by step of 2)	[4] [dB]
>>>S _{HCS,RAT}	OP		Integer (-105..91 by step of 2-32..20 by step of 2)	[4] [dB]
>>>S _{limit,SearchRAT}	OP		Integer (-32..20 by step of 2)	[4] [dB]
>>Q _{qualmin}	MP		Integer (-24..0)	Ec/N0, [dB]
>>Q _{rxlevmin}	MP		Integer (-115..-25 by step of 2)	RSCP, [dBm]
>TDD				
>>S _{intrasearch}	OP		Integer (-105..91 by step of 2)	[4] [dB]

>>S _{intersearch}	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>S _{searchHCS}	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>>RAT List	OP	1 to <maxOther RAT>		
>>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	
>>>>S _{search,RAT}	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>>>S _{HCS,RAT}	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>>>S _{limit,ShearchRAT}	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>Q _{rxlevmin}	MP		Integer (-115..-25 by step of 2)	RSCP, [dBm]
Q _{hyst1s}	MP		Integer (0..40 by step of 2)	[4]
Q _{hyst2s}	CV-FDD-Quality-Measure		Integer (0..40 by step of 2)	Default value is Q _{hyst1s} [4]
T _{reselections}	MP		Integer (0..31)	[s]
HCS Serving cell Information	OP		HCS Serving cell information 10.3.7.12	
Maximum allowed UL TX power	MP		Maximum allowed UL TX power 10.3.6.39	[dBm] UE_TXPWR_MAX_RACH in [4].
<i>CHOICE mode</i>	MP			
>FDD				
>>Q _{qualmin}	MP		Integer (-20..0)	E _c /N ₀ , [dB]
>>Q _{rxlevmin}	MP		Integer (-115..-25 by step of 2)	RSCP, [dBm]
>TDD				
>>Q _{rxlevmin}	MP		Integer (-115..-25 by step of 2)	RSCP, [dBm]

Condition	Explanation
CV-FDD-Quality-Measure	Presence is not allowed if the IE "Cell_selection_and_reselection_quality_measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value.

10.3.2.4 Cell selection and re-selection info for SIB11/12

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Qoffset1 _{s,n}	MD		Real(-50.0..50.0 by step of 1)	Default value is 0.
Qoffset2 _{s,n}	CV-FDD-Quality-Measure		Real(-50.0..50.0 by step of 1)	Default value is 0.
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	[dBm] UE_TXPWR_MAX_RACH in [4]. Default is the Maximum allowed UL TX power for the serving cell
HCS neighbouring cell information	OP		HCS Neighbouring cell information 10.3.7.11	
CHOICE mode	MP			
>FDD				
>>Qqualmin	MD		Integer (-2024..0)	Ec/N0, [dB] Default value is Qqualmin for the serving cell
>>Qrxlevmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell
>TDD				
>>Qrxlevmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell
>GSM				
>>Qrxlevmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell

Condition	Explanation
FDD-Quality-Measure	Presence is not allowed if the IE "Cell_selection_and_reselection_quality_measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value.

10.3.4.2 PDCP info

The purpose of the PDCP info IE is to indicate which algorithms shall be established and to configure the parameters of each of the algorithms.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Support for lossless SRNS relocation	CV- <i>LosslessCriteria</i>		Boolean	TRUE means support	
Max PDCP SN window size	CV <i>Lossless</i>		Integer-Enumerated (sn255, sn65535)	Maximum PDCP sequence number window size. The handling of sequence number when the Max PDCP SN window size is 255 is specified in [23]. Default value is 65535.	
PDCP PDU header	MD		Enumerated (present, absent)	Whether a PDCP PDU header is existent or not. Default value is "present"	
Header compression information	OP	1 to <maxPDCPAlgoType >			
>CHOICE <i>algorithm type</i> >>RFC 2507	MP			Header compression according to IETF standard RFC 2507	
>>>F_MAX_PERIOD	MD		Integer (1..65535)	Largest number of compressed non-TCP headers that may be sent without sending a full header. Default value is 256.	
>>>F_MAX_TIME	MD		Integer (1..255)	Compressed headers may not be sent more than F_MAX_TIME seconds after sending last full header. Default value is 5.	
>>>MAX_HEADER	MD		Integer (60..65535)	The largest header size in octets that may be compressed. Default value is 168.	
>>>TCP_SPACE	MD		Integer (3..255)	Maximum CID value for TCP connections. Default value is 15.	
>>>NON_TCP_SPACE	MD		Integer (3..65535)	Maximum CID value for non-TCP connections. Default value is 15.	
>>>EXPECT_REORDERING	MD		Enumerated (reordering not expected, reordering)	Whether the algorithm shall reorder PDCP SDUs or not. Default value is	

			expected)	"reordering not expected".	
>>RFC 3095				Header compression according to IETF standard RFC 3095	REL-4
>>>Max_CID	MD		Integer (1..16383)	Highest context ID number to be used by the compressor. Default value is 15.	REL-4
>>>Profiles	MP	1 to <maxROHC-Profiles>		Profiles supported by the decompressor.	REL-4
>>>>Profile instance	MP		Integer(1 .. 3)	Supported profile types. At least four spare values.	REL-4
>>>MRRU	MD		Integer (0 .. 65535)	Maximum reconstructed reception unit. Default value is 0 (no segmentation).	REL-4
>>>Packet _Sizes_Allowed	OP	1 to <maxROHC-PacketSizes>		List of packet sizes that are allowed to be produced by RFC 3095.	REL-4
>>>>Packet size	MP		Integer (2 .. 1500)	Packet size as defined in RFC 3095.	REL-4
>>>>Reverse-Decompression_Depth	MD		Integer (0..65535)	Determines whether reverse decompression should be used or not and the maximum number of packets that can be reverse decompressed by the decompressor. Default value is 0 (reverse decompression shall not be used).	REL-4

Condition	Explanation
<i>LosslessCriteria</i>	This IE is present only if the IE "RLC mode" is "Acknowledged" and the IE "In-sequence delivery" is "True".
<i>Lossless</i>	This IE shall be present if the IE "Support for lossless SRNS relocation" is TRUE, otherwise it shall be absent.

10.3.4.21 RB mapping info

A multiplexing option for each possible transport channel this RB can be multiplexed on.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Information for each multiplexing option	MP	1 to <maxRBMuxOptions>		
>RLC logical channel mapping indicator	CV-UL-RLCLogicalChannels		Boolean	TRUE indicates that the first logical channel shall be used for data PDUs and the second logical channel shall be used for control PDUs. FALSE indicates that control and data PDUs can be sent on either of the two logical channels. This parameter is not used in this release and shall be set to TRUE.
>Number of uplink RLC logical channels	CV-UL-RLC info	1 to MaxLoCHperRLC		1 or 2 logical channels per RLC entity or radio bearer RLC [16]
>>Uplink transport channel type	MP		Enumerated(DCH,RACH, CPCH,USCH)	CPCH is FDD only USCH is TDD only
>>ULTransport channel identity	CV-UL-DCH/USCH		Transport channel identity 10.3.5.18	This is the ID of a DCH or USCH (TDD only) that this RB could be mapped onto.
>>Logical channel identity	OP		Integer(1..15)	This parameter is used to distinguish logical channels multiplexed by MAC on a transport channel.
>>CHOICE RLC size list	MP			The RLC sizes that are allowed for this logical channel For radio bearers mapped to RACH, "Explicit list" is the only valid choice. The UE shall regard all other choices as undefined IE values and handle these as specified in clause 9.
>>>All			Null	All RLC sizes listed in the <i>Transport Format Set</i> . 10.3.5.23
>>>Configured			Null	The RLC sizes configured for this logical channel in the <i>Transport Format Set</i> . 10.3.5.23 if present in this message or in the previously stored configuration otherwise
>>>Explicit List		1 to <maxTF>		Lists the RLC sizes that are valid for the logical channel.
>>>>RLC size index	MP		Integer(1..maxTF)	The integer number is a reference to the <i>RLC size</i> which arrived at that position in the <i>Transport Format Set</i> 10.3.5.23
>>MAC logical channel priority	MP		Integer(1..8)	This is priority between a user's different RBs (or logical channels). [15]
>Downlink RLC logical channel info	CV-DL-RLC info			
>>Number of downlink RLC logical channels	MD	1 to MaxLoCHperRLC		1 or 2 logical channels per RLC entity or radio bearer RLC [16] Default value is that parameter values for DL are exactly the same as for corresponding UL

				logical channel. In case two multiplexing options are specified for the UL, the first options shall be used as default for the DL. As regards to the IE "Channel type", rule is specified in 8.6.4.8.
>>>Downlink transport channel type	MP		Enumerated(DCH,FACH/ PCH ,DSCH, DCH+DSCH)	
>>>DL DCH Transport channel identity	CV-DL-DCH		Transport channel identity 10.3.5.18	
>>>DL DSCH Transport channel identity	CV-DL-DSCH		Transport channel identity 10.3.5.18	
>>>Logical channel identity	OP		Integer(1..15)	16 is reserved

Condition	Explanation
<i>UL-RLC info</i>	If "CHOICE Uplink RLC mode" in IE "RLC info" is present this IE is MP. Otherwise the IE is not needed.
<i>DL-RLC info</i>	If "CHOICE Downlink RLC mode" in IE "RLC info" is present this IE is MP. Otherwise the IE is not needed.
<i>UL-RLCLogicalChannels</i>	If "Number of uplink RLC logical channels" in IE "RB mapping info" is 2, then this is present. Otherwise this IE is not needed.
<i>UL-DCH/USCH</i>	If IE "Uplink transport channel type" is equal to "DCH" or "USCH" (TDD only) this IE is MP. Otherwise the IE is not needed.
<i>DL-DCH</i>	If IE "Downlink transport channel type" is equal to "DCH" or "DCH+DSCH" this IE is MP. Otherwise the IE is not needed.
<i>DL-DSCH</i>	If IE "Downlink transport channel type" is equal to "DSCH" or "DCH+DSCH" this IE is MP. Otherwise the IE is not needed.

10.3.6.8a Cell and Channel Identity info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Burst type	MP		Enumerated (Type1, Type2)	Identifies the channel in combination with the Offset
Midamble Shift	MP		Integer (10 ... 16 15)	
Basic Midamble Number	MP		Integer (0...127)	Identifies the cell

10.3.6.13 CPCH set info

NOTE: Only for FDD.

This IE may be broadcast in the System Information message or assigned by SRNC. It is pseudo-static in a cell.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CPCH set ID	MP		CPCH set ID 10.3.5.3	Indicates the ID number for a particular CPCH set allocated to a cell.
TFS	MP		Transport Format Set 10.3.5.23	Transport Format Set Information allocated to this CPCH set.
TFCS	MP		Transport Format Combination Set 10.3.5.20	Transport Format Set Information allocated to this CPCH set
AP preamble scrambling code	MP		Integer (0..79)	Preamble scrambling code for AP in UL
AP-AICH channelisation code	MP		Integer(0..255)	Channelisation code for AP-AICH in DL
CD preamble scrambling code	MP		Integer (0..79)	Preamble scrambling code for CD in UL
CD/CA-ICH channelisation code	MP		Integer (0..255)	Channelisation code for CD/CA-ICH in DL
Available CD access slot subchannel	CV- CDSigPresent	1 to <maxPCP CH-CDsubCh>		Lists the set of subchannels to be used for CD access preambles. Note: if not present, all subchannels are to be used without access delays.
>CD access slot subchannel	MP		Integer (0..11)	
Available CD signatures	OP	1 to <maxPCP CH-CDsig>		Signatures for CD preamble in UL. Note: if not present, all signatures are available for use.
>CD signatures	MP		Integer (0..15)	
DeltaPp-m	MP		Integer (-10..10)	In dB. Power offset between the transmitted CD preamble and UL DPCCH of the power control preamble or message part (added to the preamble power to calculate the power of the UL DPCCH)
UL DPCCH Slot Format	MP		Enumerated (0,1,2)	Slot format for UL DPCCH in power control preamble and in message part
N_start_message	MP		Integer (1..8)	Number of Frames for start of message indication
N_EOT	MP		Integer(0..7)	Actual number of appended EOT indicators is $T_EOT = N_TTI * \text{ceil}(N_EOT/N_TTI)$, where N_TTI is the number of frames per TTI and "ceil" refers to rounding up to nearest integer.
Channel Assignment Active	OP		Boolean	When present, indicates that Node B send a CA message and VCAM mapping rule (14.11) shall be used.
CPCH status indication mode	MP		CPCH status indication mode 10.3.6.14	
PCPCH Channel Info.	MP	1 to <maxPCP CHs>		
>UL scrambling code	MP		Integer (0..79)	For PCPCH message part

>DL channelisation code	MP		Integer (0...511)	For DL DPCCH for PCPCH message part
>DL scrambling code	MD		Secondary Scrambling Code 10.3.6.74	Default is the same scrambling code as for the primary CPICH.
>PCP length	MP		Enumerated (0, 8)	Indicates length of power control preamble, 0slots (no preamble used) or 8 slots
>UCSM Info	CV-NCAA			
>>Minimum Spreading Factor	MP		Integer (4,8,16,32,64,128,256)	The UE may use this PCPCH at any Spreading Factor equal to or greater than the indicated minimum Spreading Factor. The Spreading Factor for initial access is the minimum Spreading Factor.
>>NF_max	MP		Integer (1...64)	Maximum number of frames for PCPCH message part
>>Channel request parameters for UCSM	MP	1 to <maxSig>		Required in UE channel selection mode.
>>>Available AP signature	MP	1 to <maxPCP CH-APsig>		AP preamble signature codes for selection of this PCPCH channel.
>>>>AP signature	MP		Integer (0..15)	
>>>Available AP access slot subchannel	OP	1 to <maxPCP CH-APsubCh>		Lists the set of subchannels to be used for AP access preambles in combination with the above AP signature(s). Note: if not present, all subchannels are to be used without access delays.
>>>>AP access slot subchannel	MP		Integer (0..11)	
VCAM info	CV-CAA			
>Available Minimum Spreading Factor	MP	1 to <maxPCP CH-SF>		
>>Minimum Spreading Factor	MP		Enumerated (4,8,16,32,64,128,256)	
>>NF_max	MP		Integer (1..64)	Maximum number of frames for PCPCH message part
>>Maximum available number of PCPCH	MP		Integer (1..64)	Maximum available number of PCPCH for the indicated Spreading Factor.
>>Available AP signatures	MP	1 to <maxPCP CH-APsig>		Signatures for AP preamble in UL.
>>>AP signature			Integer (0..15)	
>>Available AP sub-channel	OP	1 to <maxPCP CH-APsubCh>		AP sub-channels for the given AP signature in UL. Note: if not present, all subchannels are to be used without access delays.
>>>AP sub-channel	MP		Integer (0..11)	

Condition	Explanation
<i>CDSigPresent</i>	This IE may be included if IE "Available CD signatures" is present.
<i>NCAA</i>	This IE is included if IE "Channel Assignment Active" is not present
<i>CAA</i>	This IE is included if IE ""Channel Assignment Active" is present.

10.3.6.18 Downlink DPCH info common for all RL

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timing Indication	MP		Enumerated(Initialise, Maintain)	
CFN-targetSFN frame offset	CV TimInd		Integer(0..255)	In frame
Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.23	
CHOICE mode				
>FDD				
>>Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.23	
>>Power offset P _{Pilot-DPCH}	MP		Integer(0..24)	Power offset equals P _{Pilot} - P _{DPCH} , range 0..6 dB, in steps of 0.25 dB
>>Downlink rate matching restriction information	OP		Downlink rate matching restriction information 10.3.6.31	If this IE is set to "absent", no Transport CH is restricted in TFI.
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	
>>Fixed or Flexible Position	MP		Enumerated (Fixed, Flexible)	
>>TFCI existence	MP		Boolean	TRUE indicates that TFCI exists
>>CHOICE SF	MP			
>>>SF = 256				
>>>>Number of bits for Pilot bits	MP		Integer (2,4,8)	In bits
>>>>SF = 128				
>>>>Number of bits for Pilot bits	MP		Integer(4,8)	In bits
>>>>Otherwise				(no data). In ASN.1 choice "Otherwise" is not explicitly available as all values available, it is implied by the use of any value other than 128 or 256.
>TDD				
>>Common timeslot info	MD		Common Timeslot Info 10.3.6.10	Default is the current Common timeslot info

CHOICE SF	Condition under which the given SF is chosen
SF=128	"Spreading factor" is set to 128
SF=256	"Spreading factor" is set to 256
Otherwise	"Spreading factor" is set to a value distinct from 128 and 256

Condition	Explanation
<i>TimInd</i>	This IE is OPTIONAL if the IE "Timing Indication" is set to "Initialise". Otherwise it is absent.

10.3.7.10 HCS Cell re-selection information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Penalty_time	MD		Integer(0, 10, 20, 30, 40, 50, 60)	Default value is 0 which means = not used In seconds
Temporary_offsets	CV-Penalty used			
>Temporary_offset1	MP		Integer(10, 20, 30, 40, 50, 60, 70, infinity)	
>Temporary_offset2	CV-FDD-Quality-Measure		Integer(10, 20, 30, 40, 50, 60, 70, infinity)	Default value is- Temporary_offset1

Condition	Explanation
Penalty used	Not allowed if IE Penalty time equals 'not used' else MP
FDD-Quality-Measure	Presence is not allowed if the IE "Cell_selection_and_reselection_quality_measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value. <u>This conditional presence is implemented in ASN.1 by the use of a specific RSCP and HCN0 variants of 10.3.7.10.</u>

10.3.7.11 HCS neighbouring cell information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
HCS_PRIO	MD		Integer (0..7)	Default value = 0
Q _{HCS}	MD		Integer (-0..99)	Default value = 0
HCS Cell Re-selection Information	OP		HCS Cell Re-selection Information 10.3.7.10	

10.3.7.12 HCS Serving cell information

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
HCS_PRIO	MD		Integer (0..7)	Default value = 0
Q _{HCS}	MD		Integer(0..99)	Default value = 0
T _{CRmax}	MD		<u>IntegerEnumerated(0not used, 30, 60, 120, 180, 240)</u>	[s] Default value is 0 which means = not used
N _{CR}	CV-UE speed detector		Integer(1..16)	Default value = 8
T _{CRmaxHyst}	CV-UE speed detector		<u>IntegerEnumerated(0not used, 10, 20, 30, 40, 50, 60, 70..70 by step of 10)</u>	[s] Default value is 0 which means = not used

Condition	Explanation
<i>UE Speed detector</i>	Not allowed if T_{Crmax} equals 'not used' else <u>MPMandatory</u>

10.3.8.5 Inter-RAT change failure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT change failure cause	<u>MDMP</u>		Enumerated(Configuration unacceptable, physical channel failure, protocol error)	Default value is "unspecified". At least 3 spare values, criticality = default, are required
Protocol error information	<i>CV-ProtErr</i>		Protocol error information 10.3.8.12	

Condition	Explanation
<i>ProtErr</i>	If the IE "Inter-RAT handover failure cause" has the value "Protocol error"

11.2 PDU definitions

```

-- *****
--
-- CELL CHANGE ORDER FROM UTRAN
--
-- *****

CellChangeOrderFromUTRAN-r3 ::= CHOICE {
    r3                               SEQUENCE {
        cellChangeOrderFromUTRAN-IEs      CellChangeOrderFromUTRAN-r3-IEs,
        nonCriticalExtensions              SEQUENCE {} OPTIONAL
    },
    criticalExtensions                    SEQUENCE {}
}

CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier             RRC-TransactionIdentifier,
    integrityProtectionModeInfo IntegrityProtectionModeInfo      OPTIONAL,
    activationTime                         ActivationTime              OPTIONAL,
    rab-InformationList                    RAB-InformationList         OPTIONAL,
    interRAT-TargetCellDescription         InterRAT-TargetCellDescription
}

-- *****
--
-- CELL CHANGE ORDER FROM UTRAN FAILURE
--
-- *****

CellChangeOrderFromUTRANFailure ::= CHOICE {
    r3                               SEQUENCE {
        r3-IEs                            CellChangeOrderFromUTRANFailure-r3-IEs,
        nonCriticalExtensions              SEQUENCE {} OPTIONAL
    },
    criticalExtensions                    SEQUENCE {}
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier             RRC-TransactionIdentifier,
    integrityProtectionModeInfo IntegrityProtectionModeInfo      OPTIONAL,
    interRAT-ChangeFailureCause           InterRAT-ChangeFailureCause
}

```

11.3 Information element definitions

```

InformationElements DEFINITIONS AUTOMATIC TAGS ::=
-- *****
--
-- CORE NETWORK INFORMATION ELEMENTS (10.3.1)
-- *****

BEGIN

IMPORTS

    hiPDSCHidentities,
    hiPUSCHidentities,
    hiRM,
    maxAC,
    maxAdditionalMeas,
    maxASC,
    maxASCmap,
    maxASCpersist,
    maxCCTrCH,
    maxCellMeas,
    maxCellMeas-1,
    maxCNdomains,
    maxCPCHsets,
    maxDPCH-DLchan,
    maxDPCHcodesPerTS,
    maxDPDCH-UL,
    maxDRACclasses,
    maxFACHPCH,
    maxFreq,
    maxFrequencybands,
    maxInterSysMessages,
    maxLoCHperRLC,
    maxMeasEvent,
    maxMeasIntervals,
    maxMeasParEvent,
    maxNumCDMA2000Freqs,
    maxNumFDDFreqs,
    maxNumGSMFreqRanges,
    maxNumTDDFreqs,
    maxOtherRAT,
    maxPage1,
    maxPCPCH-APsig,
    maxPCPCH-APsubCh,
    maxPCPCH-CDsig,
    maxPCPCH-CDsubCh,
    maxPCPCH-SF,
    maxPCPCHs,
    maxPDCPAlgoType,
    maxPDSCH,
    maxPDSCH-TFCIgroups,
    maxPRACH,
    maxPRACH-FPACH,
    maxPUSCH,
    maxRABsetup,
    maxRAT,
    maxRB,
    maxRBallRABs,
    maxRBMuxOptions,
    maxRBperRAB,
    maxReportedGSMCells,
    maxSRBsetup,
    maxRL,
    maxRL-1,
    maxROHC-PacketSizes,
    maxROHC-Profile,
    maxSCCPCH,
    maxSat,
    maxSIB,
    maxSIB-FACH,
    maxSig,
    maxSubCh,
    maxSystemCapability,
    maxTF,

```

```

maxTF-CPCH,
maxTFC,
maxTFCI-2-Combs,
maxTGPS,
maxTrCH,
maxTS,
maxTS-1,
maxTS-LCR,
maxTS-LCR-1,
maxURA
FROM Constant-definitions;

```

```

DL-DPCH-InfoPerRL-PostTDD ::= SEQUENCE {
|   dl-ECPCHDPCH-TimeslotsCodes      DownlinkTimeslotsCodes
| }

```

```

FACH-PCH-InformationList ::= SEQUENCE (SIZE (1..maxFACHPCH)) OF
|   FACH-PCH-Information

```

```

PDSCH-CapacityAllocationInfo ::= SEQUENCE {
|   pdsch-PowerControlInfo      PDSCH-PowerControlInfo      OPTIONAL,
|   -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
|   -- selected the IE is OPTIONAL otherwise it should not be sent
|   pdsch-AllocationPeriodInfo AllocationPeriodInfo,
|   tfcs-Identity                TFCS-IdentityPlain      OPTIONAL,
|   configuration                 CHOICE {
|     old-Configuration           SEQUENCE {
|       pdsch-Identity           PDSCH-Identity
|     },
|     new-Configuration          SEQUENCE {
|       pdsch-Info               PDSCH-Info,
|       pdsch-Identity           PDSCH-Identity      OPTIONAL
|     }
|   }
| }

```

```

PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
|   pdsch-PowerControlInfo      PDSCH-PowerControlInfo      OPTIONAL,
|   -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
|   -- selected the IE is OPTIONAL otherwise it should not be sent
|   pdsch-AllocationPeriodInfo AllocationPeriodInfo,
|   tfcs-Identity                TFCS-IdentityPlain      OPTIONAL,
|   configuration                 CHOICE {
|     old-Configuration           SEQUENCE {
|       pdsch-Identity           PDSCH-Identity
|     },
|     new-Configuration          SEQUENCE {
|       pdsch-Info-r4            PDSCH-Info-r4,
|       pdsch-Identity           PDSCH-Identity      OPTIONAL
|     }
|   }
| }

```


11.4 Constant definitions

Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

```

hipDSCHidentities          INTEGER ::= 64
hiPUSCHidentities          INTEGER ::= 64
hiRM                        INTEGER ::= 256
maxAC                       INTEGER ::= 16
maxAdditionalMeas           INTEGER ::= 4
maxASC                      INTEGER ::= 8
maxASCmap                   INTEGER ::= 7
maxASCpersist              INTEGER ::= 6
maxCCTrCH                   INTEGER ::= 8
maxCellMeas                 INTEGER ::= 32
maxCellMeas-1              INTEGER ::= 31
maxCNdomains                INTEGER ::= 4
maxCPCHsets                 INTEGER ::= 16
maxDPCH-DLchan             INTEGER ::= 8
maxDPCHcodesPerTS         INTEGER ::= 16
-- **TODO**
maxDPDCH-UL                 INTEGER ::= 6
maxDRACclasses             INTEGER ::= 8
-- **TODO**
maxFACHPCH                  INTEGER ::= 8
maxFreq                     INTEGER ::= 8
maxFrequencybands          INTEGER ::= 4
maxInterSysMessages        INTEGER ::= 4
maxLoCHperRLC              INTEGER ::= 2
maxMeasEvent                INTEGER ::= 8
maxMeasIntervals           INTEGER ::= 3
maxMeasParEvent            INTEGER ::= 2
maxNumCDMA2000Freqs        INTEGER ::= 8
maxNumGSMFreqRanges        INTEGER ::= 32
maxNumFDDFreqs             INTEGER ::= 8
maxNumTDDFreqs             INTEGER ::= 8
maxNoOfMeas                INTEGER ::= 16
maxOtherRAT                 INTEGER ::= 15
maxPage1                    INTEGER ::= 8
maxPCPCH-APsig             INTEGER ::= 16
maxPCPCH-APsubCh           INTEGER ::= 12
maxPCPCH-CDsig             INTEGER ::= 16
maxPCPCH-CDsubCh           INTEGER ::= 12
maxPCPCH-SF                 INTEGER ::= 7
maxPCPCHs                   INTEGER ::= 64
maxPDCPAlgoType            INTEGER ::= 8
maxPDSCH                    INTEGER ::= 8
maxPDSCH-TFCIgroups        INTEGER ::= 256
maxPRACH                    INTEGER ::= 16
maxPRACH-FPACH             INTEGER ::= 8
maxPredefConfig            INTEGER ::= 16
maxPUSCH                    INTEGER ::= 8
maxRABsetup                 INTEGER ::= 16
maxRAT                      INTEGER ::= 16
maxRB                       INTEGER ::= 32
maxRBallRABs               INTEGER ::= 27
maxRBMuxOptions            INTEGER ::= 8
maxRBperRAB                INTEGER ::= 8
maxReportedGSMCells        INTEGER ::= 6
maxRL                       INTEGER ::= 8
maxRL-1                     INTEGER ::= 7
maxROHC-PacketSizes        INTEGER ::= 16
maxROHC-Profile            INTEGER ::= 8
maxSat                      INTEGER ::= 16
maxSCCPCH                  INTEGER ::= 16
maxSIB                      INTEGER ::= 32
-- **TODO**
maxSIB-FACH                 INTEGER ::= 8
maxSIBperMsg               INTEGER ::= 16
maxSig                      INTEGER ::= 16
maxSRBsetup                 INTEGER ::= 8
maxSubCh                    INTEGER ::= 12
maxSystemCapability         INTEGER ::= 16
maxTF                       INTEGER ::= 32
maxTF-CPCH                  INTEGER ::= 16

```

```
maxTFC                INTEGER ::= 1024
maxTFCI-2-Combs      INTEGER ::= 512
maxTGPS               INTEGER ::= 6
maxTrCH              INTEGER ::= 32
maxTrCHpreconf       INTEGER ::= 16
maxTS                INTEGER ::= 14
maxTS-1              INTEGER ::= 13
maxTS-LCR            INTEGER ::= 6
maxTS-LCR-1          INTEGER ::= 5
maxURA               INTEGER ::= 8

END
```

CHANGE REQUEST

⌘ **25.331 CR 880** ⌘ ev **r1** ⌘ Current version: **3.6.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Editorial corrections on Tabular and ASN.1 inconsistencies		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 23.5.2001
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change: ⌘ In multiple places the tabular notation and the ASN.1 in TS 25.331 are not aligned in v. 3.6.0. This CR captures a number of corrections, which have no impact on the ASN.1 encoding or procedural aspects and thus should be seen as editorial modifications to align the two notations.

Summary of change: ⌘ **The changes in Rev1 are shown in green.**

10.2.42 RRC STATUS
 Added comment to Condition "Message Identified" to clarify that the IE is mandatory.

10.2.48 SYSTEM INFORMATION
 Added description for condition "Channel". MP missing from Need column in Combination 6. Complete list multiplicity changed to use constant.

10.2.48.2 First Segment (short)
 Reference for SIB data variable corrected.

10.2.48.8.18 System Information Block type 15
 Ellipsoid Point with altitude and uncertainty ellipse spelling "10.3.8.4e" instead of "10.3.8.e" in table, spelling corrected.

10.3.1.6 Intra Domain NAS Node Selector
 CHOICE RoutingBasis->IMSI(cause UE initiated event) inconsistent with name used in ASN.1, aligned to Tabular.

10.3.3.12 Expiration Time Factor
 Spelling: "Expiration Time factor" in table, but "Expiration Timer factor" in "11.3.8" ASN1. (10.2.48.8.10, 10.2.48.8.17 ASN.1 uses this IE as well and has been updated.)

10.3.3.15 Initial UE identity

Tabular structure made consistent with ASN.1 and missing descriptions added.

10.3.3.25 Physical channel capability

'>' has been removed for the IE 'FDD uplink physical channel capability'. It is already correct in ASN.1.

10.3.3.45 UE positioning capability

Name of parameter Support for IPDL, spelling corrected in ASN.1 definition

10.3.4.1 Downlink RLC STATUS info

Range of Timer_Status_Prohibit aligned with ASN.1

10.3.4.7 Predefined RB configuration

Name maxRBcount used in list definition not defined, it should be maxRBperRAB as already used in ASN.1. Table aligned with ASN.1.

10.3.4.13 RB activation time info

Radio bearer activation time is OP in the tabular description. This is missing in the ASN.1 description. This use of OP implies the entire IE is optional which would be reflected in the structure where it was used. Tabular has been updated in line with ASN.1.

10.3.5.1 Added or Reconfigured DL TrCH information

Independent has been replaced with explicit for consistency with ASN.1

10.3.5.7 DRAC Static Information

Multiplicity of DRAC Class Identity has been changed to use constant value.

10.3.5.12 TFCI Field 2 Information

Second (empty) table has been deleted

10.3.5.15 TFCS Reconfiguration/Addition Information

Power offset Information has been called gainFactorInformation in ASN.1, the ASN.1 has renamed

10.3.5.16 TFCS Removal Information

Deleted second table as condition is not defined or used.

10.3.5.17 Transparent mode signalling info

Note added in ASN.1 for UL-ControlledTrChList

10.3.6.5 Alpha

Note added to ASN.1 to clarify value mapping.

10.3.6.17 Downlink channelisation codes

Changed "Bitmap" to "Bitstring"

10.3.6.28 Downlink information for each radio link Post

Reference should be 10.3.6.22 instead of 10.3.6.19 in table

10.3.6.30 Downlink PDSCH information

Removed unnecessary indentation.

10.3.6.55 PRACH system information list

In tabular element PRACH Partitioning should refer to 10.3.6.53 (not 10.3.6.46)

10.3.6.56 Predefined PhyCH configuration

Missing Need value added, OP to be consistent with ASN.1

10.3.6.61 Primary CPICH Tx power

Added semantics description

10.3.6.64 PUSCH Capacity Allocation info

Corrected limit.

10.3.6.66 PUSCH system information

In ASN.1 definition PUSCH-SysInfoList-SFN:

1.. maxPUSCH =8 in table, but 1..MaxPDSCH =8 in ASN1

should be maxPUSCH, ASN.1 corrected.

10.3.6.71 Secondary CCPCH info

TDD offset is changed to MP to align with ASN1. Code List multiplicity aligned with ASN.1.

10.3.7.26 Inter-RAT measured results list

10.3.7.28 Inter-RAT measurement event results

Ranges aligned with ASN.1. The range for inter-RAT cell id corrected. The corresponding change in ASN.1 is done in CR 876r1

10.3.7.30 Inter-RAT measurement reporting criteria

Missing ranges added to table.

10.3.7.39: In Clause 3 of tabular "3j" has been replaced by "3i". *Backwards compatible change due to correction of tabular.*

10.3.7.45: Wrong references to TDD specs have been removed from FDD branches, also the CPICH Ec/No and CPICH RSCP is copied to both occurrences of the two IE:s. In tabular the CPICH Ec/No and CPICH RSCP have now the same ranges as in ASN.1. *Backwards compatible change due to correction of tabular.*

10.3.7.60: The comment line in ASN1 "—Actual value = IE value * 512" was not making sense and it is has been removed.

10.3.7.61: Max. Numbers of reported cells were shown as integers (1..6) in tabular, but enumerated (e1,..e6) in ASN.1. Therefore, the tabular has been corrected according to ASN.1. In addition there was a spelling mistake table that was reading as "Report cells w within monitored set on non-used frequency". The letter w has been deleted, so now it reads: "Report cells within monitored set on non-used frequency". *Backwards compatible change due to correction of tabular.*

10.3.7.63: In ASN.1 the comment line "-- Actual value for type2 = IE value * 0.0625 – 1280" was not correct anymore so it was deleted.

10.3.7.72: In the tabular the Uplink transport channel type was shown as MP, but UL-TrCH-Identity is OPTIONAL in ASN.1. Therefore the former has been updated according to the latter. *Backwards compatible change due to correction of tabular.*

10.3.7.82: Correction of spelling mistake in ASN.1: "ue-RX-TX-TimeDifferece" changed to " ue-RX-TX-TimeDifference".

10.3.7.88: In the description of "Doppler 1st order" in ASN.1 the range given appeared to be different from the one given in the tabular. Therefore the range in the tabular has been updated to: (-0.966..0.483). In addition, the actual value calculation formula has been added to ASN.1. In the Azimuth and Elevation descriptions in ASN.1 the actual value formula "-- Actual value = IE value * 11.25" was missing and therefore it has been added. Doppler (0th order term) was declared in Tabular as Real(-5.120..5.1175 by step 2.5). It has been corrected to what it should be (Real(-5120..5117.5 by step 2.5) which is also the way it is implimented in ASN.1. In addition a comment has been added to ASN.1 regarding the calculation of the actual value "-- Actual value = IE value * 2.5". *Backwards compatible change due to correction of tabular.*

10.3.7.89: IE "DataID" appeared as bitstring(2) in tabular and Integer(0..3) in ASN.1. The former has been replaced with the latter.

10.3.7.91: The ASN.1 description of IE "PRC2 was missing a comment regarding the calculation of the actual value which is now added. In addition, the range given in tabular and ASN.1 were not identical and therefore the former had to change to: (-655.04..655.04 step of 0.32). The IE "RRC" ASN.1 description was missing the comment about the actual value description "-- Actual value = IE value * 0.032" which has been added. Finally, a comment about the actual value has been added to ASN.1 discription of the IE "DeltaRRC": "-- Actual value = IE value * 0.032". *Backwards compatible change due to correction of tabular and additional.*

10.3.7.93: The IE "Measured results" appeared in tabular as "UE-Positioning-GPS-Measurement". The title found to be misleading and therefore in ASN.1 the name changed to "-UE-Positioning-GPS-MeasuredResults". Change of name is backwards compatible.

10.3.7.103: "UE-Positioning-OTDOA-NeighbourCellInfo" was OP in tabular, but MP in ASN.1. The tabular value made not sence so it has changed to MP. In addition in the tabular, the IE "UE positioning OTDOA neighbour cell info" has been indented with ">". *Backwards compatible change due to correction of tabular.*

10.3.7.106 & 10.3.7.108: Missing description "-- Actual value = IE value * 0,0625 + 876" of IE "Round Trip Time" is added to in ASN1. In addition (0..32765) was not covering all the range and it has been replaced by (0..32766) in ASN.1. It should be pointed out that this is a backwards comaptible change cause no additional bit is used.

10.3.7.108: In tabular both Cell Position methods shown are OP. However, in ASN.1 Choice Cell Position is OP, with choices either "Ellipsoid Point" or "Ellipsoid Point with Altitude". Therefore, the table has been corrected by adding new rows marking both branches of the CHOICE. The CHOICE changed to OP. "Ellipsoid Point" and "Ellipsoid Point with Altitude" changed to MP within the CHOICE clause.

Backwards Compatibility Analysis: This CR doesn't need to be implemented into products and has therefore no impact on backwards compatibility.

Consequences if not approved: ☒ Inconsistencies between tabular and ASN.1 notation are not corrected.

Clauses affected: ☒ 10.2.42, 10.2.48, 10.2.48.2, 10.2.48.8.18, 10.3.3.15, 10.3.3.25, 10.3.4.1, 10.3.4.7, 10.3.4.13, 10.3.5.1, 10.3.5.7, 10.3.5.12, 10.3.5.16, 10.3.6.17, 10.3.6.28, 10.3.6.30, 10.3.6.55, 10.3.6.56, 10.3.6.61, 10.3.6.64, 10.3.6.71, 10.3.7.26, 10.3.7.28, 10.3.7.30, 10.3.7.39, 10.3.7.45, 10.3.7.59, 10.3.7.61, 10.3.7.72, 10.3.7.88, 10.3.7.89, 10.3.7.91, 10.3.7.103, 10.3.7.108, 11

Other specs affected: ☒ Other core specifications ☒ Test specifications
 O&M Specifications

Other comments: ☒

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

10.2 Radio Resource Control messages

10.2.42 RRC STATUS

This message is sent to indicate a protocol error.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
Integrity check info	CH		Integrity check info 10.3.3.16	Integrity check info is included if integrity protection is applied
Identification of received message	CV- <i>Message identified</i>			
>Received message type	MP		Message Type	
>RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Other information elements				
Protocol error information	MP		Protocol error information 10.3.8.12	

Condition	Explanation
<i>Message identified</i>	This IE is mandatory ! if the IE "Protocol error cause" in the IE "Protocol error information" has any other value than "ASN.1 violation or encoding error" or "Message type non-existent or not implemented"

10.2.48 SYSTEM INFORMATION

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message type	OP		Message type	The message type is mandatory on the FACH, and absent on the BCH
SFNprime	CV _e Channel		Integer(0..4094 by step of 2)	SFN=SFNprime (for first 10ms frame of 20ms TTI), SFN=SFNprime+1 (for last 10ms frame of 20ms TTI)
CHOICE Segment combination	MP			
>Combination 1				(no data)
>Combination 2				
>>First Segment	MP		First Segment, 10.2.48.1	
>Combination 3				
>>Subsequent Segment	MP		Subsequent Segment, 10.2.48.3	
>Combination 4				
>>Last segment	MP		Last segment (short), 10.2.48.5	
>Combination 5				
>>Last segment	MP		Last Segment (short) 10.2.48.5	
>>First Segment	MP		First Segment (short), 10.2.48.2	
>Combination 6				
>>Last Segment	MP		Last Segment (short), 10.2.48.5	
>>Complete list	<u>MP</u>	1 to maxSIBperMsg		Note 1
>>>Complete	<u>MP</u>		Complete SIB (short), 10.2.48.7	
>Combination 7				
>>Last Segment	MP		Last Segment (short), 10.2.48.5	
>>Complete list	MP	1..46maxSIBperMsg		Note 1
>>>Complete	MP		Complete SIB (short), 10.2.48.7	
>>First Segment	MP		First Segment (short), 10.2.48.2	
>Combination 8				
>>Complete list	MP	1 to maxSIBperMsg		Note 1
>>>Complete	MP		Complete	

			SIB (short),10.2.48.7	
>Combination 9				
>>Complete list	MP	1..MaxSIB perMsg		Note 1
>>>Complete	MP		Complete SIB (short),10.2.48.7	
>>First Segment	MP		First Segment (short), 10.2.48.2	
>Combination 10				
>>>Complete SIB of size 215 to 226	MP		Complete SIB,10.2.48.6	
>Combination 11				
>>Last segment of size 215 to 222	MP		Last segment,10.2.48.4	

<u>Condition</u>	<u>Explanation</u>
<u>Channel</u>	<u>This IE is mandatory is the channel is BCH, otherwise it is absent.</u>

If the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.1. Padding is needed e.g. if the remaining space is insufficient to start a new First Segment (which requires several bits for SIB type, SEG_COUNT and SIB data).

NOTE 1: If Combination 6 - 9 contains a Master information block Master information shall be located as the first IE in the list.

10.2.48.2 First Segment (short)

This segment type is used to transfer the first segment of a segmented system information block. The IE is used when the first segment is concatenated after other segments in a transport block (Combination 5, 7 and 9).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
SIB type	MP		SIB Type, 10.3.8.21	
SEG_COUNT	MP		SEG COUNT, 10.3.8.17	
SIB data variable	MP		SIB data variable, 10.3.8.1620	

10.2.48.8.18 System Information Block type 15

The system information block type 15 contains information useful for UE-based or UE-assisted positioning methods.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS Data ciphering info	OP		UE positioning Cipher info 10.3.7.86	If this IE is present then the SIB types 15.1, 15.2 & 15.3 are ciphered in accordance with the Data Assistance Ciphering Algorithm specified in [18]
Reference position	MP		Ellipsoid point with altitude and uncertainty ellipse 10.3.8.4e	approximate position where the UE is located
GPS Reference Time	MP		UE positioning GPS reference time 10.3.7.96	
Satellite information	OP	1 to <maxSat>		This IE is present whenever bad (failed/failing) satellites are detected by UTRAN [18].
>BadSatID	MP		Enumerated(0..63)	

10.3.3.15 Initial UE identity

This information element identifies the UE at a request of an RRC connection.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE UE id type	MP			
>IMSI (GSM-MAP)			IMSI (GSM-MAP) 10.3.1.5	
>TMSI and LAI (GSM-MAP)				
>>TMSI (GSM-MAP)	MP		TMSI (GSM-MAP) 10.3.1.17	
>>LAI (GSM-MAP)	MP		Location Area Identification 10.3.1.7	
>P-TMSI and RAI (GSM-MAP)				
>>P-TMSI (GSM-MAP)	MP		P-TMSI (GSM-MAP) 10.3.1.13	
>>RAI (GSM-MAP)	MP		Routing Area Identification 10.3.1.16	
>IMEI			IMEI 10.3.1.4	
>ESN (DS-41)			<u>TIA/EIA/IS-2000-4 BIT STRING (SIZE (32))</u>	<u>TIA/EIA/IS-2000-4</u>
>IMSI (DS-41)			<u>TIA/EIA/IS-2000-4 OCTET STRING (SIZE (5..7))</u>	<u>TIA/EIA/IS-2000-4</u>
>IMSI and ESN (DS-41)			<u>TIA/EIA/IS-2000-4</u>	<u>TIA/EIA/IS-2000-4</u>
<u>>>IMSI (DS-41)</u>	<u>MP</u>		<u>OCTET STRING (SIZE (5..7))</u>	<u>TIA/EIA/IS-2000-4</u>
<u>>>ESN (DS-41)</u>	<u>MP</u>		<u>BIT STRING (SIZE (32))</u>	<u>TIA/EIA/IS-2000-4</u>
>TMSI (DS-41)			<u>TIA/EIA/IS-2000-4 OCTET STRING (SIZE (2..12))</u>	<u>TIA/EIA/IS-2000-4</u>

10.3.3.25 Physical channel capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Downlink physical channel capability information elements				
FDD downlink physical channel capability	CH- <i>fdd_req_su</i> <i>p</i>			
>Max no DPCH/PDSCH codes	MP		Integer (1..8)	Maximum number of DPCH/PDSCH codes to be simultaneously received
>Max no physical channel bits received	MP		Integer (600, 1200, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 48000, 57600, 67200, 76800)	Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)
>Support for SF 512	MP		Boolean	TRUE means supported
>Support of PDSCH	MP		Boolean	TRUE means supported
>Simultaneous reception of SCCPCH and DPCH	MP		Boolean	TRUE means supported
>Simultaneous reception of SCCPCH, DPCH and PDSCH	CV- <i>if_sim_rec</i> <i>_pdsch</i> <i>_sup</i>		Boolean	TRUE means supported
>Max no of S-CCPCH RL	CV- <i>if_sim_rec</i>		Integer(1)	Maximum number of simultaneous S-CCPCH radio links
TDD downlink physical channel capability	CH- <i>tdd_req_su</i> <i>p</i>			
>Maximum number of timeslots per frame	MP		Integer (1..14)	
>Maximum number of physical channels per frame	MP		Integer (1..224)	
>Minimum SF	MP		Integer (1, 16)	
>Support of PDSCH	MP		Boolean	TRUE means supported
>Maximum number of physical channels per timeslot	MP		Integer (1..16)	
Uplink physical channel capability information elements				
>FDD uplink physical channel capability	CH- <i>fdd_req_su</i> <i>p</i>			
>Maximum number of DPDCH bits transmitted per 10 ms	MP		Integer (600, 1200, 2400, 4800, 9600, 19200, 28800, 38400, 48000, 57600)	
>Support of PCPCH	MP		Boolean	TRUE means supported
TDD uplink physical channel capability	CH- <i>tdd_req_su</i> <i>p</i>			
>Maximum Number of timeslots	MP		Integer	

per frame			(1..14)	
>Maximum number of physical channels per timeslot	MP		Integer (1, 2)	
>Minimum SF	MP		Integer (1, 2, 4, 8, 16)	
>Support of PUSCH	MP		Boolean	TRUE means supported

Condition	Explanation
<i>if_sim_rec_pdsch_sup</i>	Presence is mandatory if IE Simultaneous reception of SCCPCH and DPCH = True and IE Support of PDSCH = True. Otherwise this field is not needed in the message.
<i>if_sim_rec</i>	Presence is mandatory if IE capability Simultaneous reception of SCCPCH and DPCH = True. Otherwise this field is not needed in the message.
<i>tdd_req_sup</i>	Presence is mandatory if IE Multi-mode capability has the value "TDD" or "FDD/TDD" and a TDD capability update has been requested in a previous message. Otherwise this field is not needed in the message.
<i>fdd_req_sup</i>	Presence is mandatory if IE Multi-mode capability has the value "FDD" or "FDD/TDD" and a FDD capability update has been requested in a previous message. Otherwise this field is not needed in the message.

10.3.4.1 Downlink RLC STATUS info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timer_Status_Prohibit	OP		Integer(10..50 by step of 10, <u>550..1000 by step of 50</u>)	Minimum time in ms between STATUS reports
Timer_EPC	OP		Integer(50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200, 300, 400, 500, 700, 900)	Time in ms
Missing PDU Indicator	MP		Boolean	Value true indicates that UE should send a STATUS report for each missing PDU that is detected
Timer_STATUS_periodic	OP		Integer(100, 200, 300, 400, 500, 750, 1000, 2000)	Time in milliseconds

10.3.4.7 Predefined RB configuration

This information element concerns a pre- defined configuration of radio bearer parameters

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Signalling radio bearer information				
Signalling RB information to setup List	MP	1 to <maxSRBs etup>		For each signalling radio bearer
>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24	
RB information				Only one RAB supported
RB information to setup list	MP	1 to <maxRBpe rRABcount >		
>RB information to setup	MP		RB information to setup 10.3.4.20	

10.3.4.13 RB activation time info

This IE contains the time, in terms of RLC sequence numbers, when a certain configuration shall be activated, for a number of radio bearers.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Radio bearer activation time	MP	1 to <maxRB>		
>RB identity	MP		RB identity 10.3.4.16	
>RLC sequence number	MP		Integer (0.. 4095)	RLC SN [16] . Used for radio bearers mapped on RLC AM and UM

10.3.5.1 Added or Reconfigured DL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink transport channel type	MP		Enumerated(DCH,DSCH)	
DL Transport channel identity	MP		Transport channel identity 10.3.5.18	
CHOICE DL parameters				
> Independent Explicit				
>>TFS	MP		Transport Format Set 10.3.5.23	
>SameAsUL				
>>Uplink transport channel type	MP		Enumerated(DCH,USCH)	USCH is TDD only
>>UL TrCH identity	MP		Transport channel identity 10.3.5.18	Same TFS applies as specified for indicated UL TrCH
DCH quality target	OP		Quality target 10.3.5.10	
Transparent mode signalling info	CV- <i>MessageType</i>		Transparent mode signalling info 10.3.5.17	This IE is not used in RB RELEASE message nor RB RECONFIGURATION message

Condition	Explanation
<i>MessageType</i>	This IE is absent in Radio Bearer Release message and Radio Bearer Reconfiguration message. Otherwise it is OPTIONAL.

10.3.5.2 Added or Reconfigured UL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Uplink transport channel type	MP		Enumerated(DCH,USCH)	USCH is TDD only
UL Transport channel identity	MP		Transport channel identity 10.3.5.18	
TFS	MP		Transport Format Set 10.3.5.23	

NOTE This information element is included within IE "Predefined RB configuration"

10.3.5.3 CPCH set ID

NOTE: Only for FDD.

This information element indicates that this transport channel may use any of the Physical CPCH channels defined in the CPCH set info, which contains the same CPCH set ID. The CPCH set ID associates the transport channel with a set of PCPCH channels defined in a CPCH set info IE and a set of CPCH persistency values. The CPCH set info IE(s) and the CPCH persistency values IE(s) each include the CPCH set ID and are part of the SYSTEM INFORMATION message

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CPCH set ID	MP		Integer(1...maxCPCHsets)	Identifier for CPCH set info and CPCH persistency value messages

10.3.5.4 Deleted DL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink transport channel type	MP		Enumerated(DCH,DSCH)	
DL Transport channel identity	MP		Transport channel identity 10.3.5.18	

10.3.5.5 Deleted UL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Uplink transport channel type	MP		Enumerated(DCH,USCH)	USCH is TDD only
UL Transport channel identity	MP		Transport channel identity 10.3.5.18	

10.3.5.6 DL Transport channel information common for all transport channels

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SCCPCH TFCS	OP		Transport Format Combination Set 10.3.5.20	This IE should be absent within IE "Predefined RB configuration"
CHOICE <i>mode</i>	OP			
>FDD				
>>CHOICE DL parameters	MP			
>>>Independent				
>>>>DL DCH TFCS	OP		Transport Format Combination Set 10.3.5.20	
>>>SameAsUL				(no data)
>TDD				
>>Individual DL CCTrCH information	OP	1 to >maxCCTrCH>		
>>>DL TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Identifies a special CCTrCH for shared or dedicated channels.
>>>CHOICE DL parameters	MP			
>>>>Independent				
>>>>>DL TFCS	MP		Transport format combination set 10.3.5.20	
>>>>SameAsUL				
>>>>>UL DCH TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Same TFCS applies as specified for the indicated UL DCH TFCS identity except for information applicable for UL only

NOTE This information element is included within IE "Predefined TrCh configuration"

10.3.5.7 DRAC Static Information

NOTE: Only for FDD.

Contains static parameters used by the DRAC procedure. Meaning and use is described in subclause 14.8.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transmission Time Validity	MP		Integer(1..256)	number of frames
Time duration before retry	MP		Integer(1..256)	number of frames
DRAC Class Identity	MP		Integer(1.. 8 max DRACclasses)	Indicates the class of DRAC parameters to use in SIB10 message

10.3.5.12 TFCI Field 2 Information

This IE is used for signalling the mapping between TFCI (field 2) values and the corresponding TFC.

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
CHOICE <i>Signalling method</i>	MP			
>TFCI range				
>>TFCI(field 2) range	MP	1 to <maxPDSCH-TFCIgroups>		
>>>Max TFCI(field2) value	MP		Integer(1..1023)	This is the Maximum value in the range of TFCI(field2) values for which the specified CTFC(field2) applies
>>>TFCS Information for DSCH (TFCI range method)	MP		TFCS Information for DSCH (TFCI range method) 10.3.5.14	
>Explicit				
>>TFCS explicit configuration	MP		TFCS explicit configuration 10.3.5.13	

CHOICE <i>Signalling method</i>	Condition under which <i>Split type</i> is chosen
<i>TFCI range</i>	
<i>Explicit</i>	

HANS: Remove the empty table (above)

10.3.5.16 TFCS Removal Information

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
Removal TFCI information	MP	1 to <maxTFC>		
>TFCI	MP		Integer(0..1023)	In TDD 0 is a reserved value

Range Bound	Explanation
<i>MaxDelTFCCount</i>	Maximum number of Transport Format Combinations to be removed.

HANS: Remove empty table (above)

10.3.6.17 Downlink channelisation codes

NOTE: Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE <i>codes representation</i>	MP			
>Consecutive codes				
>>First channelisation code	MP		Enumerated ((16/1)...(16/16))	The codes from First channelisation code to Last channelisation code shall be used in that order by the physical layer in this timeslot. If a TFCI exists in this timeslot, it is mapped in the First channelisation code.
>>Last channelisation code	MP		Enumerated ((16/1)...(16/16))	If this is the same as First channelisation code, only one code is used by the physical layer.
>Bitmap				
>>Channelisation codes bitmap	MP		<u>Bitmapstring</u> (16)	0000000000000000: Usage of SF1 0000000000000001: Channelisation Code 1, SF16 0000000000000010: Channelisation Code 2, SF16 0000000000000011: Channelisation Code 1 & 2, SF16 1111111111111111: Channelisation Code 1 to 16, SF16 (For SF 16, a 1 in the bitmap means that the corresponding code is used, a 0 means that the corresponding code is not used.)

10.3.6.28 Downlink information for each radio link Post

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Choice mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info post 10.3.6.58	
Downlink DPCH info for each RL	MP		Downlink DPCH info for each RL Post 10.3.6.2210- 3.6.19	

10.3.6.30 Downlink PDSCH information

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>PDSCH with SHO DCH Info	OP		PDSCH with SHO DCH Info 10.3.6.47	
>>PDSCH code mapping	OP		PDSCH code mapping 10.3.6.43	

10.3.6.55 PRACH system information list

Information element	Need	Multi	Type and reference	Semantics description
PRACH system information	MP	1 .. <maxPRA CH>		
>PRACH info	MP		PRACH info (for RACH) 10.3.6.52	
>Transport channel identity	MP		Transport channel identity 10.3.5.18	
>RACH TFS	MD		Transport format set 10.3.5.23	Default value is the value of "RACH TFS" for the previous PRACH in the list NOTE: The first occurrence is then MP) NOTE: For TDD in this release there is a single TF within the RACH TFS.
>RACH TFCS	MD		Transport Format Combination Set 10.3.5.20	Default value is the value of "RACH TFCS" for the previous PRACH in the list. NOTE: The first occurrence is then MP). NOTE: For TDD in this release there is no TFCS required.
>PRACH partitioning	MD		PRACH partitioning 10.3.6.53 10- 3-6-46	Default value is the value of "PRACH partitioning" for the previous PRACH in the list (note : the first occurrence is then MP)
>Persistence scaling factors	OP		Persistence scaling factors 10.3.6.48	This IE shall not be present if only ASC 0 and ASC 1 are defined. If this IE is absent, value is the value of "Persistence scaling factors" for the previous PRACH in the list if value exists
>AC-to-ASC mapping	OP		AC-to-ASC mapping 10.3.6.1	Only present in SIB 5 If this IE is absent, value is the value of "AC-to-ASC mapping" for the previous PRACH in the list if value exists
>CHOICE <i>mode</i>	MP			
>>FDD				
>>>Primary CPICH TX power	MD		Primary CPICH TX power 10.3.6.61	Default value is the value of "Primary CPICH TX power" for the previous PRACH in the list (note : the first occurrence is then MP)
>>>Constant value	MD		Constant value 10.3.6.11	Default value is the value of "Constant value" for the previous PRACH in the list (note : the first occurrence is then MP)
>>>PRACH power offset	MD		PRACH power offset 10.3.6.54	Default value is the value of "PRACH power offset" for the previous PRACH in the list (note : the first occurrence is then MP)
>>>RACH transmission parameters	MD		RACH transmission parameters	Default value is the value of "RACH transmission parameters" for the previous

			10.3.6.67	PRACH in the list (note : the first occurrence is then MP)
>>>AICH info	MD		AICH info 10.3.6.2	Default value is the value of "AICH info" for the previous PRACH in the list (note : the first occurrence is then MP)
>>TDD				(no data)

NOTE: If the setting of the PRACH information results in that a combination of a signature, preamble scrambling code and subchannel corresponds to a RACH with different TFS and/or TFCS, then for that combination only the TFS/TFCS of the PRACH listed first is valid, where PRACHs listed in System Information Block type 5 shall be counted first.

10.3.6.56 Predefined PhyCH configuration

This information element concerns a pre- defined configuration of physical channel parameters.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Uplink radio resources				
Uplink DPCH info	MP		Uplink DPCH info Pre 10.3.6.90	
Downlink radio resources				
Downlink information common for all radio links	<u>OP</u>		Downlink information common for all radio links Pre 10.3.6.26	

10.3.6.61 Primary CPICH Tx power

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH Tx Power	MP		Integer(-10..50)	<u>Power in dBm.</u>

10.3.6.64 PUSCH Capacity Allocation info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE PUSCH allocation	MP			
>PUSCH allocation pending				(no data)
>PUSCH allocation assignment				
>>PUSCH allocation period info	MP		Allocation Period Info 10.3.6.4	
>>PUSCH power control info	OP		PUSCH power control info 10.3.6.65	
>>TFCS ID	MD		Integer(1..8)	Default is 1.
>>CHOICE Configuration	MP			
>>>Old configuration				
>>>>PUSCH Identity	MP		Integer(1..Hi PUSCH Identities)	
>>>New configuration				
>>>>PUSCH info	MP		PUSCH info 10.3.6.63	
>>>>PUSCH Identity	OP		Integer(1.._HiPUSCHIdentitiesmaxPDSCHIdentity)	

10.3.6.71 Secondary CCPCH info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE <i>mode</i>	MP			
>FDD				
>>Primary CPICH usage for channel estimation	MP		Primary CPICH usage for channel estimation 10.3.6.62	
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.73	May only be sent for SCCPCH channels not carrying the PCH.
>>Secondary scrambling code	OP		Secondary scrambling code 10.3.6.74	May only be sent for SCCPCH channels not carrying the PCH.
>>STTD indicator	MD		STTD Indicator 10.3.6.78	Default value is "TRUE"
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256)	
>>Code number	MP		Integer(0..Spreading factor - 1)	
>>Pilot symbol existence	MD		Boolean	TRUE means the existence. Default value is "TRUE"
>>TFCI existence	MD		Boolean	TRUE means the existence. Default value is "TRUE"
>>Fixed or Flexible Position	MD		Enumerated (Fixed, Flexible)	Default value is "Flexible"
>>Timing Offset	MD		Integer(0..38144 by step of 256)	Chip Delay of the Secondary CCPCH relative to the Primary CCPCH. Default value is 0.
>TDD				
>>Offset	MDMP		Integer (0..Repetition Period -1)	SFN modulo Repetition period = offset. Repetition period is the one indicated in the accompanying Common timeslot info IE
>>Common timeslot info	MP		Common timeslot info 10.3.6.10	
>>Individual timeslot info	MP		Individual timeslot info 10.3.6.37	
>>Code List	MP	1..<maxCode sCount> to 16		
>>>Channelisation Code	MP		Enumerated((16/1)..(16/16))	

10.3.7.26 Inter-RAT measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT measurement results	OP	1 to <maxOther RAT>		
>CHOICE system				At least one spare value needed
>>GSM				
>>>Measured GSM cells	MP	1 to <maxReportedGSMCells>		
>>>>GSM carrier RSSI	OP		bit string(6)	RXLEV, [46]
>>>>Pathloss	OP		Integer(46..158)	In dB
>>>>CHOICE BSIC	MP			
>>>>>Verified BSIC				
>>>>>>inter-RAT cell id			Integer(0..<maxCellMeasurements> - 1)	
>>>>>>Non verified BSIC				
>>>>>>>BCCH ARFCN			Integer (0..1023)	[45]
>>>>>>>>Observed time difference to GSM cell	OP		Observed time difference to GSM cell 10.3.7.52	

10.3.7.28 Inter-RAT measurement event results

This IE contains the measurement event results that are reported to UTRAN for inter-RAT measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT event identity	MP		Inter-RAT event identity 10.3.7.24	
Cells to report	MP	1 to <maxCellMeasurements>		
>CHOICE BSIC	MP			
>>Verified BSIC				
>>>inter-RAT cell id			Integer(0..<maxCellMeasurements> - 1)	
>>>Non verified BSIC				
>>>>BCCH ARFCN			Integer (0..1023)	[45]

10.3.7.30 Inter-RAT measurement reporting criteria

The triggering of the event-triggered reporting for an inter-RAT measurement. All events concerning inter-RAT measurements are labelled 3x where x is a,b,c..

Event 3a: The estimated quality of the currently used UTRAN frequency is below a certain threshold **and** the estimated quality of the other system is above a certain threshold.

Event 3b: The estimated quality of other system is below a certain threshold.

Event 3c: The estimated quality of other system is above a certain threshold.

Event 3d: Change of best cell in other system.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters required for each event	OP	1 to <maxMeas Event>		
>Inter-RAT event identity	MP		Inter-RAT event identity 10.3.7.24	
>Threshold own system	CV – clause 0		<u>Integer (-115..0)</u>	
>W	CV – clause 0		<u>Real(0.0..2.0 by step of 0.1)</u>	In event 3a
>Threshold other system	CV – clause 1		<u>Integer (-115..0)</u>	In event 3a, 3b, 3c
>Hysteresis	MP		<u>Integer (0..15)</u>	
>Time to trigger	MP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report.
>Reporting cell status	OP		Reporting cell status 10.3.7.61	

Condition	Explanation
<i>Clause 0</i>	The IE is mandatory if " Inter-RAT event identity" is set to "3a", otherwise the IE is not needed
<i>Clause 1</i>	The IE is mandatory if " Inter-RAT event identity" is set to 3a, 3b or 3c, otherwise the IE is not needed

10.3.7.39 Intra-frequency measurement reporting criteria

The triggering of the event-triggered reporting for an intra-frequency measurement. All events concerning intra-frequency measurements are labelled 1x where x is a, b, c....

Event 1a: A Primary CPICH enters the Reporting Range (FDD only).

Event 1b: A Primary CPICH leaves the Reporting Range (FDD only).

Event 1c: A Non-active Primary CPICH becomes better than an active Primary CPICH (FDD only).

Event 1d: Change of best cell [Note 1] (FDD only).

Event 1e: A Primary CPICH becomes better than an absolute threshold (FDD only).

Event 1f: A Primary CPICH becomes worse than an absolute threshold (FDD only).

Event 1g: Change of best cell in TDD.

Event 1h: Timeslot ISCP below a certain threshold (TDD only).

Event 1i: Timeslot ISCP above a certain threshold (TDD only).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters required for each event	OP	1 to <maxMeas Event>		
>Intra-frequency event identity	MP		Intra-frequency event identity 10.3.7.34	
>Triggering condition 1	CV – clause 0		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells)	Indicates which cells can trigger the event
>Triggering condition 2	CV – clause 6		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells, Detected set cells, Detected set cells and monitored set cells)	Indicates which cells can trigger the event
>Reporting Range	CV – clause 2		Real(0..14.5 by step of 0.5)	In dB. In event 1a,1b.
>Cells forbidden to affect Reporting range	CV – clause 1	1 to <maxCellMeas>		In event 1a,1b
>>CHOICE mode	MP			
>>>FDD				
>>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>>>TDD				
>>>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57	
>W	CV – clause 2		Real(0.0..2.0 by step of 0.1)	
>Hysteresis	MP		Real(0..7.5 by step of 0.5)	In dB.
>Threshold used frequency	CV-clause 3		Integer (-115..165)	Range used depend on measurement quantity. CPICH RSCP -115..-25 dBm CPICH Ec/No -24..0 dB Pathloss 30..165dB ISCP -115..-25 dBm
>Reporting deactivation threshold	CV-clause 4		Integer(0, 1, 2, 3, 4, 5, 6, 7)	In event 1a Indicates the maximum number of cells allowed in the active set in order for event 1a to occur. 0 means not applicable

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>Replacement activation threshold	CV-clause 5		Integer(0, 1, 2, 3, 4, 5, 6, 7)	In event 1c Indicates the minimum number of cells allowed in the active set in order for event 1c to occur. 0 means not applicable
>Time to trigger	MP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms
>Amount of reporting	CV-clause 7		Integer(1, 2, 4, 8, 16, 32, 64, Infinity)	
>Reporting interval	CV-clause 7		Integer(0, 250, 500, 1000, 2000, 4000, 8000, 16000)	Indicates the interval of periodical reporting when such reporting is triggered by an event. Interval in milliseconds. 0 means no periodical reporting
>Reporting cell status	OP		Reporting cell status 10.3.7.61	

Condition	Explanation
Clause 0	The IE is mandatory if "Intra-frequency event identity" is set to "1b" or "1f", otherwise the IE is not needed
Clause 1	The IE is optional if "Intra-frequency event identity" is set to "1a" or "1b", otherwise the IE is not needed
Clause 2	The IE is mandatory if "Intra-frequency event identity" is set to "1a" or "1b", otherwise the IE is not needed
Clause 3	The IE is mandatory if "Intra-frequency event identity" is set to , "1e", "1f", "1h", "1i" or "1j", otherwise the IE is not needed
Clause 4	The IE is mandatory if "Intra-frequency event identity" is set to "1a", otherwise the IE is not needed
Clause 5	The IE is mandatory if "Intra-frequency event identity" is set to "1c", otherwise the IE is not needed
Clause 6	The IE is mandatory if "Intra-frequency event identity" is set to "1a" or "1e".
Clause 7	The IE is mandatory if "Intra-frequency event identity" is set to "1a" or "1c".

10.3.7.45 Measured results on RACH

Contains the measured results on RACH of the quantity indicated optionally by Reporting Quantity in the system information broadcast on BCH. The list should be in the order of the value of the measurement quality (the first cell should be the best cell). The "best" FDD cell has the largest value when the measurement quantity is "Ec/No" or "RSCP". On the other hand, the "best" cell has the smallest value when the measurement quantity is "Pathloss". The "best" TDD cell has the largest value when measurement quantity is "Primary CCPCH RSCP".

Information Element/group name	Need	Multi	Type and reference	Semantics description
Measurement result for current cell				
CHOICE mode	MP			
>FDD				
>>CHOICE measurement quantity	MP			
>>>CPICH Ec/No			Integer(0..50)	In dB. According to CPICH_Ec/No in [19] and [20].
>>>CPICH RSCP			Integer(0..91)	In dBm. According to CPICH_RSCP_LEV in [19] and [20].
>>>Pathloss			Integer(46..158)	In dB
>TDD				
>>Timeslot List	OP	1 to 14		
>>>Timeslot ISCP	MP		Timeslot ISCP info 10.3.7.65	The UE shall report the Timeslot ISCP in the same order as indicated in the cell info
>>>Primary CCPCH RSCP	OP		Primary CCPCH RSCP info 10.3.7.54	
Measurement results for monitored cells	OP	1 to 7		
>SFN-SFN observed time difference	OP		SFN-SFN observed time difference 10.3.7.63	It is absent for current cell
>CHOICE mode	MP			
>>FDD				
>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>>CHOICE measurement quantity	OP			It is absent for current cell
>>>>CPICH Ec/No			Integer(-20..00..50)	In dB. According to CPICH_Ec/No in [19].
>>>>CPICH RSCP			Integer(0..91 -115..-40)	In dBm. According to CPICH_RSCP_LEV in [19].
>>>>Pathloss			Integer(46..158)	In dB
>>TDD				
>>>Cell parameters Id	MP		Cell parameters Id 10.3.6.9	
>>>>Primary CCPCH RSCP	MP		Primary CCPCH RSCP info 10.3.7.54	

NOTE 1: Monitored cells consist of current cell and neighbouring cells.

10.3.7.55 Quality measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
BLER measurement results	OP	1 to <maxTrCH >		
>DL Transport channel identity	MP		Transport channel identity 10.3.5.18	transport channel type = DCH
>DL Transport Channel BLER	OP		Integer (0..63)	According to BLER_LOG in [19] and [20]
CHOICE mode				
>FDD				No data
>TDD				
>>SIR measurement results	OP	1 to <MaxCCTrCH>		SIR measurements for DL CCTrCH
>>>TFCS ID	MP		Enumerated (1..8)	
>>>Timeslot list	MP	1 to <maxTS>		for all timeslot on which the CCTrCH is mapped on
>>>>SIR	MP		Integer(0..63)	According to UE_SIR in [20]

10.3.7.59 Quality reporting quantity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
DL Transport Channel BLER	MP		Boolean	TRUE means report requested
Transport channels for BLER reporting	CV BLER reporting	1 to <maxTrCH >		The default, if no transport channel identities are present, is that the BLER is reported for all downlink transport channels
>DL Transport channel identity	MP		Transport channel identity 10.3.5.18	transport channel type = DCH
CHOICE mode				
>FDD				No data
>TDD				
>>SIR measurement list	OP	1 to <maxCCTr CH>		SIR measurements shall be reported for all listed TFCS IDs
>>>TFCS ID	MP		Enumerated Integer(1...8)	

Condition	Explanation
<i>BLER reporting</i>	This information element is absent if 'DL Transport Channel BLER' is 'False' and optional, if 'DL Transport Channel BLER' is 'True'

10.3.7.61 Reporting Cell Status

Indicates maximum allowed number of cells to report and whether active set cells and/or virtual active set cells and/or monitored set cells on and/or detected set cells used frequency and/or monitored set cells on non used frequency should/should not be included in the IE "Measured results".

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Choice reported cell	MP			
>Report cells within active set				
>>Maximum number of reported cells	MP		EnumeratedInteger(e1..e6)	
>Report cells within monitored set cells on used frequency				
>>Maximum number of reported cells	MP		EnumeratedInteger(e1..e6)	
>Report cells within active set and/or monitored set cells on used frequency				
>>Maximum number of reported cells	MP		EnumeratedInteger(e1..e6)	
>Report cells within detected set on used frequency				
>>Maximum number of reported cells	MP		EnumeratedInteger(e1..e6)	
>Report cells within monitored set and/or detected set on used frequency				
>>Maximum number of reported cells	MP		EnumeratedInteger(e1..e6)	

>Report all active set cells + cells within monitored set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within monitored set and/or detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report cells within virtual active set				
>>Maximum number of reported cells	MP		Integer(1..6)	
>Report cells w -within monitored set on non-used frequency				
>>Maximum number of reported cells	MP		Integer(1..6)	
>Report cells within monitored and/or active set on non-used frequency				
>>Maximum number of reported cells	MP		Integer(1..6)	
>Report all virtual active set cells + cells within monitored set on non-used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report cells within active set or within virtual active set				
>>Maximum number of reported cells	MP		Integer (1..12)	
>Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency				
>>Maximum number of reported cells	MP		Integer(1..12)	

10.3.7.72 Traffic volume measurement reporting criteria

Contains the measurement reporting criteria information for a traffic volume measurement.

Event 4a: Transport Channel Traffic Volume [15] exceeds an absolute threshold.

Event 4b: Transport Channel Traffic Volume [15] becomes smaller than an absolute threshold.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters sent for each transport channel	OP	1 to <maxTrCH >		
>Uplink transport channel type	MOP		Enumerated(DCH,RACH,USCH)	USCH is TDD only
>UL Transport Channel ID	<i>CV-UL-DCH/USCH</i>		Transport channel identity 10.3.5.18	
>Parameters required for each Event	OP	1 to <maxMeas perEvent>		
>>Traffic volume event identity	MP		Traffic volume event identity 10.3.7.66	
>>Reporting Threshold	MP		Enumerated(8,16,32,64,128,256,512,1024,2K,3K,4K,6K,8K,12K,16K,24K,32K,48K,64K,96K,128K,192K,256K,384K,512K,768K)	Threshold in bytes And N Kbytes = N*1024 bytes
>>Time to trigger	OP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms
>>Pending time after trigger	OP		Integer(250, 500, 1000, 2000, 4000, 8000, 16000)	Time in seconds. Indicates the period of time during which it is forbidden to send any new measurement reports with the same Traffic volume event identity even if the triggering condition is fulfilled again. Time in milliseconds
>>Tx interruption after trigger	OP		Integer (250, 500, 1000, 2000, 4000, 8000, 16000)	Time in milliseconds. Indicates whether or not the UE shall block DTCH transmissions on the RACH after a measurement report is triggered.

Condition	Explanation
<i>UL-DCH/USCH</i>	If IE "Uplink transport channel type" is equal to "DCH" or "USCH" (TDD only) this IE is OP. Otherwise the IE is not needed.

10.3.7.88 UE positioning GPS acquisition assistance

This IE contains parameters that enable fast acquisition of the GPS signals in UE-assisted GPS positioning.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
CHOICE Reference Time				
>UTRAN reference time				GPS Time of Week counted in microseconds, given as GPS TOW in milliseconds and GPS TOW remainder in microseconds, UTRAN reference time = 1000 * GPS TOW msec + GPS TOW rem usec
>>GPS TOW msec	MP		Integer(0..6.048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit)
>>GPS TOW rem usec	MP		Integer(0..999)	GPS Time of Week in microseconds MOD 1000.
>>SFN	MP		Integer(0..4095)	
>GPS reference time only				
>>GPS TOW msec	MP		Integer(0..6.048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit).
Satellite information	MP	1 to <maxSat>		
>SatID	MP		Integer (0..63)	
>Doppler (0 th order term)	MP		Real(-5.120..5.1175 by step of 2.5)	Hz
>Extra Doppler	OP			
>>Doppler (1 st order term)	MP		Real (-40.966..0.5483 by step of 0.023)	Scaling factor 1/42
>>Doppler Uncertainty	MP		Enumerated (12.5,25,50,100,200)	Hz
>Code Phase	MP		Integer(0..1022)	Chips, specifies the centre of the search window
>Integer Code Phase	MP		Integer(0..19)	1023 chip segments
>GPS Bit number	MP		Integer(0..3)	Specifies GPS bit number (20 1023 chip segments)
>Code Phase Search Window	MP		Integer(1023,1,2,3,4,6,8,12,16,24,32,48,64,96,128,192)	Specifies the width of the search window.
>Azimuth and Elevation	OP			
>>Azimuth	MP		Real(0..348.75 by step of 11.25)	Degrees
>>Elevation	MP		Real(0..78.75 by step of 11.25)	Degrees

CHOICE Reference time	Condition under which the given reference time is chosen
UTRAN reference time	The reference time is relating GPS time to UTRAN time (SFN)
GPS reference time only	The time gives the time for which the location estimate is valid

10.3.7.88a UE positioning GPS Additional Assistance Data Request

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Almanac	MP		Boolean	TRUE means requested
UTC Model	MP		Boolean	TRUE means requested
Ionospheric model	MP		Boolean	TRUE means requested
Navigation Model	MP		Boolean	TRUE means requested
DGPS Corrections	MP		Boolean	TRUE means requested
Reference Location	MP		Boolean	TRUE means requested
Reference Time	MP		Boolean	TRUE means requested
Acquisition Assistance	MP		Boolean	TRUE means requested
Real-Time Integrity	MP		Boolean	TRUE means requested
Navigation Model Additional data	CV- <i>Navigation Model</i>			this IE is present only if "Navigation Model" is set to TRUE otherwise it is absent
>GPS Week	MP		Integer (0..1023)	
>GPS_Toe	MP		Integer (0..167)	GPS time of ephemeris in hours of the latest ephemeris set contained by the UE
>T-Toe limit	MP		Integer (0..10)	ephemeris age tolerance of the UE to UTRAN in hours
>Satellites list related data	MP	0 to <maxSat>-1		
>>SatID	MP		Integer (0..63)	
>>IODE	MP		Integer (0..239)	Issue of Data Ephemeris for SatID

10.3.7.89 UE positioning GPS almanac

This IE contains a reduced-precision subset of the clock and ephemeris parameters.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
WN _a	MP		Bit string(8)	
Satellite information	MP	1 to <maxSat>		
>DataID	MP		Integer(0..3) Bitstring(2)	See [12]
>SatID	MP		Enumerated(0..63)	Satellite ID
>e	MP		Bit string(16)	Eccentricity [12]
>t _{oa}	MP		Bit string(8)	Reference Time Ephemeris [12]
>δi	MP		Bit string(16)	
>OMEGADOT	MP		Bit string(16)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles/sec) [12]
>SV Health	MP		Bit string(8)	
>A ^{1/2}	MP		Bit string(24)	Semi-Major Axis (meters) ^{1/2} [12]
>OMEGA ₀	MP		Bit string(24)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles) [12]
>M ₀	MP		Bit string(24)	Mean Anomaly at Reference Time (semi-circles) [12]
>ω	MP		Bit string(24)	Argument of Perigee (semi-circles) [12]
>af ₀	MP		Bit string(11)	apparent clock correction [12]
>af ₁	MP		Bit string(11)	apparent clock correction [12]
SV Global Health	OP		Bit string(364)	This enables GPS time recovery and possibly extended GPS correlation intervals. It is specified in page 25 of subframes 4 and 5 [12]

10.3.7.91 UE positioning GPS DGPS corrections

This IE contains DGPS corrections to be used by the UE.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS TOW sec	MP		Integer(0..604799)	seconds GPS time-of-week when the DGPS corrections were calculated
Status/Health	MP		Enumerated(UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.2, UDRE scale 0.1, no data, invalid data)	
DPGS information	CV-Status/Health	1 to <maxSat>		If the Cipher information is included these fields are ciphered.
>SatID	MP		Enumerated(0..63)	
>IODE	MP		Integer(0..239)	
>UDRE	MP		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	The value in this field shall be multiplied by the UDRE Scale Factor in the IE Status/Health to determine the final UDRE estimate for the particular satellite.
>PRC	MP		Real(-655.304..655.034 by step of 0.32)	meters (different from [13])
>RRC	MP		Real(-4.064..4.064 by step of 0.032)	meters/sec (different from [13])
>Delta PRC2	MP		Integer(-127..127)	Meters
>Delta RRC2	MP		Real(-0.224..0.224 by step of 0.032)	meters/sec
>Delta PRC3	CV-DCCH		Integer(-127..127)	Meters
>Delta RRC3	CV-DCCH		Real(-0.224..0.224 by step of 0.032)	meters/sec

Condition	Explanation
Status/Health	This IE is mandatory if "status" is not equal to "no data" or "invalid data", otherwise the IE is not needed
DCCH	This IE is mandatory present if the IE " UE positioning GPS DGPS corrections" it is included in the point-to-point message otherwise it is optional if the IE "UE positioning GPS DGPS corrections" is included in the broadcast message

10.3.7.103 UE positioning OTDOA assistance data

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
UE positioning OTDOA reference cell info	OP		UE positioning OTDOA cell info 10.3.7.108	
UE positioning OTDOA neighbour cell list	OP	1 to <maxCellMeas>		
≥UE positioning OTDOA neighbour cell info	<u>M</u> OP		UE positioning OTDOA neighbour cell info 10.3.7.106	

10.3.7.108 UE positioning OTDOA reference cell info

This IE defines the cell used for time references in all OTDOA measurements.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
SFN	OP		Integer (0..4095)	Time stamp (SFN of Reference Cell) of the SFN-SFN observed time differences and SFN-SFN drift rates. Included if any SFN-SFN drift value is included.
CHOICE mode				
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>TDD				
>>cell and channel ID	MP		Cell and Channel Identity info 10.3.6.8a	Identifies the channel to be measured on.
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information.
CHOICE PositioningMode				
>UE based				
>>CHOICE <i>Cell Position</i>	<u>OP</u>			The position of the antenna that defines the cell. Used for the UE based method.
>>>Ellipsoid				
>>>>Ellipsoid point	<u>OPMP</u>		Ellipsoid point 10.3.8.4a	
>>>Ellipsoid with altitude				
>>>>Ellipsoid point with altitude	<u>OPMP</u>		Ellipsoid point with altitude 10.3.8.4b	
>>Round Trip Time	OP		Real(876.00 .. 2923.875) in steps of 0.0625	In chips.
>UE assisted				(no data)
IPDL parameters	OP		UE positioning IPDL parameters 10.3.7.98	If this element is not included there are no idle periods present

11 Message and Information element abstract syntax (with ASN.1)

This clause contains definitions for RRC PDUs and IEs using a subset of ASN.1 as specified in [14]. PDU and IE definitions are grouped into separate ASN.1 modules.

```

Gsm-map-IDNNS ::=
    routingbasis
        localPTMSI
            routingparameter
        },
        tMSIofsamePLMN
            routingparameter
        },
        tMSIofdifferntPLMN
            routingparameter
        },
        iMSIresponsetopaging
            routingparameter
        },
        iMSIcausenotresponsetopagingUEinitiatedEvent
            routingparameter
        },
        iMEI
            routingparameter
        },
        spare1
            routingparameter
        },
        spare2
            routingparameter
    },
    enteredparameter
}

SEQUENCE {
    CHOICE {
        SEQUENCE {
            RoutingParameter
        }
        SEQUENCE {
            RoutingParameter
        }
        SEQUENCE {
            RoutingParameter
        }
        SEQUENCE {
            RoutingParameter
        }
        SEQUENCE {
            RoutingParameter
        }
        SEQUENCE {
            RoutingParameter
        }
        SEQUENCE {
            RoutingParameter
        }
    }
    BOOLEAN
}

UE-Positioning-Capability ::=
    standaloneLocMethodsSupported
    ue-BasedOTDOA-Supported
    networkAssistedGPS-Supported
    gps-ReferenceTimeCapable
    supportForIPDL
}

SEQUENCE {
    BOOLEAN,
    BOOLEAN,
    NetworkAssistedGPS-Supported,
    BOOLEAN,
    BOOLEAN
}

TFCS-ReconfAdd ::=
    ctfcSize
        CHOICE{
            ctfc2Bit
                ctfc2
                gainFactorpowerOffsetInformation
                PowerOffsetInformation
                OPTIONAL
            },
            ctfc4Bit
                ctfc4
                gainFactorpowerOffsetInformation
                PowerOffsetInformation
                OPTIONAL
            },
            ctfc6Bit
                ctfc6
                gainFactorpowerOffsetInformation
                PowerOffsetInformation
                OPTIONAL
            },
            ctfc8Bit
                ctfc8
                gainFactorpowerOffsetInformation
                PowerOffsetInformation
                OPTIONAL
            },
            ctfc12Bit
                ctfc12
                gainFactorpowerOffsetInformation
                PowerOffsetInformation
                OPTIONAL
            },
            ctfc16Bit
                ctfc16
                gainFactorpowerOffsetInformation
                PowerOffsetInformation
                OPTIONAL
            },
        }
}

SEQUENCE{
    CHOICE{
        SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            INTEGER (0..3),
            PowerOffsetInformation
        }
        SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            INTEGER (0..15),
            PowerOffsetInformation
        }
        SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            INTEGER (0..63),
            PowerOffsetInformation
        }
        SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            INTEGER (0..255),
            PowerOffsetInformation
        }
        SEQUENCE (SIZE(1..maxTFC)) OF SEQUENCE {
            INTEGER (0..4095),
            PowerOffsetInformation
        }
        SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            INTEGER(0..65535),
            PowerOffsetInformation
        }
    }
}

```

```

        ctfc24Bit                SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        ctfc24                    INTEGER(0..16777215),
|      gainFactorpowerOffsetInformation    PowerOffsetInformation    OPTIONAL
    }
}

TM-SignallingInfo ::=          SEQUENCE {
    messType                    MessType,
    tm-SignallingMode           CHOICE {
        model                    NULL,
        mode2                    SEQUENCE {
|      --TrCH-Type is always DCH
        ul-controlledTrChList    UL-ControlledTrChList
    }
}
}

| -- Actual value = IE value * 0.125
Alpha ::=                      INTEGER (0..8)

| PUSCH-SysInfoList-SFN ::=    SEQUENCE (SIZE (1.. maxPUSCHmaxPDSCH)) OF
    SEQUENCE {
        pusch-SysInfo           PUSCH-SysInfo,
        sfn-TimeInfo            SFN-TimeInfo    OPTIONAL
    }

AcquisitionSatInfo ::=        SEQUENCE {
|      -- Actual value = IE value * 2.5
    satID                       SatID,
    doppler0thOrder             INTEGER (-2048..2047),
    extraDopplerInfo           ExtraDopplerInfo    OPTIONAL,
    codePhase                   INTEGER (0..1022),
    integerCodePhase           INTEGER (0..19),
    gps-BitNumber              INTEGER (0..3),
    codePhaseSearchWindow      CodePhaseSearchWindow,
    azimuthAndElevation        AzimuthAndElevation    OPTIONAL
}

AzimuthAndElevation ::=       SEQUENCE {
|      -- Actual value = IE value * 11.25
    azimuth                     INTEGER (0..31),
|      -- Actual value = IE value * 11.25
    elevation                   INTEGER (0..7)
}

| -- Actual value = IE value * 0.032
DeltaRRC ::=                   INTEGER (-7..7)

ExtraDopplerInfo ::=          SEQUENCE {
|      -- -Actual value = IE value * 0.023
    doppler1stOrder            INTEGER (-42..21),
    dopplerUncertainty         DopplerUncertainty
}

| -- Actual value = IE value * 0.32
PRC ::=                        INTEGER (-2047..2047)

| -- Actual value = IE value * 512
ReferenceTimeDifferenceToCell ::= CHOICE {
    -- Actual value = IE value * 40
    accuracy40                  INTEGER (0..960),
    -- Actual value = IE value * 256
    accuracy256                 INTEGER (0..150),
    -- Actual value = IE value * 2560
    accuracy2560                INTEGER (0..15)
}

```

```

| -- Actual value = IE value * 0.032
RRC ::= INTEGER (-127..127)

SFN-SFN-ObsTimeDifference ::= CHOICE {
  type1 SFN-SFN-ObsTimeDifference1,
| Actual value for type2 = IE value * 0.0625 - 1280
  type2 SFN-SFN-ObsTimeDifference2
}

UE-InternalReportingQuantity ::= SEQUENCE {
  ue-TransmittedPower BOOLEAN,
  modeSpecificInfo CHOICE {
|   fdd SEQUENCE {
      ue-RX-TX-TimeDifference BOOLEAN
    },
    tdd SEQUENCE {
      appliedTA BOOLEAN
    }
  }
}

| UE-Positioning-GPS-MeasurementResults ::= SEQUENCE {
  referenceSFN ReferenceSFN OPTIONAL,
  gps-TOW-lmsec GPS-TOW-lmsec,
  gps-TOW-rem-usec GPS-TOW-rem-usec OPTIONAL,
  gps-MeasurementParamList GPS-MeasurementParamList
}

UE-Positioning-MeasuredResults ::= SEQUENCE {
  ue-positioning-MultipleSets UE-Positioning-MultipleSets
  OPTIONAL,
  ue-positioning-ReferenceCellIdentity PrimaryCPICH-Info OPTIONAL,
  ue-positioning-OTDOA-Measurement UE-Positioning-OTDOA-Measurement
  OPTIONAL,
  ue-positioning-PositionEstimateInfo UE-Positioning-PositionEstimateInfo
  OPTIONAL,
| ue-positioning-GPS-Measurement UE-Positioning-GPS-MeasurementResults
  OPTIONAL,
  ue-positioning-Error UE-Positioning-Error
  OPTIONAL
}

UE-Positioning-MeasurementEventResults ::= CHOICE {
  event7a UE-Positioning-PositionEstimateInfo,
| event7b UE-Positioning-OTDOA-Measurement,
  event7c UE-Positioning-GPS-MeasurementResults
}

UE-Positioning-OTDOA-NeighbourCellInfo ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info
    },
    tdd SEQUENCE {
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo FrequencyInfo OPTIONAL,
  ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters
  OPTIONAL,
  sfn-SFN-RelTimeDifference SFN-SFN-RelTimeDifference1,
  sfn-SFN-Drift INTEGER (0..30),
  searchWindowSize OTDOA-SearchWindowSize,
  positioningMode CHOICE {
    ueBased SEQUENCE {
      relativeNorth INTEGER (-20000..20000) OPTIONAL,
      relativeEast INTEGER (-20000..20000) OPTIONAL,
      relativeAltitude INTEGER (-4000..4000) OPTIONAL,
      fineSFN-SFN FineSFN-SFN OPTIONAL,
| -- actual value = (IE value * 0.0625) + 876
      roundTripTime INTEGER (0..327665) OPTIONAL
    }
  },
}

```

```

    ueAssisted                               SEQUENCE {}
  }
}

UE-Positioning-OTDOA-ReferenceCellInfo ::=          SEQUENCE {
  sfn                                           INTEGER (0..4095)
  OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd                                         SEQUENCE {
      primaryCPICH-Info                        PrimaryCPICH-Info
    },
    tdd                                         SEQUENCE {
      cellAndChannelIdentity                  CellAndChannelIdentity
    }
  },
  frequencyInfo                               FrequencyInfo                               OPTIONAL,
  positioningMode CHOICE {
    ueBased                                     SEQUENCE {
      cellPosition                            ReferenceCellPosition  OPTIONAL,
      -- actual value = (IE value * 0.0625) + 876
      roundTripTime                          INTEGER (0..327665)    OPTIONAL
    },
    ueAssisted                                SEQUENCE {}
  },
  ue-positioning-IPDL-Parameters              UE-Positioning-IPDL-Parameters  OPTIONAL
}

--Actual value = 2^(IE value)
ExpirationTimeFactor ::=          INTEGER (1..8)

SysInfoType7 ::=          SEQUENCE {
  -- Physical channel IEs
  modeSpecificInfo        CHOICE {
    fdd                    SEQUENCE {
      ul-Interference      UL-Interference
    },
    tdd                    NULL
  },
  prach-Information-SIB5-List  DynamicPersistenceLevelList,
  prach-Information-SIB6-List  DynamicPersistenceLevelList  OPTIONAL,
  expirationTimeFactor         ExpirationTimeFactor          OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions        SEQUENCE {}                  OPTIONAL
}

SysInfoType14 ::=          SEQUENCE {
  -- Physical channel IEs
  individualTS-InterferenceList  IndividualTS-InterferenceList,
  expirationTimeFactor           ExpirationTimeFactor          OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}                  OPTIONAL
}

```

CHANGE REQUEST

⌘ **25.331 CR 881** ⌘ ev **-** ⌘ Current version: **4.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Editorial corrections on Tabular and ASN.1 inconsistencies		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 30.5.2001
Category:	⌘ A	Release:	⌘ REL-4
	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)

Reason for change: ⌘ In multiple places the tabular notation and the ASN.1 in TS 25.331 are not aligned in v. 3.6.0. This CR captures a number of corrections, which have no impact on the ASN.1 encoding or procedural aspects and thus should be seen as editorial modifications to align the two notations.

Summary of change: ⌘ **The changes in CR880R1 are shown in green**
The changes in CR881 are shown in yellow.

10.2.42 RRC STATUS
 Added comment to Condition "Message Identified" to clarify that the IE is mandatory.

10.2.48 SYSTEM INFORMATION
 Added description for condition "Channel". MP missing from Need column in Combination 6. Complete list multiplicity changed to use constant.

10.2.48.2 First Segment (short)
 Reference for SIB data variable corrected.

10.2.48.8.18 System Information Block type 15
 Ellipsoid Point with altitude and uncertainty ellipse spelling "10.3.8.4e" instead of "10.3.8.e" in table, spelling corrected.

10.3.1.6 Intra Domain NAS Node Selector
 CHOICE RoutingBasis->IMSI(cause UE initiated event) inconsistent with name used in ASN.1, aligned to Tabular.

10.3.3.12 Expiration Time Factor
 Spelling: "Expiration Time factor" in table, but "Expiration Timer factor" in "11.3.8" ASN1. (10.2.48.8.10, 10.2.48.8.17 ASN.1 uses this IE as well and has been

updated.)

10.3.3.15 Initial UE identity

Tabular structure made consistent with ASN.1 and missing descriptions added.

10.3.3.25 Physical channel capability

'>' has been removed for the IE 'FDD uplink physical channel capability'. It is already correct in ASN.1.

10.3.3.45 UE positioning capability

Name of parameter Support for IPDL, spelling corrected in ASN.1 definition

10.3.4.1 Downlink RLC STATUS info

Range of Timer_Status_Prohibit aligned with ASN.1

10.3.4.7 Predefined RB configuration

Name maxRBcount used in list definition not defined, it should be maxRBperRAB as already used in ASN.1. Table aligned with ASN.1.

10.3.4.13 RB activation time info

Radio bearer activation time is OP in the tabular description. This is missing in the ASN.1 description. This use of OP implies the entire IE is optional which would be reflected in the structure where it was used. Tabular has been updated in line with ASN.1.

10.3.5.1 Added or Reconfigured DL TrCH information

Independent has been replaced with explicit for consistency with ASN.1

10.3.5.7 DRAC Static Information

Multiplicity of DRAC Class Identity has been changed to use constant value.

10.3.5.12 TFCI Field 2 Information

Second (empty) table has been deleted

10.3.5.15 TFCS Reconfiguration/Addition Information

Power offset Information has been called gainFactorInformation in ASN.1, the ASN.1 has renamed

10.3.5.16 TFCS Removal Information

Deleted second table as condition is not defined or used.

10.3.5.17 Transparent mode signalling info

Note added in ASN.1 for UL-ControlledTrChList

10.3.6.5 Alpha

Note added to ASN.1 to clarify value mapping.

10.3.6.17 Downlink channelisation codes

Changed "Bitmap" to "Bitstring"

10.3.6.28 Downlink information for each radio link Post

Reference should be 10.3.6.22 instead of 10.3.6.19 in table

10.3.6.30 Downlink PDSCH information

Removed unnecessary indentation.

10.3.6.55 PRACH system information list

In tabular element PRACH Partitioning should refer to 10.3.6.53 (not 10.3.6.46)

10.3.6.56 Predefined PhyCH configuration

Missing Need value added, OP to be consistent with ASN.1

10.3.6.61 Primary CPICH Tx power

Added semantics description

10.3.6.64 PUSCH Capacity Allocation info

Corrected limit.

10.3.6.66 PUSCH system information

In ASN.1 definition PUSCH-SysInfoList-SFN:

1.. maxPUSCH =8 in table, but 1..MaxPDSCH =8 in ASN1

should be maxPUSCH, ASN.1 corrected.

10.3.6.71 Secondary CCPCH info

TDD offset is changed to MP to align with ASN1. Code List multiplicity aligned with ASN.1.

10.3.7.26 Inter-RAT measured results list

10.3.7.28 Inter-RAT measurement event results

Ranges aligned with ASN.1. The range for inter-RAT cell id corrected. The corresponding change in ASN.1 is done in CR 876r1

10.3.7.30 Inter-RAT measurement reporting criteria

Missing ranges added to table.

10.3.7.39: In Clause 3 of tabular "3j" has been replaced by "3i". *Backwards compatible change due to correction of tabular.*

10.3.7.45: Wrong references to TDD specs have been removed from FDD branches, also the CPICH Ec/No and CPICH RSCP is copied to both occurrences of the two IE:s. In tabular the CPICH Ec/No and CPICH RSCP have now the same ranges as in ASN.1. *Backwards compatible change due to correction of tabular.*

10.3.7.60: The comment line in ASN1 "—Actual value = IE value * 512" was not making sense and it is has been removed.

10.3.7.61: Max. Numbers of reported cells were shown as integers (1..6) in tabular, but enumerated (e1,..e6) in ASN.1. Therefore, the tabular has been corrected according to ASN.1. In addition there was a spelling mistake table that was reading as "Report cells w within monitored set on non-used frequency". The letter w has been deleted, so now it reads: "Report cells within monitored set on non-used frequency". *Backwards compatible change due to correction of tabular.*

10.3.7.63: In ASN.1 the comment line "-- Actual value for type2 = IE value * 0.0625 – 1280" was not correct anymore so it was deleted.

10.3.7.72: In the tabular the Uplink transport channel type was shown as MP, but UL-TrCH-Identity is OPTIONAL in ASN.1. Therefore the former has been updated according to the latter. *Backwards compatible change due to correction of tabular.*

10.3.7.82: Correction of spelling mistake in ASN.1: "ue-RX-TX-TimeDifferece" changed to " ue-RX-TX-TimeDifference".

10.3.7.88: In the description of "Doppler 1st order" in ASN.1 the range given appeared to be different from the one given in the tabular. Therefore the range in the tabular has been updated to: (-0.966..0.483). In addition, the actual value calculation formula has been added to ASN.1. In the Azimuth and Elevation descriptions in ASN.1 the actual value formula "-- Actual value = IE value * 11.25" was missing and therefore it has been added. Doppler (0th order term) was declared in Tabular as Real(-5.120..5.1175 by step 2.5). It has been corrected to what it should be (Real(-5120..5117.5 by step 2.5) which is also the way it is implimented in ASN.1. In addition a comment has been added to ASN.1 regarding the calculation of the actual value "-- Actual value = IE value * 2.5". *Backwards*

compatible change due to correction of tabular.

10.3.7.89: IE "DataID" appeared as bitstring(2) in tabular and Integer(0..3) in ASN.1. The former has been replaced with the latter.

10.3.7.91: The ASN.1 description of IE "PRC2 was missing a comment regarding the calculation of the actual value which is now added. In addition, the range given in tabular and ASN.1 were not identical and therefore the former had to change to: (-655.04..655.04 step of 0.32). The IE "RRC" ASN.1 description was missing the comment about the actual value description "-- Actual value = IE value * 0.032" which has been added. Finally, a comment about the actual value has been added to ASN.1 discription of the IE "DeltaRRC": "-- Actual value = IE value * 0.032". *Backwards compatible change due to correction of tabular and additional.*

10.3.7.93: The IE "Measured results" appeared in tabular as "UE-Positioning-GPS-Measurement". The title found to be misleading and therefore in ASN.1 the name changed to "-UE-Positioning-GPS-MeasuredResults". Change of name is backwards compatible.

10.3.7.103: "UE-Positioning-OTDOA-NeighbourCellInfo" was OP in tabular, but MP in ASN.1. The tabular value made not sence so it has changed to MP. In addition in the tabular, the IE "UE positioning OTDOA neighbour cell info" has been indented with ">". *Backwards compatible change due to correction of tabular.*

10.3.7.106 & 10.3.7.108: Missing description "-- Actual value = IE value * 0,0625 + 876" of IE "Round Trip Time" is added to in ASN1. In addition (0..32765) was not covering all the range and it has been replaced by (0..32766) in ASN.1. It should be pointed out that this is a backwards comaptible change cause no additional bit is used.

10.3.7.108: In tabular both Cell Position methods shown are OP. However, in ASN.1 Choice Cell Position is OP, with choices either "Ellipsoid Point" or "Ellipsoid Point with Altitude". Therefore, the table has been corrected by adding new rows marking both branches of the CHOICE. The CHOICE changed to OP. "Ellipsoid Point" and "Ellipsoid Point with Altitude" changed to MP within the CHOICE clause.

Backwards Compatibility Analysis: This CR doesn't need to be implemented into products and has therefore no impact on backwards compatibility.

Consequences if not approved: ☞ Inconsistencies between tabular and ASN.1 notation are not corrected.

Clauses affected: ☞ 10.2.42, 10.2.48, 10.2.48.2, 10.2.48.8.18, 10.3.3.15, 10.3.3.25, 10.3.4.1, 10.3.4.7, 10.3.4.13, 10.3.5.1, 10.3.5.7, 10.3.5.12, 10.3.5.16, 10.3.6.17, 10.3.6.28, 10.3.6.30, 10.3.6.55, 10.3.6.56, 10.3.6.61, 10.3.6.64, 10.3.6.71, 10.3.7.26, 10.3.7.28, 10.3.7.30, 10.3.7.39, 10.3.7.45, 10.3.7.59, 10.3.7.61, 10.3.7.72, 10.3.7.88, 10.3.7.89, 10.3.7.91, 10.3.7.103, 10.3.7.108, 11

Other specs affected: ☞ Other core specifications ☞
 Test specifications
 O&M Specifications

Other comments: ☞

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

10.2 Radio Resource Control messages

10.2.42 RRC STATUS

This message is sent to indicate a protocol error.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
Integrity check info	CH		Integrity check info 10.3.3.16	Integrity check info is included if integrity protection is applied
Identification of received message	CV- <i>Message identified</i>			
>Received message type	MP		Message Type	
>RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Other information elements				
Protocol error information	MP		Protocol error information 10.3.8.12	

Condition	Explanation
<i>Message identified</i>	<u>This IE is mandatory</u> if the IE "Protocol error cause" in the IE "Protocol error information" has any other value than "ASN.1 violation or encoding error" or "Message type non-existent or not implemented"

10.2.48 SYSTEM INFORMATION

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message type	OP		Message type	The message type is mandatory on the FACH, and absent on the BCH
SFNprime	CV _e Channel		Integer(0..4094 by step of 2)	SFN=SFNprime (for first 10ms frame of 20ms TTI), SFN=SFNprime+1 (for last 10ms frame of 20ms TTI)
CHOICE Segment combination	MP			
>Combination 1				(no data)
>Combination 2				
>>First Segment	MP		First Segment, 10.2.48.1	
>Combination 3				
>>Subsequent Segment	MP		Subsequent Segment, 10.2.48.3	
>Combination 4				
>>Last segment	MP		Last segment (short), 10.2.48.5	
>Combination 5				
>>Last segment	MP		Last Segment (short) 10.2.48.5	
>>First Segment	MP		First Segment (short), 10.2.48.2	
>Combination 6				
>>Last Segment	MP		Last Segment (short), 10.2.48.5	
>>Complete list	<u>MP</u>	1 to maxSIBperMsg		Note 1
>>>Complete	<u>MP</u>		Complete SIB (short), 10.2.48.7	
>Combination 7				
>>Last Segment	MP		Last Segment (short), 10.2.48.5	
>>Complete list	MP	1..46maxSIBperMsg		Note 1
>>>Complete	MP		Complete SIB (short), 10.2.48.7	
>>First Segment	MP		First Segment (short), 10.2.48.2	
>Combination 8				
>>Complete list	MP	1 to maxSIBperMsg		Note 1
>>>Complete	MP		Complete	

			SIB (short),10.2.48.7	
>Combination 9				
>>Complete list	MP	1..MaxSIB perMsg		Note 1
>>>Complete	MP		Complete SIB (short),10.2.48.7	
>>First Segment	MP		First Segment (short), 10.2.48.2	
>Combination 10				
>>>Complete SIB of size 215 to 226	MP		Complete SIB,10.2.48.6	
>Combination 11				
>>Last segment of size 215 to 222	MP		Last segment,10.2.48.4	

<u>Condition</u>	<u>Explanation</u>
<u>Channel</u>	<u>This IE is mandatory is the channel is BCH, otherwise it is absent.</u>

If the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.1. Padding is needed e.g. if the remaining space is insufficient to start a new First Segment (which requires several bits for SIB type, SEG_COUNT and SIB data).

NOTE 1: If Combination 6 - 9 contains a Master information block Master information shall be located as the first IE in the list.

10.2.48.2 First Segment (short)

This segment type is used to transfer the first segment of a segmented system information block. The IE is used when the first segment is concatenated after other segments in a transport block (Combination 5, 7 and 9).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
SIB type	MP		SIB Type, 10.3.8.21	
SEG_COUNT	MP		SEG COUNT, 10.3.8.17	
SIB data variable	MP		SIB data variable, 10.3.8.1620	

10.2.48.8.18 System Information Block type 15

The system information block type 15 contains information useful for UE-based or UE-assisted positioning methods.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS Data ciphering info	OP		UE positioning Cipher info 10.3.7.86	If this IE is present then the SIB types 15.1, 15.2 & 15.3 are ciphered in accordance with the Data Assistance Ciphering Algorithm specified in [18]
Reference position	MP		Ellipsoid point with altitude and uncertainty ellipse 10.3.8.4e	approximate position where the UE is located
GPS Reference Time	MP		UE positioning GPS reference time 10.3.7.96	
Satellite information	OP	1 to <maxSat>		This IE is present whenever bad (failed/failing) satellites are detected by UTRAN [18].
>BadSatID	MP		Enumerated(0..63)	

10.3.3.15 Initial UE identity

This information element identifies the UE at a request of an RRC connection.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE UE id type	MP			
>IMSI (GSM-MAP)			IMSI (GSM-MAP) 10.3.1.5	
>TMSI and LAI (GSM-MAP)				
>>TMSI (GSM-MAP)	MP		TMSI (GSM-MAP) 10.3.1.17	
>>LAI (GSM-MAP)	MP		Location Area Identification 10.3.1.7	
>P-TMSI and RAI (GSM-MAP)				
>>P-TMSI (GSM-MAP)	MP		P-TMSI (GSM-MAP) 10.3.1.13	
>>RAI (GSM-MAP)	MP		Routing Area Identification 10.3.1.16	
>IMEI			IMEI 10.3.1.4	
>ESN (DS-41)			<u>TIA/EIA/IS-2000-4 BIT STRING (SIZE (32))</u>	<u>TIA/EIA/IS-2000-4</u>
>IMSI (DS-41)			<u>TIA/EIA/IS-2000-4 OCTET STRING (SIZE (5..7))</u>	<u>TIA/EIA/IS-2000-4</u>
>IMSI and ESN (DS-41)			<u>TIA/EIA/IS-2000-4</u>	<u>TIA/EIA/IS-2000-4</u>
<u>>>IMSI (DS-41)</u>	<u>MP</u>		<u>OCTET STRING (SIZE (5..7))</u>	<u>TIA/EIA/IS-2000-4</u>
<u>>>ESN (DS-41)</u>	<u>MP</u>		<u>BIT STRING (SIZE (32))</u>	<u>TIA/EIA/IS-2000-4</u>
>TMSI (DS-41)			<u>TIA/EIA/IS-2000-4 OCTET STRING (SIZE (2..12))</u>	<u>TIA/EIA/IS-2000-4</u>

10.3.3.25 Physical channel capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Downlink physical channel capability information elements				
FDD downlink physical channel capability	CH- <i>fdd_req_su</i> <i>p</i>			
>Max no DPCH/PDSCH codes	MP		Integer (1..8)	Maximum number of DPCH/PDSCH codes to be simultaneously received
>Max no physical channel bits received	MP		Integer (600, 1200, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 48000, 57600, 67200, 76800)	Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)
>Support for SF 512	MP		Boolean	TRUE means supported
>Support of PDSCH	MP		Boolean	TRUE means supported
>Simultaneous reception of SCCPCH and DPCH	MP		Boolean	TRUE means supported
>Simultaneous reception of SCCPCH, DPCH and PDSCH	CV- <i>if_sim_rec</i> <i>_pdsch</i> <i>_sup</i>		Boolean	TRUE means supported
>Max no of S-CCPCH RL	CV- <i>if_sim_rec</i>		Integer(1)	Maximum number of simultaneous S-CCPCH radio links
TDD downlink physical channel capability	CH- <i>tdd_req_su</i> <i>p</i>			
>Maximum number of timeslots per frame	MP		Integer (1..14)	
>Maximum number of physical channels per frame	MP		Integer (1..224)	
>Minimum SF	MP		Integer (1, 16)	
>Support of PDSCH	MP		Boolean	TRUE means supported
>Maximum number of physical channels per timeslot	MP		Integer (1..16)	
Uplink physical channel capability information elements				
>FDD uplink physical channel capability	CH- <i>fdd_req_su</i> <i>p</i>			
>Maximum number of DPDCH bits transmitted per 10 ms	MP		Integer (600, 1200, 2400, 4800, 9600, 19200, 28800, 38400, 48000, 57600)	
>Support of PCPCH	MP		Boolean	TRUE means supported
TDD uplink physical channel capability	CH- <i>tdd_req_su</i> <i>p</i>			
>Maximum Number of timeslots	MP		Integer	

per frame			(1..14)	
>Maximum number of physical channels per timeslot	MP		Integer (1, 2)	
>Minimum SF	MP		Integer (1, 2, 4, 8, 16)	
>Support of PUSCH	MP		Boolean	TRUE means supported

Condition	Explanation
<i>if_sim_rec_pdsch_sup</i>	Presence is mandatory if IE Simultaneous reception of SCCPCH and DPCH = True and IE Support of PDSCH = True. Otherwise this field is not needed in the message.
<i>if_sim_rec</i>	Presence is mandatory if IE capability Simultaneous reception of SCCPCH and DPCH = True. Otherwise this field is not needed in the message.
<i>tdd_req_sup</i>	Presence is mandatory if IE Multi-mode capability has the value "TDD" or "FDD/TDD" and a TDD capability update has been requested in a previous message. Otherwise this field is not needed in the message.
<i>fdd_req_sup</i>	Presence is mandatory if IE Multi-mode capability has the value "FDD" or "FDD/TDD" and a FDD capability update has been requested in a previous message. Otherwise this field is not needed in the message.

10.3.4.1 Downlink RLC STATUS info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timer_Status_Prohibit	OP		Integer(10..50 by step of 10, <u>550..1000 by step of 50</u>)	Minimum time in ms between STATUS reports
Timer_EPC	OP		Integer(50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200, 300, 400, 500, 700, 900)	Time in ms
Missing PDU Indicator	MP		Boolean	Value true indicates that UE should send a STATUS report for each missing PDU that is detected
Timer_STATUS_periodic	OP		Integer(100, 200, 300, 400, 500, 750, 1000, 2000)	Time in milliseconds

10.3.4.7 Predefined RB configuration

This information element concerns a pre- defined configuration of radio bearer parameters

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Signalling radio bearer information				
Signalling RB information to setup List	MP	1 to <maxSRBs etup>		For each signalling radio bearer
>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24	
RB information				Only one RAB supported
RB information to setup list	MP	1 to <maxRBpe rRABcount >		
>RB information to setup	MP		RB information to setup 10.3.4.20	

10.3.4.13 RB activation time info

This IE contains the time, in terms of RLC sequence numbers, when a certain configuration shall be activated, for a number of radio bearers.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Radio bearer activation time	MP	1 to <maxRB>		
>RB identity	MP		RB identity 10.3.4.16	
>RLC sequence number	MP		Integer (0.. 4095)	RLC SN [16] . Used for radio bearers mapped on RLC AM and UM

10.3.5.1 Added or Reconfigured DL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink transport channel type	MP		Enumerated(DCH,DSCH)	
DL Transport channel identity	MP		Transport channel identity 10.3.5.18	
CHOICE DL parameters				
> Independent Explicit				
>>TFS	MP		Transport Format Set 10.3.5.23	
>SameAsUL				
>>Uplink transport channel type	MP		Enumerated(DCH,USCH)	USCH is TDD only
>>UL TrCH identity	MP		Transport channel identity 10.3.5.18	Same TFS applies as specified for indicated UL TrCH
DCH quality target	OP		Quality target 10.3.5.10	
Transparent mode signalling info	CV- MessageT ype		Transparent mode signalling info 10.3.5.17	This IE is not used in RB RELEASE message nor RB RECONFIGURATION message

Condition	Explanation
MessageType	This IE is absent in Radio Bearer Release message and Radio Bearer Reconfiguration message. Otherwise it is OPTIONAL.

10.3.5.2 Added or Reconfigured UL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Uplink transport channel type	MP		Enumerated(DCH,USCH)	USCH is TDD only
UL Transport channel identity	MP		Transport channel identity 10.3.5.18	
TFS	MP		Transport Format Set 10.3.5.23	

NOTE This information element is included within IE "Predefined RB configuration"

10.3.5.3 CPCH set ID

NOTE: Only for FDD.

This information element indicates that this transport channel may use any of the Physical CPCH channels defined in the CPCH set info, which contains the same CPCH set ID. The CPCH set ID associates the transport channel with a set of PCPCH channels defined in a CPCH set info IE and a set of CPCH persistency values. The CPCH set info IE(s) and the CPCH persistency values IE(s) each include the CPCH set ID and are part of the SYSTEM INFORMATION message

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CPCH set ID	MP		Integer(1...maxCPCHsets)	Identifier for CPCH set info and CPCH persistency value messages

10.3.5.4 Deleted DL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink transport channel type	MP		Enumerated(DCH,DSCH)	
DL Transport channel identity	MP		Transport channel identity 10.3.5.18	

10.3.5.5 Deleted UL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Uplink transport channel type	MP		Enumerated(DCH,USCH)	USCH is TDD only
UL Transport channel identity	MP		Transport channel identity 10.3.5.18	

10.3.5.6 DL Transport channel information common for all transport channels

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SCCPCH TFCS	OP		Transport Format Combination Set 10.3.5.20	This IE should be absent within IE "Predefined RB configuration"
CHOICE <i>mode</i>	OP			
>FDD				
>>CHOICE DL parameters	MP			
>>>Independent				
>>>>DL DCH TFCS	OP		Transport Format Combination Set 10.3.5.20	
>>>SameAsUL				(no data)
>TDD				
>>Individual DL CCTrCH information	OP	1 to >maxCCTrCH>		
>>>DL TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Identifies a special CCTrCH for shared or dedicated channels.
>>>CHOICE DL parameters	MP			
>>>>Independent				
>>>>>DL TFCS	MP		Transport format combination set 10.3.5.20	
>>>>SameAsUL				
>>>>>UL DCH TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Same TFCS applies as specified for the indicated UL DCH TFCS identity except for information applicable for UL only

NOTE This information element is included within IE "Predefined TrCh configuration"

10.3.5.7 DRAC Static Information

NOTE: Only for FDD.

Contains static parameters used by the DRAC procedure. Meaning and use is described in subclause 14.8.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transmission Time Validity	MP		Integer(1..256)	number of frames
Time duration before retry	MP		Integer(1..256)	number of frames
DRAC Class Identity	MP		Integer(1.. 8 max DRACclasses)	Indicates the class of DRAC parameters to use in SIB10 message

10.3.5.12 TFCI Field 2 Information

This IE is used for signalling the mapping between TFCI (field 2) values and the corresponding TFC.

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
CHOICE <i>Signalling method</i>	MP			
>TFCI range				
>>TFCI(field 2) range	MP	1 to <maxPDSCH-TFCIgroups>		
>>>Max TFCI(field2) value	MP		Integer(1..1023)	This is the Maximum value in the range of TFCI(field2) values for which the specified CTFC(field2) applies
>>>TFCS Information for DSCH (TFCI range method)	MP		TFCS Information for DSCH (TFCI range method) 10.3.5.14	
>Explicit				
>>TFCS explicit configuration	MP		TFCS explicit configuration 10.3.5.13	

CHOICE <i>Signalling method</i>	Condition under which <i>Split type</i> is chosen
<i>TFCI range</i>	
<i>Explicit</i>	

HANS: Remove the empty table (above)

10.3.5.16 TFCS Removal Information

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
Removal TFCI information	MP	1 to <maxTFC>		
>TFCI	MP		Integer(0..1023)	In TDD 0 is a reserved value

Range Bound	Explanation
<i>MaxDelTFCCount</i>	Maximum number of Transport Format Combinations to be removed.

HANS: Remove empty table (above)

10.3.6.17 Downlink channelisation codes

NOTE: Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE <i>codes representation</i>	MP			
>Consecutive codes				
>>First channelisation code	MP		Enumerated ((16/1)...(16/16))	The codes from First channelisation code to Last channelisation code shall be used in that order by the physical layer in this timeslot. If a TFCI exists in this timeslot, it is mapped in the First channelisation code.
>>Last channelisation code	MP		Enumerated ((16/1)...(16/16))	If this is the same as First channelisation code, only one code is used by the physical layer.
>Bitmap				
>>Channelisation codes bitmap	MP		Bitmapstring(16)	0000000000000000: Usage of SF1 0000000000000001: Channelisation Code 1, SF16 0000000000000010: Channelisation Code 2, SF16 0000000000000011: Channelisation Code 1 & 2, SF16 1111111111111111: Channelisation Code 1 to 16, SF16 (For SF 16, a 1 in the bitmap means that the corresponding code is used, a 0 means that the corresponding code is not used.)

10.3.6.28 Downlink information for each radio link Post

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Choice mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info post 10.3.6.58	
Downlink DPCH info for each RL	MP		Downlink DPCH info for each RL Post 10.3.6.22-10.3.6.19	

10.3.6.30 Downlink PDSCH information

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>PDSCH with SHO DCH Info	OP		PDSCH with SHO DCH Info 10.3.6.47	
>>PDSCH code mapping	OP		PDSCH code mapping 10.3.6.43	

10.3.6.55 PRACH system information list

Information element	Need	Multi	Type and reference	Semantics description
PRACH system information	MP	1 .. <maxPRA CH>		
>PRACH info	MP		PRACH info (for RACH) 10.3.6.52	
>Transport channel identity	MP		Transport channel identity 10.3.5.18	
>RACH TFS	MD		Transport format set 10.3.5.23	Default value is the value of "RACH TFS" for the previous PRACH in the list NOTE: The first occurrence is then MP) NOTE: For TDD in this release there is a single TF within the RACH TFS.
>RACH TFCS	MD		Transport Format Combination Set 10.3.5.20	Default value is the value of "RACH TFCS" for the previous PRACH in the list. NOTE: The first occurrence is then MP). NOTE: For TDD in this release there is no TFCS required.
>PRACH partitioning	MD		PRACH partitioning 10.3.6.53 10-3-6-46	Default value is the value of "PRACH partitioning" for the previous PRACH in the list (note : the first occurrence is then MP)
>Persistence scaling factors	OP		Persistence scaling factors 10.3.6.48	This IE shall not be present if only ASC 0 and ASC 1 are defined. If this IE is absent, value is the value of "Persistence scaling factors" for the previous PRACH in the list if value exists
>AC-to-ASC mapping	OP		AC-to-ASC mapping 10.3.6.1	Only present in SIB 5 If this IE is absent, value is the value of "AC-to-ASC mapping" for the previous PRACH in the list if value exists
>CHOICE <i>mode</i>	MP			
>>FDD				
>>>Primary CPICH TX power	MD		Primary CPICH TX power 10.3.6.61	Default value is the value of "Primary CPICH TX power" for the previous PRACH in the list (note : the first occurrence is then MP)
>>>Constant value	MD		Constant value 10.3.6.11	Default value is the value of "Constant value" for the previous PRACH in the list (note : the first occurrence is then MP)
>>>PRACH power offset	MD		PRACH power offset 10.3.6.54	Default value is the value of "PRACH power offset" for the previous PRACH in the list (note : the first occurrence is then MP)
>>>RACH transmission parameters	MD		RACH transmission parameters	Default value is the value of "RACH transmission parameters" for the previous

			10.3.6.67	PRACH in the list (note : the first occurrence is then MP)
>>>AICH info	MD		AICH info 10.3.6.2	Default value is the value of "AICH info" for the previous PRACH in the list (note : the first occurrence is then MP)
>>TDD				(no data)

NOTE: If the setting of the PRACH information results in that a combination of a signature, preamble scrambling code and subchannel corresponds to a RACH with different TFS and/or TFCS, then for that combination only the TFS/TFCS of the PRACH listed first is valid, where PRACHs listed in System Information Block type 5 shall be counted first.

10.3.6.56 Predefined PhyCH configuration

This information element concerns a pre- defined configuration of physical channel parameters.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Uplink radio resources				
Uplink DPCH info	MP		Uplink DPCH info Pre 10.3.6.90	
Downlink radio resources				
Downlink information common for all radio links	<u>OP</u>		Downlink information common for all radio links Pre 10.3.6.26	

10.3.6.61 Primary CPICH Tx power

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH Tx Power	MP		Integer(-10..50)	<u>Power in dBm.</u>

10.3.6.64 PUSCH Capacity Allocation info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE PUSCH allocation	MP			
>PUSCH allocation pending				(no data)
>PUSCH allocation assignment				
>>PUSCH allocation period info	MP		Allocation Period Info 10.3.6.4	
>>PUSCH power control info	OP		PUSCH power control info 10.3.6.65	
>>TFCS ID	MD		Integer(1..8)	Default is 1.
>>CHOICE Configuration	MP			
>>>Old configuration				
>>>>PUSCH Identity	MP		Integer(1..Hi PUSCH Identities)	
>>>New configuration				
>>>>PUSCH info	MP		PUSCH info 10.3.6.63	
>>>>PUSCH Identity	OP		Integer(1.._HiPUSCHIdentitiesmaxPDSCHIdentity)	

10.3.6.71 Secondary CCPCH info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE <i>mode</i>	MP			
>FDD				
>>Primary CPICH usage for channel estimation	MP		Primary CPICH usage for channel estimation 10.3.6.62	
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.73	May only be sent for SCCPCH channels not carrying the PCH.
>>Secondary scrambling code	OP		Secondary scrambling code 10.3.6.74	May only be sent for SCCPCH channels not carrying the PCH.
>>STTD indicator	MD		STTD Indicator 10.3.6.78	Default value is "TRUE"
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256)	
>>Code number	MP		Integer(0..Spreading factor - 1)	
>>Pilot symbol existence	MD		Boolean	TRUE means the existence. Default value is "TRUE"
>>TFCI existence	MD		Boolean	TRUE means the existence. Default value is "TRUE"
>>Fixed or Flexible Position	MD		Enumerated (Fixed, Flexible)	Default value is "Flexible"
>>Timing Offset	MD		Integer(0..38144 by step of 256)	Chip Delay of the Secondary CCPCH relative to the Primary CCPCH. Default value is 0.
>TDD				
>>Offset	MDMP		Integer (0..Repetition Period -1)	SFN modulo Repetition period = offset. Repetition period is the one indicated in the accompanying Common timeslot info IE
>>Common timeslot info	MP		Common timeslot info 10.3.6.10	
>>Individual timeslot info	MP		Individual timeslot info 10.3.6.37	
>>Code List	MP	1..<maxCode sCount> to 16		
>>>Channelisation Code	MP		Enumerated((16/1)..(16/16))	

10.3.7.26 Inter-RAT measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT measurement results	OP	1 to <maxOther RAT>		
>CHOICE system				At least one spare value needed
>>GSM				
>>>Measured GSM cells	MP	1 to <maxReportedGSMCells>		
>>>>GSM carrier RSSI	OP		bit string(6)	RXLEV, [46]
>>>>Pathloss	OP		Integer(46..158)	In dB
>>>>CHOICE BSIC	MP			
>>>>>Verified BSIC				
>>>>>>inter-RAT cell id			Integer(0..<maxCellMeasurements> - 1)	
>>>>>>Non verified BSIC				
>>>>>>>BCCH ARFCN			Integer (0..1023)	[45]
>>>>>>>>Observed time difference to GSM cell	OP		Observed time difference to GSM cell 10.3.7.52	

10.3.7.28 Inter-RAT measurement event results

This IE contains the measurement event results that are reported to UTRAN for inter-RAT measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT event identity	MP		Inter-RAT event identity 10.3.7.24	
Cells to report	MP	1 to <maxCellMeasurements>		
>CHOICE BSIC	MP			
>>Verified BSIC				
>>>inter-RAT cell id			Integer(0..<maxCellMeasurements> - 1)	
>>>Non verified BSIC				
>>>>BCCH ARFCN			Integer (0..1023)	[45]

10.3.7.30 Inter-RAT measurement reporting criteria

The triggering of the event-triggered reporting for an inter-RAT measurement. All events concerning inter-RAT measurements are labelled 3x where x is a,b,c..

Event 3a: The estimated quality of the currently used UTRAN frequency is below a certain threshold **and** the estimated quality of the other system is above a certain threshold.

Event 3b: The estimated quality of other system is below a certain threshold.

Event 3c: The estimated quality of other system is above a certain threshold.

Event 3d: Change of best cell in other system.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters required for each event	OP	1 to <maxMeas Event>		
>Inter-RAT event identity	MP		Inter-RAT event identity 10.3.7.24	
>Threshold own system	CV – clause 0		<u>Integer (-115..0)</u>	
>W	CV – clause 0		<u>Real(0.0..2.0 by step of 0.1)</u>	In event 3a
>Threshold other system	CV – clause 1		<u>Integer (-115..0)</u>	In event 3a, 3b, 3c
>Hysteresis	MP		<u>Integer (0..15)</u>	
>Time to trigger	MP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report.
>Reporting cell status	OP		Reporting cell status 10.3.7.61	

Condition	Explanation
<i>Clause 0</i>	The IE is mandatory if " Inter-RAT event identity" is set to "3a", otherwise the IE is not needed
<i>Clause 1</i>	The IE is mandatory if " Inter-RAT event identity" is set to 3a, 3b or 3c, otherwise the IE is not needed

10.3.7.39 Intra-frequency measurement reporting criteria

The triggering of the event-triggered reporting for an intra-frequency measurement. All events concerning intra-frequency measurements are labelled 1x where x is a, b, c....

Event 1a: A Primary CPICH enters the Reporting Range (FDD only).

Event 1b: A Primary CPICH leaves the Reporting Range (FDD only).

Event 1c: A Non-active Primary CPICH becomes better than an active Primary CPICH (FDD only).

Event 1d: Change of best cell [Note 1] (FDD only).

Event 1e: A Primary CPICH becomes better than an absolute threshold (FDD only).

Event 1f: A Primary CPICH becomes worse than an absolute threshold (FDD only).

Event 1g: Change of best cell in TDD.

Event 1h: Timeslot ISCP below a certain threshold (TDD only).

Event 1i: Timeslot ISCP above a certain threshold (TDD only).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters required for each event	OP	1 to <maxMeas Event>		
>Intra-frequency event identity	MP		Intra-frequency event identity 10.3.7.34	
>Triggering condition 1	CV – clause 0		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells)	Indicates which cells can trigger the event
>Triggering condition 2	CV – clause 6		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells, Detected set cells, Detected set cells and monitored set cells)	Indicates which cells can trigger the event
>Reporting Range	CV – clause 2		Real(0..14.5 by step of 0.5)	In dB. In event 1a,1b.
>Cells forbidden to affect Reporting range	CV – clause 1	1 to <maxCellMeas>		In event 1a,1b
>>CHOICE mode	MP			
>>>FDD				
>>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>>>TDD				
>>>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57	
>W	CV – clause 2		Real(0.0..2.0 by step of 0.1)	
>Hysteresis	MP		Real(0..7.5 by step of 0.5)	In dB.
>Threshold used frequency	CV-clause 3		Integer (-115..165)	Range used depend on measurement quantity. CPICH RSCP -115..-25 dBm CPICH Ec/No -24..0 dB Pathloss 30..165dB ISCP -115..-25 dBm
>Reporting deactivation threshold	CV-clause 4		Integer(0, 1, 2, 3, 4, 5, 6, 7)	In event 1a Indicates the maximum number of cells allowed in the active set in order for event 1a to occur. 0 means not applicable

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>Replacement activation threshold	CV-clause 5		Integer(0, 1, 2, 3, 4, 5, 6, 7)	In event 1c Indicates the minimum number of cells allowed in the active set in order for event 1c to occur. 0 means not applicable
>Time to trigger	MP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms
>Amount of reporting	CV-clause 7		Integer(1, 2, 4, 8, 16, 32, 64, Infinity)	
>Reporting interval	CV-clause 7		Integer(0, 250, 500, 1000, 2000, 4000, 8000, 16000)	Indicates the interval of periodical reporting when such reporting is triggered by an event. Interval in milliseconds. 0 means no periodical reporting
>Reporting cell status	OP		Reporting cell status 10.3.7.61	

Condition	Explanation
Clause 0	The IE is mandatory if "Intra-frequency event identity" is set to "1b" or "1f", otherwise the IE is not needed
Clause 1	The IE is optional if "Intra-frequency event identity" is set to "1a" or "1b", otherwise the IE is not needed
Clause 2	The IE is mandatory if "Intra-frequency event identity" is set to "1a" or "1b", otherwise the IE is not needed
Clause 3	The IE is mandatory if "Intra-frequency event identity" is set to , "1e", "1f", "1h", "1i" or "1j", otherwise the IE is not needed
Clause 4	The IE is mandatory if "Intra-frequency event identity" is set to "1a", otherwise the IE is not needed
Clause 5	The IE is mandatory if "Intra-frequency event identity" is set to "1c", otherwise the IE is not needed
Clause 6	The IE is mandatory if "Intra-frequency event identity" is set to "1a" or "1e".
Clause 7	The IE is mandatory if "Intra-frequency event identity" is set to "1a" or "1c".

10.3.7.45 Measured results on RACH

Contains the measured results on RACH of the quantity indicated optionally by Reporting Quantity in the system information broadcast on BCH. The list should be in the order of the value of the measurement quality (the first cell should be the best cell). The "best" FDD cell has the largest value when the measurement quantity is "Ec/No" or "RSCP". On the other hand, the "best" cell has the smallest value when the measurement quantity is "Pathloss". The "best" TDD cell has the largest value when measurement quantity is "Primary CCPCH RSCP".

Information Element/group name	Need	Multi	Type and reference	Semantics description
Measurement result for current cell				
CHOICE mode	MP			
>FDD				
>>CHOICE measurement quantity	MP			
>>>CPICH Ec/No			Integer(0..50)	In dB. According to CPICH_Ec/No in [19] and [20].
>>>CPICH RSCP			Integer(0..91)	In dBm. According to CPICH_RSCP_LEV in [19] and [20].
>>>Pathloss			Integer(46..158)	In dB
>TDD				
>>Timeslot List	OP	1 to 14		
>>>Timeslot ISCP	MP		Timeslot ISCP info 10.3.7.65	The UE shall report the Timeslot ISCP in the same order as indicated in the cell info
>>>Primary CCPCH RSCP	OP		Primary CCPCH RSCP info 10.3.7.54	
Measurement results for monitored cells	OP	1 to 7		
>SFN-SFN observed time difference	OP		SFN-SFN observed time difference 10.3.7.63	It is absent for current cell
>CHOICE mode	MP			
>>FDD				
>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>>CHOICE measurement quantity	OP			It is absent for current cell
>>>>CPICH Ec/No			Integer(-20..00..50)	In dB. According to CPICH_Ec/No in [19].
>>>>CPICH RSCP			Integer(0..91 -115..-40)	In dBm. According to CPICH_RSCP_LEV in [19].
>>>>Pathloss			Integer(46..158)	In dB
>>TDD				
>>>Cell parameters Id	MP		Cell parameters Id 10.3.6.9	
>>>>Primary CCPCH RSCP	MP		Primary CCPCH RSCP info 10.3.7.54	

NOTE 1: Monitored cells consist of current cell and neighbouring cells.

10.3.7.55 Quality measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
BLER measurement results	OP	1 to <maxTrCH >		
>DL Transport channel identity	MP		Transport channel identity 10.3.5.18	transport channel type = DCH
>DL Transport Channel BLER	OP		Integer (0..63)	According to BLER_LOG in [19] and [20]
CHOICE mode				
>FDD				No data
>TDD				
>>SIR measurement results	OP	1 to <MaxCCTrCH>		SIR measurements for DL CCTrCH
>>>TFCS ID	MP		Enumerated (1..8)	
>>>Timeslot list	MP	1 to <maxTS>		for all timeslot on which the CCTrCH is mapped on
>>>>SIR	MP		Integer(0..63)	According to UE_SIR in [20]

10.3.7.59 Quality reporting quantity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
DL Transport Channel BLER	MP		Boolean	TRUE means report requested
Transport channels for BLER reporting	CV BLER reporting	1 to <maxTrCH >		The default, if no transport channel identities are present, is that the BLER is reported for all downlink transport channels
>DL Transport channel identity	MP		Transport channel identity 10.3.5.18	transport channel type = DCH
CHOICE mode				
>FDD				No data
>TDD				
>>SIR measurement list	OP	1 to <maxCCTr CH>		SIR measurements shall be reported for all listed TFCS IDs
>>>TFCS ID	MP		Enumerated Integer(1...8)	

Condition	Explanation
<i>BLER reporting</i>	This information element is absent if 'DL Transport Channel BLER' is 'False' and optional, if 'DL Transport Channel BLER' is 'True'

10.3.7.61 Reporting Cell Status

Indicates maximum allowed number of cells to report and whether active set cells and/or virtual active set cells and/or monitored set cells on and/or detected set cells used frequency and/or monitored set cells on non used frequency should/should not be included in the IE "Measured results".

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Choice reported cell	MP			
>Report cells within active set				
>>Maximum number of reported cells	MP		EnumeratedInteger(e1..e6)	
>Report cells within monitored set cells on used frequency				
>>Maximum number of reported cells	MP		EnumeratedInteger(e1..e6)	
>Report cells within active set and/or monitored set cells on used frequency				
>>Maximum number of reported cells	MP		EnumeratedInteger(e1..e6)	
>Report cells within detected set on used frequency				
>>Maximum number of reported cells	MP		EnumeratedInteger(e1..e6)	
>Report cells within monitored set and/or detected set on used frequency				
>>Maximum number of reported cells	MP		EnumeratedInteger(e1..e6)	

>Report all active set cells + cells within monitored set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within monitored set and/or detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report cells within virtual active set				
>>Maximum number of reported cells	MP		Integer(1..6)	
>Report cells w -within monitored set on non-used frequency				
>>Maximum number of reported cells	MP		Integer(1..6)	
>Report cells within monitored and/or active set on non-used frequency				
>>Maximum number of reported cells	MP		Integer(1..6)	
>Report all virtual active set cells + cells within monitored set on non-used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report cells within active set or within virtual active set				
>>Maximum number of reported cells	MP		Integer (1..12)	
>Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency				
>>Maximum number of reported cells	MP		Integer(1..12)	

10.3.7.72 Traffic volume measurement reporting criteria

Contains the measurement reporting criteria information for a traffic volume measurement.

Event 4a: Transport Channel Traffic Volume [15] exceeds an absolute threshold.

Event 4b: Transport Channel Traffic Volume [15] becomes smaller than an absolute threshold.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters sent for each transport channel	OP	1 to <maxTrCH >		
>Uplink transport channel type	MOP		Enumerated(DCH,RACH,USCH)	USCH is TDD only
>UL Transport Channel ID	<i>CV-UL-DCH/USCH</i>		Transport channel identity 10.3.5.18	
>Parameters required for each Event	OP	1 to <maxMeas perEvent>		
>>Traffic volume event identity	MP		Traffic volume event identity 10.3.7.66	
>>Reporting Threshold	MP		Enumerated(8,16,32,64,128,256,512,1024,2K,3K,4K,6K,8K,12K,16K,24K,32K,48K,64K,96K,128K,192K,256K,384K,512K,768K)	Threshold in bytes And N Kbytes = N*1024 bytes
>>Time to trigger	OP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms
>>Pending time after trigger	OP		Integer(250, 500, 1000, 2000, 4000, 8000, 16000)	Time in seconds. Indicates the period of time during which it is forbidden to send any new measurement reports with the same Traffic volume event identity even if the triggering condition is fulfilled again. Time in milliseconds
>>Tx interruption after trigger	OP		Integer (250, 500, 1000, 2000, 4000, 8000, 16000)	Time in milliseconds. Indicates whether or not the UE shall block DTCH transmissions on the RACH after a measurement report is triggered.

Condition	Explanation
<i>UL-DCH/USCH</i>	If IE "Uplink transport channel type" is equal to "DCH" or "USCH" (TDD only) this IE is OP. Otherwise the IE is not needed.

10.3.7.88 UE positioning GPS acquisition assistance

This IE contains parameters that enable fast acquisition of the GPS signals in UE-assisted GPS positioning.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
CHOICE Reference Time				
>UTRAN reference time				GPS Time of Week counted in microseconds, given as GPS TOW in milliseconds and GPS TOW remainder in microseconds, UTRAN reference time = 1000 * GPS TOW msec + GPS TOW rem usec
>>GPS TOW msec	MP		Integer(0..6.048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit)
>>GPS TOW rem usec	MP		Integer(0..999)	GPS Time of Week in microseconds MOD 1000.
>>SFN	MP		Integer(0..4095)	
>GPS reference time only				
>>GPS TOW msec	MP		Integer(0..6.048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit).
Satellite information	MP	1 to <maxSat>		
>SatID	MP		Integer (0..63)	
>Doppler (0 th order term)	MP		Real(-5.120..5.1175 by step of 2.5)	Hz
>Extra Doppler	OP			
>>Doppler (1 st order term)	MP		Real (-40.966..0.5483 by step of 0.023)	Scaling factor 1/42
>>Doppler Uncertainty	MP		Enumerated (12.5,25,50,100,200)	Hz
>Code Phase	MP		Integer(0..1022)	Chips, specifies the centre of the search window
>Integer Code Phase	MP		Integer(0..19)	1023 chip segments
>GPS Bit number	MP		Integer(0..3)	Specifies GPS bit number (20 1023 chip segments)
>Code Phase Search Window	MP		Integer(1023,1,2,3,4,6,8,12,16,24,32,48,64,96,128,192)	Specifies the width of the search window.
>Azimuth and Elevation	OP			
>>Azimuth	MP		Real(0..348.75 by step of 11.25)	Degrees
>>Elevation	MP		Real(0..78.75 by step of 11.25)	Degrees

CHOICE Reference time	Condition under which the given reference time is chosen
UTRAN reference time	The reference time is relating GPS time to UTRAN time (SFN)
GPS reference time only	The time gives the time for which the location estimate is valid

10.3.7.88a UE positioning GPS Additional Assistance Data Request

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Almanac	MP		Boolean	TRUE means requested
UTC Model	MP		Boolean	TRUE means requested
Ionospheric model	MP		Boolean	TRUE means requested
Navigation Model	MP		Boolean	TRUE means requested
DGPS Corrections	MP		Boolean	TRUE means requested
Reference Location	MP		Boolean	TRUE means requested
Reference Time	MP		Boolean	TRUE means requested
Acquisition Assistance	MP		Boolean	TRUE means requested
Real-Time Integrity	MP		Boolean	TRUE means requested
Navigation Model Additional data	CV- <i>Navigation Model</i>			this IE is present only if "Navigation Model" is set to TRUE otherwise it is absent
>GPS Week	MP		Integer (0..1023)	
>GPS_Toe	MP		Integer (0..167)	GPS time of ephemeris in hours of the latest ephemeris set contained by the UE
>T-Toe limit	MP		Integer (0..10)	ephemeris age tolerance of the UE to UTRAN in hours
>Satellites list related data	MP	0 to <maxSat>-1		
>>SatID	MP		Integer (0..63)	
>>IODE	MP		Integer (0..239)	Issue of Data Ephemeris for SatID

10.3.7.89 UE positioning GPS almanac

This IE contains a reduced-precision subset of the clock and ephemeris parameters.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
WN _a	MP		Bit string(8)	
Satellite information	MP	1 to <maxSat>		
>DataID	MP		Integer(0..3) Bitstring(2)	See [12]
>SatID	MP		Enumerated(0..63)	Satellite ID
>e	MP		Bit string(16)	Eccentricity [12]
>t _{oa}	MP		Bit string(8)	Reference Time Ephemeris [12]
>δi	MP		Bit string(16)	
>OMEGADOT	MP		Bit string(16)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles/sec) [12]
>SV Health	MP		Bit string(8)	
>A ^{1/2}	MP		Bit string(24)	Semi-Major Axis (meters) ^{1/2} [12]
>OMEGA ₀	MP		Bit string(24)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles) [12]
>M ₀	MP		Bit string(24)	Mean Anomaly at Reference Time (semi-circles) [12]
>ω	MP		Bit string(24)	Argument of Perigee (semi-circles) [12]
>af ₀	MP		Bit string(11)	apparent clock correction [12]
>af ₁	MP		Bit string(11)	apparent clock correction [12]
SV Global Health	OP		Bit string(364)	This enables GPS time recovery and possibly extended GPS correlation intervals. It is specified in page 25 of subframes 4 and 5 [12]

10.3.7.91 UE positioning GPS DGPS corrections

This IE contains DGPS corrections to be used by the UE.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS TOW sec	MP		Integer(0..604799)	seconds GPS time-of-week when the DGPS corrections were calculated
Status/Health	MP		Enumerated(UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.2, UDRE scale 0.1, no data, invalid data)	
DPGS information	CV-Status/Health	1 to <maxSat>		If the Cipher information is included these fields are ciphered.
>SatID	MP		Enumerated(0..63)	
>IODE	MP		Integer(0..239)	
>UDRE	MP		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	The value in this field shall be multiplied by the UDRE Scale Factor in the IE Status/Health to determine the final UDRE estimate for the particular satellite.
>PRC	MP		Real(-655.304..655.034 by step of 0.32)	meters (different from [13])
>RRC	MP		Real(-4.064..4.064 by step of 0.032)	meters/sec (different from [13])
>Delta PRC2	MP		Integer(-127..127)	Meters
>Delta RRC2	MP		Real(-0.224..0.224 by step of 0.032)	meters/sec
>Delta PRC3	CV-DCCH		Integer(-127..127)	Meters
>Delta RRC3	CV-DCCH		Real(-0.224..0.224 by step of 0.032)	meters/sec

Condition	Explanation
Status/Health	This IE is mandatory if "status" is not equal to "no data" or "invalid data", otherwise the IE is not needed
DCCH	This IE is mandatory present if the IE " UE positioning GPS DGPS corrections" it is included in the point-to-point message otherwise it is optional if the IE "UE positioning GPS DGPS corrections" is included in the broadcast message

10.3.7.103 UE positioning OTDOA assistance data

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
UE positioning OTDOA reference cell info	OP		UE positioning OTDOA cell info 10.3.7.108	
UE positioning OTDOA neighbour cell list	OP	1 to <maxCellMEas>		
≥UE positioning OTDOA neighbour cell info	<u>M</u> OP		UE positioning OTDOA neighbour cell info 10.3.7.106	

10.3.7.108 UE positioning OTDOA reference cell info

This IE defines the cell used for time references in all OTDOA measurements.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
SFN	OP		Integer (0..4095)	Time stamp (SFN of Reference Cell) of the SFN-SFN observed time differences and SFN-SFN drift rates. Included if any SFN-SFN drift value is included.
CHOICE mode				
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>TDD				
>>cell and channel ID	MP		Cell and Channel Identity info 10.3.6.8a	Identifies the channel to be measured on.
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information.
CHOICE PositioningMode				
>UE based				
>>CHOICE <i>Cell Position</i>	<u>OP</u>			The position of the antenna that defines the cell. Used for the UE based method.
>>>Ellipsoid				
>>>>Ellipsoid point	<u>OPMP</u>		Ellipsoid point 10.3.8.4a	
>>>Ellipsoid with altitude				
>>>>Ellipsoid point with altitude	<u>OPMP</u>		Ellipsoid point with altitude 10.3.8.4b	
>>Round Trip Time	OP		Real(876.00 .. 2923.875) in steps of 0.0625	In chips.
>UE assisted				(no data)
IPDL parameters	OP		UE positioning IPDL parameters 10.3.7.98	If this element is not included there are no idle periods present

11 Message and Information element abstract syntax (with ASN.1)

This clause contains definitions for RRC PDUs and IEs using a subset of ASN.1 as specified in [14]. PDU and IE definitions are grouped into separate ASN.1 modules.

```

Gsm-map-IDNNS ::=
  routingbasis
  localPTMSI
    routingparameter
  },
  tMSIofsamePLMN
    routingparameter
  },
  tMSIofdifferentPLMN
    routingparameter
  },
  iMSIresponsetopaging
    routingparameter
  },
  iMSIcausenotresponsetopagingUEinitiatedEvent
    routingparameter
  },
  iMEI
    routingparameter
  },
  spare1
    routingparameter
  },
  spare2
    routingparameter
  },
  enteredparameter
  }

  SEQUENCE {
    CHOICE {
      SEQUENCE {
        RoutingParameter
      },
      SEQUENCE {
        RoutingParameter
      },
      SEQUENCE {
        RoutingParameter
      },
      SEQUENCE {
        RoutingParameter
      },
      SEQUENCE {
        RoutingParameter
      },
      SEQUENCE {
        RoutingParameter
      },
      SEQUENCE {
        RoutingParameter
      }
    }
  }
  BOOLEAN

UE-Positioning-Capability ::=
  standaloneLocMethodsSupported
  ue-BasedOTDOA-Supported
  networkAssistedGPS-Supported
  gps-ReferenceTimeCapable
  supportForIPDL
  }

  SEQUENCE {
    BOOLEAN,
    BOOLEAN,
    NetworkAssistedGPS-Supported,
    BOOLEAN,
    BOOLEAN
  }

TFCS-ReconfAdd ::=
  ctfcSize
  ctfc2Bit
    ctfc2
    gainFactorpowerOffsetInformation
  },
  ctfc4Bit
    ctfc4
    gainFactorpowerOffsetInformation
  },
  ctfc6Bit
    ctfc6
    gainFactorpowerOffsetInformation
  },
  ctfc8Bit
    ctfc8
    gainFactorpowerOffsetInformation
  },
  ctfc12Bit
    ctfc12
    gainFactorpowerOffsetInformation
  },
  ctfc16Bit
    ctfc16
    gainFactorpowerOffsetInformation
  },
  }

  SEQUENCE{
    CHOICE{
      SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        INTEGER (0..3),
        PowerOffsetInformation
      } OPTIONAL
    },
    SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        INTEGER (0..15),
        PowerOffsetInformation
      } OPTIONAL
    },
    SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        INTEGER (0..63),
        PowerOffsetInformation
      } OPTIONAL
    },
    SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        INTEGER (0..255),
        PowerOffsetInformation
      } OPTIONAL
    },
    SEQUENCE (SIZE(1..maxTFC)) OF SEQUENCE {
        INTEGER (0..4095),
        PowerOffsetInformation
      } OPTIONAL
    },
    SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        INTEGER(0..65535),
        PowerOffsetInformation
      } OPTIONAL
    }
  }

```

```

        ctfc24Bit                SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        ctfc24                    INTEGER(0..16777215),
|      gainFactorpowerOffsetInformation    PowerOffsetInformation    OPTIONAL
    }
}

TM-SignallingInfo ::=          SEQUENCE {
    messType                    MessType,
    tm-SignallingMode           CHOICE {
        model                    NULL,
        mode2                    SEQUENCE {
|      --TrCH-Type is always DCH
        ul-controlledTrChList    UL-ControlledTrChList
    }
}
}

| -- Actual value = IE value * 0.125
Alpha ::=                      INTEGER (0..8)

| PUSCH-SysInfoList-SFN ::=    SEQUENCE (SIZE (1.. maxPUSCHmaxPDSCH)) OF
    SEQUENCE {
        pusch-SysInfo           PUSCH-SysInfo,
        sfn-TimeInfo            SFN-TimeInfo    OPTIONAL
    }

AcquisitionSatInfo ::=        SEQUENCE {
|      -- Actual value = IE value * 2.5
    satID                       SatID,
    doppler0thOrder             INTEGER (-2048..2047),
    extraDopplerInfo           ExtraDopplerInfo    OPTIONAL,
    codePhase                   INTEGER (0..1022),
    integerCodePhase            INTEGER (0..19),
    gps-BitNumber               INTEGER (0..3),
    codePhaseSearchWindow       CodePhaseSearchWindow,
    azimuthAndElevation         AzimuthAndElevation    OPTIONAL
}

AzimuthAndElevation ::=      SEQUENCE {
|      -- Actual value = IE value * 11.25
    azimuth                     INTEGER (0..31),
|      -- Actual value = IE value * 11.25
    elevation                   INTEGER (0..7)
}

| -- Actual value = IE value * 0.032
DeltaRRC ::=                  INTEGER (-7..7)

ExtraDopplerInfo ::=          SEQUENCE {
|      -- -Actual value = IE value * 0.023
    doppler1stOrder             INTEGER (-42..21),
    dopplerUncertainty          DopplerUncertainty
}

| -- Actual value = IE value * 0.32
PRC ::=                        INTEGER (-2047..2047)

| -- Actual value = IE value * 512
ReferenceTimeDifferenceToCell ::= CHOICE {
    -- Actual value = IE value * 40
    accuracy40                  INTEGER (0..960),
    -- Actual value = IE value * 256
    accuracy256                 INTEGER (0..150),
    -- Actual value = IE value * 2560
    accuracy2560                INTEGER (0..15)
}

```

```

| -- Actual value = IE value * 0.032
RRC ::= INTEGER (-127..127)

SFN-SFN-ObsTimeDifference ::= CHOICE {
  type1 SFN-SFN-ObsTimeDifference1,
| Actual value for type2 = IE value * 0.0625 - 1280
  type2 SFN-SFN-ObsTimeDifference2
}

UE-InternalReportingQuantity ::= SEQUENCE {
  ue-TransmittedPower BOOLEAN,
  modeSpecificInfo CHOICE {
|   fdd SEQUENCE {
      ue-RX-TX-TimeDifference BOOLEAN
    },
    tdd SEQUENCE {
      appliedTA BOOLEAN
    }
  }
}

UE-InternalReportingQuantity-r4 ::= SEQUENCE {
  ue-TransmittedPower BOOLEAN,
  modeSpecificInfo CHOICE {
|   fdd SEQUENCE {
      ue-RX-TX-TimeDifference
    },
    tdd SEQUENCE {
      tddOption CHOICE {
        tdd384 SEQUENCE {
          appliedTA BOOLEAN
        },
        tdd128 SEQUENCE {
          upPTS-ADV BOOLEAN
        }
      }
    }
  }
}

| UE-Positioning-GPS-MeasurementResults ::= SEQUENCE {
  referenceSFN ReferenceSFN OPTIONAL,
  gps-TOW-lmsec GPS-TOW-lmsec,
  gps-TOW-rem-usec GPS-TOW-rem-usec OPTIONAL,
  gps-MeasurementParamList GPS-MeasurementParamList
}

UE-Positioning-MeasuredResults ::= SEQUENCE {
  ue-positioning-MultipleSets UE-Positioning-MultipleSets
  OPTIONAL,
  ue-positioning-ReferenceCellIdentity PrimaryCPICH-Info OPTIONAL,
  ue-positioning-OTDOA-Measurement UE-Positioning-OTDOA-Measurement
  OPTIONAL,
  ue-positioning-PositionEstimateInfo UE-Positioning-PositionEstimateInfo
  OPTIONAL,
| ue-positioning-GPS-Measurement UE-Positioning-GPS-MeasurementResults
  OPTIONAL,
  ue-positioning-Error UE-Positioning-Error
  OPTIONAL
}

UE-Positioning-MeasurementEventResults ::= CHOICE {
  event7a UE-Positioning-PositionEstimateInfo,
| event7b UE-Positioning-OTDOA-Measurement,
  event7c UE-Positioning-GPS-MeasurementResults
}

UE-Positioning-OTDOA-NeighbourCellInfo ::= SEQUENCE {
  modeSpecificInfo CHOICE {
|   fdd SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info
    },

```

```

        tdd                SEQUENCE{
            cellAndChannelIdentity    CellAndChannelIdentity
        }
    },
    frequencyInfo          FrequencyInfo                OPTIONAL,
    ue-positioning-IPDL-Paremters  UE-Positioning-IPDL-Parameters
OPTIONAL,
    sfn-SFN-RelTimeDifference  SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift              INTEGER (0..30),
    searchWindowSize           OTDOA-SearchWindowSize,
    positioningMode           CHOICE{
        ueBased                SEQUENCE {
            relativeNorth      INTEGER (-20000..20000)        OPTIONAL,
            relativeEast        INTEGER (-20000..20000)        OPTIONAL,
            relativeAltitude    INTEGER (-4000..4000)          OPTIONAL,
            fineSFN-SFN         FineSFN-SFN                  OPTIONAL,
            -- actual value = (IE value * 0.0625) + 876
            roundTripTime       INTEGER (0..327665)            OPTIONAL
        },
        ueAssisted              SEQUENCE {}
    }
}

```

```

UE-Positioning-OTDOA-NeighbourCellInfo-r4 ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd                SEQUENCE {
            primaryCPICH-Info    PrimaryCPICH-Info
        },
        tdd                SEQUENCE{
            cellAndChannelIdentity    CellAndChannelIdentity
        }
    },
    frequencyInfo          FrequencyInfo                OPTIONAL,
    ue-positioning-IPDL-Paremters  UE-Positioning-IPDL-Parameters-r4
OPTIONAL,
    sfn-SFN-RelTimeDifference  SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift              INTEGER (0..30),
    searchWindowSize           OTDOA-SearchWindowSize,
    positioningMode           CHOICE{
        ueBased                SEQUENCE {
            relativeNorth      INTEGER (-20000..20000)        OPTIONAL,
            relativeEast        INTEGER (-20000..20000)        OPTIONAL,
            relativeAltitude    INTEGER (-4000..4000)          OPTIONAL,
            fineSFN-SFN         FineSFN-SFN                  OPTIONAL,
            -- actual value = (IE value * 0.0625) + 876
            roundTripTime       INTEGER (0..327665)            OPTIONAL
        },
        ueAssisted              SEQUENCE {}
    }
}

```

```

UE-Positioning-OTDOA-ReferenceCellInfo ::= SEQUENCE {
    sfn                    INTEGER (0..4095)
OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                SEQUENCE {
            primaryCPICH-Info    PrimaryCPICH-Info
        },
        tdd                SEQUENCE{
            cellAndChannelIdentity    CellAndChannelIdentity
        }
    },
    frequencyInfo          FrequencyInfo                OPTIONAL,
    positioningMode CHOICE {
        ueBased                SEQUENCE {
            cellPosition          ReferenceCellPosition    OPTIONAL,
            -- actual value = (IE value * 0.0625) + 876
            roundTripTime         INTEGER (0..327665)        OPTIONAL
        },
        ueAssisted              SEQUENCE {}
    },
    ue-positioning-IPDL-Paremters  UE-Positioning-IPDL-Parameters    OPTIONAL
}

```

```

UE-Positioning-OTDOA-ReferenceCellInfo-r4 ::= SEQUENCE {
    sfn                    INTEGER (0..4095)
OPTIONAL,
    modeSpecificInfo CHOICE {

```

```

        fdd                               SEQUENCE {
            primaryCPICH-Info             PrimaryCPICH-Info
        },
        tdd                               SEQUENCE{
            cellAndChannelIdentity        CellAndChannelIdentity
        }
    },
    frequencyInfo                         FrequencyInfo                OPTIONAL,
    positioningMode CHOICE {
        ueBased                           SEQUENCE {
            cellPosition                   ReferenceCellPosition    OPTIONAL,
            -- actual value = (IE value * 0.0625) + 876
            roundTripTime                  INTEGER (0..327665)        OPTIONAL
        },
        ueAssisted                         SEQUENCE {}
    },
    ue-positioning-IPDL-Parameters        UE-Positioning-IPDL-Parameters-r4    OPTIONAL
}

```

--Actual value = 2^(IE value)

```
ExpirationTimeFactor ::= INTEGER (1..8)
```

```

SysInfoType7 ::= SEQUENCE {
    -- Physical channel IEs
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            ul-Interference
        },
        tdd NULL
    },
    prach-Information-SIB5-List DynamicPersistenceLevelList,
    prach-Information-SIB6-List DynamicPersistenceLevelList    OPTIONAL,
    expirationTimeFactor ExpirationTimeFactor                OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions SEQUENCE {}                        OPTIONAL
}

```

```

SysInfoType14 ::= SEQUENCE {
    -- Physical channel IEs
    individualTS-InterferenceList IndividualTS-InterferenceList,
    expirationTimeFactor ExpirationTimeFactor                OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions SEQUENCE {}                        OPTIONAL
}

```

3GPP TSG-RAN WG2 Meeting #21
Busan, Korea, May 21-25, 2001

R2_011497

CR-Form-v4	CHANGE REQUEST
⌘ 25.331 CR 882 ⌘ rev r1 ⌘ Current version: 3.6.0 ⌘	

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ UE Positioning Corrections to ASN.1 and Tabular		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 2001-05-30
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ Discrepancies between RRC ASN.1 and tabular were identified in R2-011034.
Summary of change:	⌘ <u>Tabular Changes:</u> <ul style="list-style-type: none"> • UE positioning GPS reference time (10.3.7.96) <ul style="list-style-type: none"> • Range of values for "Node B Clock Drift" changed so that total number of steps can be described by INTEGER (0..15) in ASN.1 • UE positioning measured results (10.3.7.99) <ul style="list-style-type: none"> • UE positioning Multiple Sets (10.3.7.102) IE is not used in Release 99. This optional IE is deleted. • UE positioning Multiple Sets (10.3.7.102) <ul style="list-style-type: none"> • This IE is not used in Release 99. The contents of this IE are deleted. Section 10.3.7.102 is renamed to "Void". <u>ASN.1 Changes:</u> <ul style="list-style-type: none"> • "EllipsoidPointAltitude" <ul style="list-style-type: none"> • altitude changed from (0..16383) to (0..32767) • "EllipsoidPointAltitudeEllipsoide" <ul style="list-style-type: none"> • altitude changed from (0..16383) to (0..32767) • "NodeB-ClockDrift" <ul style="list-style-type: none"> • comment added to describe actual scaling of value • "Satellite Status" <ul style="list-style-type: none"> • "es-NN-C" value replaced by a reserved value, "rev2" • "UE-Positioning-GPS-ReferenceTime" <ul style="list-style-type: none"> • SFN changed from mandatory to optional • "UE-Positioning-MeasuredResults" <ul style="list-style-type: none"> • "ue-positioning-MultipleSets" option deleted

- “UE-Positioning-MultipleSets” definition deleted
- “ReferenceCellRelation” definition deleted

Backwards Compatability Analysis:

- Proposed changes are backward compatible.
1 and 2. Correction to a function where rules were missing.
Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Consequences if not approved: ⌘ If not approved, then inconsistencies will exist between ASN.1 and tabular.

Clauses affected: ⌘ 10.3.7.96, 10.3.7.99, 10.3.7.102, 11.3

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

Other comments: ⌘ There were no e-mail comments offered on CR 882 following RAN WG2 #21.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

... <NEXT MODIFIED SECTION> ...

10.3.7.96 UE positioning GPS reference time

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS Week	MP		Integer(0..1023)	
GPS TOW msec	MP		Integer(0..6.048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit).
GPS TOW rem usec	OP		Integer(0..999)	GPS Time of Week in microseconds MOD 1000. GPS Time of Week in microseconds = 1000 * GPS TOW msec + GPS TOW rem usec
SFN	OP		Integer(0..4095)	The SFN which the GPS TOW time stamps. SFN and GPS TOW msec and GPS TOW rem usec are included if relation GPS TOW/SFN is known to at least 10 μs.
SFN-TOW Uncertainty	OP		Enumerated (lessThan10, moreThan10)	This field indicates the uncertainty of the relation GPS TOW/SFN. lessThan10 means the relation is accurate to at least 10 ms.
Node B Clock Drift	OP		Real(-0.1..0.1 by step of 0.0125) (-0.09375..0.09375 by step of 0.0125)	μsec/sec (ppm)
GPS TOW Assist	OP	1 to <maxSat >		
>SatID	MP		Enumerated(0..63)	
>TLM Message	MP		Bit string(14)	
>Anti-Spoof	MP		Boolean	
>Alert	MP		Boolean	
>TLM Reserved	MP		Bit string(2)	

... <NEXT MODIFIED SECTION> ...

10.3.7.99 UE positioning measured results

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE positioning Multiple Sets	OP		UE positioning Multiple Sets 10.3.7.102	If this IE is absent, a single measurement set is included.
UE positioning reference cell Identity	OP		Primary CPICH Info 10.3.6.60	
UE positioning OTDOA measured results	OP		UE positioning OTDOA measured results 10.3.7.105	
UE positioning Position estimate info	OP		UE positioning Position estimate info 10.3.7.109	
UE positioning GPS measured results	OP		UE positioning GPS measured results 10.3.7.93	
UE positioning error	OP		UE positioning error 10.3.7.87	Included if UE positioning error occurred

... <NEXT MODIFIED SECTION> ...

10.3.7.102 VoidUE-positioning-multiple-sets

This IE indicates how many OTDOA Measurement Information sets or GPS Measurement Information sets, and Reference cells are included in this element.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Number of OTDOA-IPDL/GPS-Measurement Information Sets	MP		Integer(2..3)	
Number of Reference Cells	MP		Integer(1..3)	
Reference Cell relation to Measurement Elements	CV- <i>MeasInfoSetAndNumRefCells</i>		Enumerated(RefCellRel_1, RefCellRel_2, RefCellRel_3)	This IE indicates how the reference cells listed in this element relate to measurement sets later in this component. If this IE is not included, the relation between reference cell and Number of OTDOA-IPDL/GPS Measurement Information Sets is as follows: If there are three sets and three reference cells -> First reference cell relates to first set, second reference cell relates to second set, and third reference cell relates to third set. If there are two sets and two reference cells -> First reference cell relates to first set, and second reference cell relates to second set. If there is only one reference cell and 1-3 sets -> this reference cell relates to all sets.

NOTE:—The following table gives the mapping of the IE "Reference Cell relation to Measurement Elements"

Value	Indication
RefCellRel_1	First reference cell is related to first and second OTDOA-IPDL/GPS Measurement Information Sets, and second reference cell is related to third OTDOA-IPDL/GPS Measurement Information Sets.
RefCellRel_2	First reference cell is related to first and third OTDOA-IPDL/GPS Measurement Information Sets, and second reference cell is related to second OTDOA-IPDL/GPS Measurement Information Sets.
RefCellRel_3	First reference cell is related to first OTDOA-IPDL/GPS Measurement Information Sets, and second reference cell is related to second and third OTDOA/GPS Measurement Information Sets.

Condition	Explanation
<i>MeasInfoSetAndNumRefCells</i>	This IE is present only if the IE "Number of OTDOA-IPDL/GPS Measurement Information Sets" is '3' and the IE "Number of Reference cells" is '2'.

... <NEXT MODIFIED SECTION> ...

11.3 Information element definitions

InformationElements DEFINITIONS AUTOMATIC TAGS ::=

```

-- *****
--
-- CORE NETWORK INFORMATION ELEMENTS (10.3.1)
--
-- *****

```

... ..

```

EllipsoidPointAltitude ::= SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),
  longitude         INTEGER (-8388608..8388607),
  altitudeDirection ENUMERATED {height, depth},
  altitude          INTEGER (0..1638332767)
}

```

```

EllipsoidPointAltitudeEllipsoide ::= SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),
  longitude         INTEGER (-8388608..8388607),
  altitudeDirection ENUMERATED {height, depth},
  altitude          INTEGER (0..1638332767),
  uncertaintySemiMajor    INTEGER (0..127),
  uncertaintySemiMinor    INTEGER (0..127),
  orientationMajorAxis    INTEGER (0..89),
  uncertaintyAltitude     INTEGER (0..127),
  confidence            INTEGER (0..100)
}

```

... <NEXT MODIFIED SECTION> ...

```

-- Actual value = IE value * 0.0125 - 0.09375
NodeB-ClockDrift ::= INTEGER (0..15)

```

... <NEXT MODIFIED SECTION> ...

```

ReferenceCellRelation ::= ENUMERATED {
first-12-second-3,
first-13-second-2,
first-1-second-23 }

```

... <NEXT MODIFIED SECTION> ...

```

SatelliteStatus ::= ENUMERATED {
    ns-NN-U,
    es-SN,
    es-NN-U,
rev2es-NN-C,
    rev }

```

... <NEXT MODIFIED SECTION> ...

```

UE-Positioning-GPS-ReferenceTime ::= SEQUENCE {
    gps-Week INTEGER (0..1023),
    gps-tow-1msec GPS-TOW-1msec,
    gps-tow-rem-usec GPS-TOW-rem-usec OPTIONAL,
    sfn INTEGER (0..4095) OPTIONAL,
    sfn-tow-Uncertainty SFN-TOW-Uncertainty OPTIONAL,
    nodeBClockDrift NodeB-ClockDrift OPTIONAL,
    gps-TOW-AssistList GPS-TOW-AssistList OPTIONAL
}

```

... <NEXT MODIFIED SECTION> ...

```

UE-Positioning-MeasuredResults ::= SEQUENCE {
  ue-positioning-MultipleSets UE-Positioning-MultipleSets
  OPTIONAL,
  ue-positioning-ReferenceCellIdentity PrimaryCPICH-Info OPTIONAL,
  ue-positioning-OTDOA-Measurement UE-Positioning-OTDOA-Measurement
  OPTIONAL,
  ue-positioning-PositionEstimateInfo UE-Positioning-PositionEstimateInfo
  OPTIONAL,
  ue-positioning-GPS-Measurement UE-Positioning-GPS-Measurement
  OPTIONAL,
  ue-positioning-Error UE-Positioning-Error
  OPTIONAL
}

```

... <NEXT MODIFIED SECTION> ...

```

UE-Positioning-MultipleSets ::= SEQUENCE {
  numberOfOTDOA-IPDL-GPS-Sets INTEGER (2..3),
  numberOfReferenceCells INTEGER (1..3),
  referenceCellRelation ReferenceCellRelation
}

```

... <NEXT MODIFIED SECTION> ...

```
UE-Positioning-ReportingQuantity ::=          SEQUENCE {
  methodType                UE-Positioning-MethodType,
  positioningMethod          PositioningMethod,
  responseTime               UE-Positioning-ResponseTime,
  accuracy                   UE-Positioning-Accuracy          OPTIONAL,
  gps-TimingOfCellWanted     BOOLEAN,
  multipleSets               BOOLEAN,
  additionalAssistanceDataReq  BOOLEAN,
  environmentCharacterisation EnvironmentCharacterisation     OPTIONAL
}
```


3GPP TSG-RAN WG2 Meeting #21
Busan, Korea, May 21-25, 2001

R2_011498

CR-Form-v4
CHANGE REQUEST
⌘ 25.331 CR 883 ⌘ rev - ⌘ Current version: 4.0.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ UE Positioning Corrections to ASN.1 and Tabular		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 2001-05-30
Category:	⌘ A	Release:	⌘ REL-4
	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)

Reason for change:	⌘ Discrepancies between RRC ASN.1 and tabular were identified in R2-011034.
Summary of change:	⌘ <u>Tabular Changes:</u> <ul style="list-style-type: none"> • UE positioning GPS reference time (10.3.7.96) <ul style="list-style-type: none"> • Range of values for "Node B Clock Drift" changed so that total number of steps can be described by INTEGER (0..15) in ASN.1 • UE positioning measured results (10.3.7.99) <ul style="list-style-type: none"> • UE positioning Multiple Sets (10.3.7.102) IE is not used in Release 99. This optional IE is deleted. • UE positioning Multiple Sets (10.3.7.102) <ul style="list-style-type: none"> • This IE is not used in Release 99. The contents of this IE are deleted. Section 10.3.7.102 is renamed to "Void". <u>ASN.1 Changes:</u> <ul style="list-style-type: none"> • "EllipsoidPointAltitude" <ul style="list-style-type: none"> • altitude changed from (0..16383) to (0..32767) • "EllipsoidPointAltitudeEllipsoide" <ul style="list-style-type: none"> • altitude changed from (0..16383) to (0..32767) • "NodeB-ClockDrift" <ul style="list-style-type: none"> • comment added to describe actual scaling of value • "Satellite Status" <ul style="list-style-type: none"> • "es-NN-C" value replaced by a reserved value, "rev2" • "UE-Positioning-GPS-ReferenceTime" <ul style="list-style-type: none"> • SFN changed from mandatory to optional • "UE-Positioning-MeasuredResults" <ul style="list-style-type: none"> • "ue-positioning-MultipleSets" option deleted

- “UE-Positioning-MultipleSets” definition deleted
- “ReferenceCellRelation” definition deleted

Backwards Compatability Analysis:

- Proposed changes are backward compatible.
1 and 2. Correction to a function where rules were missing.
Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Consequences if not approved: ⌘ If not approved, then inconsistencies will exist between ASN.1 and tabular.

Clauses affected: ⌘ 10.3.7.96, 10.3.7.99, 10.3.7.102, 11.3

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

Other comments: ⌘ There were no e-mail comments offered on CR 882 following RAN WG2 #21.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

... <NEXT MODIFIED SECTION> ...

10.3.7.96 UE positioning GPS reference time

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS Week	MP		Integer(0..1023)	
GPS TOW msec	MP		Integer(0..6.048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit).
GPS TOW rem usec	OP		Integer(0..999)	GPS Time of Week in microseconds MOD 1000. GPS Time of Week in microseconds = 1000 * GPS TOW msec + GPS TOW rem usec
SFN	OP		Integer(0..4095)	The SFN which the GPS TOW time stamps. SFN and GPS TOW msec and GPS TOW rem usec are included if relation GPS TOW/SFN is known to at least 10 μs.
SFN-TOW Uncertainty	OP		Enumerated (lessThan10, moreThan10)	This field indicates the uncertainty of the relation GPS TOW/SFN. lessThan10 means the relation is accurate to at least 10 ms.
Node B Clock Drift	OP		Real(-0.1..0.1 by step of 0.0125) (-0.09375..0.09375 by step of 0.0125)	μsec/sec (ppm)
GPS TOW Assist	OP	1 to <maxSat >		
>SatID	MP		Enumerated(0..63)	
>TLM Message	MP		Bit string(14)	
>Anti-Spoof	MP		Boolean	
>Alert	MP		Boolean	
>TLM Reserved	MP		Bit string(2)	

... <NEXT MODIFIED SECTION> ...

10.3.7.99 UE positioning measured results

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE positioning Multiple Sets	OP		UE positioning Multiple Sets 10.3.7.102	If this IE is absent, a single measurement set is included.
UE positioning reference cell Identity	OP		Primary CPICH Info 10.3.6.60	
UE positioning OTDOA measured results	OP		UE positioning OTDOA measured results 10.3.7.105	
UE positioning Position estimate info	OP		UE positioning Position estimate info 10.3.7.109	
UE positioning GPS measured results	OP		UE positioning GPS measured results 10.3.7.93	
UE positioning error	OP		UE positioning error 10.3.7.87	Included if UE positioning error occurred

... <NEXT MODIFIED SECTION> ...

10.3.7.102 VoidUE-positioning-multiple-sets

This IE indicates how many OTDOA Measurement Information sets or GPS Measurement Information sets, and Reference cells are included in this element.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Number of OTDOA-IPDL/GPS-Measurement Information Sets	MP		Integer(2..3)	
Number of Reference Cells	MP		Integer(1..3)	
Reference Cell relation to Measurement Elements	CV- <i>MeasInfoSetAndNumRefCells</i>		Enumerated(1, RefCellRel_2, RefCellRel_3)	This IE indicates how the reference cells listed in this element relate to measurement sets later in this component. If this IE is not included, the relation between reference cell and Number of OTDOA-IPDL/GPS Measurement Information Sets is as follows: If there are three sets and three reference cells -> First reference cell relates to first set, second reference cell relates to second set, and third reference cell relates to third set. If there are two sets and two reference cells -> First reference cell relates to first set, and second reference cell relates to second set. If there is only one reference cell and 1-3 sets -> this reference cell relates to all sets.

NOTE:—The following table gives the mapping of the IE "Reference Cell relation to Measurement Elements"

Value	Indication
RefCellRel_1	First reference cell is related to first and second OTDOA-IPDL/GPS Measurement Information Sets, and second reference cell is related to third OTDOA-IPDL/GPS Measurement Information Sets.
RefCellRel_2	First reference cell is related to first and third OTDOA-IPDL/GPS Measurement Information Sets, and second reference cell is related to second OTDOA-IPDL/GPS Measurement Information Sets.
RefCellRel_3	First reference cell is related to first OTDOA-IPDL/GPS Measurement Information Sets, and second reference cell is related to second and third OTDOA/GPS Measurement Information Sets.

Condition	Explanation
<i>MeasInfoSetAndNumRefCells</i>	This IE is present only if the IE "Number of OTDOA-IPDL/GPS Measurement Information Sets" is '3' and the IE "Number of Reference cells" is '2'.

... <NEXT MODIFIED SECTION> ...

11.3 Information element definitions

InformationElements DEFINITIONS AUTOMATIC TAGS ::=

```

-- *****
--
-- CORE NETWORK INFORMATION ELEMENTS (10.3.1)
--
-- *****

```

... ..

```

EllipsoidPointAltitude ::= SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),
  longitude         INTEGER (-8388608..8388607),
  altitudeDirection ENUMERATED {height, depth},
  altitude          INTEGER (0..1638332767)
}

```

```

EllipsoidPointAltitudeEllipsoide ::= SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),
  longitude         INTEGER (-8388608..8388607),
  altitudeDirection ENUMERATED {height, depth},
  altitude          INTEGER (0..1638332767),
  uncertaintySemiMajor    INTEGER (0..127),
  uncertaintySemiMinor   INTEGER (0..127),
  orientationMajorAxis   INTEGER (0..89),
  uncertaintyAltitude    INTEGER (0..127),
  confidence            INTEGER (0..100)
}

```

... <NEXT MODIFIED SECTION> ...

```

-- Actual value = IE value * 0.0125 - 0.09375
NodeB-ClockDrift ::= INTEGER (0..15)

```

... <NEXT MODIFIED SECTION> ...

```

ReferenceCellRelation ::= ENUMERATED {
first-12-second-3,
first-13-second-2,
first-1-second-23 }

```

... <NEXT MODIFIED SECTION> ...

```

SatelliteStatus ::= ENUMERATED {
    ns-NN-U,
    es-SN,
    es-NN-U,
rev2es-NN-C,
    rev }

```

... <NEXT MODIFIED SECTION> ...

```

UE-Positioning-GPS-ReferenceTime ::= SEQUENCE {
    gps-Week INTEGER (0..1023),
    gps-tow-1msec GPS-TOW-1msec,
    gps-tow-rem-usec GPS-TOW-rem-usec OPTIONAL,
    sfn INTEGER (0..4095) OPTIONAL,
    sfn-tow-Uncertainty SFN-TOW-Uncertainty OPTIONAL,
    nodeBClockDrift NodeB-ClockDrift OPTIONAL,
    gps-TOW-AssistList GPS-TOW-AssistList OPTIONAL
}

```

... <NEXT MODIFIED SECTION> ...

```

UE-Positioning-MeasuredResults ::= SEQUENCE {
  ue-positioning-MultipleSets UE-Positioning-MultipleSets
  OPTIONAL,
  ue-positioning-ReferenceCellIdentity PrimaryCPICH-Info OPTIONAL,
  ue-positioning-OTDOA-Measurement UE-Positioning-OTDOA-Measurement
  OPTIONAL,
  ue-positioning-PositionEstimateInfo UE-Positioning-PositionEstimateInfo
  OPTIONAL,
  ue-positioning-GPS-Measurement UE-Positioning-GPS-Measurement
  OPTIONAL,
  ue-positioning-Error UE-Positioning-Error
  OPTIONAL
}

```

... <NEXT MODIFIED SECTION> ...

```

UE-Positioning-MultipleSets ::= SEQUENCE {
  numberOfOTDOA-IPDL-GPS-Sets INTEGER (2..3),
  numberOfReferenceCells INTEGER (1..3),
  referenceCellRelation ReferenceCellRelation
}

```


... <NEXT MODIFIED SECTION> ...

```
UE-Positioning-ReportingQuantity ::=          SEQUENCE {
  methodType                UE-Positioning-MethodType,
  positioningMethod          PositioningMethod,
  responseTime               UE-Positioning-ResponseTime,
  accuracy                   UE-Positioning-Accuracy          OPTIONAL,
  gps-TimingOfCellWanted     BOOLEAN,
  multipleSets               BOOLEAN,
  additionalAssistanceDataReq    BOOLEAN,
  environmentCharacterisation EnvironmentCharacterisation     OPTIONAL
}
```

CHANGE REQUEST

⌘ **25.331 CR 884** ⌘ rev **r1** ⌘ Current version: **3.6.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections to resolve inconsistencies between tabular and ASN.1		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 2001-06-01
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (essential 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)

Reason for change: ⌘ Miscellaneous misalignments between tabular format and ASN.1, some of which may cause interoperability problems

Summary of change: ⌘ The original revision of the CR includes the following changes:

- **RADIO BEARER RECONFIGURATION message:**
 - Need for IE "RB information to reconfigure list" changed to MP (in tabular); to align tabular with ASN.1
 - Need for IE "Downlink information per radio link list" changed to MP (in tabular); to align tabular with ASN.1
- **RRC CONNECTION SETUP message:**
 - need for IE "Added or Reconfigured TrCH information list" changed to MP (in tabular); to align tabular with ASN.1
 - Clarification that RRC state indicator takes precedence over other IEs to resolve the ambiguities upon receiving an RRC CONNECTION SETUP message with state indicator set to CELL_FACH but including dedicated TrCH information, which can not be excluded in the ASN.1 for that message
- **UTRAN MOBILITY INFORMATION message:** IE "COUNT-C activation time" removed in ASN.1; aligned with tabular that was correct
- **UTRAN MOBILITY INFORMATION CONFIRM message:** IE "COUNT-C activation time" added in ASN.1; aligned with tabular that was correct
- **IE "RB information to reconfigure":** the "same as" option for IE RLC-info is removed from the tabular format to align tabular with ASN.1
- **IE "DL Transport channel information common for all transport channels":**
 - the need for choice mode is changed to MP (in tabular); to align tabular with ASN.1
 - the need column for IE DL DCH TFCS is changed to MP (in tabular); to align tabular with ASN.1. Additional clarification is provided concerning the UE behaviour for this case

- **HANDOVER FROM UTRAN message:** Editorial improvement of the tabular format concerning the Inter-RAT information to better reflect the ASN.1
- **HANDOVER FROM UTRAN FAILURE message:** Editorial improvement of the tabular format concerning the Inter-RAT information to better reflect the ASN.1. The ASN.1 has also been modified slightly, which is regarded as acceptable since there are more ASN.1 changes to the inter RAT procedures in other CRs
- **IE InitialPriorityDelayList (CPCH):** the size of the list of IE "Initial priority delay" for CPCH has been made variable (in ASN.1); to align ASN.1 to tabular format which was correct

NOTE Whenever changes are introduced in the tabular due to align with an imperfection in the ASN.1, text is inserted in the tabular and comments in the ASN.1 to ensure the error is corrected when new versions of the concerned messages are specified

Backwards compatibility

The CR adds extensibility, generic error handling and some missing parameters (UE capability, CN DRX cycle length) to the transfer of RRC information across other interfaces

- **Affected functions/ procedures:** This CR correct the UTRAN mobility information procedure and resolves inconsistencies between tabular and ASN.1 for the RRC connection establishment and RB reconfiguration procedures. Several other procedures are affected due to an inconsistencies between tabular and ASN.1 that was resolved within IE "DL Transport channel information common for all transport channels": cell update, handover to UTRAN, RB release, RB establishment, TrCH reconfiguration
- **Affected implementations:** all implementations supporting the UTRAN mobility information procedure and/ or CPCH are affected. Regarding the other changes, only implementations are affected that have assumed the inconsistently specified behaviour to be different than specified in this CR
- **Rationale:** The specification was inconsistent

Consequences if not approved:

- ⌘ **Consequences if not approved**
 The most important consequences are as follows:
- There may be severe interoperability problem due to the fact that different implementations have assumed different behaviour for the inconsistencies resolved by this CR. As a result, it may be impossible for UTRAN to order UEs to enter CELL_FACH state upon RRC connection establishment and/ or RB reconfiguration
 - The UTRAN mobility information procedure will not work

Clauses affected:	⌘	8.1.3.4, 8.2.2.2, 8.2.2.3, 8.3.7.3, 8.6.3.3, 8.6.5.10, 10.2.15, 10.2.16, 10.2.27, 10.2.40, 10.3.4.18, 10.3.5.6, 10.3.8.6, 10.3.8.8, 11.2, 11.3									
Other specs affected:	⌘	<table border="1"> <tr> <td><input type="checkbox"/></td> <td>Other core specifications</td> <td>⌘</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Test specifications</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td>O&M Specifications</td> <td></td> </tr> </table>	<input type="checkbox"/>	Other core specifications	⌘	<input type="checkbox"/>	Test specifications		<input type="checkbox"/>	O&M Specifications	
<input type="checkbox"/>	Other core specifications	⌘									
<input type="checkbox"/>	Test specifications										
<input type="checkbox"/>	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/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

8.1.3.4 Reception of an RRC CONNECTION REQUEST message by the UTRAN

Upon receiving an RRC CONNECTION REQUEST message, UTRAN should either:

- submit an RRC CONNECTION SETUP message to the lower layers for transmission on the downlink CCCH; or

NOTE The RRC CONNECTION SETUP message always includes the IEs " Added or Reconfigured TrCH information list ", both for uplink and downlink transport channels, even if UTRAN orders the UE to move to CELL_FACH and hence need not configure any transport channels. In this cases, UTRAN may include a configuration that adds little to the encoded message size e.g. a DCH with a single zero size transport format. At a later stage, UTRAN may either remove or reconfigure this configuration.

- submit an RRC CONNECTION REJECT message on the downlink CCCH. In the RRC CONNECTION REJECT message, the UTRAN may direct the UE to another UTRA carrier or to another system. After the RRC CONNECTION REJECT message has been sent, all context information for the UE may be deleted in UTRAN.

8.1.3.5 Cell re-selection or T300 timeout

- if the UE has not yet received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL_UE_IDENTITY; and
- if cell re-selection or expiry of timer T300 occurs;

the UE shall:

- check the value of V300; and
 - if V300 is equal to or smaller than N300:
 - if cell re-selection occurred:
 - set CFN in relation to SFN of current cell according to subclause 8.5.15;
 - set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;
 - perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13; and
 - apply the given Access Service Class when accessing the RACH;
 - submit a new RRC CONNECTION REQUEST message to lower layers for transmission on the uplink CCCH;
 - increment counter V300;
 - restart timer T300 when the MAC layer indicates success or failure to transmit the message;
 - if V300 is greater than N300:
 - enter idle mode.
 - consider the procedure to be unsuccessful;
 - Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
 - The procedure ends.

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:

- ignore the rest of the message;

If the values are identical, the UE shall:

- stop timer T300, and act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following;
- if the UE will be in the CELL_FACH state at the conclusion of this procedure:
 - if the IE "Frequency info" is included:
 - select a suitable UTRA cell according to [4] on that frequency;
 - select PRACH according to subclause 8.6.6.2;
 - select Secondary CCPCH according to subclause 8.6.6.5;
- enter a state according to subclause 8.6.3.3;
- 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:
 - set the IE "RRC transaction identifier" to
 - 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
 - clear that entry.
 - calculate START values for each CN domain according to subclause 8.5.9 and include the result in the IE "START list";
 - if the IE "UE radio access FDD capability update requirement" included in the RRC CONNECTION SETUP message has the value TRUE:
 - include its UTRAN-specific FDD capabilities and its UTRAN –specific capabilities common to FDD and TDD in the IE "UE radio access capability";
 - if the IE "UE radio access TDD capability update requirement" included in the RRC CONNECTION SETUP message has the value TRUE:
 - include its UTRAN-specific TDD capabilities and its UTRAN –specific capabilities common to FDD and TDD in the IE "UE radio access capability";
 - if the IE "System specific capability update requirement list" is present in the RRC CONNECTION SETUP message:
 - include its inter-RAT capabilities for the requested systems in the IE "UE system specific capability".

When of the RRC CONNECTION SETUP COMPLETE message has been submitted to lower layers for transmission the UE shall:

- if the UE has entered CELL_FACH state:
 - 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 system information block type 1;
- update its variable UE_CAPABILITY_TRANSFERRED which UE capabilities it has transmitted to the UTRAN;
- if the IE "Transport format combination subset" was not included in the RRC CONNECTION SETUP message:
 - set the IE "Current TFC subset" in the variable TFS_SUBSET to "Full transport format combination set";
- set the "Status" in the variable CIPHERING_STATUS to "Not started";
- set the "Reconfiguration" in the variable CIPHERING_STATUS to FALSE;
- set the "Status" in the variable INTEGRITY_PROTECTION_INFO to "Not started";

- set the "Historical status" in the variable INTEGRITY_PROTECTION_INFO to "Never been active";
- set the "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE;
- set the variable CELL_UPDATE_STARTED to FALSE;
- set the variable ORDERED_RECONFIGURATION to FALSE;
- set the variable FAILURE_INDICATOR to FALSE;
- set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to FALSE;
- set the variable INVALID_CONFIGURATION to FALSE;
- set the variable PROTOCOL_ERROR_INDICATOR to FALSE;
- set the variable PROTOCOL_ERROR_REJECT to FALSE;
- set the variable TGSN_REPORTED to FALSE;
- set the variable UNSUPPORTED_CONFIGURATION to FALSE;
- clear all optional IEs in all variables, except those optional IEs that are set in this procedure;
- consider the procedure to be successful;

And the procedure ends.

8.2.2.2 Initiation

To initiate any one of the reconfiguration procedures, UTRAN should:

- configure new radio links in any new physical channel configuration;
- start transmission and reception on the new radio links;
- for a radio bearer establishment procedure:
 - transmit a RADIO BEARER SETUP message on the downlink DCCH using AM or UM RLC;
- for a radio bearer reconfiguration procedure:
 - transmit a RADIO BEARER RECONFIGURATION message on the downlink DCCH using AM or UM RLC;
- for a radio bearer release procedure:
 - transmit a RADIO BEARER RELEASE message on the downlink DCCH using AM or UM RLC;
- for a transport channel reconfiguration procedure:
 - transmit a TRANSPORT CHANNEL RECONFIGURATION message on the downlink DCCH using AM or UM RLC;
- for a physical channel reconfiguration procedure:
 - transmit a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH using AM or UM RLC;
- if the reconfiguration procedure is simultaneous with SRNS relocation procedure, and ciphering and/or integrity protection are activated:
 - transmit new ciphering and/or integrity protection information to be used after reconfiguration.
- if transport channels are added, reconfigured or deleted in uplink and/or downlink:
 - set TFCS according to the new transport channel(s).
- if transport channels are added or deleted in uplink and/or downlink, and RB Mapping Info applicable to the new configuration has not been previously provided to the UE, the UTRAN should:
 - send the RB Mapping Info for the new configuration.

In the Radio Bearer Reconfiguration procedure UTRAN may indicate that uplink transmission shall be stopped or continued on certain radio bearers. Uplink transmission on a signalling radio bearer used by the RRC signalling (RB1 or RB2) should not be stopped.

NOTE 1 The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure", even if UTRAN does not require the reconfiguration of any RB. In these cases, UTRAN may include only the IE "RB identity" within the IE "RB information to reconfigure".

NOTE 2 The RADIO BEARER RECONFIGURATION message always includes the IE "Downlink information per radio link list", even if UTRAN does not require the reconfiguration of any RL. In these cases, UTRAN may re- send the currently assigned values for the mandatory IEs included within the IE "Downlink information per radio link list". Moreover, the RADIO BEARER RECONFIGURATION message always includes the IE "Primary CPICH Info" (FDD) or IE "Primary CCPCH Info" (TDD). This implies that in case UTRAN applies the RADIO BEARER RECONFIGURATION message to move the UE to CELL_FACH state, it has to indicate a cell. However, UTRAN may indicate any cell; the UE anyhow performs cell selection and notifies UTRAN if it selects another cell than indicated by UTRAN.

If the IE "Activation Time" is included, UTRAN should set it to a value taking the UE performance requirements into account.

UTRAN should take the UE capabilities into account when setting the new configuration.

If the message is used to initiate a transition from CELL_DCH to CELL_FACH state, the UTRAN may assign a common channel configuration of a given cell and C-RNTI to be used in that cell to the UE.

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 be able to receive any of the following messages:

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

and perform a hard handover, 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:

- set the variable ORDERED_RECONFIGURATION to TRUE;
- may first release the current physical channel configuration and
- then establish a new physical channel configuration and act upon all received information elements as specified in subclause 8.6, unless specified in the following:
 - 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:
 - act upon the IE "PDSCH code mapping" as specified in subclause 8.6 and;
 - infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted;
- 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 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 the UE remains in CELL_DCH state after state transition, the UE shall:

- if the IE "UL DPCH Info" is absent, not change its current UL Physical channel configuration;
- if the IE "DL DPCH Info for each RL" is absent, not change its current DL Physical channel configuration.

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

- if the IE "Frequency info" is included in the received reconfiguration message:
 - select a suitable UTRA cell according to [4] on that frequency;
- if the IE "Frequency info" is not included in the received reconfiguration message:
 - select a suitable UTRA cell according to [4];
- 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:
 - initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - when the cell update procedure completed successfully:
 - 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";
 - proceed as below;
- 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;
- select PRACH according to subclause 8.6.6.2;
- select Secondary CCPCH according to subclause 8.6.6.5;
- use the transport format set given in system information;
- if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
- ignore that IE and stop using DRX;
- if the contents of the variable C_RNTI is empty:
 - perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - when the cell update procedure completed successfully:
 - 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";
 - proceed as below;

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:

- if the received reconfiguration message included the IE "Downlink counter synchronisation info":
 - calculate the START value according to subclause 8.5.9;
 - include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info";
- if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
 - if the variable START_VALUE_TO_TRANSMIT is set:
 - include and set the IE "START" to the value of that variable;
 - if the variable START_VALUE_TO_TRANSMIT is not set and the IE "New U-RNTI" is included:

- calculate the START value according to subclause 8.5.9;
- include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info";
- if the received reconfiguration message contained the IE "Ciphering mode info":
 - include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
- if the received reconfiguration message contained the IE "Integrity protection mode info" with the IE "Integrity protection mode command" set to "Modify":
 - include and set the IE "Integrity protection activation info" to the value of the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
- 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
- clear that entry;
- if the variable PDCP_SN_INFO is not empty:
 - include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_INFO;
- 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):
 - set the IE "Uplink Timing Advance" to the calculated value;
- if the IE "Integrity protection mode info" was present in the received reconfiguration message:
 - start applying the new integrity protection configuration in the uplink for RB#2 from and including the transmitted response message;

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

- if the IE "Frequency info" is included in the received reconfiguration message:
 - select a suitable UTRA cell according to [4] on that frequency;
- if the IE "Frequency info" is not included in the received reconfiguration message:
 - select a suitable UTRA cell according to [4];
- prohibit periodical status transmission in RLC;
- remove any C-RNTI from MAC;
- clear the variable C_RNTI;
- 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;
- select Secondary CCPCH according to subclause 8.6.6.5;
- if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 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;
- if the UE enters CELL_PCH state, and 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:
 - initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";

- when the cell update procedure completed successfully:
 - The procedure ends;
- if the UE enters URA_PCH state, and after cell selection the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 is fulfilled:
 - initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";
 - when the URA update procedure completed:
 - The procedure ends.

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

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

The UE shall:

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

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM (DCS-1800 band-used)	GSM TS 04.18, version 8.5.0 or later	HANDOVER COMMAND
GSM (PCS-1900 band-used)	GSM TS 04.18, version 8.5.0 or later	HANDOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

- if the IE " System type" has the value "GSM":

- if the IE "Frequency band System-type" has the value "GSM ~~/(DCS 1800 band used)~~":
 - set the BAND_INDICATOR [26] to "ARFCN indicates 1800 band";
- if the IE "Frequency band System-type" has the value " GSM ~~/(PCS 1900 band used)~~":
 - set the BAND_INDICATOR [26] to "ARFCN indicates 1900 band";
- apply the "Inter RAT Message" according to the "standard to apply" in the table above.
- in case one or more IEs "RAB info" is included in the HANDOVER FROM UTRAN COMMAND message:
 - connect upper layer entities corresponding to indicated RABs to the radio resources indicated in the inter-RAT message;

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

8.6.3.3 Generic state transition rules depending on received information elements

The IE "RRC State Indicator" indicates the state the UE shall enter. The UE shall enter the state indicated by the IE "RRC State Indicator" even if the received message includes other IEs relevant only for states other than indicated by the IE "RRC State Indicator". E.g. if the RRC state indicator is set to CELL_FACH while other IEs provide information about a configuration including dedicated channels, the UE shall enter CELL_FACH state. If however the UE has no information about the configuration corresponding with the state indicated by the IE "RRC State Indicator", it shall consider the requested configuration as invalid.

-The UE shall, if the IE "RRC State Indicator" in the received message has the value:

- "CELL_FACH":
 - enter CELL_FACH state as dictated by the procedure governing the message received;
- "CELL_DCH":
 - if neither DPCH is assigned in the message nor is the UE is CELL_DCH:
 - set the variable INVALID_CONFIGURATION to TRUE;
 - else:
 - enter CELL_DCH state as dictated by the procedure governing the message received;
- "CELL_PCH":
 - if the received message is RRC CONNECTION SETUP and IE "RRC State Indicator" is set to CELL_PCH:
 - set the variable INVALID_CONFIGURATION to TRUE;
 - else:
 - enter CELL_PCH state as dictated by the procedure governing the message received;
- "URA_PCH":
 - if the received message is RRC CONNECTION SETUP and IE "RRC State Indicator" is set to URA_PCH:
 - set the variable INVALID_CONFIGURATION to TRUE;
 - else:
 - enter URA_PCH state as dictated by the procedure governing the message received.

8.6.5.10 DL Transport channel information common for all transport channels

If the IE "DL Transport channel information common for all transport channels" is included the UE shall:

- if the IE "SCCPCH TFCS" is included:
 - perform actions for the TFCS of the selected SCCPCH as specified in subclause 8.6.5.2;
- if the IE choice "mode" is set to FDD:
 - if the choice "DL parameters" is set to 'Independent':
 - if the IE "DL DCH TFCS" is included:

- if the IE "SCCPCH TFCS" is included AND —if the state the UE enters after handling the received information is other than CELL_DCH state:

- ignore the received IE "DL DCH TFCS"

NOTE the IE "DL Transport channel information common for all transport channels" always includes a DL DCH TFCS configuration, either by including the IE "DL DCH TFCS " or by specifying that the TFCS is the same as in UL. If UTRAN does not require the reconfiguration of the concerned parameters, UTRAN may replace one TFC with the value that is already should re-send the currently assigned values for this IE. If the UE is in CELL_DCH state, UTRAN has to include add, reconfigure or remove a transport format combination. This should not be considered as an invalid configuration by the UE.

- else:

- perform actions as specified 8.6.5.2;
- if the IE choice "mode" is set to TDD:
 - if the IE "Individual DL CCTRCH information" is included:
 - for each DL TFCS identified by the IE "DL TFCS identity":
 - if the IE choice "DL parameters" is set to 'independent':
 - perform actions for the IE "DL TFCS" as specified in 8.6.5.2;
 - if the IE choice "DL parameters" is set to 'same as UL':
 - store for that DL TFCS the TFCS identified by the IE "UL DCH TFCS identity".

10.2.15 HANDOVER FROM UTRAN COMMAND

This message is used for handover from UMTS to another system e.g. GSM. One or several messages from the other system can be included in the Inter-RAT message information element in this message. These messages are structured and coded according to that systems specification.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
RB information elements				
RAB information list	OP	1 to <maxRABs etup>		For each RAB to be handed over
>RAB info	MP		RAB info 10.3.4.8	
Other information elements				
<u>Inter-RAT message</u>	<u>MP</u>		<u>Inter-RAT message-10.3.8.8</u>	
<u>CHOICE System type</u>	<u>MP</u>			<u>This IE indicates in particular which specification to apply to decode the transported messages</u>
<u>>GSM</u>				
<u>>>Frequency band</u>	<u>MP</u>		<u>Enumerated (GSM/DCS 1800 band used), GSM/PCS 1900 band used)</u>	
<u>>>>GSM message</u>				
<u>>>>Single GSM message</u>	<u>MP</u>		<u>Bitstring (no explicit size constraint)</u>	<u>Formatted and coded according to GSM specifications</u>
<u>>>>GSM message List</u>	<u>MP</u>	<u>1.to.<maxlnterSysMessages></u>	<u>Bitstring (1..512)</u>	<u>Formatted and coded according to GSM specifications</u>
<u>>cdma2000</u>				
<u>>>cdma2000MessageList</u>	<u>MP</u>	<u>1.to.<maxlnterSysMessages></u>		
<u>>>>MSG_TYPE(s)</u>	<u>MP</u>		<u>Bitstring (8)</u>	<u>Formatted and coded according to cdma2000 specifications</u>
<u>>>>cdma2000Messagepayload(s)</u>	<u>MP</u>		<u>Bitstring (1..512)</u>	<u>Formatted and coded according to cdma2000 specifications</u>

10.2.16 HANDOVER FROM UTRAN FAILURE

This message is sent on the RRC connection used before the Inter-RAT Handover was executed. The message indicates that the UE has failed to seize the new channel in the other system.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Other information elements				
Inter-RAT handover failure	OP		Inter-RAT handover failure 10.3.8.6	
<u>CHOICE System type</u>	<u>MP</u>			<u>This IE indicates in particular which specification to apply to decode the transported messages</u>
<u>>GSM</u>				
<u>>GSM message List</u>	<u>MP</u>	<u>1.to.<maxInterSysMessages></u>	<u>Bitstring (1..512)</u>	<u>Formatted and coded according to GSM specifications</u>
<u>>cdma2000</u>				
<u>>>cdma2000MessageList</u>	<u>MP</u>	<u>1.to.<maxInterSysMessages></u>		
<u>>>>MSG_TYPE(s)</u>	<u>MP</u>		<u>Bitstring (8)</u>	<u>Formatted and coded according to cdma2000 specifications</u>
<u>>>>cdma2000Messagepayload(s)</u>	<u>MP</u>		<u>Bitstring (1..512)</u>	<u>Formatted and coded according to cdma2000 specifications</u>

<u>Condition</u>	<u>Explanation</u>
<u>ProtErr</u>	<u>If the IE "Inter-RAT handover failure cause" has the value "Protocol error"</u>

10.2.27 RADIO BEARER RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
RRC State Indicator	MP		RRC State Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MD		UTRAN DRX cycle length coefficient 10.3.3.49	Default value is the existing value of UTRAN DRX cycle length coefficient
CN information elements				
CN Information info	OP		CN Information info 10.3.1.3	
UTRAN mobility information elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements				
RAB information to reconfigure list	OP	1 to <maxRABsetup >		
>RAB information to reconfigure	MP		RAB information to reconfigure 10.3.4.11	
RB information to reconfigure list	OMP	1to <maxRB>		<u>Although this IE is not always required, need is MP to align with ASN.1</u>
>RB information to reconfigure	MP		RB information to reconfigure 10.3.4.18	
RB information to be affected list	OP	1 to <maxRB>		
>RB information to be affected	MP		RB information to be affected 10.3.4.17	
TrCH Information Elements				
Uplink transport channels				
UL Transport channel	OP		UL Transport	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
information common for all transport channels			channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxTrCH >		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
CHOICE <i>mode</i>	OP			
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH >		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxTrCH >		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE <i>channel requirement</i>	OP			

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE <i>mode</i>	MP			
>FDD				
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OMP	1 to <maxRL>		<u>Although this IE is not always required, need is MP to align with ASN.1</u>
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

10.2.40 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements				
Initial UE identity	MP		Initial UE identity 10.3.3.15	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	MP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
RRC State Indicator	MP		RRC State Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MP		UTRAN DRX cycle length coefficient 10.3.3.49	
Capability update requirement	MD		Capability update requirement 10.3.3.2	Default value is defined in subclause 10.3.3.2
RB Information Elements				
Signalling RB information to setup list	MP	3 to 4		Information for signalling radio bearers, in the order RB 1 up to 4.
>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24	
TrCH Information Elements				
Uplink transport channels				
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Added or Reconfigured TrCH information list	CV-Cell_FACH MP	1 to <maxTrCH >		<u>Although this IE is not required when the IE "RRC state indicator" is set to "CELL_FACH", need is MP to align with ASN.1</u>
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Added or Reconfigured TrCH information list	CV-Cell_FACH	1 to <maxTrCH >		<u>Although this IE is not required when the IE "RRC state</u>

Information Element/Group name	Need	Multi	Type and reference	Semantics description
	MP	>		<u>indicator" is set to "CELL_FACH", need is MP to align with ASN.1</u>
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
<i>CHOICE channel requirement</i>				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <MaxRL>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

Condition	Explanation
<i>Cell_FACH</i>	<i>This IE is optional when UE's final state is CELL_FACH, else it is mandatory</i>

10.3.4.18 RB information to reconfigure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.16	
PDCP info	OP		PDCP info 10.3.4.2	
PDCP SN info	C PDCP		PDCP SN info 10.3.4.3	PDCP sequence number info from the network. Present only in case of lossless SRNS relocation.
CHOICE-RLC info type	OP			
>RLC info			RLC info 10.3.4.23	
>Same as RB	<u>OP</u>		RB identity 10.3.4.16	Identity of RB with exactly the same values for IE "RLC info"
RB mapping info	OP		RB mapping info 10.3.4.21	
RB stop/continue	OP		Enumerated(stop, continue)	

Condition	Explanation
<i>PDCP</i>	This IE is optional only if "PDCP info" is present. Otherwise it is absent.

10.3.5.6 DL Transport channel information common for all transport channels

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SCCPCH TFCS	OP		Transport Format Combination Set 10.3.5.20	This IE should be absent within IE "Predefined RB configuration"
CHOICE <i>mode</i>	OMP			<u>Although this IE is not always required, need is MP to align with ASN.1</u>
>FDD				
>>CHOICE DL parameters	MP			
>>>Independent				
>>>>DL DCH TFCS	OMP		Transport Format Combination Set 10.3.5.20	<u>Although this IE is not always required, need is MP to align with ASN.1</u>
>>>SameAsUL				(no data)
>TDD				
>>Individual DL CCTrCH information	OP	1 to \leq maxCC TrCH>		
>>>DL TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Identifies a special CCTrCH for shared or dedicated channels.
>>>CHOICE DL parameters	MP			
>>>>Independent				
>>>>>DL TFCS	MP		Transport format combination set 10.3.5.20	
>>>>SameAsUL				
>>>>>UL DCH TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Same TFCS applies as specified for the indicated UL DCH TFCS identity except for information applicable for UL only

NOTE This information element is included within IE "Predefined TrCh configuration"

10.3.8.6 Inter-RAT handover failure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT handover failure cause	MD		Enumerated(Configuration unacceptable, physical channel failure, protocol error, inter-RAT protocol error, unspecified)	Default value is "unspecified". At least one spare value needed
Protocol error information	CV-ProtErr		Protocol error information 10.3.8.12	
Inter-RAT message	OP		Inter-RAT message-10.3.8.8	

Condition	Explanation
<i>ProtErr</i>	If the IE "Inter-RAT handover failure cause" has the value "Protocol error"

10.3.8.8 Inter-RAT message(Void)

This Information Element contains one or several messages that are structured and coded according to the specification used for the system type indicated by the first parameter:

Information Element/Group name	Need	Multi	Type and reference	Semantics description
System type	MP		Enumerated (GSM (DCS-1800 band-used), GSM (PCS 1900 band-used), cdma2000)	This IE indicates in particular which specification to apply to decode the transported messages
<u>CHOICE</u> <i>system</i> <u>System type</u>	MP			<u>This IE indicates in particular which specification to apply to decode the transported messages</u>
>GSM				
>>Frequency band	MP		Enumerated (GSM/DCS-1800 band-used), GSM/PCS-1900 band-used)	
>>>CHOICE Messages				
>>>>Single GSM message	MP		Bitstring (no explicit size constraint)	Formatted and coded according to GSM specifications
>>>>GSM mMessage(s) List	MP	1..<maxInterSysMessages>	Bitstring (1..512)	Formatted and coded according to GSM specifications
>cdma2000				
>>cdma2000MessageList	MP	1..<maxInterSysMessages>		
>>>MSG_TYPE(s)	MP		Bitstring (8)	Formatted and coded according to cdma2000 specifications
>>>>cdma2000Messagepayload(s)	MP		Bitstring (1..512)	Formatted and coded according to cdma2000 specifications

Condition	Explanation
<i>System</i>	The 'GSM' choice shall be applied when the IE 'System type' is 'GSM except PCS 1900' or 'PCS 1900', and the 'cdma2000' choice shall be applied when the IE 'system type' is 'cdma2000'.

NOTE For this message, the translation between tabular format and ASN.1 is not very straightforward e.g. within the ASN.1 two different message types are defined. Furthermore, the Message CHOICE "Single GSM message" only applies when this IE is included within for the HANDOVER FROM UTRAN COMMAND message.

11.2 PDU definitions

```

--*****
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*****

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

--*****
--
-- IE parameter types from other modules
--
--*****

IMPORTS

-- Core Network IEs :
  CN-DomainIdentity,
  CN-InformationInfo,
  NAS-Message,
  PagingRecordTypeID,
-- UTRAN Mobility IEs :
  URA-Identity,
-- User Equipment IEs :
  ActivationTime,
  C-RNTI,
  CapabilityUpdateRequirement,
  CellUpdateCause,
  CipheringAlgorithm,
  CipheringModeInfo,
  EstablishmentCause,
  FailureCauseWithProtErr,
  FailureCauseWithProtErrTrId,
  InitialUE-Identity,
  IntegrityProtActivationInfo,
  IntegrityProtectionModeInfo,
  N-308,
  PagingCause,
  PagingRecordList,
  ProtocolErrorIndicator,
  ProtocolErrorIndicatorWithMoreInfo,
  Rb-timer-indicator,
  Re-EstablishmentTimer,
  RedirectionInfo,
  RejectionCause,
  ReleaseCause,
  RRC-StateIndicator,
  RRC-TransactionIdentifier,
  SecurityCapability,
  START-Value,
  STARTList,
  U-RNTI,
  U-RNTI-Short,
  UE-RadioAccessCapability,
  UE-ConnTimersAndConstants,
  URA-UpdateCause,
  UTRAN-DRX-CycleLengthCoefficient,
  WaitTime,
-- Radio Bearer IEs :
  DefaultConfigIdentity,
  DefaultConfigMode,
  DL-CounterSynchronisationInfo,
  PredefinedConfigIdentity,
  RAB-Info,
  RAB-Info-Post,
  RAB-InformationList,
  RAB-InformationReconfigList,
  RAB-InformationSetupList,
  RB-ActivationTimeInfo,

```

```

RB-ActivationTimeInfoList,
RB-COUNT-C-InformationList,
RB-COUNT-C-MSB-InformationList,
RB-IdentityList,
RB-InformationAffectedList,
RB-InformationReconfigList,
RB-InformationReleaseList,
RB-InformationSetupList,
RB-WithPDCP-InfoList,
SRB-InformationSetupList,
SRB-InformationSetupList2,
UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
CPCH-SetID,
DL-AddReconfTransChInfo2List,
DL-AddReconfTransChInfoList,
DL-CommonTransChInfo,
DL-DeletedTransChInfoList,
DRAC-StaticInformationList,
TFC-Subset,
TFCS-Identity,
UL-AddReconfTransChInfoList,
UL-CommonTransChInfo,
UL-DeletedTransChInfoList,
-- Physical Channel IEs :
AllocationPeriodInfo,
Alpha,
CCTrCH-PowerControlInfo,
ConstantValue,
CPCH-SetInfo,
DL-CommonInformation,
DL-CommonInformationPost,
DL-InformationPerRL,
DL-InformationPerRL-List,
DL-InformationPerRL-ListPostFDD,
DL-InformationPerRL-PostTDD,
DL-DPCH-PowerControlInfo,
DL-PDSCH-Information,
DPCH-CompressedModeStatusInfo,
FrequencyInfo,
FrequencyInfoFDD,
FrequencyInfoTDD,
IndividualTS-InterferenceList,
MaxAllowedUL-TX-Power,
PDSCH-CapacityAllocationInfo,
PDSCH-Identity,
PDSCH-Info,
PRACH-RACH-Info,
PrimaryCCPCH-TX-Power,
PUSCH-CapacityAllocationInfo,
PUSCH-Identity,
RL-AdditionInformationList,
RL-RemovalInformationList,
SpecialBurstScheduling,
SSDT-Information,
TFC-ControlDuration,
TimeslotList,
TX-DiversityMode,
UL-ChannelRequirement,
UL-ChannelRequirementWithCPCH-SetID,
UL-DPCH-Info,
UL-DPCH-InfoPostFDD,
UL-DPCH-InfoPostTDD,
UL-TimingAdvance,
UL-TimingAdvanceControl,
-- Measurement IEs :
AdditionalMeasurementID-List,
Frequency-Band-Indicator,
EventResults,
InterRAT-TargetCellDescription,
MeasuredResults,
MeasuredResultsList,
MeasuredResultsOnRACH,
MeasurementCommand,
MeasurementIdentity,
MeasurementReportingMode,
PrimaryCCPCH-RSCP,
TimeslotListWithISCP,

```

```

TrafficVolumeMeasuredResultsList,
UE-Positioning-GPS-AssistanceData,
UE-Positioning-OTDOA-AssistanceData,
-- Other IEs :
BCCH-ModificationInfo,
CDMA2000-MessageList,
GSM-MessageList,
InterRAT-ChangeFailureCause,
InterRAT-HO-Failure,
InterRAT-UE-RadioAccessCapabilityList,
InterRAT-UE-SecurityCapList,
InterRATMessage,
IntraDomainNasNodeSelector,
ProtocolErrorInformation,
ProtocolErrorMoreInformation,
Rplmn-Information,
SegCount,
SegmentIndex,
SFN-Prime,
SIB-Data-fixed,
SIB-Data-variable,
SIB-Type
FROM InformationElements

maxSIBperMsg,
maxSystemCapability
FROM Constant-definitions;

<Cut until the next modified section>

-- *****
--
-- HANDOVER FROM UTRAN COMMAND
--
-- *****

HandoverFromUTRANCommand-GSM-r3 ::= CHOICE {
    r3 SEQUENCE {
        handoverFromUTRANCommand-GSM-r3
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
}

HandoverFromUTRANCommand-GSM-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    activationTime ActivationTime OPTIONAL,
    -- Radio bearer IEs
    toHandoverremainingRAB-Info RAB-Info OPTIONAL,
    -- Measurement IEs
    Frequency-band-Indicator Frequency-Band-Indicator,
    -- Other IEs
    gsm-message-and-extension CHOICE {
        single-GSMgsm-Message SEQUENCE {},
        -- In this case, what follows the basic production is a variable length bit string
        -- with no length field, containing the GSM message including GSM padding up to end
        -- of container, to be analysed according to GSM specifications
        gsm-MessageListwith-extension SEQUENCE {
            gsm-Mmessages GSM-MessageList
        }
    }
}

HandoverFromUTRANCommand-CDMA2000-r3 ::= CHOICE {
    r3 SEQUENCE {
        handoverFromUTRANCommand-CDMA2000-r3
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
}

HandoverFromUTRANCommand-CDMA2000-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    activationTime ActivationTime OPTIONAL,
    -- Radio bearer IEs

```

```

|      toHandoverremainingRAB-Info          RAB-Info          OPTIONAL,
-- Other IEs
   cdma2000-MessageList          CDMA2000-MessageList
}

-- *****
--
-- HANOVER FROM UTRAN FAILURE
--
-- *****

HandoverFromUTRANFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- Other IEs
  interRAT-HO-FailureCause      InterRAT-HO-FailureCause          OPTIONAL,
  interRATMessage                CHOICE {
    gsm                           SEQUENCE {
      gsm-MessageList             GSM-MessageList
    },
    cdma2000                       SEQUENCE {
      cdma2000-MessageList        CDMA2000-MessageList
    }
  }
}
-- Extension mechanism for non- release99 information
nonCriticalExtensions            SEQUENCE {}          OPTIONAL
}

```



```

-- *****
--
-- RADIO BEARER RECONFIGURATION
--
-- *****

RadioBearerReconfiguration-r3 ::= CHOICE {
  r3                               SEQUENCE {
    radioBearerReconfiguration-r3  RadioBearerReconfiguration-r3-IEs,
    nonCriticalExtensions           SEQUENCE {} OPTIONAL
  },
  criticalExtensions              SEQUENCE {}
}

RadioBearerReconfiguration-r3-IEs ::= SEQUENCE {
  -- User equipment IES
  rrc-TransactionIdentifier        RRC-TransactionIdentifier,
  integrityProtectionModeInfo     IntegrityProtectionModeInfo      OPTIONAL,
  cipheringModeInfo               CipheringModeInfo                OPTIONAL,
  activationTime                   ActivationTime                    OPTIONAL,
  new-U-RNTI                       U-RNTI                          OPTIONAL,
  new-C-RNTI                       C-RNTI                          OPTIONAL,
  rrc-StateIndicator               RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff       UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- Core network IES
  cn-InformationInfo               CN-InformationInfo            OPTIONAL,
  -- UTRAN mobility IES
  ura-Identity                     URA-Identity                    OPTIONAL,
  -- Radio bearer IES
  rab-InformationReconfigList      RAB-InformationReconfigList   OPTIONAL,
  rb-InformationReconfigList       RB-InformationReconfigList,
  -- NOTE: IE rb-InformationReconfigList should be optional in later versions of this message
  rb-InformationAffectedList       RB-InformationAffectedList   OPTIONAL,
  -- Transport channel IES
  ul-CommonTransChInfo             UL-CommonTransChInfo          OPTIONAL,
  ul-deletedTransChInfoList        UL-DeletedTransChInfoList     OPTIONAL,
  ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList   OPTIONAL,
  modeSpecificTransChInfo          CHOICE {
    fdd                             SEQUENCE {
      cpch-SetID                     CPCH-SetID                    OPTIONAL,
      addReconfTransChDRAC-Info      DRAC-StaticInformationList  OPTIONAL
    },
    tdd                             NULL
  }
  dl-CommonTransChInfo             DL-CommonTransChInfo          OPTIONAL,
  dl-DeletedTransChInfoList        DL-DeletedTransChInfoList     OPTIONAL,
  dl-AddReconfTransChInfoList      DL-AddReconfTransChInfo2List   OPTIONAL,
  -- Physical channel IES
  frequencyInfo                    FrequencyInfo                    OPTIONAL,
  maxAllowedUL-TX-Power             MaxAllowedUL-TX-Power          OPTIONAL,
  ul-ChannelRequirement             UL-ChannelRequirement          OPTIONAL,
  modeSpecificPhysChInfo           CHOICE {
    fdd                             SEQUENCE {
      dl-PDSCH-Information           DL-PDSCH-Information          OPTIONAL
    },
    tdd                             NULL
  },
  dl-CommonInformation             DL-CommonInformation          OPTIONAL,
  dl-InformationPerRL-List         DL-InformationPerRL-List
  -- NOTE: IE dl-InformationPerRL-List should be optional in later versions of this message
}

```

<Cut until the next modified section>

```
-- *****
--
-- RRC CONNECTION SETUP
--
-- *****

RRCConnectionSetup-r3 ::= CHOICE {
  r3
    rrcConnectionSetup-r3          SEQUENCE {
      rrcConnectionSetup-r3
      nonCriticalExtensions          RRCConnectionSetup-r3-IEs,
      criticalExtensions              SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

RRCConnectionSetup-r3-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  initialUE-Identity                InitialUE-Identity,
  rrc-TransactionIdentifier          RRC-TransactionIdentifier,
  activationTime                     ActivationTime                OPTIONAL,
  new-U-RNTI                        U-RNTI,
  new-c-RNTI                        C-RNTI                    OPTIONAL,
  rrc-StateIndicator                RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff        UTRAN-DRX-CycleLengthCoefficient,
  capabilityUpdateRequirement       CapabilityUpdateRequirement  OPTIONAL,
  -- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
  -- be used.
  -- Radio bearer IEs
  srb-InformationSetupList          SRB-InformationSetupList2,
  -- Transport channel IEs
  ul-CommonTransChInfo              UL-CommonTransChInfo        OPTIONAL,
  ul-AddReconfTransChInfoList       UL-AddReconfTransChInfoList,
  -- NOTE: IE ul-AddReconfTransChInfoList should be optional in later versions of this message
  dl-CommonTransChInfo              DL-CommonTransChInfo        OPTIONAL,
  dl-AddReconfTransChInfoList       DL-AddReconfTransChInfoList,
  -- NOTE: IE dl-AddReconfTransChInfoList should be optional in later versions of this message
  -- Physical channel IEs
  frequencyInfo                     FrequencyInfo                OPTIONAL,
  maxAllowedUL-TX-Power              MaxAllowedUL-TX-Power      OPTIONAL,
  ul-ChannelRequirement              UL-ChannelRequirement      OPTIONAL,
  dl-CommonInformation               DL-CommonInformation       OPTIONAL,
  dl-InformationPerRL-List           DL-InformationPerRL-List   OPTIONAL
}

```

<Cut until the next modified section>

```

-- *****
--
-- UTRAN MOBILITY INFORMATION
--
-- *****

UTRANMobilityInformation ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo                  OPTIONAL,
  new-U-RNTI                      U-RNTI                          OPTIONAL,
  new-C-RNTI                      C-RNTI                          OPTIONAL,
  ue-ConnTimersAndConstants      UE-ConnTimersAndConstants      OPTIONAL,
  -- CN information elements
  cn-InformationInfo              CN-InformationInfo              OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                    URA-Identity                    OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime ActivationTime OPTIONAL,
  dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo  OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions           SEQUENCE {}                    OPTIONAL
}

-- *****
--
-- UTRAN MOBILITY INFORMATION CONFIRM
--
-- *****

UTRANMobilityInformationConfirm ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo      IntegrityProtActivationInfo      OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime ActivationTime OPTIONAL,
  rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList      OPTIONAL,
  ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo  OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions           SEQUENCE {}                    OPTIONAL
}

-- *****
--
-- UTRAN MOBILITY INFORMATION FAILURE
--
-- *****

UTRANMobilityInformationFailure ::= SEQUENCE {
  -- UE information elements
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions           SEQUENCE {}                    OPTIONAL
}

```

11.3 Information element definitions

<Cut until the next modified section>

```
-- *****  
--  
--     OTHER INFORMATION ELEMENTS (10.3.8)  
--  
-- *****
```

<Cut until the next modified section>

```
InterRATMessageList ::= SEQUENCE (SIZE (1..maxSystemCapability)) OF  
InterRATMessage
```

<Cut until the next modified section>

```
-- *****  
--  
--     USER EQUIPMENT INFORMATION ELEMENTS (10.3.3)  
--  
-- *****
```

<Cut until the next modified section>

```
| InitialPriorityDelayList ::=          SEQUENCE (SIZE (1..maxASC)) OF  
                                     NS-IP
```

<Cut until the next modified section>

```
-- *****
--
--     TRANSPORT CHANNEL INFORMATION ELEMENTS (10.3.5)
--
-- *****
```

<Cut until the next modified section>

```
DL-CommonTransChInfo ::=          SEQUENCE {
    sccpch-TFCS                    TFCS                    OPTIONAL,
    modeSpecificInfo               CHOICE {
        fdd                        SEQUENCE {
            tfcs-SignallingModedl-Parameters          CHOICE {
                explicitdl-DCH-TFCS                TFCS,
                sameAsUL                            NULL
            }
        },
        tdd                        SEQUENCE {
            individualDL-CCTrCH-InfoList            IndividualDL-CCTrCH-InfoList
        }
    }
}
-- NOTE: CHOICE modeSpecificInfo should be optional. A new version of this IE
-- should be defined to be used in later versions of messages using this IE
}
```

<Cut until the next modified section>

```
-- *****
--
--     MEASUREMENT INFORMATION ELEMENTS (10.3.7)
--
-- *****
```

<Cut until the next modified section>

```
Frequency-Band-Indicator ::=          ENUMERATED {
    dcs1800BandUsed, pcs1900BandUsed }
```

<Cut until the next modified section>

```
-- *****
--
--     OTHER INFORMATION ELEMENTS (10.3.8)
--
-- *****
```

<Cut until the next modified section>

```
InterRAT-HO-Failure ::=          SEQUENCE {
interRAT-HO-FailureCause          InterRAT-HO-FailureCause          OPTIONAL,
interRATMessage                  InterRATMessage                  OPTIONAL
}
}
```

CHANGE REQUEST

⌘ **25.331 CR 885** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections to resolve inconsistencies between tabular and ASN.1		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 2001-06-01
Category:	⌘ A	Release:	⌘ REL-4
	<p>Use <u>one</u> of the following categories:</p> <p>F (essential correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (Addition of feature),</p> <p>C (Functional modification of feature)</p> <p>D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>REL-4 (Release 4)</p> <p>REL-5 (Release 5)</p>

Reason for change: ⌘ Miscellaneous misalignments between tabular format and ASN.1, some of which may cause interoperability problems

Summary of change: ⌘ The original revision of the CR includes the following changes:

- **RADIO BEARER RECONFIGURATION message:**
 - Need for IE "RB information to reconfigure list" changed to MP (in tabular); to align tabular with ASN.1
 - Need for IE "Downlink information per radio link list" changed to MP (in tabular); to align tabular with ASN.1
- **RRC CONNECTION SETUP message:**
 - need for IE "Added or Reconfigured TrCH information list" changed to MP (in tabular); to align tabular with ASN.1
 - Clarification that RRC state indicator takes precedence over other IEs to resolve the ambiguities upon receiving an RRC CONNECTION SETUP message with state indicator set to CELL_FACH but including dedicated TrCH information, which can not be excluded in the ASN.1 for that message
- **UTRAN MOBILITY INFORMATION message:** IE "COUNT-C activation time" removed in ASN.1; aligned with tabular that was correct
- **UTRAN MOBILITY INFORMATION CONFIRM message:** IE "COUNT-C activation time" added in ASN.1; aligned with tabular that was correct
- **IE "RB information to reconfigure":** the "same as" option for IE RLC-info is removed from the tabular format to align tabular with ASN.1
- **IE "DL Transport channel information common for all transport channels":**
 - the need for choice mode is changed to MP (in tabular); to align tabular with ASN.1
 - the need column for IE DL DCH TFCS is changed to MP (in tabular); to align tabular with ASN.1. Additional clarification is provided concerning the UE behaviour for this case

- HANDOVER FROM UTRAN message: Editorial improvement of the tabular format concerning the Inter-RAT information to better reflect the ASN.1
- HANDOVER FROM UTRAN FAILURE message: Editorial improvement of the tabular format concerning the Inter-RAT information to better reflect the ASN.1. The ASN.1 has also been modified slightly, which is regarded as acceptable since there are more ASN.1 changes to the inter RAT procedures in other CRs
- IE InitialPriorityDelayList (CPCH): the size of the list of IE "Initial priority delay" for CPCH has been made variable (in ASN.1); to align ASN.1 to tabular format which was correct

NOTE Whenever changes are introduced in the tabular due to align with an imperfection in the ASN.1, text is inserted in the tabular and comments in the ASN.1 to ensure the error is corrected when new versions of the concerned messages are specified

Backwards compatibility

The CR adds extensibility, generic error handling and some missing parameters (UE capability, CN DRX cycle length) to the transfer of RRC information across other interfaces

- Affected functions/ procedures: This CR correct the UTRAN mobility information procedure and resolves inconsistencies between tabular and ASN.1 for the RRC connection establishment and RB reconfiguration procedures. Several other procedures are affected due to an inconsistencies between tabular and ASN.1 that was resolved within IE "DL Transport channel information common for all transport channels": cell update, handover to UTRAN, RB release, RB establishment, TrCH reconfiguration
- Affected implementations: all implementations supporting the UTRAN mobility information procedure and/ or CPCH are affected. Regarding the other changes, only implementations are affected that have assumed the inconsistently specified behaviour to be different than specified in this CR
- Rationale: The specification was inconsistent

Consequences if not approved:

⌘ Consequences if not approved

The most important consequences are as follows:

- There may be severe interoperability problem due to the fact that different implementations have assumed different behaviour for the inconsistencies resolved by this CR. As a result, it may be impossible for UTRAN to order UEs to enter CELL_FACH state upon RRC connection establishment and/ or RB reconfiguration
- The UTRAN mobility information procedure will not work

Clauses affected: ⌘ 8.1.3.4, 8.2.2.2, 8.2.2.3, 8.3.7.3, 8.6.3.3, 8.6.5.10, 10.2.15, 10.2.16, 10.2.27, 10.2.40, 10.3.4.18, 10.3.5.6, 10.3.8.6, 10.3.8.8, 11.2, 11.3

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

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

8.1.3.4 Reception of an RRC CONNECTION REQUEST message by the UTRAN

Upon receiving an RRC CONNECTION REQUEST message, UTRAN should either:

- submit an RRC CONNECTION SETUP message to the lower layers for transmission on the downlink CCCH; or

NOTE The RRC CONNECTION SETUP message always includes the IEs " Added or Reconfigured TrCH information list ", both for uplink and downlink transport channels, even if UTRAN orders the UE to move to CELL_FACH and hence need not configure any transport channels. In this cases, UTRAN may include a configuration that adds little to the encoded message size e.g. a DCH with a single zero size transport format. At a later stage, UTRAN may either remove or reconfigure this configuration.

- submit an RRC CONNECTION REJECT message on the downlink CCCH. In the RRC CONNECTION REJECT message, the UTRAN may direct the UE to another UTRA carrier or to another system. After the RRC CONNECTION REJECT message has been sent, all context information for the UE may be deleted in UTRAN.

8.2.2.2 Initiation

To initiate any one of the reconfiguration procedures, UTRAN should:

- configure new radio links in any new physical channel configuration;
- start transmission and reception on the new radio links;
- for a radio bearer establishment procedure:
 - transmit a RADIO BEARER SETUP message on the downlink DCCH using AM or UM RLC;
- for a radio bearer reconfiguration procedure:
 - transmit a RADIO BEARER RECONFIGURATION message on the downlink DCCH using AM or UM RLC;
- for a radio bearer release procedure:
 - transmit a RADIO BEARER RELEASE message on the downlink DCCH using AM or UM RLC;
- for a transport channel reconfiguration procedure:
 - transmit a TRANSPORT CHANNEL RECONFIGURATION message on the downlink DCCH using AM or UM RLC;
- for a physical channel reconfiguration procedure:
 - transmit a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH using AM or UM RLC;
- if the reconfiguration procedure is simultaneous with SRNS relocation procedure, and ciphering and/or integrity protection are activated:
 - transmit new ciphering and/or integrity protection information to be used after reconfiguration.
- if transport channels are added, reconfigured or deleted in uplink and/or downlink:
 - set TFCS according to the new transport channel(s).
- if transport channels are added or deleted in uplink and/or downlink, and RB Mapping Info applicable to the new configuration has not been previously provided to the UE, the UTRAN should:
 - send the RB Mapping Info for the new configuration.

In the Radio Bearer Reconfiguration procedure UTRAN may indicate that uplink transmission shall be stopped or continued on certain radio bearers. Uplink transmission on a signalling radio bearer used by the RRC signalling (RB1 or RB2) should not be stopped.

NOTE 1 The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure", even if UTRAN does not require the reconfiguration of any RB. In these cases, UTRAN may include only the IE "RB identity" within the IE "RB information to reconfigure".

NOTE 2 The RADIO BEARER RECONFIGURATION message always includes the IE "Downlink information per radio link list ", even if UTRAN does not require the reconfiguration of any RL. In these cases, UTRAN may re- send the currently assigned values for the mandatory IEs included within the IE "Downlink information per radio link list ". Moreover, the RADIO BEARER RECONFIGURATION message always includes the IE "Primary CPICH Info" (FDD) or IE "Primary CCPCH Info" (TDD). This implies that in case UTRAN applies the RADIO BEARER RECONFIGURATION message to move the UE to CELL_FACH state, it has to indicate a cell. However, UTRAN may indicate any cell; the UE anyhow performs cell selection and notifies UTRAN if it selects another cell than indicated by UTRAN.

If the IE "Activation Time" is included, UTRAN should set it to a value taking the UE performance requirements into account.

UTRAN should take the UE capabilities into account when setting the new configuration.

If the message is used to initiate a transition from CELL_DCH to CELL_FACH state, the UTRAN may assign a common channel configuration of a given cell and C-RNTI to be used in that cell to the UE.

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 be able to receive any of the following messages:

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

and perform a hard handover, 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:

- set the variable ORDERED_RECONFIGURATION to TRUE;
- may first release the current physical channel configuration and
- then establish a new physical channel configuration and act upon all received information elements as specified in subclause 8.6, unless specified in the following:
 - 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:
 - act upon the IE "PDSCH code mapping" as specified in subclause 8.6 and;
 - infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted;
- 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 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 the UE remains in CELL_DCH state after state transition, the UE shall:

- if the IE "UL DPCH Info" is absent, not change its current UL Physical channel configuration;
- if the IE "DL DPCH Info for each RL" is absent, not change its current DL Physical channel configuration.

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

- if the IE "Frequency info" is included in the received reconfiguration message:
 - select a suitable UTRA cell according to [4] on that frequency;
- if the IE "Frequency info" is not included in the received reconfiguration message:
 - select a suitable UTRA cell according to [4];
- 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:
 - initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - when the cell update procedure completed successfully:
 - 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";
 - proceed as below;
- 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;
- select PRACH according to subclause 8.6.6.2;
- select Secondary CCPCH according to subclause 8.6.6.5;
- use the transport format set given in system information;
- if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
- ignore that IE and stop using DRX;
- if the contents of the variable C_RNTI is empty:
 - perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - when the cell update procedure completed successfully:
 - 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";
 - proceed as below;

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:

- if the received reconfiguration message included the IE "Downlink counter synchronisation info":
 - calculate the START value according to subclause 8.5.9;
 - include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info";
- if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
 - if the variable START_VALUE_TO_TRANSMIT is set:
 - include and set the IE "START" to the value of that variable;
 - if the variable START_VALUE_TO_TRANSMIT is not set and the IE "New U-RNTI" is included:

- calculate the START value according to subclause 8.5.9;
- include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info";
- if the received reconfiguration message contained the IE "Ciphering mode info":
 - include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
- if the received reconfiguration message contained the IE "Integrity protection mode info" with the IE "Integrity protection mode command" set to "Modify":
 - include and set the IE "Integrity protection activation info" to the value of the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
- 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
- clear that entry;
- if the variable PDCP_SN_INFO is not empty:
 - include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_INFO;
- 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):
 - set the IE "Uplink Timing Advance" to the calculated value;
- if the IE "Integrity protection mode info" was present in the received reconfiguration message:
 - start applying the new integrity protection configuration in the uplink for RB#2 from and including the transmitted response message;

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

- if the IE "Frequency info" is included in the received reconfiguration message:
 - select a suitable UTRA cell according to [4] on that frequency;
- if the IE "Frequency info" is not included in the received reconfiguration message:
 - select a suitable UTRA cell according to [4];
- prohibit periodical status transmission in RLC;
- remove any C-RNTI from MAC;
- clear the variable C_RNTI;
- 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;
- select Secondary CCPCH according to subclause 8.6.6.5;
- if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 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;
- if the UE enters CELL_PCH state, and 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:
 - initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";

- when the cell update procedure completed successfully:
 - The procedure ends;
- if the UE enters URA_PCH state, and after cell selection the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 is fulfilled:
 - initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";
 - when the URA update procedure completed:
 - The procedure ends.

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

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

The UE shall:

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

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM (DCS-1800 band used)	GSM TS 04.18, version 8.5.0 or later	HANDOVER COMMAND
GSM (PCS-1900 band used)	GSM TS 04.18, version 8.5.0 or later	HANDOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

- if the IE "System type" has the value "GSM":

- if the IE "~~System type~~Frequency band" has the value "GSM/ (~~DCS 1800 band used~~)":
 - set the BAND_INDICATOR [26] to "ARFCN indicates 1800 band";
- if the IE "~~System type~~Frequency band" has the value " GSM/ (~~PCS 1900 band used~~)":
 - set the BAND_INDICATOR [26] to "ARFCN indicates 1900 band";
- apply the "Inter RAT Message" according to the "standard to apply" in the table above.
- in case one or more IEs "RAB info" is included in the HANDOVER FROM UTRAN COMMAND message:
 - connect upper layer entities corresponding to indicated RABs to the radio resources indicated in the inter-RAT message;

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

8.6.3.3 Generic state transition rules depending on received information elements

The IE "RRC State Indicator" indicates the state the UE shall enter. The UE shall enter the state indicated by the IE "RRC State Indicator" even if the received message includes other IEs relevant only for states other than indicated by the IE "RRC State Indicator". E.g. if the RRC state indicator is set to CELL_FACH while other IEs provide information about a configuration including dedicated channels, the UE shall enter CELL_FACH state. If however the UE has no information about the configuration corresponding with the state indicated by the IE "RRC State Indicator", it shall consider the requested configuration as invalid.

The UE shall, if the IE "RRC State Indicator" in the received message has the value:

- "CELL_FACH":
 - enter CELL_FACH state as dictated by the procedure governing the message received;
- "CELL_DCH":
 - if neither DPCH is assigned in the message nor is the UE is CELL_DCH:
 - set the variable INVALID_CONFIGURATION to TRUE;
 - else:
 - enter CELL_DCH state as dictated by the procedure governing the message received;
- "CELL_PCH":
 - if the received message is RRC CONNECTION SETUP and IE "RRC State Indicator" is set to CELL_PCH:
 - set the variable INVALID_CONFIGURATION to TRUE;
 - else:
 - enter CELL_PCH state as dictated by the procedure governing the message received;
- "URA_PCH":
 - if the received message is RRC CONNECTION SETUP and IE "RRC State Indicator" is set to URA_PCH:
 - set the variable INVALID_CONFIGURATION to TRUE;
 - else:
 - enter URA_PCH state as dictated by the procedure governing the message received.

8.6.5.10 DL Transport channel information common for all transport channels

If the IE "DL Transport channel information common for all transport channels" is included the UE shall:

- if the IE "SCCPCH TFCS" is included:
 - perform actions for the TFCS of the selected SCCPCH as specified in subclause 8.6.5.2;
- if the IE choice "mode" is set to FDD:
 - if the choice "DL parameters" is set to 'Independent':
 - if the IE "DL DCH TFCS" is included:

- if the IE "SCCPCH TFCS" is included AND the state the UE enters after handling the received information is other than CELL_DCH state:

- ignore the received IE "DL DCH TFCS"

NOTE the IE "DL Transport channel information common for all transport channels" always includes a DL DCH TFCS configuration, either by including the IE "DL DCH TFCS" or by specifying that the TFCS is the same as in UL. If UTRAN does not require the reconfiguration of the concerned parameters, UTRAN may replace one TFC with the value that is already assigned for this IE.

- else:

- perform actions as specified 8.6.5.2;
- if the IE choice "mode" is set to TDD:
 - if the IE "Individual DL CCTRCH information" is included:
 - for each DL TFCS identified by the IE "DL TFCS identity":
 - if the IE choice "DL parameters" is set to 'independent':
 - perform actions for the IE "DL TFCS" as specified in 8.6.5.2;
 - if the IE choice "DL parameters" is set to 'same as UL':
 - store for that DL TFCS the TFCS identified by the IE "UL DCH TFCS identity".

10.2.15 HANDOVER FROM UTRAN COMMAND

This message is used for handover from UMTS to another system e.g. GSM. One or several messages from the other system can be included in the Inter-RAT message information element in this message. These messages are structured and coded according to that systems specification.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
RB information elements				
RAB information list	OP	1 to <maxRABs etup>		For each RAB to be handed over
>RAB info	MP		RAB info 10.3.4.8	
Other information elements				
<u>Inter-RAT message</u>	<u>MP</u>		<u>Inter-RAT message-40.3.8.8</u>	
<u>CHOICE System type</u>	<u>MP</u>			<u>This IE indicates in particular which specification to apply to decode the transported messages</u>
<u>>GSM</u>				
<u>>>Frequency band</u>	<u>MP</u>		<u>Enumerated (GSM/DCS 1800 band used), GSM/PCS 1900 band used)</u>	
<u>>>>GSM message</u>				
<u>>>>Single GSM message</u>	<u>MP</u>		<u>Bitstring (no explicit size constraint)</u>	<u>Formatted and coded according to GSM specifications</u>
<u>>>>GSM message List</u>	<u>MP</u>	<u>1.to.<maxInterSysMessages></u>	<u>Bitstring (1..512)</u>	<u>Formatted and coded according to GSM specifications</u>
<u>>cdma2000</u>				
<u>>>cdma2000MessageList</u>	<u>MP</u>	<u>1.to.<maxInterSysMessages></u>		
<u>>>>MSG_TYPE(s)</u>	<u>MP</u>		<u>Bitstring (8)</u>	<u>Formatted and coded according to cdma2000 specifications</u>
<u>>>>cdma2000Messagepayload(s)</u>	<u>MP</u>		<u>Bitstring (1..512)</u>	<u>Formatted and coded according to cdma2000 specifications</u>

10.2.16 HANDOVER FROM UTRAN FAILURE

This message is sent on the RRC connection used before the Inter-RAT Handover was executed. The message indicates that the UE has failed to seize the new channel in the other system.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Other information elements				
Inter-RAT handover failure	OP		Inter-RAT handover failure 10.3.8.6	
<u>CHOICE System type</u>	<u>MP</u>			<u>This IE indicates in particular which specification to apply to decode the transported messages</u>
<u>>GSM</u>				
<u>>GSM message List</u>	<u>MP</u>	<u>1.to.<max nterSysMessages></u>	<u>Bitstring (1..512)</u>	<u>Formatted and coded according to GSM specifications</u>
<u>>cdma2000</u>				
<u>>>cdma2000MessageList</u>	<u>MP</u>	<u>1.to.<max nterSysMessages></u>		
<u>>>>MSG_TYPE(s)</u>	<u>MP</u>		<u>Bitstring (8)</u>	<u>Formatted and coded according to cdma2000 specifications</u>
<u>>>>cdma2000Messagepayload(s)</u>	<u>MP</u>		<u>Bitstring (1..512)</u>	<u>Formatted and coded according to cdma2000 specifications</u>

10.2.27 RADIO BEARER RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
RRC State Indicator	MP		RRC State Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MD		UTRAN DRX cycle length coefficient 10.3.3.49	Default value is the existing value of UTRAN DRX cycle length coefficient
CN information elements				
CN Information info	OP		CN Information info 10.3.1.3	
UTRAN mobility information elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements				
RAB information to reconfigure list	OP	1 to <maxRABsetup >		
>RAB information to reconfigure	MP		RAB information to reconfigure 10.3.4.11	
RB information to reconfigure list	OMP	1to <maxRB>		<u>Although this IE is not always required, need is MP to align with ASN.1</u>
>RB information to reconfigure	MP		RB information to reconfigure 10.3.4.18	
RB information to be affected list	OP	1 to <maxRB>		
>RB information to be affected	MP		RB information to be affected 10.3.4.17	
TrCH Information Elements				
Uplink transport channels				
UL Transport channel	OP		UL Transport	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
information common for all transport channels			channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxTrCH >		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
CHOICE <i>mode</i>	OP			
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH >		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxTrCH >		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE <i>channel requirement</i>	OP			

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE <i>mode</i>	MP			
>FDD				
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OMP	1 to <maxRL>		<u>Although this IE is not always required, need is MP to align with ASN.1</u>
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

10.2.40 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements				
Initial UE identity	MP		Initial UE identity 10.3.3.15	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	MP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
RRC State Indicator	MP		RRC State Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MP		UTRAN DRX cycle length coefficient 10.3.3.49	
Capability update requirement	MD		Capability update requirement 10.3.3.2	Default value is defined in subclause 10.3.3.2
RB Information Elements				
Signalling RB information to setup list	MP	3 to 4		Information for signalling radio bearers, in the order RB 1 up to 4.
>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24	
TrCH Information Elements				
Uplink transport channels				
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Added or Reconfigured TrCH information list	<i>CV-Cell_FACH</i> MP	1 to <maxTrCH >		<u>Although this IE is not required when the IE "RRC state indicator" is set to "CELL_FACH", need is MP to align with ASN.1</u>
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Added or Reconfigured TrCH information list	<i>CV-Cell_FACH</i>	1 to <maxTrCH >		<u>Although this IE is not required when the IE "RRC state</u>

Information Element/Group name	Need	Multi	Type and reference	Semantics description
	<u>MP</u>	>		<u>indicator" is set to "CELL_FACH", need is MP to align with ASN.1.</u>
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <MaxRL>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

Condition	Explanation
<u>Cell_FACH</u>	<u>This IE is optional when UE's final state is CELL_FACH, else it is mandatory</u>

10.3.4.18 RB information to reconfigure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.16	
PDCP info	OP		PDCP info 10.3.4.2	
PDCP SN info	C PDCP		PDCP SN info 10.3.4.3	PDCP sequence number info from the network. Present only in case of lossless SRNS relocation.
CHOICE RLC info type	OP			
>RLC info	OP		RLC info 10.3.4.23	
>Same as RB			RB identity 10.3.4.16	Identity of RB with exactly the same values for IE "RLC info"
RB mapping info	OP		RB mapping info 10.3.4.21	
RB stop/continue	OP		Enumerated(stop, continue)	

Condition	Explanation
<i>PDCP</i>	This IE is optional only if "PDCP info" is present. Otherwise it is absent.

10.3.5.6 DL Transport channel information common for all transport channels

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SCCPCH TFCS	OP		Transport Format Combination Set 10.3.5.20	This IE should be absent within IE "Predefined RB configuration"
CHOICE <i>mode</i>	OMP			<u>Although this IE is not always required, need is MP to align with ASN.1</u>
>FDD				
>>CHOICE DL parameters	MP			
>>>Independent				
>>>>DL DCH TFCS	OMP		Transport Format Combination Set 10.3.5.20	<u>Although this IE is not always required, need is MP to align with ASN.1</u>
>>>SameAsUL				(no data)
>TDD				
>>Individual DL CTrCH information	OP	1 to \geq maxCC TrCH>		
>>>DL TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Identifies a special CTrCH for shared or dedicated channels.
>>>CHOICE DL parameters	MP			
>>>>Independent				
>>>>>DL TFCS	MP		Transport format combination set 10.3.5.20	
>>>>SameAsUL				
>>>>>UL DCH TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Same TFCS applies as specified for the indicated UL DCH TFCS identity except for information applicable for UL only

NOTE This information element is included within IE "Predefined TrCh configuration"

10.3.8.6 Inter-RAT handover failure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT handover failure cause	MD		Enumerated(Configuration unacceptable, physical channel failure, protocol error, inter-RAT protocol error, unspecified)	Default value is "unspecified". At least one spare value needed
Protocol error information	CV-ProtErr		Protocol error information 10.3.8.12	
Inter-RAT message	OP		Inter-RAT message-10.3.8.8	

Condition	Explanation
<i>ProtErr</i>	If the IE "Inter-RAT handover failure cause" has the value "Protocol error"

10.3.8.8 Inter-RAT message(Void)

This Information Element contains one or several messages that are structured and coded according to the specification used for the system type indicated by the first parameter.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
System type	MP		Enumerated (GSM (DCS 1800 band used), GSM (PCS 1900 band used), cdma2000)	This IE indicates in particular which specification to apply to decode the transported messages
CHOICE system	MP			
>GSM				
>>Message(s)	MP	1..to.<maxInterSysMessages>	Bitstring (1..512)	Formatted and coded according to GSM specifications
>cdma2000				
>>cdma2000Message	MP	1..to.<maxInterSysMessages>		
>>>MSG_TYPE(s)	MP		Bitstring (8)	Formatted and coded according to cdma2000 specifications
>>>cdma2000Messagepayload(s)	MP		Bitstring (1..512)	Formatted and coded according to cdma2000 specifications

Condition	Explanation
System	The 'GSM' choice shall be applied when the IE 'System type' is 'GSM except PCS 1900' or 'PCS 1900', and the 'cdma2000' choice shall be applied when the IE 'system type' is 'cdma2000'.

11.2 PDU definitions

```
--*****
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*****

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

--*****
--
-- IE parameter types from other modules
--
--*****

IMPORTS

-- Core Network IEs :
  CN-DomainIdentity,
  CN-InformationInfo,
  NAS-Message,
  PagingRecordTypeID,
-- UTRAN Mobility IEs :
  URA-Identity,
-- User Equipment IEs :
  ActivationTime,
  C-RNTI,
  CapabilityUpdateRequirement,
  CapabilityUpdateRequirement-r4,
  CapabilityUpdateRequirement-r4Ext,
  CellUpdateCause,
  CipheringAlgorithm,
  CipheringModeInfo,
  EstablishmentCause,
  FailureCauseWithProtErr,
  FailureCauseWithProtErrTrId,
  InitialUE-Identity,
  IntegrityProtActivationInfo,
  IntegrityProtectionModeInfo,
  N-308,
  PagingCause,
  PagingRecordList,
  ProtocolErrorIndicator,
  ProtocolErrorIndicatorWithMoreInfo,
  Rb-timer-indicator,
  Re-EstablishmentTimer,
  RedirectionInfo,
  RejectionCause,
  ReleaseCause,
  RRC-StateIndicator,
  RRC-TransactionIdentifier,
  SecurityCapability,
  START-Value,
  STARTList,
  U-RNTI,
  U-RNTI-Short,
  UE-RadioAccessCapability,
  UE-RadioAccessCapability-r4ext,
  UE-ConnTimersAndConstants,
  URA-UpdateCause,
  UTRAN-DRX-CycleLengthCoefficient,
  WaitTime,
-- Radio Bearer IEs :
  DefaultConfigIdentity,
  DefaultConfigMode,
  DL-CounterSynchronisationInfo,
  PredefinedConfigIdentity,
  RAB-Info,
  RAB-Info-Post,
  RAB-InformationList,
```



```

RAB-InformationReconfigList,
RAB-InformationSetupList,
RAB-InformationSetupList-r4,
RB-ActivationTimeInfo,
RB-ActivationTimeInfoList,
RB-COUNT-C-InformationList,
RB-COUNT-C-MSB-InformationList,
RB-IdentityList,
RB-InformationAffectedList,
RB-InformationReconfigList,
RB-InformationReconfigList-r4,
RB-InformationReleaseList,
RB-InformationSetupList,
RB-InformationSetupList-r4,
RB-WithPDCP-InfoList,
SRB-InformationSetupList,
SRB-InformationSetupList2,
UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
  CPCH-SetID,
  DL-AddReconfTransChInfo2List,
  DL-AddReconfTransChInfoList,
  DL-CommonTransChInfo,
  DL-DeletedTransChInfoList,
  DRAC-StaticInformationList,
  TFC-Subset,
  TFCS-Identity,
  UL-AddReconfTransChInfoList,
  UL-CommonTransChInfo,
  UL-DeletedTransChInfoList,
-- Physical Channel IEs :
  AllocationPeriodInfo,
  Alpha,
  CCTrCH-PowerControlInfo,
  CCTrCH-PowerControlInfo-r4,
  ConstantValue,
  CPCH-SetInfo,
  DL-CommonInformation,
  DL-CommonInformation-r4,
  DL-CommonInformationPost,
  DL-InformationPerRL,
  DL-InformationPerRL-List,
  DL-InformationPerRL-List-r4,
  DL-InformationPerRL-ListPostFDD,
  DL-InformationPerRL-PostTDD,
  DL-InformationPerRL-PostTDD-LCR,
  DL-DPCH-PowerControlInfo,
  DL-PDSCH-Information,
  DPCH-CompressedModeStatusInfo,
  FrequencyInfo,
  FrequencyInfoFDD,
  FrequencyInfoTDD,
  IndividualTS-InterferenceList,
  MaxAllowedUL-TX-Power,
  OpenLoopPowerControl-IPDL-TDD,
  PDSCH-CapacityAllocationInfo,
  PDSCH-CapacityAllocationInfo-r4,
  PDSCH-Identity,
  PDSCH-Info,
  PDSCH-Info-r4,
  PRACH-RACH-Info,
  PrimaryCCPCH-TX-Power,
  PUSCH-CapacityAllocationInfo,
  PUSCH-CapacityAllocationInfo-r4,
  PUSCH-Identity,
  RL-AdditionInformationList,
  RL-RemovalInformationList,
  SpecialBurstScheduling,
  SSDT-Information,
  TFC-ControlDuration,
  SSDT-UL,
  TimeslotList,
  TimeslotList-r4,
  TX-DiversityMode,
  UL-ChannelRequirement,
  UL-ChannelRequirement-r4,
  UL-ChannelRequirementWithCPCH-SetID,
  UL-ChannelRequirementWithCPCH-SetID-r4,

```

```

-- REL-4

```

```

    UL-DPCH-Info,
    UL-DPCH-Info-r4,
    UL-DPCH-InfoPostFDD,
    UL-DPCH-InfoPostTDD,
    UL-DPCH-InfoPostTDD-LCR,
    UL-SynchronisationParameters,
    UL-TimingAdvance,
    UL-TimingAdvanceControl,
    UL-TimingAdvanceControl-r4,
-- Measurement IEs :
    AdditionalMeasurementID-List,
    Frequency-Band-Indicator,
    EventResults,
    InterFreqEventResults-LCR,
    InterRAT-TargetCellDescription,
    MeasuredResults,
    MeasuredResultsList,
    MeasuredResultsList-LCR,
    MeasuredResultsOnRACH,
    MeasurementCommand,
    MeasurementCommand-r4,
    MeasurementIdentity,
    MeasurementReportingMode,
    PrimaryCCPCH-RSCP,
    TimeslotListWithISCP,
    TrafficVolumeMeasuredResultsList,
    UE-Positioning-GPS-AssistanceData,
    UE-Positioning-OTDOA-AssistanceData,
    UP-IPDL-Parameters-TDD,
-- Other IEs :
    BCCH-ModificationInfo,
    CDMA2000-MessageList,
    GSM-MessageList,
    InterRAT-ChangeFailureCause,
    InterRAT-HO-Failure,
    InterRAT-UE-RadioAccessCapabilityList,
    InterRAT-UE-SecurityCapList,
    InterRATMessage,
    IntraDomainNasNodeSelector,
    ProtocolErrorInformation,
    ProtocolErrorMoreInformation,
    Rplmn-Information,
    Rplmn-Information-r4,
    SegCount,
    SegmentIndex,
    SFN-Prime,
    SIB-Data-fixed,
    SIB-Data-variable,
    SIB-Type
FROM InformationElements

    maxSIBperMsg,
    maxSystemCapability
FROM Constant-definitions;

```

<Cut until the next modified section>

```

-- *****
--
-- CELL UPDATE CONFIRM
--
-- *****

```

```

CellUpdateConfirm-r3 ::= CHOICE {
    r3
        cellUpdateConfirm-r3          SEQUENCE {
            nonCriticalExtensions      CellUpdateConfirm-r3-IEs,
            criticalExtensions          SEQUENCE {} OPTIONAL
        },
        criticalExtensions             SEQUENCE {}
}

CellUpdateConfirm-r4 ::= CHOICE {
    r3
        cellUpdateConfirm-r3          SEQUENCE {
            nonCriticalExtensions      CellUpdateConfirm-r3-IEs,
            cellUpdateConfirm-r4-ext   SEQUENCE {
                nonCriticalExtensions CellUpdateConfirm-r4-ext-IEs,
                criticalExtensions     SEQUENCE {} OPTIONAL
            }
        },
        criticalExtensions             SEQUENCE {}
}

```

```

criticalExtensions          CHOICE {
  r4                        SEQUENCE {
    cellUpdateConfirm-r4   CellUpdateConfirm-r4-IEs,
    nonCriticalExtensions  SEQUENCE {} OPTIONAL
  },
  criticalExtensions       SEQUENCE {}
}
}
CellUpdateConfirm-r3-IEs ::= SEQUENCE {
-- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
  cipheringModeInfo        CipheringModeInfo          OPTIONAL,
  activationTime            ActivationTime             OPTIONAL,
  new-U-RNTI                U-RNTI                   OPTIONAL,
  new-C-RNTI                C-RNTI                   OPTIONAL,
  rrc-StateIndicator        RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  rlc-Re-establishIndicatorRb2or3 BOOLEAN,
  rlc-Re-establishIndicatorRb4orAbove BOOLEAN,
-- CN information elements
  cn-InformationInfo        CN-InformationInfo          OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity              URA-Identity                OPTIONAL,
-- Radio bearer IEs
  rb-InformationReleaseList RB-InformationReleaseList  OPTIONAL,
  rb-InformationReconfigList RB-InformationReconfigList  OPTIONAL,
  rb-InformationAffectedList RB-InformationAffectedList  OPTIONAL,
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo      UL-CommonTransChInfo          OPTIONAL,
  ul-deletedTransChInfoList UL-DeletedTransChInfoList    OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList  OPTIONAL,
  modeSpecificTransChInfo    CHOICE {
    fdd                      SEQUENCE {
      cpch-SetID              CPCH-SetID                OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd                      NULL
  },
  dl-CommonTransChInfo      DL-CommonTransChInfo          OPTIONAL,
  dl-DeletedTransChInfoList DL-DeletedTransChInfoList    OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList  OPTIONAL,
-- Physical channel IEs
  frequencyInfo             FrequencyInfo             OPTIONAL,
  maxAllowedUL-TX-Power     MaxAllowedUL-TX-Power     OPTIONAL,
  ul-ChannelRequirement     UL-ChannelRequirement     OPTIONAL,
  modeSpecificPhysChInfo    CHOICE {
    fdd                      SEQUENCE {
      dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
    },
    tdd                      NULL
  },
  dl-CommonInformation      DL-CommonInformation          OPTIONAL,
  dl-InformationPerRL-List  DL-InformationPerRL-List    OPTIONAL
}

CellUpdateConfirm-r4-ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- The following IE extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
  ssdt-UL                   SSdT-UL                      OPTIONAL
}

CellUpdateConfirm-r4-IEs ::= SEQUENCE {
-- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
  cipheringModeInfo        CipheringModeInfo          OPTIONAL,
  activationTime            ActivationTime             OPTIONAL,
  new-U-RNTI                U-RNTI                   OPTIONAL,
  new-C-RNTI                C-RNTI                   OPTIONAL,
  rrc-StateIndicator        RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  rlc-ResetIndicatorC-Plane  BOOLEAN,
  rlc-ResetIndicatorU-Plane  BOOLEAN,
-- CN information elements
  cn-InformationInfo        CN-InformationInfo          OPTIONAL,

```

```

-- UTRAN mobility IEs
  ura-Identity          URA-Identity          OPTIONAL,
-- Radio bearer IEs
  rb-InformationReleaseList  RB-InformationReleaseList  OPTIONAL,
  rb-InformationReconfigList  RB-InformationReconfigList-r4  OPTIONAL,
  rb-InformationAffectedList  RB-InformationAffectedList  OPTIONAL,
  rb-WithPDCP-InfoList      RB-WithPDCP-InfoList      OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo      UL-CommonTransChInfo      OPTIONAL,
  ul-deletedTransChInfoList  UL-DeletedTransChInfoList  OPTIONAL,
  ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList  OPTIONAL,
  modeSpecificTransChInfo    CHOICE {
    fdd          SEQUENCE {
      cpch-SetID          CPCH-SetID          OPTIONAL,
      addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
    },
    tdd          NULL
  },
  dl-CommonTransChInfo      DL-CommonTransChInfo-r4    OPTIONAL,
  dl-DeletedTransChInfoList  DL-DeletedTransChInfoList  OPTIONAL,
  dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList  OPTIONAL,
-- Physical channel IEs
  frequencyInfo            FrequencyInfo            OPTIONAL,
  maxAllowedUL-TX-Power    MaxAllowedUL-TX-Power    OPTIONAL,
  ul-ChannelRequirement    UL-ChannelRequirement-r4  OPTIONAL,
  modeSpecificPhysChInfo    CHOICE {
    fdd          SEQUENCE {
      dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
    },
    tdd          NULL
  },
  dl-CommonInformation      DL-CommonInformation-r4    OPTIONAL,
  dl-InformationPerRL-List  DL-InformationPerRL-List-r4  OPTIONAL
}

```

<Cut until the next modified section>

```

-- *****
--
-- HANDOVER FROM UTRAN COMMAND
--
-- *****

```

```

HandoverFromUTRANCommand-GSM-r3 ::= CHOICE {
  r3          SEQUENCE {
    handoverFromUTRANCommand-GSM-r3
    nonCriticalExtensions          HandoverFromUTRANCommand-GSM-r3-IEs,
    criticalExtensions          SEQUENCE {} OPTIONAL
  },
  criticalExtensions          SEQUENCE {}
}

```

```

HandoverFromUTRANCommand-GSM-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  activationTime                  ActivationTime          OPTIONAL,
-- Radio bearer IEs
  toHandoverremainingRAB-Info    RAB-Info          OPTIONAL,
-- Measurement IEs
  frequency-band-Indicator      Frequency-Band-Indicator,
-- Other IEs
  gsm-message-and-extension          CHOICE {
    single-GSMgsm-Message          SEQUENCE {},
    -- In this case, what follows the basic production is a variable length bit string
    -- with no length field, containing the GSM message including GSM padding up to end
    -- of container, to be analysed according to GSM specifications
    gsm-MessageListwith-extension          SEQUENCE {
      gsm-Mmessages          GSM-MessageList
    }
  }
}

```

```

HandoverFromUTRANCommand-CDMA2000-r3 ::= CHOICE {
  r3          SEQUENCE {
    handoverFromUTRANCommand-CDMA2000-r3
    nonCriticalExtensions          HandoverFromUTRANCommand-CDMA2000-r3-IEs,
  },
  criticalExtensions          SEQUENCE {} OPTIONAL
}

```

```

    criticalExtensions          SEQUENCE {}
}

HandoverFromUTRANCommand-CDMA2000-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier   RRC-TransactionIdentifier,
    activationTime              ActivationTime              OPTIONAL,
    -- Radio bearer IEs
    toHandoverRemainingRAB-Info RAB-Info                  OPTIONAL,
    -- Other IEs
    cdma2000-MessageList       CDMA2000-MessageList
}

-- *****
--
-- HANDOVER FROM UTRAN FAILURE
--
-- *****

HandoverFromUTRANFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier   RRC-TransactionIdentifier,
    -- Other IEs
    interRAT-HO-Failure        InterRAT-HO-Failure        OPTIONAL,
    -- Extension mechanism for non-release99 information
    nonCriticalExtensions       SEQUENCE {}                 OPTIONAL
}

<Cut until the next modified section>

-- *****
--
-- RADIO BEARER RECONFIGURATION
--
-- *****

RadioBearerReconfiguration-r3 ::= CHOICE {
    r3          SEQUENCE {
        radioBearerReconfiguration-r3 RadioBearerReconfiguration-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    criticalExtensions          SEQUENCE {}
}

RadioBearerReconfiguration-r4 ::= CHOICE {
    r3          SEQUENCE {
        radioBearerReconfiguration-r3 RadioBearerReconfiguration-r3-IEs,
        nonCriticalExtensions         SEQUENCE {
            radioBearerReconfiguration-r4-ext RadioBearerReconfiguration-r4-ext-IEs,
            nonCriticalExtensions         SEQUENCE {} OPTIONAL
        }
        OPTIONAL
    },
    criticalExtensions          CHOICE {
        r4          SEQUENCE {
            radioBearerReconfiguration-r4 RadioBearerReconfiguration-r4-IEs,
            nonCriticalExtensions         SEQUENCE {} OPTIONAL
        },
        criticalExtensions          SEQUENCE {}
    }
}

RadioBearerReconfiguration-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier   RRC-TransactionIdentifier,
    integrityProtectionModeInfo IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo          CipheringModeInfo          OPTIONAL,
    activationTime              ActivationTime              OPTIONAL,
    new-U-RNTI                  U-RNTI                    OPTIONAL,
    new-C-RNTI                  C-RNTI                    OPTIONAL,
    rrc-StateIndicator          RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IEs
    cn-InformationInfo          CN-InformationInfo          OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                URA-Identity                OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList RAB-InformationReconfigList    OPTIONAL,
    rb-InformationReconfigList  RB-InformationReconfigList,

```

```

| -- NOTE: IE rb-InformationReconfigList should be optional in later versions of this message
|
|   rb-InformationAffectedList      RB-InformationAffectedList      OPTIONAL,
| -- Transport channel IEs
|   ul-CommonTransChInfo           UL-CommonTransChInfo           OPTIONAL,
|   ul-deletedTransChInfoList      UL-DeletedTransChInfoList      OPTIONAL,
|   ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList    OPTIONAL,
|   modeSpecificTransChInfo        CHOICE {
|     fdd                           SEQUENCE {
|       cpch-SetID                  CPCH-SetID                  OPTIONAL,
|       addReconfTransChDRAC-Info    DRAC-StaticInformationList  OPTIONAL
|     },
|     tdd                            NULL
|   }
|   dl-CommonTransChInfo           DL-CommonTransChInfo           OPTIONAL,
|   dl-DeletedTransChInfoList      DL-DeletedTransChInfoList      OPTIONAL,
|   dl-AddReconfTransChInfoList    DL-AddReconfTransChInfo2List   OPTIONAL,
| -- Physical channel IEs
|   frequencyInfo                  FrequencyInfo                   OPTIONAL,
|   maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power         OPTIONAL,
|   ul-ChannelRequirement          UL-ChannelRequirement         OPTIONAL,
|   modeSpecificPhysChInfo        CHOICE {
|     fdd                           SEQUENCE {
|       dl-PDSCH-Information         DL-PDSCH-Information       OPTIONAL
|     },
|     tdd                            NULL
|   },
|   dl-CommonInformation           DL-CommonInformation           OPTIONAL,
|   dl-InformationPerRL-List       DL-InformationPerRL-List
| -- NOTE: IE dl-InformationPerRL-List should be optional in later versions of this message
| }

```

```

RadioBearerReconfiguration-r4-ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- The following IE extends SSDT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL                          SSDT-UL                          OPTIONAL
}

```

```

RadioBearerReconfiguration-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier         RRC-TransactionIdentifier,
  integrityProtectionModeInfo      IntegrityProtectionModeInfo     OPTIONAL,
  cipheringModeInfo                CipheringModeInfo               OPTIONAL,
  activationTime                   ActivationTime                   OPTIONAL,
  new-U-RNTI                       U-RNTI                         OPTIONAL,
  new-C-RNTI                       C-RNTI                         OPTIONAL,
  rrc-StateIndicator               RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff       UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  -- Core network IEs
  cn-InformationInfo               CN-InformationInfo             OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                     URA-Identity                   OPTIONAL,
  -- Radio bearer IEs
  rab-InformationReconfigList      RAB-InformationReconfigList    OPTIONAL,
  rb-InformationReconfigList       RB-InformationReconfigList-r4  OPTIONAL,
  rb-InformationAffectedList       RB-InformationAffectedList     OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo            UL-CommonTransChInfo           OPTIONAL,
  ul-deletedTransChInfoList        UL-DeletedTransChInfoList      OPTIONAL,
  ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList    OPTIONAL,
  modeSpecificTransChInfo          CHOICE {
    fdd                             SEQUENCE {
      cpch-SetID                    CPCH-SetID                    OPTIONAL,
      addReconfTransChDRAC-Info      DRAC-StaticInformationList    OPTIONAL
    },
    tdd                              NULL
  }
}
|
| dl-CommonTransChInfo             DL-CommonTransChInfo-r4        OPTIONAL,
| dl-DeletedTransChInfoList        DL-DeletedTransChInfoList      OPTIONAL,
| dl-AddReconfTransChInfoList      DL-AddReconfTransChInfo2List   OPTIONAL,
| -- Physical channel IEs
|   frequencyInfo                  FrequencyInfo                   OPTIONAL,
|   maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power         OPTIONAL,
|   ul-ChannelRequirement          UL-ChannelRequirement-r4       OPTIONAL,
|   modeSpecificPhysChInfo        CHOICE {
|     fdd                           SEQUENCE {
|       dl-PDSCH-Information         DL-PDSCH-Information       OPTIONAL
|     },

```

```

        tdd                NULL
    },
    dl-CommonInformation    DL-CommonInformation-r4                OPTIONAL,
    dl-InformationPerRL-List DL-InformationPerRL-List-r4            OPTIONAL
}

```

<Cut until the next modified section>

```

-- *****
--
-- RADIO BEARER RELEASE
--
-- *****

```

```

RadioBearerRelease-r3 ::= CHOICE {
    r3 SEQUENCE {
        radioBearerRelease-r3    RadioBearerRelease-r3-IEs,
        nonCriticalExtensions     SEQUENCE {} OPTIONAL
    },
    criticalExtensions           SEQUENCE {}
}

```

```

RadioBearerRelease-r4 ::= CHOICE {
    r3 SEQUENCE {
        radioBearerRelease-r3    RadioBearerRelease-r3-IEs,
        nonCriticalExtensions     SEQUENCE {}
        radioBearerRelease-r4-ext RadioBearerRelease-r4-ext-IEs,
        nonCriticalExtensions     SEQUENCE {} OPTIONAL
    } OPTIONAL
    },
    criticalExtensions           CHOICE {
        r4 SEQUENCE {
            radioBearerRelease-r4 RadioBearerRelease-r4-IEs,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        },
        criticalExtensions        SEQUENCE {}
    }
}

```

```

RadioBearerRelease-r3-IEs ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    integrityProtectionModeInfo  IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo            CipheringModeInfo                    OPTIONAL,
    activationTime                ActivationTime                      OPTIONAL,
    new-U-RNTI                    U-RNTI                            OPTIONAL,
    new-C-RNTI                    C-RNTI                            OPTIONAL,
    rrc-StateIndicator            RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
    cn-InformationInfo            CN-InformationInfo                    OPTIONAL,
    signallingConnectionRelIndication CN-DomainIdentity                OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                  URA-Identity                            OPTIONAL,
-- Radio bearer IEs
    rab-InformationReconfigList    RAB-InformationReconfigList        OPTIONAL,
    rb-InformationReleaseList      RB-InformationReleaseList          OPTIONAL,
    rb-InformationAffectedList     RB-InformationAffectedList         OPTIONAL,
    dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo     OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo          UL-CommonTransChInfo              OPTIONAL,
    ul-deletedTransChInfoList     UL-DeletedTransChInfoList         OPTIONAL,
    ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList       OPTIONAL,
    modeSpecificTransChInfo       CHOICE {
        fdd SEQUENCE {
            cpch-SetID            CPCH-SetID                    OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList  OPTIONAL
        },
        tdd                NULL
    }
    dl-CommonTransChInfo          DL-CommonTransChInfo              OPTIONAL,
    dl-DeletedTransChInfoList     DL-DeletedTransChInfoList         OPTIONAL,
    dl-AddReconfTransChInfoList   DL-AddReconfTransChInfo2List      OPTIONAL,
-- Physical channel IEs
    frequencyInfo                 FrequencyInfo                        OPTIONAL,
    maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power              OPTIONAL,
    ul-ChannelRequirement          UL-ChannelRequirement              OPTIONAL,
    modeSpecificPhysChInfo         CHOICE {

```

```

        fdd          SEQUENCE {
            dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
        },
        tdd          NULL
    },
    dl-CommonInformation    DL-CommonInformation    OPTIONAL,
    dl-InformationPerRL-List    DL-InformationPerRL-List    OPTIONAL
}

```

```

RadioBearerRelease-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL          SSdT-UL          OPTIONAL
}

```

```

RadioBearerRelease-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo            CipheringModeInfo    OPTIONAL,
    activationTime                ActivationTime    OPTIONAL,
    new-U-RNTI                    U-RNTI    OPTIONAL,
    new-C-RNTI                    C-RNTI    OPTIONAL,
    rrc-StateIndicator            RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IEs
    cn-InformationInfo            CN-InformationInfo    OPTIONAL,
    signallingConnectionRelIndication    CN-DomainIdentity    OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                  URA-Identity    OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList    RAB-InformationReconfigList    OPTIONAL,
    rb-InformationReleaseList      RB-InformationReleaseList,
    rb-InformationAffectedList     RB-InformationAffectedList    OPTIONAL,
    rb-WithPDCP-InfoList          RB-WithPDCP-InfoList    OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo          UL-CommonTransChInfo    OPTIONAL,
    ul-deletedTransChInfoList     UL-DeletedTransChInfoList    OPTIONAL,
    ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList    OPTIONAL,
    modeSpecificTransChInfo       CHOICE {
        fdd          SEQUENCE {
            cpch-SetID            CPCH-SetID    OPTIONAL,
            addReconfTransChDRAC-Info    DRAC-StaticInformationList    OPTIONAL
        },
        tdd          NULL
    }
    dl-CommonTransChInfo          DL-CommonTransChInfo-r4    OPTIONAL,
    dl-DeletedTransChInfoList     DL-DeletedTransChInfoList    OPTIONAL,
    dl-AddReconfTransChInfoList   DL-AddReconfTransChInfo2List    OPTIONAL,
    -- Physical channel IEs
    frequencyInfo                 FrequencyInfo    OPTIONAL,
    maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power    OPTIONAL,
    ul-ChannelRequirement         UL-ChannelRequirement-r4    OPTIONAL,
    modeSpecificPhysChInfo        CHOICE {
        fdd          SEQUENCE {
            dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
        },
        tdd          NULL
    },
    dl-CommonInformation          DL-CommonInformation-r4    OPTIONAL,
    dl-InformationPerRL-List      DL-InformationPerRL-List-r4    OPTIONAL
}

```

<Cut until the next modified section>

```

-- *****
--
-- RADIO BEARER SETUP
--
-- *****

```

```

RadioBearerSetup-r3 ::= CHOICE {
    r3          SEQUENCE {
        radioBearerSetup-r3    RadioBearerSetup-r3-IEs,
        nonCriticalExtensions    SEQUENCE {} OPTIONAL
    },
    criticalExtensions    SEQUENCE {}
}

```



```

}

RadioBearerSetup-r4 ::= CHOICE {
  r3 SEQUENCE {
    radioBearerSetup-r3 RadioBearerSetup-r3-IEs,
    nonCriticalExtensions SEQUENCE {
      radioBearerSetup-r4-ext RadioBearerSetup-r4-ext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  criticalExtensions CHOICE {
    r4 SEQUENCE {
      radioBearerSetup-r4 RadioBearerSetup-r4-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
  }
}

RadioBearerSetup-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
  cipheringModeInfo CipheringModeInfo OPTIONAL,
  activationTime ActivationTime OPTIONAL,
  new-U-RNTI U-RNTI OPTIONAL,
  new-C-RNTI C-RNTI OPTIONAL,
  rrc-StateIndicator RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity URA-Identity OPTIONAL,
  -- Core network IEs
  cn-InformationInfo CN-InformationInfo OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList SRB-InformationSetupList OPTIONAL,
  rab-InformationSetupList RAB-InformationSetupList OPTIONAL,
  rb-InformationAffectedList RB-InformationAffectedList OPTIONAL,
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
  ul-deletedTransChInfoList UL-DeletedTransChInfoList OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
  modeSpecificTransChInfo CHOICE {
    fdd SEQUENCE {
      cpch-SetID CPCH-SetID OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd NULL
  } OPTIONAL,
  dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
  dl-DeletedTransChInfoList DL-DeletedTransChInfoList OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList OPTIONAL,
  -- Physical channel IEs
  frequencyInfo FrequencyInfo OPTIONAL,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  ul-ChannelRequirement UL-ChannelRequirement OPTIONAL,
  modeSpecificPhysChInfo CHOICE {
    fdd SEQUENCE {
      dl-PDSCH-Information DL-PDSCH-Information OPTIONAL
    },
    tdd NULL
  },
  dl-CommonInformation DL-CommonInformation OPTIONAL,
  dl-InformationPerRL-List DL-InformationPerRL-List OPTIONAL
}

RadioBearerSetup-r4-ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- The following IE extends SSDT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL SSDT-UL OPTIONAL
}

RadioBearerSetup-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
  cipheringModeInfo CipheringModeInfo OPTIONAL,

```

```

activationTime          ActivationTime          OPTIONAL,
new-U-RNTI              U-RNTI              OPTIONAL,
new-C-RNTI              C-RNTI              OPTIONAL,
rrc-StateIndicator      RRC-StateIndicator,
utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- UTRAN mobility IEs
ura-Identity            URA-Identity            OPTIONAL,
-- Core network IEs
cn-InformationInfo      CN-InformationInfo      OPTIONAL,
-- Radio bearer IEs
srb-InformationSetupList  SRB-InformationSetupList  OPTIONAL,
rab-InformationSetupList  RAB-InformationSetupList-r4  OPTIONAL,
rb-InformationAffectedList  RB-InformationAffectedList  OPTIONAL,
-- Transport channel IEs
ul-CommonTransChInfo    UL-CommonTransChInfo    OPTIONAL,
ul-deletedTransChInfoList  UL-DeletedTransChInfoList  OPTIONAL,
ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList  OPTIONAL,
modeSpecificTransChInfo  CHOICE {
    fdd                  SEQUENCE {
        cpch-SetID      CPCH-SetID          OPTIONAL,
        addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
    },
    tdd                  NULL
}
dl-CommonTransChInfo    DL-CommonTransChInfo-r4  OPTIONAL,
dl-DeletedTransChInfoList  DL-DeletedTransChInfoList  OPTIONAL,
dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList  OPTIONAL,
-- Physical channel IEs
frequencyInfo           FrequencyInfo           OPTIONAL,
maxAllowedUL-TX-Power    MaxAllowedUL-TX-Power  OPTIONAL,
ul-ChannelRequirement    UL-ChannelRequirement-r4  OPTIONAL,
modeSpecificPhysChInfo  CHOICE {
    fdd                  SEQUENCE {
        dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL
    },
    tdd                  NULL
},
dl-CommonInformation    DL-CommonInformation-r4  OPTIONAL,
dl-InformationPerRL-List  DL-InformationPerRL-List-r4  OPTIONAL
}

```

<Cut until the next modified section>

```

-- *****
--
-- RRC CONNECTION SETUP
--
-- *****

```

```

RRCConnectionSetup-r3 ::= CHOICE {
    r3          SEQUENCE {
        rrcConnectionSetup-r3          RRCConnectionSetup-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions          SEQUENCE {}
}

RRCConnectionSetup-r4 ::= CHOICE {
    r3          SEQUENCE {
        rrcConnectionSetup-r3          RRCConnectionSetup-r3-IEs,
        nonCriticalExtensions          SEQUENCE {
            rrcConnectionSetup-r4Ext  RRCConnectionSetup-r4Ext-IEs,
            -- Extension mechanism for non- release99 information
            nonCriticalExtensions          SEQUENCE {}
        } OPTIONAL
    },
    criticalExtensions          CHOICE {
        r4          SEQUENCE {
            rrcConnectionSetup-r4          RRCConnectionSetup-r4-IEs,
            nonCriticalExtensions          SEQUENCE {} OPTIONAL
        },
        criticalExtensions          SEQUENCE {}
    }
}

```

```

RRCConnectionSetup-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
}

```

```

    initialUE-Identity          InitialUE-Identity,
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    activationTime              ActivationTime                OPTIONAL,
    new-U-RNTI                  U-RNTI,
    new-c-RNTI                  C-RNTI                      OPTIONAL,
    rrc-StateIndicator          RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient,
    capabilityUpdateRequirement  CapabilityUpdateRequirement  OPTIONAL,
    -- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
    -- be used.
-- Radio bearer IEs
  srb-InformationSetupList      SRB-InformationSetupList2,
-- Transport channel IEs
  ul-CommonTransChInfo         UL-CommonTransChInfo        OPTIONAL,
  ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList,
  -- NOTE: IE ul-AddReconfTransChInfoList should be optional in later versions of this message
  dl-CommonTransChInfo         DL-CommonTransChInfo        OPTIONAL,
  dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList,
  -- NOTE: IE dl-AddReconfTransChInfoList should be optional in later versions of this message
-- Physical channel IEs
  frequencyInfo                FrequencyInfo            OPTIONAL,
  maxAllowedUL-TX-Power        MaxAllowedUL-TX-Power    OPTIONAL,
  ul-ChannelRequirement        UL-ChannelRequirement    OPTIONAL,
  dl-CommonInformation         DL-CommonInformation    OPTIONAL,
  dl-InformationPerRL-List     DL-InformationPerRL-List  OPTIONAL
}

```

```

RRCConnectionSetup-r4Ext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4Ext  CapabilityUpdateRequirement-r4Ext  OPTIONAL,
  -- Physical channel IEs
  -- The following IE extends SSdT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL                          SSdT-UL                OPTIONAL
}

```

```

RRCConnectionSetup-r4-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  initialUE-Identity          InitialUE-Identity,
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  activationTime              ActivationTime                OPTIONAL,
  new-U-RNTI                  U-RNTI,
  new-c-RNTI                  C-RNTI                      OPTIONAL,
  rrc-StateIndicator          RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient,
  capabilityUpdateRequirement  CapabilityUpdateRequirement-r4  OPTIONAL,
  -- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
  -- be used.
-- Radio bearer IEs
  srb-InformationSetupList      SRB-InformationSetupList2,
-- Transport channel IEs
  ul-CommonTransChInfo         UL-CommonTransChInfo        OPTIONAL,
  ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList  OPTIONAL,
  dl-CommonTransChInfo         DL-CommonTransChInfo-r4      OPTIONAL,
  dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList  OPTIONAL,
-- Physical channel IEs
  frequencyInfo                FrequencyInfo            OPTIONAL,
  maxAllowedUL-TX-Power        MaxAllowedUL-TX-Power    OPTIONAL,
  ul-ChannelRequirement        UL-ChannelRequirement-r4    OPTIONAL,
  dl-CommonInformation         DL-CommonInformation-r4    OPTIONAL,
  dl-InformationPerRL-List     DL-InformationPerRL-List-r4  OPTIONAL
}

```

<Cut until the next modified section>

```

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION
--
-- *****

```

```

TransportChannelReconfiguration-r3 ::= CHOICE {
  r3          SEQUENCE {
    transportChannelReconfiguration-r3
    nonCriticalExtensions          TransportChannelReconfiguration-r3-IEs,
  },
  criticalExtensions              SEQUENCE {}
}

```

```

}
TransportChannelReconfiguration-r4 ::= CHOICE {
  r3 SEQUENCE {
    transportChannelReconfiguration-r3
    nonCriticalExtensions TransportChannelReconfiguration-r3-IEs,
    transportChannelReconfiguration-r4-ext TransportChannelReconfiguration-r4-ext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
},
criticalExtensions CHOICE {
  r4 SEQUENCE {
    transportChannelReconfiguration-r4
    nonCriticalExtensions TransportChannelReconfiguration-r4-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  },
  criticalExtensions SEQUENCE {}
}
}

```

```

TransportChannelReconfiguration-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
  cipheringModeInfo CipheringModeInfo OPTIONAL,
  activationTime ActivationTime OPTIONAL,
  new-U-RNTI U-RNTI OPTIONAL,
  new-C-RNTI C-RNTI OPTIONAL,
  rrc-StateIndicator RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  -- Core network IEs
  cn-InformationInfo CN-InformationInfo OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity URA-Identity OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
  modeSpecificTransChInfo CHOICE {
    fdd SEQUENCE {
      cpch-SetID CPCH-SetID OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd NULL
  } OPTIONAL,
  dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList OPTIONAL,
  -- Physical channel IEs
  frequencyInfo FrequencyInfo OPTIONAL,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  ul-ChannelRequirement UL-ChannelRequirement OPTIONAL,
  modeSpecificPhysChInfo CHOICE {
    fdd SEQUENCE {
      dl-PDSCH-Information DL-PDSCH-Information OPTIONAL
    },
    tdd NULL
  },
  dl-CommonInformation DL-CommonInformation OPTIONAL,
  dl-InformationPerRL-List DL-InformationPerRL-List OPTIONAL
}

```

```

TransportChannelReconfiguration-r4-ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- The following IE extends SSdT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL SSdT-UL OPTIONAL
}

```

```

TransportChannelReconfiguration-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
  cipheringModeInfo CipheringModeInfo OPTIONAL,
  activationTime ActivationTime OPTIONAL,
  new-U-RNTI U-RNTI OPTIONAL,
  new-C-RNTI C-RNTI OPTIONAL,
}

```

```

        rrc-StateIndicator          RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IES
    cn-InformationInfo              CN-InformationInfo          OPTIONAL,
-- UTRAN mobility IES
    ura-Identity                    URA-Identity            OPTIONAL,
-- Radio bearer IES
    rb-WithPDCP-InfoList            RB-WithPDCP-InfoList    OPTIONAL,
-- Transport channel IES
    ul-CommonTransChInfo            UL-CommonTransChInfo    OPTIONAL,
    ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList  OPTIONAL,
    modeSpecificTransChInfo         CHOICE {
        fdd                          SEQUENCE {
            cpch-SetID                CPCH-SetID                OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList  OPTIONAL
        },
        tdd                          NULL
    }
    dl-CommonTransChInfo            DL-CommonTransChInfo-r4    OPTIONAL,
    dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList  OPTIONAL,
-- Physical channel IES
    frequencyInfo                   FrequencyInfo              OPTIONAL,
    maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power     OPTIONAL,
    ul-ChannelRequirement            UL-ChannelRequirement-r4   OPTIONAL,
    modeSpecificPhysChInfo           CHOICE {
        fdd                          SEQUENCE {
            dl-PDSCH-Information      DL-PDSCH-Information      OPTIONAL
        },
        tdd                          NULL
    },
    dl-CommonInformation             DL-CommonInformation-r4    OPTIONAL,
    dl-InformationPerRL-List         DL-InformationPerRL-List-r4  OPTIONAL
}

```

<Cut until the next modified section>

```

-- *****
--
-- UTRAN MOBILITY INFORMATION
--
-- *****

```

```

UTRANMobilityInformation ::= SEQUENCE {
-- User equipment IES
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    integrityProtectionModeInfo      IntegrityProtectionModeInfo  OPTIONAL,
    cipheringModeInfo                CipheringModeInfo            OPTIONAL,
    new-U-RNTI                        U-RNTI                      OPTIONAL,
    new-C-RNTI                        C-RNTI                      OPTIONAL,
    ue-ConnTimersAndConstants        UE-ConnTimersAndConstants    OPTIONAL,
-- CN information elements
    cn-InformationInfo              CN-InformationInfo          OPTIONAL,
-- UTRAN mobility IES
    ura-Identity                    URA-Identity            OPTIONAL,
-- Radio bearer IES
    count-C-ActivationTime      ActivationTime          OPTIONAL,
    dl-CounterSynchronisationInfo     DL-CounterSynchronisationInfo  OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions             SEQUENCE {}                OPTIONAL
}

```

```

-- *****
--
-- UTRAN MOBILITY INFORMATION CONFIRM
--
-- *****

```

```

UTRANMobilityInformationConfirm ::= SEQUENCE {
-- User equipment IES
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo        IntegrityProtActivationInfo    OPTIONAL,
-- Radio bearer IES
    count-C-ActivationTime      ActivationTime          OPTIONAL,
    rb-UL-CiphActivationTimeInfo      RB-ActivationTimeInfoList     OPTIONAL,
    ul-CounterSynchronisationInfo     UL-CounterSynchronisationInfo  OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions             SEQUENCE {}                OPTIONAL
}

```

```
-- *****
--
-- UTRAN MOBILITY INFORMATION FAILURE
--
-- *****

UTRANMobilityInformationFailure ::= SEQUENCE {
  -- UE information elements
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {} OPTIONAL
}
```

11.3 Information element definitions

<Cut until the next modified section>

```
-- *****
--
-- USER EQUIPMENT INFORMATION ELEMENTS (10.3.3)
--
-- *****
```

<Cut until the next modified section>

```
InitialPriorityDelayList ::= SEQUENCE (SIZE (1..maxASC)) OF
                             NS-IP
```

<Cut until the next modified section>

```
-- *****
--
-- TRANSPORT CHANNEL INFORMATION ELEMENTS (10.3.5)
--
-- *****
```

<Cut until the next modified section>

```
DL-CommonTransChInfo ::= SEQUENCE {
    sccpch-TFCS                TFCS                OPTIONAL,
    modeSpecificInfo           CHOICE {
        fdd                    SEQUENCE {
            tfcs-SignallingModedl-Parameters      CHOICE {
                dl-DCH-TFCSexplicit             TFCS,
                sameAsUL                          NULL
            }
        },
        tdd                    SEQUENCE {
            individualDL-CCTrCH-InfoList          IndividualDL-CCTrCH-InfoList
        }
    }
}
```

```
-- NOTE: CHOICE modeSpecificInfo should be optional. A new version of this IE
-- should be defined to be used in later versions of messages using this IE
```

```
DL-CommonTransChInfo-r4 ::= SEQUENCE {
    sccpch-TFCS                TFCS                OPTIONAL,
    modeSpecificInfo           CHOICE {
        fdd                    SEQUENCE {
            dl-Parameters      CHOICE {
                dl-DCH-TFCS    SEQUENCE {
                    tfcs       TFCS                OPTIONAL
                },
                sameAsUL      NULL
            }
        }
        OPTIONAL,
        tdd                    SEQUENCE {
            individualDL-CCTrCH-InfoList          IndividualDL-CCTrCH-InfoList
        }
    }
}
```

<Cut until the next modified section>

```
-- *****
--
-- MEASUREMENT INFORMATION ELEMENTS (10.3.7)
--
-- *****
```

<Cut until the next modified section>

```
Frequency-Band-Indicator- ::= ENUMERATED {
    dcs1800BandUsed, pcs1900BandUsed }
```

<Cut until the next modified section>

```
-- *****
```

```
--
-- OTHER INFORMATION ELEMENTS (10.3.8)
--
-- *****
```

<Cut until the next modified section>

```
InterRAT-HO-Failure ::= SEQUENCE {  
  interRAT-HO-FailureCause InterRAT-HO-FailureCause OPTIONAL,  
  interRATMessage InterRATMessage OPTIONAL  
}
```

```
InterRAT-HO-FailureCause ::= CHOICE {  
  configurationUnacceptable NULL,  
  physicalChannelFailure NULL,  
  protocolError ProtocolErrorInformation,  
  interRAT-ProtocolError NULL,  
  unspecified NULL,  
  spare1 NULL,  
  spare2 NULL,  
  spare3 NULL,  
  spare4 NULL  
}
```

```
InterRATMessage ::= CHOICE {  
  gsm SEQUENCE {  
    gsm-MessageList GSM-MessageList  
  },  
  cdma2000 SEQUENCE {  
    cdma2000-MessageList CDMA2000-MessageList  
  }  
}
```

```
InterRATMessageList ::= SEQUENCE (SIZE (1..maxSystemCapability)) OF  
  InterRATMessage
```


CR-Form-v4

CHANGE REQUEST

⌘ **25.331 CR 886** ⌘ rev **r1** ⌘ Current version: **3.6.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ UE positioning OTDOA Neighbour Cell Info		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 25 May, 01
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ Align tabular with ASN.1 and add missing description on cell position default being as the same as the previous message
	This CR is backward compatible since it is only affects UE positioning.
Summary of change:	⌘ Define a variable CELL_POSITION for cell position.
Consequences if not approved:	⌘ It would lead to inconsistency between the tabular and ASN.1

Clauses affected:	⌘ 8.6.7.x (new), 10.3.7.106, 11, 13.4.x (new)	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.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/](http://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.

***** NEXT MODIFIED SECTION *****

8.6.7.Y UE positioning OTDOA neighbour cell info

if IE “UE positioning OTDOA neighbour cell info” is received with UE based PositioningMode selected:

- if “Relative North”, “Relative East”, or “Relative Altitude” IEs are transmitted, store the corresponding values into UE variable “CELL_POSITION” defined in 13.4.X.
- Use the values stored in CELL_POSITION (either from the current or previously processed IEs) as “Relative North”, “Relative East” and “Relative Altitude”.

***** NEXT MODIFIED SECTION *****

10.3.7.106 UE positioning OTDOA neighbour cell info

This IE gives approximate cell timing in order to decrease the search window.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
CHOICE mode				
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>TDD				
>>cell and channel ID	MP		Cell and Channel Identity info 10.3.6.8a	Identifies the channel to be measured on.
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
IPDL parameters	CV-IPDLs		UE positioning IPDL parameters 10.3.7.98	
SFN-SFN relative time difference	MP		Integer(0..9830399)	Gives the relative timing compared to the reference cell. in chips.
SFN-SFN drift	OP		Real(0,+0.33,+0.66,+1,+1.33,+1.66,+2,+2.5,+3,+4,+5,+7,+9,+11,+13,+15,-0.33,-0.66,-1,-1.33,-1.66,-2,-2.5,-3,-4,-5,-7,-9,-11,-13,-15)	meters/sec
Search Window Size	MP		Integer(10,20,30,40,50,60,70,infinity)	in chips. Infinity means more
CHOICE PositioningMode	<u>MP</u>			
>UE based				
>>Cell Position	MD			Default is the same as previous cell
>>>Relative North	<u>OMP</u>		Integer(-20000..20000)	Seconds, scale factor 0.03. Relative position compared to reference cell.
>>>Relative East	<u>OMP</u>		Integer(-20000..20000)	Seconds, scale factor 0.03. Relative position compared to reference cell.
>>>Relative Altitude	OP		Integer(-4000..4000)	Relative altitude in meters compared to ref. cell.
>>Fine SFN-SFN	MP		Real(0..0.9375 in steps of 0.0625)	Gives finer resolution
>>Round Trip Time	OP		Real(876.00 .. 2923.875) in steps of 0.0625	In chips. Included if cell is in active set.
>UE assisted				(no data)

Condition	Explanation
IPDLs	This IE is present only if IPDLs are applied.

***** NEXT MODIFIED SECTION *****

```

UE-Positioning-OTDOA-NeighbourCellInfo ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            primaryCPICH-Info PrimaryCPICH-Info
        },
        tdd SEQUENCE {
            cellAndChannelIdentity CellAndChannelIdentity
        }
    },
    frequencyInfo FrequencyInfo OPTIONAL,
    ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters
    OPTIONAL,
    sfn-SFN-RelTimeDifference SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift SFN-SFN-Drift OPTIONAL INTEGER (-0..30),
    searchWindowSize OTDOA-SearchWindowSize,
    positioningMode CHOICE {
        ueBased SEQUENCE {
            relativeNorth INTEGER (-20000..20000) OPTIONAL,
            relativeEast INTEGER (-20000..20000) OPTIONAL,
            relativeAltitude INTEGER (-4000..4000) OPTIONAL,
            fineSFN-SFN FineSFN-SFN OPTIONAL,
            roundTripTime INTEGER (0..32765) OPTIONAL
        },
        ueAssisted SEQUENCE {}
    }
}

```

~~SFN-SFN-Drift ::= ENUMERATED {no drift, sfn-sfndrift0-33, sfn-sfndrift0-66, sfn-sfndrift1, sfn-sfndrift1-33, sfn-sfndrift1-66, sfn-sfndrift2, sfn-sfndrift2-5, sfn-sfndrift3, sfn-sfndrift4, sfn-sfndrift5, sfn-sfndrift7, sfn-sfndrift9, sfn-sfndrift11, sfn-sfndrift13, sfn-sfndrift15, sfn-sfndrift-0-33, sfn-sfndrift-0-66, sfn-sfndrift-1, sfn-sfndrift-1-33, sfn-sfndrift-1-66, sfn-sfndrift-2, sfn-sfndrift-2-5, sfn-sfndrift-3, sfn-sfndrift-4, sfn-sfndrift-5, sfn-sfndrift-7, sfn-sfndrift-9, sfn-sfndrift-11, sfn-sfndrift-13, sfn-sfndrift-15}~~

... ..

~~-- Actual value = IE value * 0.0625~~

```

FineSFN-SFN ::= INTEGER (0..15) ENUMERATED {
fs0, fs0-25, fs0-5, fs0-75 }

```

***** NEXT MODIFIED SECTION *****

13.4.X CELL POSITION

This variable stores the CELL_POSITION for UE-based OTDOA (10.3.7.106).

<u>Information Element/Group name</u>	<u>Need</u>	<u>Multi</u>	<u>Type and reference</u>	<u>Semantics description</u>
<u>Relative North</u>	<u>OP</u>		<u>Integer(-20000..20000)</u>	<u>Seconds, scale factor 0.03. Relative position compared to reference cell.</u>
<u>Relative East</u>	<u>OP</u>		<u>Integer(-20000..20000)</u>	<u>Seconds, scale factor 0.03. Relative position compared to reference cell.</u>
<u>Relative Altitude</u>	<u>OP</u>		<u>Integer(-4000..4000)</u>	<u>Relative altitude in meters compared to ref. cell.</u>

CR-Form-v4

CHANGE REQUEST

⌘ **25.331 CR 887** ⌘ rev ⌘ Current version: **4.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ UE positioning OTDOA Neighbour Cell Info		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 25 May, 01
Category:	⌘ A	Release:	⌘ REL-4
	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)

Reason for change:	⌘ Align tabular with ASN.1 and add missing description on cell position default being as the same as the previous message
Summary of change:	⌘ Define a variable CELL_POSITION for cell position.
Consequences if not approved:	⌘ It would lead to inconsistency between the tabular and ASN.1

Clauses affected:	⌘ 8.6.7.x (new), 10.3.7.106, 11, 13.4.x (new)		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.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.

***** NEXT MODIFIED SECTION *****

8.6.7.Y UE positioning OTDOA neighbour cell info

if IE “UE positioning OTDOA neighbour cell info” is received with UE based PositioningMode selected:

- if “Relative North”, “Relative East”, or “Relative Altitude” IEs are transmitted, store the corresponding values into UE variable “CELL_POSITION” defined in 13.4.X.
- Use the values stored in CELL_POSITION (either from the current or previously processed IEs) as “Relative North”, “Relative East” and “Relative Altitude”.

***** NEXT MODIFIED SECTION *****

10.3.7.106 UE positioning OTDOA neighbour cell info

This IE gives approximate cell timing in order to decrease the search window.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
CHOICE mode				
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>TDD				
>>cell and channel ID	MP		Cell and Channel Identity info 10.3.6.8a	Identifies the channel to be measured on.
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
IPDL parameters	CV-IPDLs		UE positioning IPDL parameters 10.3.7.98	
SFN-SFN relative time difference	MP		Integer(0..9830399)	Gives the relative timing compared to the reference cell. in chips.
SFN-SFN drift	OP		Real(0,+0.33,+0.66,+1,+1.33,+1.66,+2,+2.5,+3,+4,+5,+7,+9,+11,+13,+15,-0.33,-0.66,-1,-1.33,-1.66,-2,-2.5,-3,-4,-5,-7,-9,-11,-13,-15)	meters/sec
Search Window Size	MP		Integer(10,20,30,40,50,60,70,infinity)	in chips. Infinity means more
CHOICE PositioningMode	<u>MP</u>			
>UE based				
>>Cell Position	MD			Default is the same as previous cell
>>>Relative North	<u>OMP</u>		Integer(-20000..20000)	Seconds, scale factor 0.03. Relative position compared to reference cell.
>>>Relative East	<u>OMP</u>		Integer(-20000..20000)	Seconds, scale factor 0.03. Relative position compared to reference cell.
>>>Relative Altitude	OP		Integer(-4000..4000)	Relative altitude in meters compared to ref. cell.
>>Fine SFN-SFN	MP		Real(0..0.9375 in steps of 0.0625)	Gives finer resolution
>>Round Trip Time	OP		Real(876.00 .. 2923.875) in steps of 0.0625	In chips. Included if cell is in active set.
>UE assisted				(no data)

Condition	Explanation
IPDLs	This IE is present only if IPDLs are applied.

***** NEXT MODIFIED SECTION *****

```

UE-Positioning-OTDOA-NeighbourCellInfo ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            primaryCPICH-Info PrimaryCPICH-Info
        },
        tdd SEQUENCE{
            cellAndChannelIdentity CellAndChannelIdentity
        }
    },
    frequencyInfo FrequencyInfo OPTIONAL,
    ue-positioning-IPDL-Paremers UE-Positioning-IPDL-Parameters
    OPTIONAL,
    sfn-SFN-RelTimeDifference SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift SFN-SFN-Drift OPTIONALINTEGER (0..30),
    searchWindowSize OTDOA-SearchWindowSize,
    positioningMode CHOICE{
        ueBased SEQUENCE {
            relativeNorth INTEGER (-20000..20000) OPTIONAL,
            relativeEast INTEGER (-20000..20000) OPTIONAL,
            relativeAltitude INTEGER (-4000..4000) OPTIONAL,
            fineSFN-SFN FineSFN-SFN OPTIONAL,
            roundTripTime INTEGER (0..32765) OPTIONAL
        },
        ueAssisted SEQUENCE {}
    }
}

```

~~SFN-SFN-Drift ::= ENUMERATED {no drift, sfnsfndrift0-33, sfnsfndrift0-66, sfnsfndrift1, sfnsfndrift1-33, sfnsfndrift1-66, sfnsfndrift2, sfnsfndrift2-5, sfnsfndrift3, sfnsfndrift4, sfnsfndrift5, sfnsfndrift7, sfnsfndrift9, sfnsfndrift11, sfnsfndrift13, sfnsfndrift15, sfnsfndrift-0-33, sfnsfndrift-0-66, sfnsfndrift-1, sfnsfndrift-1-33, sfnsfndrift-1-66, sfnsfndrift-2, sfnsfndrift-2-5, sfnsfndrift-3, sfnsfndrift-4, sfnsfndrift-5, sfnsfndrift-7, sfnsfndrift-9, sfnsfndrift-11, sfnsfndrift-13, sfnsfndrift-15}~~

... ..

~~-- Actual value = IE value * 0.0625~~

```

FineSFN-SFN ::= INTEGER (0..15)ENUMERATED {
fs0, fs0-25, fs0-5, fs0-75 }

```

***** NEXT MODIFIED SECTION *****

13.4.X CELL POSITION

This variable stores the CELL_POSITION for UE-based OTDOA (10.3.7.106).

<u>Information Element/Group name</u>	<u>Need</u>	<u>Multi</u>	<u>Type and reference</u>	<u>Semantics description</u>
<u>Relative North</u>	<u>OP</u>		<u>Integer(-20000..20000)</u>	<u>Seconds, scale factor 0.03. Relative position compared to reference cell.</u>
<u>Relative East</u>	<u>OP</u>		<u>Integer(-20000..20000)</u>	<u>Seconds, scale factor 0.03. Relative position compared to reference cell.</u>
<u>Relative Altitude</u>	<u>OP</u>		<u>Integer(-4000..4000)</u>	<u>Relative altitude in meters compared to ref. cell.</u>

CHANGE REQUEST

⌘ **25.331 CR 888** ⌘ rev **r3** ⌘ Current version: **3.6.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ DRAC corrections		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 2001-05-24
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (essential 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)

Reason for change: ⌘

1. There is an inconsistency on the IE "Reference to SIB" defined in the IE "Downlink information for each radio link between both Tabular and ASN1". Therefore, the feature "simultaneous reception of DPCH and S-CCPCH" and consequently DRAC procedure can not be supported.
2. There is an inconsistency between Tabular and ASN 1 for the IE "FACH/PCH information".

Summary of change: ⌘

1. In ASN.1 the IE "Secondary CCPCH info" is replaced by the "IE SCCPCH Information for FACH" and the reference to SIB is deleted. In addition,- corrections are made in the Tabular accordingly.
2. The IEs included in the list "FACH/PCH information" are aligned with ASN.1.

Backward compatibility: The backward compatibility is ensured for equipments that do not support the simultaneous reception of both SCCPCH and DPCH that is required for supporting DRAC procedure.

Consequences if not approved: ⌘

1. Not possible to use DRAC.

Clauses affected: ⌘ 8.6.6.4, 10.3.6.27, 10.3.6.70, 10.3.6.72, 11

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

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

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

8.6.6.4 Downlink information for each radio link

If the IE "Downlink information for each radio link" is included in a received message, the UE shall:

- if the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message:
 - if the IE "~~Secondary CCPCH info~~ SCCPCH Information for FACH " is included; and
 - if the UE is not capable of simultaneous reception of DPCH and Secondary CCPCH:
 - set the variable UNSUPPORTED_CONFIGURATION to TRUE;
 - else:
 - if the UE is capable of simultaneous reception of DPCH and SCCPCH:
 - start to receive the indicated Secondary CCPCH;
 - act on the other IEs contained in the IE "Downlink information for each radio link" as specified in subclause 8.6;
- if the UE would enter either the CELL_FACH, CELL_PCH or URA_PCH state according to subclause 8.6.3.3 applied on the received message:
 - if the received message is CELL UPDATE CONFIRM:
 - set the variable INVALID_CONFIGURATION to TRUE;
 - if the received message is any other message than CELL UPDATE CONFIRM; and
 - if other IEs than the IE "Primary CPICH info" (for FDD) or the IE "Primary CCPCH info" (for TDD) are included in the IE "Downlink information for each radio link":
 - set the variable INVALID_CONFIGURATION to TRUE.

10.3.6.27 Downlink information for each radio link

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Choice mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>PDSCH with SHO DCH Info	OP		PDSCH with SHO DCH Info 10.3.6.47	
>>PDSCH code mapping	OP		PDSCH code mapping 10.3.6.43	
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57	
Downlink DPCH info for each RL	OP		Downlink DPCH info for each RL 10.3.6.21	
SCCPCH Information for FACH	OP		SCCPCH Information for FACH 10.3.6.70	
Secondary CCPCH info	OP		Secondary CCPCH info 10.3.6.71	
References to system information blocks	OP	1 to <maxSIB-FACH>		
>Scheduling information	MP		Scheduling information 10.3.8.16	
>SIB type SIBs only	MP		SIB Type SIBs only, 10.3.8.22	

10.3.6.70 SCCPCH Information for FACH

Secondary CCPCH info	MP		Secondary CCPCH info 10.3.6.71	
TFCS	MP		Transport format combination set 10.3.5.20	For FACHs and PCH
FACH/PCH information	MP	1 to <maxFAC HPCH>		
>TFS	MP		Transport format set 10.3.5.23	For each FACHs and PCH
> Transport channel identity	MP		Transport channel identity 10.3.5.18	
> CTCH indicator	MP		Boolean	The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.
CHOICE mode				
> FDD				
>>References to system information blocks	MP	1 to <maxSIB-FACH>		
>>>Scheduling information	MP		Scheduling information 10.3.8.16	
>>>SIB type SIBs only	MP		SIB Type SIBs only, 10.3.8.22	
> TDD				(No data)

NOTE 1: TFS for PCH shall be the first "FACH/PCH information" in the list if a PCH exists for the respective secondary CCPCH.

10.3.6.72 Secondary CCPCH system information

Information element	Need	Multi	Type and reference	Semantics description
Secondary CCPCH system information	MP	1 to <maxSCC PCH>		
>Secondary CCPCH info	MP		Secondary CCPCH info 10.3.6.71	Note 1
>TFCS	MD		Transport format combination set 10.3.5.20	For FACHs and PCH Default value is the value of "TFCS" for the previous SCCPCH in the list (note : the first occurrence is then MP)
>FACH/PCH information	MD	1 to <maxFAC HPCH>		Default value is the value of "FACH/PCH" for the previous SCCPCH in the list (note : the first occurrence is then MP)
<u>>>TFS</u>	<u>MP</u>		<u>Transport format set 10.3.5.23</u>	<u>For each FACH and PCH Note 2</u>
>>Transport channel identity	MP		Transport channel identity 10.3.5.18	
<u>>>TFS</u>	<u>MP</u>		<u>Transport format set 10.3.5.23</u>	<u>For each FACH and PCH Note 2</u>
>>CTCH indicator	MP		Boolean	The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.
>PICH info	OP		PICH info 10.3.6.49	PICH info is present only when PCH is multiplexed on Secondary CCPCH

NOTE 1: The secondary CCPCHs carrying a PCH shall be listed first.

NOTE 2: TFS for PCH shall be the first "FACH/PCH information" in the list if a PCH exists for the respective secondary CCPCH.

11.3 Information element definitions

```

DL-InformationPerRL ::=
  modeSpecificInfo
  fdd
    primaryCPICH-Info
    pdsch-SHO-DCH-Info
    pdsch-CodeMapping
  },
  tdd
    PrimaryCCPCH-Info
  },
  dl-DPCH-InfoPerRL
  secondaryCCPCH-Info
  sccpch-InfoForFACH
}

```

	SEQUENCE {	
	CHOICE {	
	SEQUENCE {	
primaryCPICH-Info	PrimaryCPICH-Info,	
pdsch-SHO-DCH-Info	PDSCH-SHO-DCH-Info	OPTIONAL,
pdsch-CodeMapping	PDSCH-CodeMapping	OPTIONAL
PrimaryCCPCH-Info	PrimaryCCPCH-Info	
DL-DPCH-InfoPerRL	DL-DPCH-InfoPerRL	OPTIONAL,
SecondaryCCPCH-Info	SecondaryCCPCH-Info	OPTIONAL
SCCPCH-InfoForFACH	SCCPCH-InfoForFACH	OPTIONAL

```

SCCPCH-InfoForFACH ::=
  secondaryCCPCH-Info
  tfcs
  modeSpecificInfo
  fdd
    fach-PCH-InformationList
    sib-ReferenceListFACH
  },
  tdd
    NULL
}

```

	SEQUENCE {	
secondaryCCPCH-Info	SecondaryCCPCH-Info,	
tfcs	TFCS,	
CHOICE {		
SEQUENCE {		
fach-PCH-InformationList	FACH-PCH-InformationList,	
sib-ReferenceListFACH	SIB-ReferenceListFACH	
NULL	NULL	

CHANGE REQUEST

⌘ **25.331 CR 889** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ DRAC corrections		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 2001-05-24
Category:	⌘ A	Release:	⌘ REL-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (essential correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (Addition of feature),	R97	(Release 1997)
	C (Functional modification of feature)	R98	(Release 1998)
	D (Editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		REL-4 (Release 4)
			REL-5 (Release 5)

Reason for change: ⌘

1. There is an inconsistency on the IE "Reference to SIB" defined in the IE "Downlink information for each radio link between both Tabular and ASN1". Therefore, the feature "simultaneous reception of DPCH and S-CCPCH" and consequently DRAC procedure can not be supported.
2. There is an inconsistency between Tabular and ASN 1 for the IE "FACH/PCH information".

Summary of change: ⌘

1. In ASN.1 the IE "Secondary CCPCH info" is replaced by the "IE SCCPCH Information for FACH" and the reference to SIB is deleted. In addition,- corrections are made in the Tabular accordingly.
2. The IEs included in the list "FACH/PCH information" are aligned with ASN.1.

Backward compatibility: The backward compatibility is ensured for equipments that do not support the simultaneous reception of both SCCPCH and DPCH that is required for supporting DRAC procedure.

Consequences if not approved: ⌘

1. Not possible to use DRAC.

Clauses affected: ⌘ 8.6.6.4, 10.3.6.27, 10.3.6.70, 10.3.6.72, 11

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

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

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

8.6.6.4 Downlink information for each radio link

If the IE "Downlink information for each radio link" is included in a received message, the UE shall:

- if the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message:
 - if the IE "~~Secondary CCPCH info~~ SCCPCH Information for FACH " is included; and
 - if the UE is not capable of simultaneous reception of DPCH and Secondary CCPCH:
 - set the variable UNSUPPORTED_CONFIGURATION to TRUE;
 - else:
 - if the UE is capable of simultaneous reception of DPCH and SCCPCH:
 - start to receive the indicated Secondary CCPCH;
 - act on the other IEs contained in the IE "Downlink information for each radio link" as specified in subclause 8.6;
- if the UE would enter either the CELL_FACH, CELL_PCH or URA_PCH state according to subclause 8.6.3.3 applied on the received message:
 - if the received message is CELL UPDATE CONFIRM:
 - set the variable INVALID_CONFIGURATION to TRUE;
 - if the received message is any other message than CELL UPDATE CONFIRM; and
 - if other IEs than the IE "Primary CPICH info" (for FDD) or the IE "Primary CCPCH info" (for TDD) are included in the IE "Downlink information for each radio link":
 - set the variable INVALID_CONFIGURATION to TRUE.

10.3.6.27 Downlink information for each radio link

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Choice mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>PDSCH with SHO DCH Info	OP		PDSCH with SHO DCH Info 10.3.6.47	
>>PDSCH code mapping	OP		PDSCH code mapping 10.3.6.43	
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57	
Downlink DPCH info for each RL	OP		Downlink DPCH info for each RL 10.3.6.21	
SCCPCH Information for FACH	OP		SCCPCH Information for FACH 10.3.6.70	
Secondary CCPCH info	OP		Secondary CCPCH info 10.3.6.71	
References to system information blocks	OP	1 to <maxSIB-FACH>		
>Scheduling information	MP		Scheduling information 10.3.8.16	
>SIB type SIBs only	MP		SIB Type SIBs only, 10.3.8.22	

10.3.6.70 SCCPCH Information for FACH

Secondary CCPCH info	MP		Secondary CCPCH info 10.3.6.71	
TFCS	MP		Transport format combination set 10.3.5.20	For FACHs and PCH
FACH/PCH information	MP	1 to <maxFAC HPCH>		
>TFS	MP		Transport format set 10.3.5.23	For each FACHs and PCH
> Transport channel identity	MP		Transport channel identity 10.3.5.18	
> CTCH indicator	MP		Boolean	The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.
CHOICE mode				
> FDD				
>>References to system information blocks	MP	1 to <maxSIB-FACH>		
>>>Scheduling information	MP		Scheduling information 10.3.8.16	
>>>SIB type SIBs only	MP		SIB Type SIBs only, 10.3.8.22	
> TDD				(No data)

NOTE 1: TFS for PCH shall be the first "FACH/PCH information" in the list if a PCH exists for the respective secondary CCPCH.

10.3.6.72 Secondary CCPCH system information

Information element	Need	Multi	Type and reference	Semantics description
Secondary CCPCH system information	MP	1 to <maxSCC PCH>		
>Secondary CCPCH info	MP		Secondary CCPCH info 10.3.6.71	Note 1
>TFCS	MD		Transport format combination set 10.3.5.20	For FACHs and PCH Default value is the value of "TFCS" for the previous SCCPCH in the list (note : the first occurrence is then MP)
>FACH/PCH information	MD	1 to <maxFAC HPCH>		Default value is the value of "FACH/PCH" for the previous SCCPCH in the list (note : the first occurrence is then MP)
>>TFS	MP		Transport format set 10.3.5.23	For each FACH and PCH Note 2
>>Transport channel identity	MP		Transport channel identity 10.3.5.18	
>>TFS	MP		Transport format set 10.3.5.23	For each FACH and PCH Note 2
>>CTCH indicator	MP		Boolean	The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.
>PICH info	OP		PICH info 10.3.6.49	PICH info is present only when PCH is multiplexed on Secondary CCPCH

NOTE 1: The secondary CCPCHs carrying a PCH shall be listed first.

NOTE 2: TFS for PCH shall be the first "FACH/PCH information" in the list if a PCH exists for the respective secondary CCPCH.

11.3 Information element definitions

```

DL-InformationPerRL ::=
  modeSpecificInfo
  fdd
    primaryCPICH-Info
    pdsch-SHO-DCH-Info
    pdsch-CodeMapping
  },
  tdd
    PrimaryCCPCH-Info
  },
  dl-DPCH-InfoPerRL
  secondaryCCPCH-Info
  sccpch-InfoForFACH
}

```

	SEQUENCE {	
	CHOICE {	
	SEQUENCE {	
primaryCPICH-Info	PrimaryCPICH-Info,	
pdsch-SHO-DCH-Info	PDSCH-SHO-DCH-Info	OPTIONAL,
pdsch-CodeMapping	PDSCH-CodeMapping	OPTIONAL
PrimaryCCPCH-Info	PrimaryCCPCH-Info	
DL-DPCH-InfoPerRL	DL-DPCH-InfoPerRL	OPTIONAL,
SecondaryCCPCH-Info	SecondaryCCPCH-Info	OPTIONAL
SCCPCH-InfoForFACH	SCCPCH-InfoForFACH	OPTIONAL

```

SCCPCH-InfoForFACH ::=
  secondaryCCPCH-Info
  tfcs
  modeSpecificInfo
  fdd
    fach-PCH-InformationList
    sib-ReferenceListFACH
  },
  tdd
    NULL
}

```

	SEQUENCE {	
secondaryCCPCH-Info	SecondaryCCPCH-Info,	
tfcs	TFCS,	
CHOICE {		
SEQUENCE {		
fach-PCH-InformationList	FACH-PCH-InformationList,	
sib-ReferenceListFACH	SIB-ReferenceListFACH	
NULL	NULL	

CHANGE REQUEST

⌘ **25.331 CR 892** ⌘ ev **r1** ⌘ Current version: **3.6.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ ASN.1 correction of IE TFCS ID		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 23.5.2001
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	R96 (Release 1996)	2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R97 (Release 1997)	
	B (addition of feature),	R98 (Release 1998)	
	C (functional modification of feature)	R99 (Release 1999)	
	D (editorial modification)	REL-4 (Release 4)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.	REL-5 (Release 5)	

Reason for change:	⌘ Inconsistency between tabular and ASN.1 of IE TFCS ID.		
Summary of change:	⌘ In ASN.1, IE <i>TFCS ID</i> (of 10.3.6.21, 10.3.6.42, 10.3.6.63, 10.3.6.64, 10.3.6.88) has been implemented as OP instead of DEFAULT 1 as indicated in the Tabular. In tabular (10.3.7.55, 10.3.7.59) the type was shown as enumerated and was changed to integer as in ASN.1. Backwards Compatibility Analysis: This change does not affect the number of bits and since the absence of the option IE should have been interpreted as the default value now specified the change is backwards compatible.		
Consequences if not approved:	⌘ Inconsistency of IE TFCS ID between tabular and corresponding ASN.1		

Clauses affected:	⌘ 10.3.7.55, 10.3.7.59, 11.3		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.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.

10.2.53 TRANSPORT FORMAT COMBINATION CONTROL

This message is sent by UTRAN to control the uplink transport format combination within the allowed transport format combination set.

RLC-SAP: TM, AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	<i>CV-notTM</i>		Message Type	
UE information elements				
RRC transaction identifier	<i>CV-notTM</i>		RRC transaction identifier 10.3.3.36	
Integrity check info	<i>CV-notTM</i>		Integrity check info 10.3.3.16	
TrCH information elements				
CHOICE mode	MP			
>FDD				(no data)
>TDD				
>>TFCS Id	OP		Transport Format Combination Set Identity 10.3.5.21	
DPCH/PUSCH TFCS in uplink	MP		Transport Format Combination subset 10.3.5.22	
Activation time for TFC subset	<i>CV-notTMMD</i>		Activation time 10.3.3.1	Default value is "now"
TFC Control duration	<i>CV-notTMopt</i>		TFC Control duration 10.3.6.80	

Condition	Explanation
<i>NotTM</i>	The message type is not included when transmitting the message on the transparent mode signalling DCCH
<i>NotTMopt</i>	The information element is not included when transmitting the message on the transparent mode signalling DCCH and is optional otherwise.
<i>NotTMMD</i>	The information element is not included when transmitting the message on the transparent mode signalling DCCH and is Mandatory with default otherwise.

If transparent mode signalling is used and the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.1.

10.3.5.21 Transport Format Combination Set Identity

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCS ID	MD		Integer (1..8)	Indicates the identity of every TFCS within a UE. Default value is 1.
Shared Channel Indicator	MP		Boolean	TRUE indicates the use of shared channels. Default is false.

10.3.6.8 CCTrCH power control info

Parameters used by UE to set the SIR target value for uplink open loop power control in TDD.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
TFCS Identity	OP		Transport Format Combination Set Identity 10.3.5.21	TFCS Identity of this CCTrCH. Default value is 1.
Uplink DPCH power control info	MP		Uplink DPCH power control info 10.3.6.91	

10.3.6.21 Downlink DPCH info for each RL

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE <i>mode</i>	MP			
>FDD				
>>Primary CPICH usage for channel estimation	MP		Primary CPICH usage for channel estimation 10.3.6.62	
>>>DPCH frame offset	MP		Integer(0..38144 by step of 256)	Offset (in number of chips) between the beginning of the P-CCPCH frame and the beginning of the DPCH frame This is called $\tau_{DPCH,n}$ in [26]
>>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.73	
>>>DL channelisation code	MP	1 to <maxDPC H-DLchan>		SF of the channelisation code of the data part for each DPCH
>>>>Secondary scrambling code	MD		Secondary scrambling code 10.3.6.74	Default is the same scrambling code as for the Primary CPICH
>>>>CHOICE <i>Spreading factor</i>	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	Defined in CHOICE SF512-AndCodenum with "code number" in ASN.1
>>>>Code number	MP		Integer(0..Spreading factor - 1)	
>>>>Scrambling code change	CH SF/2		Enumerated (code change, no code change)	Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.
>>>>TPC combination index	MP		TPC combination index 10.3.6.85	
>>>>SSDT Cell Identity	OP		SSDT Cell Identity 10.3.6.76	
>>>>Closed loop timing adjustment mode	CH TxDiversity Mode		Integer(1, 2)	It is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2". Value in slots
>TDD				
>>>DL CCTrCh List	MP	1..<maxCC TrCH>		
>>>>TFCS ID	MD		Integer(1..8)	Identity of this CCTrCh. Default value is 1
>>>>Time info	MP		Time Info 10.3.6.83	
>>>>Downlink DPCH timeslots and codes	MD		Downlink Timeslots and Codes 10.3.6.32	Default is to use the old timeslots and codes.
>>>>UL CCTrCH TPC List	MD	1..<maxCC TrCH>		UL CCTrCH identities for TPC commands associated with this DL CCTrCH. Default is previous list or all defined UL CCTrCHs
>>>>>UL TPC TFCS Identity	MP		Transport Format Combination	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			Set Identity 10.3.5.21	

Condition	Explanation
<i>SF/2</i>	The information element is mandatory if the UE has an active compressed mode pattern sequence, which is using compressed mode method "SF/2". Otherwise the IE is not needed.
<i>TxDiversity Mode</i>	This IE is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2". Otherwise the IE is not needed.

10.3.6.42 PDSCH Capacity Allocation info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PDSCH allocation period info	MP		Allocation Period Info 10.3.6.4	
TFCS ID	MD		Integer(1..8)	Default is 1.
CHOICE <i>Configuration</i>	MP			
>Old configuration				
>>PDSCH Identity	MP		Integer(1..Hi PDSCH Identities)	
>New configuration				
>>PDSCH Info	MP		PDSCH Info 10.3.6.44	
>>PDSCH Identity	OP		Integer(1..Hi PDSCH Identities)	
>>PDSCH power control info	OP		PDSCH power control info 10.3.6.45	

10.3.6.44 PDSCH info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCS ID	MD		Integer(1..8)	TFCS to be used. Default value is 1.
Common timeslot info	OP		Common timeslot info 10.3.6.10	
PDSCH timeslots and codes	OP	1 to <maxTS>	Downlink Timeslots and Codes 10.3.6.32	Default is to use the old timeslots and codes.

10.3.6.63 PUSCH info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCS ID	MD		Integer(1..8)	Default value is 1
Common timeslot info	OP		Common timeslot info 10.3.6.10	
PUSCH timeslots and codes	OP		Uplink Timeslots and Codes 10.3.6.94	

10.3.6.64 PUSCH Capacity Allocation info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE PUSCH allocation	MP			
>PUSCH allocation pending				(no data)
>PUSCH allocation assignment				
>>PUSCH allocation period info	MP		Allocation Period Info 10.3.6.4	
>>PUSCH power control info	OP		PUSCH power control info 10.3.6.65	
>>TFCS ID	MD		Integer(1..8)	Default is 1.
>>CHOICE <i>Configuration</i>	MP			
>>>Old configuration				
>>>>PUSCH Identity	MP		Integer(1..Hi PUSCHIdentities)	
>>>New configuration				
>>>>PUSCH info	MP		PUSCH info 10.3.6.63	
>>>>PUSCH Identity	OP		Integer(1..maxPDSCHIdentity)	

10.3.6.88 Uplink DPCH info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Uplink DPCH power control info	OP		Uplink DPCH power control info 10.3.6.91	
CHOICE <i>mode</i>	MP			
>FDD				
>>Scrambling code type	MP		Enumerated(short, long)	
>>>Scrambling code number	MP		Integer(0..16777215)	
>>>Number of DPDCH	MD		Integer(2..maxDPDCH)	Default value is 1. Number of DPDCH is 1 in HANDOVER TO UTRAN COMMAND
>>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256)	SF of the channelisation code for data part
>>>TFCI existence	MD		Boolean	TRUE means existence. Default value is "TRUE"
>>>Number of FBI bits	CH		Integer (1, 2)	In bits. Number of FBI bits is needed if SSdT or FB Mode Transmit Signalling is supported.
>>>Puncturing Limit	MP		Real(0.40 ..1 by step of 0.04)	
>TDD				
>>Uplink Timing Advance Control	OP		Uplink Timing Advance Control 10.3.6.96	
>>>UL CTrCH List	MP	1 to <maxCTrCH>		
>>>>TFCS ID	MD		Integer(1..8)	Default value is 1.
>>>>Time info	MP		Time info 10.3.6.83	
>>>>Common timeslot info	MD		Common timeslot info 10.3.6.10	Default is the current Common timeslot info
>>>>Uplink DPCH timeslots and codes	MD		Uplink Timeslots and Codes 10.3.6.94	Default is to use the old timeslots and codes.

Condition	Explanation
Single	This IE is included if IE "Number of DPDCH" is "1"

10.3.7.55 Quality measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
BLER measurement results	OP	1 to <maxTrCH>		
>DL Transport channel identity	MP		Transport channel identity 10.3.5.18	transport channel type = DCH
>DL Transport Channel BLER	OP		Integer (0..63)	According to BLER_LOG in [19] and [20]
CHOICE mode				
>FDD				No data
>TDD				
>>SIR measurement results	OP	1 to <MaxCCTrCH>		SIR measurements for DL CCTrCH
>>>TFCS ID	MP		Integer Enumerated (1..8)	
>>>Timeslot list	MP	1 to <maxTS>		for all timeslot on which the CCTrCH is mapped on
>>>>SIR	MP		Integer(0..63)	According to UE_SIR in [20]

10.3.7.59 Quality reporting quantity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
DL Transport Channel BLER	MP		Boolean	TRUE means report requested
Transport channels for BLER reporting	CV BLER reporting	1 to <maxTrCH>		The default, if no transport channel identities are present, is that the BLER is reported for all downlink transport channels
>DL Transport channel identity	MP		Transport channel identity 10.3.5.18	transport channel type = DCH
CHOICE mode				
>FDD				No data
>TDD				
>>SIR measurement list	OP	1 to <maxCCTrCH>		SIR measurements shall be reported for all listed TFCS IDs
>>>TFCS ID	MP		Enumerated Integer (1..8)	

Condition	Explanation
<i>BLER reporting</i>	This information element is absent if 'DL Transport Channel BLER' is 'False' and optional, if 'DL Transport Channel BLER' is 'True'

11.3 Information element definitions

```

TFCS-Identity ::=
    tfcs-ID
    DEFAULT 1,
    sharedChannelIndicator
}

SEQUENCE {
    TFCS-IdentityPlain, INTEGER (1..8)
    BOOLEAN
}
    
```

```

TFCS-IdentityPlain ::=                INTEGER (1..8)

DL-CCTrCh ::=                          SEQUENCE {
tfcs-Identity                        TFCS-IdentityPlain                OPTIONAL,
tfcs-ID                               TFCS-IdentityPlain                DEFAULT 1,
timeInfo                               TimeInfo,
dl-CCTrCH-TimeslotsCodes               DownlinkTimeslotsCodes             OPTIONAL,
ul-CCTrChTPCList                       UL-CCTrChTPCList                  OPTIONAL
}

PDSCH-Info ::=                          SEQUENCE {
tfcs-Identity                        TFCS-IdentityPlain                OPTIONAL
tfcs-ID                               TFCS-IdentityPlain                DEFAULT 1,
commonTimeslotInfo                     CommonTimeslotInfo                 OPTIONAL,
pdsch-TimeslotsCodes                   DownlinkTimeslotsCodes             OPTIONAL
}

PDSCH-CapacityAllocationInfo ::=        SEQUENCE {
pdsch-PowerControlInfo                 PDSCH-PowerControlInfo            OPTIONAL,
pdsch-AllocationPeriodInfo             AllocationPeriodInfo,
tfcs-Identity                        TFCS-IdentityPlain                OPTIONAL
tfcs-ID                               TFCS-IdentityPlain                DEFAULT 1,
configuration                           CHOICE {
    old-Configuration                   SEQUENCE {
        pdsch-Identity                 PDSCH-Identity
    },
    new-Configuration                   SEQUENCE {
        pdsch-Info                     PDSCH-Info,
        pdsch-Identity                 PDSCH-Identity                    OPTIONAL
    }
}
}

PUSCH-CapacityAllocationInfo ::=        SEQUENCE {
pusch-Allocation                        CHOICE {
    pusch-AllocationPending             NULL,
    pusch-AllocationAssignment          SEQUENCE {
        pdsch-AllocationPeriodInfo     AllocationPeriodInfo,
        pusch-PowerControlInfo          UL-TargetSIR                    OPTIONAL,
        tfcs-ID                               TFCS-IdentityPlain                DEFAULT 1,
tfcs-Identity                        TFCS-IdentityPlain                OPTIONAL,
        configuration                     CHOICE {
            old-Configuration           SEQUENCE {
                pusch-Identity          PUSCH-Identity
            },
            new-Configuration           SEQUENCE {
                pusch-Info               PUSCH-Info,
                pusch-Identity           PUSCH-Identity                    OPTIONAL
            }
        }
    }
}
}

PUSCH-Info ::=                          SEQUENCE {
tfcs-Identity                        TFCS-IdentityPlain                OPTIONAL
tfcs-ID                               TFCS-IdentityPlain                DEFAULT 1,
commonTimeslotInfo                     CommonTimeslotInfo                 OPTIONAL,
pusch-TimeslotsCodes                   UplinkTimeslotsCodes              OPTIONAL
}

UL-CCTrCH ::=                          SEQUENCE {
tfcs-Identity                        TFCS-IdentityPlain                OPTIONAL
tfcs-ID                               TFCS-IdentityPlain                DEFAULT 1,
timeInfo                               TimeInfo,
commonTimeslotInfo                     CommonTimeslotInfo                 OPTIONAL,
ul-CCTrCH-TimeslotsCodes               UplinkTimeslotsCodes              OPTIONAL
}

```

CR-Form-v4

CHANGE REQUEST

⌘ **25.331 CR 893** ⌘ ev **-** ⌘ Current version: **4.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ ASN.1 correction of IE TFCS ID		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 23.5.2001
Category:	⌘ A	Release:	⌘ REL-4
	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)

Reason for change:	⌘ Inconsistency between tabular and ASN.1 of IE TFCS ID.		
Summary of change:	⌘ In ASN.1, IE TFCS ID (of 10.3.6.21, 10.3.6.42, 10.3.6.63, 10.3.6.64, 10.3.6.88) has been implemented as OP instead of DEFAULT 1 as indicated in the Tabular. In tabular (10.3.7.55, 10.3.7.59) the type was shown as enumerated and was changed to integer as in ASN.1.		
Consequences if not approved:	⌘ Inconsistency of IE TFCS ID between tabular and corresponding ASN.1		

Clauses affected:	⌘ 10.3.7.55, 10.3.7.59, 11.3		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.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/](http://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.

10.3.7.55 Quality measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
BLER measurement results	OP	1 to <maxTrCH >		
>DL Transport channel identity	MP		Transport channel identity 10.3.5.18	transport channel type = DCH
>DL Transport Channel BLER	OP		Integer (0..63)	According to BLER_LOG in [19] and [20]
CHOICE mode				
>FDD				No data
>TDD				
>>SIR measurement results	OP	1 to <MaxCCTrCH>		SIR measurements for DL CCTrCH
>>>TFCS ID	MP		IntegerEnumerated (1...8)	
>>>Timeslot list	MP	1 to <maxTS>		for all timeslot on which the CCTrCH is mapped on
>>>>SIR	MP		Integer(0..63)	According to UE_SIR in [20]

10.3.7.59 Quality reporting quantity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
DL Transport Channel BLER	MP		Boolean	TRUE means report requested
Transport channels for BLER reporting	CV BLER reporting	1 to <maxTrCH >		The default, if no transport channel identities are present, is that the BLER is reported for all downlink transport channels
>DL Transport channel identity	MP		Transport channel identity 10.3.5.18	transport channel type = DCH
CHOICE mode				
>FDD				No data
>TDD				
>>SIR measurement list	OP	1 to <maxCCTrCH>		SIR measurements shall be reported for all listed TFCS IDs
>>>TFCS ID	MP		Enumerated integer(1...8)	

Condition	Explanation
<i>BLER reporting</i>	This information element is absent if 'DL Transport Channel BLER' is 'False' and optional, if 'DL Transport Channel BLER' is 'True'

11.3 Information element definitions

```

TFCS-Identity ::=                               SEQUENCE {
  tfcs-ID                                       TFCS-IdentityPlain, INTEGER (1..8)
  DEFAULT 1,
  sharedChannelIndicator                       BOOLEAN
}

TFCS-IdentityPlain ::=                         INTEGER (1..8)

DL-CCTrCh ::=                                  SEQUENCE {
  tfcs-Identity                               TFCS-IdentityPlain           OPTIONAL,
  tfcs-ID                                       TFCS-IdentityPlain           DEFAULT 1,
  timeInfo                                     TimeInfo,
  dl-CCTrCH-TimeslotsCodes                   DownlinkTimeslotsCodes           OPTIONAL,
  ul-CCTrChTPCList                           UL-CCTrChTPCList                 OPTIONAL
}

PDSCH-Info ::=                                SEQUENCE {
  tfcs-Identity                               TFCS-IdentityPlain           OPTIONAL
  tfcs-ID                                       TFCS-IdentityPlain           DEFAULT 1,
  commonTimeslotInfo                         CommonTimeslotInfo               OPTIONAL,
  pdsch-TimeslotsCodes                       DownlinkTimeslotsCodes           OPTIONAL
}

PDSCH-CapacityAllocationInfo ::=              SEQUENCE {
  pdsch-PowerControlInfo                     PDSCH-PowerControlInfo           OPTIONAL,
  pdsch-AllocationPeriodInfo                 AllocationPeriodInfo,
  tfcs-Identity                               TFCS-IdentityPlain           OPTIONAL
  tfcs-ID                                       TFCS-IdentityPlain           DEFAULT 1,
  configuration                               CHOICE {
    old-Configuration                         SEQUENCE {
      pdsch-Identity                         PDSCH-Identity
    },
    new-Configuration                         SEQUENCE {
      pdsch-Info                             PDSCH-Info,
      pdsch-Identity                         PDSCH-Identity                   OPTIONAL
    }
  }
}

PUSCH-CapacityAllocationInfo ::=              SEQUENCE {
  pusch-Allocation                           CHOICE {
    pusch-AllocationPending                  NULL,
    pusch-AllocationAssignment               SEQUENCE {
      pdsch-AllocationPeriodInfo            AllocationPeriodInfo,
      pusch-PowerControlInfo                 UL-TargetSIR                     OPTIONAL,
      tfcs-ID                                       TFCS-IdentityPlain           DEFAULT 1,
      tfcs-Identity                               TFCS-IdentityPlain           OPTIONAL,
      configuration                           CHOICE {
        old-Configuration                     SEQUENCE {
          pusch-Identity                     PUSCH-Identity
        },
        new-Configuration                     SEQUENCE {
          pusch-Info                           PUSCH-Info,
          pusch-Identity                       PUSCH-Identity                   OPTIONAL
        }
      }
    }
  }
}

PUSCH-Info ::=                                SEQUENCE {
  tfcs-Identity                               TFCS-IdentityPlain           OPTIONAL
  tfcs-ID                                       TFCS-IdentityPlain           DEFAULT 1,
  commonTimeslotInfo                         CommonTimeslotInfo               OPTIONAL,
  pusch-TimeslotsCodes                       UplinkTimeslotsCodes             OPTIONAL
}

UL-CCTrCH ::=                                 SEQUENCE {
  tfcs-Identity                               TFCS-IdentityPlain           OPTIONAL

```

<u>tfcs-ID</u>	<u>TFCS-IdentityPlain</u>	<u>DEFAULT 1,</u>
timeInfo	TimeInfo,	
commonTimeslotInfo	CommonTimeslotInfo	OPTIONAL,
ul-CCTrCH-TimeslotsCodes	UplinkTimeslotsCodes	OPTIONAL
}		

CHANGE REQUEST

⌘ **25.331 CR 894** ⌘ ev **-** ⌘ Current version: **3.6.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of IE IODE range in AGPS Positioning		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 23.5.2001
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ Inconsistency in the range of IE IODE between tabular and ASN.1		
Summary of change:	⌘ Conflict in the range of IE IODE which appears as (0..239) in Tabular but (0..255) in ASN.1. The latter is correct therefore the tabular is corrected. ASN.1 implementation of IODE is now more consistent: 1 IE that was implemented as BIT STRING(SIZE(8)) changed to (0..255). Backwards Compatibility Analysis: Both ranges required the same number of bits to signal and the change can be considered backwards compatible		
Consequences if not approved:	⌘ Inconsistency in the range of IE IODE between tabular and ASN.1		

Clauses affected:	⌘ 10.3.7.88a, 10.3.7.91, 11.2		
Other specs Affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.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.

10.3.7.88a UE positioning GPS Additional Assistance Data Request

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Almanac	MP		Boolean	TRUE means requested
UTC Model	MP		Boolean	TRUE means requested
Ionospheric model	MP		Boolean	TRUE means requested
Navigation Model	MP		Boolean	TRUE means requested
DGPS Corrections	MP		Boolean	TRUE means requested
Reference Location	MP		Boolean	TRUE means requested
Reference Time	MP		Boolean	TRUE means requested
Acquisition Assistance	MP		Boolean	TRUE means requested
Real-Time Integrity	MP		Boolean	TRUE means requested
Navigation Model Additional data	CV- <i>Navigation Model</i>			this IE is present only if "Navigation Model" is set to TRUE otherwise it is absent
>GPS Week	MP		Integer (0..1023)	
>GPS_Toe	MP		Integer (0..167)	GPS time of ephemeris in hours of the latest ephemeris set contained by the UE
>T-Toe limit	MP		Integer (0..10)	ephemeris age tolerance of the UE to UTRAN in hours
>Satellites list related data	MP	0 to <maxSat>-1		
>>SatID	MP		Integer (0..63)	
>>IODE	MP		Integer (0.. 255 239)	Issue of Data Ephemeris for SatID

10.3.7.89 UE positioning GPS almanac

This IE contains a reduced-precision subset of the clock and ephemeris parameters.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
WN _a	MP		Bit string(8)	
Satellite information	MP	1 to <maxSat>		
>DataID	MP		Bitstring(2)	See [12]
>SatID	MP		Enumerated(0..63)	Satellite ID
>e	MP		Bit string(16)	Eccentricity [12]
>t _{oa}	MP		Bit string(8)	Reference Time Ephemeris [12]
>δi	MP		Bit string(16)	
>OMEGADOT	MP		Bit string(16)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles/sec) [12]
>SV Health	MP		Bit string(8)	
>A ^{1/2}	MP		Bit string(24)	Semi-Major Axis (meters) ^{1/2} [12]
>OMEGA ₀	MP		Bit string(24)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles) [12]
>M ₀	MP		Bit string(24)	Mean Anomaly at Reference Time (semi-circles) [12]
>ω	MP		Bit string(24)	Argument of Perigee (semi-circles) [12]
>af ₀	MP		Bit string(11)	apparent clock correction [12]
>af ₁	MP		Bit string(11)	apparent clock correction [12]
SV Global Health	OP		Bit string(364)	This enables GPS time recovery and possibly extended GPS correlation intervals. It is specified in page 25 of subframes 4 and 5 [12]

10.3.7.91 UE positioning GPS DGPS corrections

This IE contains DGPS corrections to be used by the UE.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS TOW sec	MP		Integer(0..604799)	seconds GPS time-of-week when the DGPS corrections were calculated
Status/Health	MP		Enumerated(UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.2, UDRE scale 0.1, no data, invalid data)	
DPGS information	CV- Status/Health	1 to <maxSat>		If the Cipher information is included these fields are ciphered.
>SatID	MP		Enumerated (0...63)	
>i	MP		Integer(0.. 25 5239)	
>UDRE	MP		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	The value in this field shall be multiplied by the UDRE Scale Factor in the IE Status/Health to determine the final UDRE estimate for the particular satellite.
>PRC	MP		Real(-655.34..655.34 by step of 0.32)	meters (different from [13])
>RRC	MP		Real(-4.064..4.064 by step of 0.032)	meters/sec (different from [13])
>Delta PRC2	MP		Integer(-127..127)	meters
>Delta RRC2	MP		Real(-0.224..0.224 by step of 0.032)	meters/sec
>Delta PRC3	CV-DCCH		Integer(-127..127)	meters
>Delta RRC3	CV-DCCH		Real(-0.224..0.224 by step of 0.032)	meters/sec

Condition	Explanation
Status/Health	This IE is mandatory if "status" is not equal to "no data" or "invalid data", otherwise the IE is not needed
DCCH	This IE is mandatory present if the IE "UE positioning GPS DGPS corrections" it is included in the point-to-point message otherwise it is optional if the IE "UE positioning GPS DGPS corrections" is included in the broadcast message

11.2 PDU definitions

```

DGPS-CorrectionSatInfo ::=          SEQUENCE {
    satID                             SatID,
    iode                               IODEBIT STRING (SIZE (8)),
    udre                               UDRE,
    prc                                PRC,
    rrc                                RRC,
    deltaPRC2                         DeltaPRC,
    deltaRRC2                         DeltaRRC,
    deltaPRC3                         DeltaPRC          OPTIONAL,
    deltaRRC3                         DeltaRRC          OPTIONAL
}

```

CHANGE REQUEST

⌘ **25.331 CR 895** ⌘ ev **-** ⌘ Current version: **4.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of IE IODE range in AGPS Positioning		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI	Date:	⌘ 23.5.2001
Category:	⌘ A	Release:	⌘ REL-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		REL-4 (Release 4)
			REL-5 (Release 5)

Reason for change:	⌘ Inconsistency in the range of IE IODE between tabular and ASN.1		
Summary of change:	⌘ Conflict in the range of IE <i>IODE</i> which appears as (0..239) in Tabular but (0..255) in ASN.1. The latter is correct therefore the tabular is corrected. ASN.1 implementation of <i>IODE</i> is now more consistent: 1 IE that was implemented as BIT STRING(SIZE(8)) changed to (0..255).		
	Backwards Compatibility Analysis: Both ranges required the same number of bits to signal and the change can be considered backwards compatible		
Consequences if not approved:	⌘ Inconsistency in the range of IE IODE between tabular and ASN.1		

Clauses affected:	⌘ 10.3.7.88a, 10.3.7.91, 11.2		
Other specs Affected:	⌘ <input type="checkbox"/> Other core specifications	⌘	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> 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/3G_Specs/CRs.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.

10.3.7.88a UE positioning GPS Additional Assistance Data Request

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Almanac	MP		Boolean	TRUE means requested
UTC Model	MP		Boolean	TRUE means requested
Ionospheric model	MP		Boolean	TRUE means requested
Navigation Model	MP		Boolean	TRUE means requested
DGPS Corrections	MP		Boolean	TRUE means requested
Reference Location	MP		Boolean	TRUE means requested
Reference Time	MP		Boolean	TRUE means requested
Acquisition Assistance	MP		Boolean	TRUE means requested
Real-Time Integrity	MP		Boolean	TRUE means requested
Navigation Model Additional data	CV- <i>Navigation Model</i>			this IE is present only if "Navigation Model" is set to TRUE otherwise it is absent
>GPS Week	MP		Integer (0..1023)	
>GPS_Toe	MP		Integer (0..167)	GPS time of ephemeris in hours of the latest ephemeris set contained by the UE
>T-Toe limit	MP		Integer (0..10)	ephemeris age tolerance of the UE to UTRAN in hours
>Satellites list related data	MP	0 to <maxSat>- 1		
>>SatID	MP		Integer (0..63)	
>>IODE	MP		Integer (0.. 255 239)	Issue of Data Ephemeris for SatID

10.3.7.89 UE positioning GPS almanac

This IE contains a reduced-precision subset of the clock and ephemeris parameters.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
WN _a	MP		Bit string(8)	
Satellite information	MP	1 to <maxSat>		
>DataID	MP		Bitstring(2)	See [12]
>SatID	MP		Enumerated(0..63)	Satellite ID
>e	MP		Bit string(16)	Eccentricity [12]
>t _{oa}	MP		Bit string(8)	Reference Time Ephemeris [12]
>δi	MP		Bit string(16)	
>OMEGADOT	MP		Bit string(16)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles/sec) [12]
>SV Health	MP		Bit string(8)	
>A ^{1/2}	MP		Bit string(24)	Semi-Major Axis (meters) ^{1/2} [12]
>OMEGA ₀	MP		Bit string(24)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles) [12]
>M ₀	MP		Bit string(24)	Mean Anomaly at Reference Time (semi-circles) [12]
>ω	MP		Bit string(24)	Argument of Perigee (semi-circles) [12]
>af ₀	MP		Bit string(11)	apparent clock correction [12]
>af ₁	MP		Bit string(11)	apparent clock correction [12]
SV Global Health	OP		Bit string(364)	This enables GPS time recovery and possibly extended GPS correlation intervals. It is specified in page 25 of subframes 4 and 5 [12]

10.3.7.91 UE positioning GPS DGPS corrections

This IE contains DGPS corrections to be used by the UE.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS TOW sec	MP		Integer(0..604799)	seconds GPS time-of-week when the DGPS corrections were calculated
Status/Health	MP		Enumerated(UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.2, UDRE scale 0.1, no data, invalid data)	
DPGS information	CV- Status/Health	1 to <maxSat>		If the Cipher information is included these fields are ciphered.
>SatID	MP		Enumerated (0...63)	
>i	MP		Integer(0.. 25 5239)	
>UDRE	MP		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	The value in this field shall be multiplied by the UDRE Scale Factor in the IE Status/Health to determine the final UDRE estimate for the particular satellite.
>PRC	MP		Real(-655.34..655.34 by step of 0.32)	meters (different from [13])
>RRC	MP		Real(-4.064..4.064 by step of 0.032)	meters/sec (different from [13])
>Delta PRC2	MP		Integer(-127..127)	meters
>Delta RRC2	MP		Real(-0.224..0.224 by step of 0.032)	meters/sec
>Delta PRC3	CV-DCCH		Integer(-127..127)	meters
>Delta RRC3	CV-DCCH		Real(-0.224..0.224 by step of 0.032)	meters/sec

Condition	Explanation
Status/Health	This IE is mandatory if "status" is not equal to "no data" or "invalid data", otherwise the IE is not needed
DCCH	This IE is mandatory present if the IE "UE positioning GPS DGPS corrections" it is included in the point-to-point message otherwise it is optional if the IE "UE positioning GPS DGPS corrections" is included in the broadcast message

11.2 PDU definitions

```

DGPS-CorrectionSatInfo ::=          SEQUENCE {
    satID                             SatID,
    iode                               IODEBIT STRING (SIZE (8)),
    udre                               UDRE,
    prc                                PRC,
    rrc                                RRC,
    deltaPRC2                         DeltaPRC,
    deltaRRC2                         DeltaRRC,
    deltaPRC3                         DeltaPRC          OPTIONAL,
    deltaRRC3                         DeltaRRC          OPTIONAL
}

```