TSG-RAN Meeting #7
Madrid, Spain, 13 – 15 March 2000

RP-000047

Title: **Agreed CRs to TS 25.331 (5)**

Source: **TSG-RAN WG2**

Agenda item: **6.3.3**

Doc-1st-	Spec	CR	Rev	Subject	Cat	Version	Versio
R2-000572	25.331	268		Removal of synchronisation Case 3	F	3.1.0	3.2.0
R2-000629	25.331	271		TX Diversity	C	3.1.0	3.2.0
R2-000632	25.331	272		Update of tabular format Section 10	D	3.1.0	3.2.0
R2-000633	25.331	273		ASN.1 description	F	3.1.0	3.2.0

3GPP TSG-RAN WG2 #11 **Document** ***R2-000572***

Turin, 28th February - 3rd March

3G CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	**CR**	**268**	Current Version:	3.1.0

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG-RAN#7 *list TSG meeting no. here ↑* — for approval [X] / for information [ ] *(only one box should be marked with an X)*

Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

Proposed change affects: *(at least one should be marked with an X)* USIM [ ] ME [ ] UTRAN [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 22/02/2000

Subject: Removal of Synchronisation Case 3

3G Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in a 2G specification	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Reason for change: Due to performance reasons synchronisation case 3 is removed from WG1 specifications and SCH and SCCH became obsolete.

Clauses affected: 8.1.13, 10.1.43, 10.2.6.27

Other specs affected:

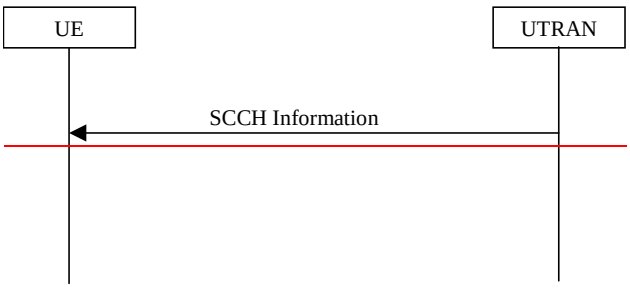
Other 3G core specifications	[X]	→ List of CRs: CR034 on 25.301, CR045 on 25.302, CR040 on 25.321, CR031 on 25.322
Other 2G core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

8.1.13 ~~Broadcast of SCCH information~~



~~8.1.13.1 General~~

~~The purpose of this procedure is to broadcast SCCH information e.g. PCCPCH allocation information.~~

~~8.1.13.2 Initiation~~

~~The SCCH broadcast information is continuously repeated on a regular basis in accordance with the transmission of PSCH.~~

~~8.1.13.3 Reception SCCH Information message by the UE~~

~~The UE shall evaluate the received SCCH Information and shall operate accordingly.~~

~~If the UE failed to decode the SCCH Information no further action shall be performed.~~

10.1.43 ~~SCCH INFORMATION~~

~~RLC SAP: TM~~

~~Logical channel: SCCH~~

~~Direction: UTRAN -> UE~~

~~Information Element~~	~~Presence~~	~~Multi~~	~~IE type and reference~~	~~Semantics description~~
~~SCCH info~~	~~M~~		~~Bit String(3)~~	~~Reserved~~

10.2.6.27 Primary CCPCH info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>STTD indicator	M		Boolean	
>TDD				
>>Timeslot	M		Integer (0...maxTScount)	~~PSCH~~PCCPCH timeslot
>>Cell parameters ID	C-MessageType		Integer (0...127)	For the cell parameter table
>>Sync case	C-MessageType		Enumerated (1, 2~~, 3~~)	Case 1,2~~, or 3~~
>>Offset	O		Integer (0... Repetition period-1)	SFN modulo Repetition period = offset. Default value is 0.
>>Repetition period	O		Integer (1, 2, 4, 8, 16, 32, 64)	Repetition period of the PCCPCH. Default value is 1.
>>Repetition length	O		Integer (1...Repetition period - 1)	Length of the allocation for each repetition. Default value is 1.
>>Block STTD indicator	O			

Condition	Explanation
C-MessageType	Mandatory in HANDOVER COMMAND message

Range Bound	Explanation
MaxTScount	In synchronisation case 2~~ and 3~~ MaxTScount is 6. In synchronisation case 1 MaxTScount is 14.

3GPP TSG RAN WG2 #11
Turin, Italy 28th- 3rd Feb. 2000

Document R2-000629

CHANGE REQUEST

25.331	CR	271	Current Version:	3.1.0

For submission to: TSG-RAN #7 — for approval [X] / for information [ ] — strategic [ ] / non-strategic [ ]

Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 28 Feb. 2000

Subject: TX diversity

Work item:

Category:

F	Correction		
A	Corresponds to a correction in an earlier release		
B	Addition of feature		
C	Functional modification of feature	X	
D	Editorial modification		

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change:

(1) Currently “TX diversity timing mode” is included in the SIB2. However, since the closed loop mode 1 and 2 in TX diversity are used in CELL_DCH state and the UE cannot refer to the SIB2 during the CELL_DCH, it is necessary to add “TX diversity timing mode” in “DL DPCH info for each RL”. Accordingly, “TX diversity timing mode” is removed from SIB2.
(2) Since this timing adjustment is only used in closed loop mode 1 and 2, “TX diversity timing mode” is renamed to “closed loop timing adjustment mode”.
(3) Current TS25.211 says that "If Tx diversity is applied on any of the downlink physical channels, it shall also be applied on P-CCPCH and SCH". Therefore, following changes are made.
- Rename the parameter "STTD indicator" to “TX diversity indicator” referring to P-CCPCH only (which are “PCCPCH info” and “Intra-frequency cell info”)
- Add “TX diversity indicator” in “Inter-frequency cell info”

Highlighted parts(Yellow) are the actual proposal.

Clauses affected: 10.1.50.5.4, 10.2.6.9,10.2.7.13, 10.2.7.2, 10.2.6.27

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

10.1.5047.5.4 System Information Block type 2 (tdoc0149)

The system information block type 2 contains the URA identity and information for periodic cell and URA update. It also includes the UE timers and counters to be used in connected mode.

Information Element	Presence	Multi	IE type and reference	Semantics description
UTRAN mobility information elements				
URA identity		1 ..<maxURAcount>		
Information for periodic cell and URA update	M			
UE information				
UE Timers and counters in connected mode	M			
UTRAN DRX cycle length coefficient for DRX with cell updating	M		DRX cycle length coefficient	
UTRAN DRX cycle length Coefficient for DRX with URA updating	M		DRX cycle length coefficient	
CHOICE *mode*				
>FDD				
~~>>TX Diversity Timing Mode~~	~~O~~		~~Enumerated(Normal Cell Mode,Macro Cell Mode)~~	~~*Note: The presence of this IE is mandatory if closed loop TX Diversity is used.*~~
Extensions	O			

Multi Bound	Explanation
MaxURAcount	Maximum number of URAs in a cell

10.2.6 Physical CH Information elements

10.2.6.9 Downlink DPCH info for each RL (tdoc0221, tdoc0192, tdoc0198)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>DL channelisation code		1 to <maxChancount>		SF of the channelisation code of the data part for each DPCH
>>>Secondary scrambling code	O		Integer (0..14)	
~~>>>Spreading factor~~	~~M~~		~~Enumerated(4, 16, 32, 64, 128, 256, 512)~~	
>>>Code number	M		Integer(0..maxCodeNum)	
~~>>Fixed or Flexible Position~~	~~M~~		~~Enumerated (Fixed, Flexible)~~	
~~>>TFCI existence~~	~~M~~		~~Boolean~~	
~~>>Number of bits for Pilot bits~~	~~C-SF~~		~~Enumerated (2,4,8 bits)~~	
~~>>TX Diversity Mode~~	~~M~~			
>>TPC combination index	M			
>>SSDT Cell Id	O			
>>Closed loop timing adjustment mode	CH TxDiversity Mode		Enumerated (1slot , 2 slots)	It is present if current TX Diversity Mode in UE is “closed loop mode 1” or “closed loop mode 2”.
>TDD				
>>DL CCTrCh List	C HO list length	1..<maxCCTrCHcount>		
>>>TFCS Identity	C HO presence			Identity of this CCTrCh.
>>>2nd interleaving mode	M		Enumerated(Frame related, Timeslot related)	Frame or timeslot related interleaving.
>>>Activation Time	O		Integer (0...255)	Frame number start of allocation period. Default is activation time in UE information elements.
>>>Duration	O		Integer (01..2565)	Total number of frames. Default ~~= 0 is(for~~ infinite~~)~~
>>>TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
>>>Puncturing Limit	M		Enumerated (0.40, 0.44..1)	Granularity of 0.04
>>>Repetition period	O		Integer (2,4,8,16,32, 64)~~Integer (1 ... Repetition~~	Repetition period of the DPCHs. Default value is continuous allocation~~1~~.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
			~~period -1)~~	
>>Repetition length	C-RepPer~~O~~		Integer (1..RepetitionPeriod)	Length of the allocation for each repetition period~~. Default value is 1.~~
>>>Individual Timeslot info		1 to < max Timeslot count>		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>>>>Timeslot	M		Integer (0...14)	Timeslot within a frame.
>>>>TFCI existence	M		Boolean	If TFCI exists it shall be coded in the first DPCH in this timeslot.
>>>>Burst type	M		Enumerated (Typ1, Typ2)	Short or long midamble for this timeslot.
>>>>Midamble shift	O		Integer (0...MaxMidambleShift – 1)	Midamble shift for this timeslot. Default is set by layer 1
>>>>channelisation code		1 to <max Codes count>	Enumerated (~~(1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8),~~ (16/1)...(16/16))	The first instance of the parameter Channelisation code corresponds to the first DPCH in that timeslot that shall be used first by the physical layer, the second to the DPCH in that timeslot that shall be used second and so on.
~~>>>Timeslot~~	~~M~~		~~Integer (0...14)~~	~~Timeslot within a frame.~~
~~>>>TFCI presence~~	~~O~~		~~Boolean~~	~~If TFCI exists it shall be coded in the first DPCH in this timeslot. Default value is No TFCI.~~
~~>>>Burst type~~	~~O~~		~~Enumerated (Typ1, Typ2)~~	~~Short or long midamble for this timeslot. Default is burst type 1.~~
~~>>>Midamble shift~~	~~O~~		~~Integer (0...MaxMidambleShift – 1)~~	~~Midamble shift for this timeslot. Default is set by layer 1~~

10.2.7.13 Intra-frequency cell info

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

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Cell individual offset	O		Enumerated(-10, -9.5..10)	Granularity 0.5 dB
Reference time difference to cell	O			
CHOICE *mode*				
>FDD				
>>Primary CPICH info	M			
>>Primary CPICH Tx power	O			
>>SFN Measurement Indicator	M		Boolean	
>>~~STTD~~ TX Diversity Indicator	M		Boolean	
>TDD				
>>Primary CCPCH info	M			
>>Primary CCPCH Tx power	O			
>>DL CCTrCH info	O			List of TFCS ID's to measure
>>DL Timeslot info	O			List of timeslots to measure
Cell Selection and Reselection parameters	O			
>Qmin	O		Integer (-20..0)	Ec/N0 or SIR, [dB]. Note 1. Default = same as in serving cell
>Maximum allowed UL TX power	O			[dBm] UE_TXPWR_MAX_RACH in 25.304. Default = same as in serving cell
>$Qoffset_{s,n}$ [dB]	O		Integer(-20, -19.5..20)	[dB] Default = 0 dB. Used in Alternative 1 in TS 25.304

10.2.7.2 Inter-frequency cell info

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

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Frequency info	M			
Cell individual offset	O		Enumerated(-10, -9.5..10)	Granularity 0.5 dB
Reference time difference to cell	O		Enumerated((-153088, 152576 ..153088)	In chip. This is –299 to 299 times 512 chip in steps of 512 chip
CHOICE *mode*				
>FDD				
>>Primary CPICH info	O			
>>Primary CPICH Tx power	O			Not required if measuring RSSI only
>>TX Diversity Indicator	M		Boolean	
>TDD				
>Primary CCPCH info	M			
>Primary CCPCH TX power	O			
Cell Selection and Reselection Info	O			
>Qmin	O		Integer (-20..0)	Ec/N0, [dB] Default = same as in serving cell
>Maximum allowed UL TX power	O			[dBm] UE_TXPWR_MAX_RACH in 25.304. Default = same as in serving cell
>Qoffset$_{s,n}$ [dB]	O		Integer(-20, -19.5..20)	[dB] Default = 0 dB. Used in Alternative 1 in TS 25.304

10.2.6.27 Primary CCPCH info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>~~STTD~~ TX Diversity indicator	M		Boolean	
>TDD				
>>Timeslot	M		Integer (0...maxTSc ount)	PSCH timeslot
>>Cell parameters ID	C-MessageT ype		Integer (0...127)	For the cell parameter table
>>Sync case	C-MessageT ype		Enumerated (1, 2, 3)	Case 1,2, or 3
>>Repetition period	O		Integer (2, 4, 8, 16, 32, 64)	Repetition period of the PCCPCH. Default is Continuous allocation
>>Repetition length	C RepPer		Integer (1...Repetitio n period - 1)	Length of the allocation for each repetition.
>>Offset	C RepPer		Integer (0... Repetition period-1)	SFN modulo Repetition period = offset.
>>Block STTD indicator	O			

3GPP RAN WG2 #11
Turin, Italy, Feb 28 - Mar 3, 2000

***Document* R2-000632**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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25.331	CR	272	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN#7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio	X	Core Network	

Source: TSG-RAN WG2 **Date:** 2000-03-10

Subject: Update of tabular format chapter 10

Work item:

Category: *(only one category shall be marked with an X)*			**Release:**	
F	Correction		Phase 2	
A	Corresponds to a correction in an earlier release		Release 96	
B	Addition of feature		Release 97	
C	Functional modification of feature		Release 98	
D	Editorial modification	X	Release 99	X
			Release 00	

Reason for change: Restructuring and editorial corrections of tabular format in chapter 10.
This CR include all agreed CRs on chapter 10 from RAN WG2 #10 and RAN WG2 #11.

Clauses affected: 10

Other specs affected:			
Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:


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<--------- double-click here for help and instructions on how to create a CR.

10 Message and information element functional definition and content

10.1 General

The function of each Radio Resource Control message together with message contents in the form of a list of information elements is defined in subclause 10.2~~1~~.

Functional definitions of the information elements are then described in subclause 10.2.

Information elements are marked as either M- mandatory, O - Optional or C -conditional (see Table 10.1).

Note: This table should be updated according to the new abbreviations and the new description in 25.921

Table 10.1: meaning of abbreviations used in RRC messages and information elements

Abbreviation	Meaning
M	IEs marked as Mandatory (M) will always be included in the message.
O	IEs marked as Optional (O) may or may not be included in the message.
C	IEs marked as Conditional (C) will be included in a message only if the condition is satisfied otherwise the IE is not included.

10.1.1 Protocol extensions

In this specification, two kind of protocol extensions are distinguished:

- Extension of an information element with additional values or choices
- Extension of a message with additional information elements

This standard fully specifies the behaviour of the UE, conforming to this revision of the standard, upon receiving a not comprehended future extension. The details of this error handling behaviour are provided in clause 16.

NOTE By avoiding the need for partial decoding (skipping uncomprehended IEs to continue decoding the remainder of the message), the RRC protocol extension mechanism also avoids the overhead of length determinants for extensions.

10.1.1.1 Extension of an information element with additional values or choices

In future releases of this protocol, some of the of value ranges and choices may be extended. For these value ranges and choices, one or more additional values are reserved. The size of the encoded information element shall not depend on whether or not the values reserved for extension are used. Information elements applicable to choices reserved for future releases of the protocol, shall be added to the end of the messsage.

For each of the values and choices reserved for future extension, the behaviour of a UE conforming to this revision of the standard is defined within the message and information element specifications provided in subclause 10.1 and 10.2. The UE may either apply a defined value, ignore the information element and/ or reject the request entire message. Which action applies is indicated within the “semantics” column of the tables specifying the messages and information elements as the “criticality” (“default”, “ignore” or “reject”).

10.1.1.2 Extension of a message with additional information elements

In future releases of this protocol, RRC messages may be extended with new information elements. These additional information elements shall always be included at the end of the message.

UTRAN is able to control the behaviour of a UE receiving a message extended with a not comprehended additional information element by indicating for each extension the “criticality” which may be “ignore” or “reject”. Therefore

UTRAN indicates the criticality for extensions provided in all messages it sends towards the UE, with the exception of broadcast messages. In the direction from UE to UTRAN, not criticality information is included for protocol extensions added at the end of a message. This is shown in the following table. Furthermore, the table indicates at which level extensions are included for the SYSTEM INFORMATION message.

Type	Message
Extensions and criticality	ACTIVE SET UPDATE 10.2.1 CELL UPDATE CONFIRM 10.2.5 DOWNLINK DIRECT TRANSFER 10.2.6 DOWNLINK OUTER LOOP CONTROL 10.2.7 HANDOVER TO UTRAN COMMAND 10.2.8 INTER SYSTEM HANDOVER COMMAND 10.2.11 MEASUREMENT CONTROL 10.2.13 PAGING TYPE 1 10.2.16 PAGING TYPE 2 10.2.17 PHYSICAL CHANNEL RECONFIGURATION 10.2.18 PHYSICAL SHARED CHANNEL ALLOCATION 10.2.21 RADIO BEARER RECONFIGURATION 10.2.23 RADIO BEARER RELEASE 10.2.26 RADIO BEARER SETUP 10.2.29 RNTI REALLOCATION 10.2.32 RRC CONNECTION RE- ESTABLISHMENT 10.2.35 RRC CONNECTION REJECT 10.2.38 RRC CONNECTION RELEASE 10.2.39 RRC CONNECTION SETUP 10.2.42 SECURITY MODE COMMAND 10.2.45 SIGNALLING CONNECTION RELEASE 10.2.48 TRANSPORT CHANNEL RECONFIGURATION 10.2.51 TRANSPORT FORMAT COMBINATION CONTROL 10.2.54 UE CAPABILITY ENQUIRY 10.2.56 UE CAPABILITY INFORMATION CONFIRM 10.2.58 UPLINK PHYSICAL CHANNEL CONTROL 10.2.60 URA UPDATE CONFIRM 10.2.62
Extensions	ACTIVE SET UPDATE COMPLETE 10.2.2 ACTIVE SET UPDATE FAILURE 10.2.3 CELL UPDATE 10.2.4 INITIAL DIRECT TRANSFER 10.2.10 INTER SYSTEM HANDOVER FAILURE 10.2.12 MEASUREMENT CONTROL FAILURE 10.2.14 MEASUREMENT REPORT 10.2.15 PHYSICAL CHANNEL RECONFIGURATION COMPLETE 10.2.19 PHYSICAL CHANNEL RECONFIGURATION FAILURE 10.2.20 PUSCH CAPACITY REQUEST 10.2.22 RADIO BEARER RECONFIGURATION COMPLETE 10.2.24 RADIO BEARER RECONFIGURATION FAILURE 10.2.25 RADIO BEARER RELEASE COMPLETE 10.2.27 RADIO BEARER RELEASE FAILURE 10.2.28 RADIO BEARER SETUP COMPLETE 10.2.30 RADIO BEARER SETUP FAILURE 10.2.31 RNTI REALLOCATION 10.2.32 RNTI REALLOCATION FAILURE 10.2.34 RRC CONNECTION RE- ESTABLISHMENT COMPLETE 10.2.36 RRC CONNECTION RE- ESTABLISHMENT REQUEST 10.2.37 RRC CONNECTION RE- ESTABLISHMENT REJECT 10.2.38 RRC CONNECTION RELEASE COMPLETE 10.2.40 RRC CONNECTION REQUEST 10.2.41 RRC CONNECTION SETUP COMPLETE 10.2.43 RRC STATUS 10.2.44 SECURITY MODE COMPLETE 10.2.46 SECURITY MODE FAILURE 10.2.47 Master Information Block 10.2.49.4.2 System Information Block type 1 to System Information Block type 16 10.2.49.4.3 to 10.2.49.4.18 SYSTEM INFORMATION CHANGE INDICATION 10.2.50 TRANSPORT CHANNEL RECONFIGURATION COMPLETE 10.2.52 TRANSPORT CHANNEL RECONFIGURATION FAILURE 10.2.53 TRANSPORT FORMAT COMBINATION CONTROL FAILURE 10.2.55 UE CAPABILITY INFORMATION 10.2.57 UPLINK DIRECT TRANSFER 10.2.59 URA UPDATE 10.2.61
None	SYSTEM INFORMATION 10.2.49 First Segment 10.2.49.1 Subsequent or last Segment 10.2.49.2 Complete SIB 10.2.49.3 SIB content 10.2.49.4.1

NOTE 1 For the SYSTEM INFORMATION message protocol extensions are only possible at the level of system

information blocks. If extension is needed at the level of SYSTEM INFORMATION, another message should be defined.

The "Extensions and criticality" may include both critical and non- critical extensions. Within the encoded message, the critical extensions shall always appear before non-critical extensions.

NOTE 2 The above implies that a UE may stop decoding upon the first not comprehended IE it encounters

The UE shall comprehend all information elements within a message upto the revision of the protocol it supports for the concerned message.

10.2~~1~~ Radio Resource Control messages

In connected mode, RB 0,1,2 and optionally 3 are available for usage by RRC messages using RLC-UM and RLC-AM on the DCCH. The UE and UTRAN shall select radio bearer for RRC messages using RLC-UM or RLC-AM on the DCCH, according to the following:

- RB 0 shall be used for all messages sent on the DCCH, when using RLC unacknowledged mode (RLC-UM).
- RB 1 shall be used for all messages sent on the DCCH, when using RLC acknowledged mode (RLC-AM), except for the DOWNLINK DIRECT TRANSFER and UPLINK DIRECT TRANSFER messages.
- RB 2 or 3 shall be used by the DOWNLINK DIRECT TRANSFER and UPLINK DIRECT TRANSFER messages sent on the DCCH in RLC acknowledged mode (RLC-AM), as specified in subclause 8.1.8.

For RRC messages on the DCCH using RLC transparent mode (RLC-TM), the transparent signalling DCCH shall be used.

10.2.1 ACTIVE SET UPDATE

NOTE : Only for FDD

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	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 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 10.3.2.45	
CN information elements				
CN Information info	OP		CN Information info 10.3.1.3	
RB information elements				
RB with PDCP information list	OP	1 to <MaxRBWithPDCPCount>		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 10.3.4.17	
Phy CH information elements				
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.27	Default value is the existing ”maximum UL TX power.
Downlink radio resources				
Radio link addition information	OP	1 to <MaxAddRLcount>		Radio link addition information required for each RL to add
>Radio link addition information	MP		Radio link addition information 10.3.6.50	
Radio link removal information	OP	1 to <MaxDelRLcount>		Radio link removal information required for each RL to remove
> Radio link removal information	MP		Radio link removal information 10.3.6.51	
TX Diversity Mode	MD		TX Diversity Mode 10.3.6.63	Default value is the existing TX diversity mode.
SSDT information	OP		SSDT information 10.3.6.57	

Multi Bound	Explanation
MaxRBWithPDCPCount	Maximum number of radio bearers which can have PDCP entity configured
MaxAddRLcount	Maximum number of radio links which can be added
MaxDelRLcount	Maximum number of radio links which can be removed/deleted

10.2.2 ACTIVE SET UPDATE COMPLETE

NOTE : For FDD only

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Uplink integrity protection activation info	OP		Integrity protection activation info 10.3.3.17	
RB Information elements				
Radio bearer uplink ciphering activation time info	OP		RBactivation time info 10.3.4.10	
RB with PDCP information list	OP	1 to <MaxRBWithPDCPCount>		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 10.3.4.17	

Multi bound	Explanation
MaxRBWithPDCPCount	Maximum number of radio bearers which can have PDCP entity configured

10.2.3 ACTIVE SET UPDATE FAILURE

NOTE : Only for FDD

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Failure cause	MP		Failure cause and error indication 10.3.3.12	

10.2.4 CELL UPDATE

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

RLC-SAP: TM

Logical channel: CCCH

Direction: UE→UTRAN

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
U-RNTI	MP		U-RNTI 10.3.3.45	
Integrity check info	CH		Integrity check info 10.3.3.16	
AM_RLC error indication	MP		Boolean	TRUE indicates AM_RLC unrecoverable error occurred on c-plane in the UE
Cell update cause	MP		Cell update cause 10.3.3.3	
Protocol error indicator	MD		Protocol error indicator 10.3.3.29	Default value is FALSE
Measurement information elements				
Measured results on RACH	OP		Measured results on RACH 10.3.7.70	
Other information elements				
Protocol error information	CV-*ProtErr*		Protocol error information 10.3.8.9	

Condition	Explanation
ProtErr	If the IE "Protocol error indicator" has the value "TRUE"

10.2.5 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: DCCH

Direction: UTRAN→UE

Information Element	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 protection mode info	OP		Integrity protection mode info 10.3.3.19	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
New U-RNTI	OP		U-RNTI 10.3.3.45	
New C-RNTI	OP		C-RNTI 10.3.3.7	
DRX Indicator	MP		DRX Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MD		DRX cycle length coefficient 10.3.3.9	Default value is the existing DRX cycle length coefficient
RLC re-configuration indicator (for C-plane)	MD		RLC re-configuration indicator 10.3.3.36	Default value is the existing RLC re-configuration indicator for C-plane
RLC re-configuration indicator (for U-plane)	MD		RLC re-configuration indicator 10.3.3.36	Default value is the existing RLC re-configuration indicator for U-plane
CN Information Elements				
CN Information info	OP		CN Information info 10.3.1.3	
UTRAN Information Elements				
URA identity	OP		URA identity 10.3.2.5	
RB information elements				
RB with PDCP information list	OP	1 to <MaxRBWithPDCPCount>		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 10.3.4.17	
PhyCH information elements				
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.27	Default value is the existing maximum UL TX power
PRACH Info (for RACH)	OP		PRACH Info (for RACH) 10.3.6.36	
Downlink radio resources				
Downlink information for one radio link	OP		Downlink information for each radio link 10.3.6.18	

Multi Bound	Explanation
MaxRBWithPDCPCount	Maximum number of radio bearers which can have PDCP entity configured

10.2.6 DOWNLINK DIRECT TRANSFER

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN -> UE

Information Element	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	
CN information elements				
CN Domain Identity	MP		Core Network Domain Identity 10.3.1.1	
NAS message	MP		NAS message 10.3.1.8	

10.2.7 DOWNLINK OUTER LOOP CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	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	
PhyCH information elements				
Downlink Outer Loop Control	MP		Downlink Outer Loop Control 10.3.6.20	Indicates whether the UE is allowed or not to increase its SIR-target value above its current value
Downlink DPCH power control information	MD		Downlink DPCH power control information 10.3.6.16	Default value is the existing "Downlink DPCH power control information"

10.2.8 HANDOVER TO UTRAN COMMAND

NOTE: Functional description of this message to be included here

RLC-SAP: N/A (Sent through a different RAT)

Logical channel: N/A (Sent through a different RAT)

Direction: UTRAN → UE

Information Element	Need	Multi	Type and reference	Semantics description
New U-RNTI	MP		U-RNTI Short 10.3.3.46	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
Ciphering algorithm	OP		Ciphering algorithm 10.3.3.4	
RAB info	MP		RAB info 10.3.4.8	
CHOICE specification mode	MP			
>Complete specification				
RB information elements				
>>Signalling RB information to setup list	MP	1 to <MaxSRBcount>		
>>>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.19	
>>RB information to setup list	MP	1 to <MaxSetupRBcount>		
>>>RB information to setup	MP		RB information to setup 10.3.4.15	
Uplink transport channels				
>>UL Transport channel information common for all transport channels	MP		UL Transport channel information common for all transport channels 10.3.5.21	
>>Added or Reconfigured TrCH information	MP	1 to <MaxReconfAddTrCHCount>		
>>>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	MP		DL Transport channel information common for all transport channels 10.3.5.7	
>>Added or Reconfigured TrCH information	MP	1 to <MaxReconfAddTrCHCount>		
>>>Added or Reconfigured DL	MP		Added or	

Information Element	Need	Multi	Type and reference	Semantics description
TrCH information			Reconfigured DL TrCH information 10.3.5.1	
Uplink radio resources				
>>Uplink DPCH info	MP		Uplink DPCH info 10.3.6.65	
Downlink radio resources				
>>Downlink information common for all radio links	MP		Downlink information common for all radio links 10.3.6.17	
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.21	
>>CHOICE mode	MP			
>>>FDD				
>>>>CPCH SET Info	OP		CPCH SET Info 10.3.6.11	
>>Downlink information per radio link		1 to <MaxRLcount>		
>>>Downlink information for each radio link			Downlink information for each radio link 10.3.6.18	
>Preconfiguration				
>>Predefined configuration identity	MP		Predefined configuration identity 10.3.4.5	
>>Uplink DPCH info	MP		Uplink DPCH info Short 10.3.6.66	
Downlink radio resources				
>>Downlink information common for all radio links				
>>>Downlink DPCH info common for all radio links	MP		Downlink DPCH info common for all RL 10.3.6.14	
>>Downlink information per radio link	MP	1 to <MaxRlcount>		Send downlink information for each radio link to be set-up. In TDD MaxRlcount is 1.
>>>Downlink information for each radio link			Downlink information for each RL short 10.3.6.19	
>>>Downlink DPCH info for each radio link	MP		Downlink DPCH info for each RL 10.3.6.15	
Frequency info	MP		Frequency info 10.3.6.24	
Maximum allowed UL TX power	MP			
CHOICE mode	MP			
>TDD				
>>Primary CCPCH Tx Power	MP		Primary CCPCH Tx Power	

Information Element	Need	Multi	Type and reference	Semantics description
			10.3.6.42	
>> Constant Value	MP		Constant value 10.3.6.9	
>>UL Interference	MP		UL interference 10.3.6.64	
>>Cell parameters ID	MP		Integer (0...127)	Description TBI

Multi Bound	Explanation
MaxRlcount	Maximum number of radio links
MaxSetupRBcount	The maximum number of RBs to setup.

10.2.9 HANDOVER TO UTRAN COMPLETE

This message is sent by the UE when a handover to UTRAN has been completed.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
Integrity protection hyper frame number	MP		Hyper frame number 10.3.3.13	

10.2.10 INITIAL DIRECT TRANSFER

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE -> UTRAN

Information Element	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	
CN information elements				
Service Descriptor	MP		Service Descriptor 10.3.1.17	
Flow Identifier	MP		Flow Identifier 10.3.1.4	Allocated by UE for a particular session
CN domain identity	MP		CN domain identity 10.3.1.1	
NAS message	MP		NAS message 10.3.1.8	
Measurement information elements				
Measured results on RACH	OP		Measured results on RACH 10.3.7.70	

10.2.11 INTER-SYSTEM HANDOVER 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-System 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	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
Integrity check info	CH		Integrity check info 10.3.3.16	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
RAB info	OP		RAB info 10.3.4.8	Remaining radio access bearer if any
Inter-System message	MP		Inter-System message 10.3.8.6	

10.2.12 INTER-SYSTEM HANDOVER FAILURE

This message is sent on the RRC connection used before the Inter-System 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	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	
Other information elements				
Inter-System handover failure	OP		Inter-System handover failure 10.3.8.5	

10.2.13 MEASUREMENT CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	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	
Measurement Information elements				
Measurement Identity Number	MP		Measurement Identity Number 10.3.7.73	
Measurement Command	MP		Measurement Command 10.3.7.71	
Measurement Reporting Mode	OP		Measurement Reporting Mode 10.3.7.74	
Additional measurements list	OP		Additional measurements list 10.3.7.1	
CHOICE Measurement type	CV *command*			
>Intra-frequency measurement			Intra-frequency measurement 10.3.7.36	
>Inter-frequency measurement			Inter-frequency measurement 10.3.7.16	
>Inter-system measurement			Inter-system measurement 10.3.7.27	
>LCS measurement			LCS measurement 10.3.7.57	
>Traffic Volume measurement			Traffic Volume measurement 10.3.7.94	
>Quality measurement			Quality measurement 10.3.7.80	
>UE internal measurement			UE internal measurement 10.3.7.103	

Condition	Explanation
Command	The IE is mandatory if the “Measurement command” IE is set to “Setup”, optional if the “Measurement command” IE is set to “modify”, otherwise the IE is not needed

10.2.14 MEASUREMENT CONTROL FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Failure cause	MP		Failure cause and error information 10.3.3.12	

10.2.15 MEASUREMENT REPORT

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Measurement Information Elements				
Measurement identity number	MP		Measurement identity number 10.3.7.73	
Measured Results	OP		Measured Results 10.3.7.69	
Additional Measured results	OP	1 to <MaxAdditionalMeas>		
>Measured Results	MP		Measured Results 10.3.7.69	
Event results	OP		Event results 10.3.7.7	

Multi Bound	Explanation
MaxAdditionalMeas	Maximum number of additional measurements for a given measurement identity

10.2.16 PAGING TYPE 1

This message is used to send information on the paging channel. One or several Ues, in idle or connected mode, can be paged in one message, which also can contain other information.

RLC-SAP: TM

Logical channel: PCCH

Direction: UTRAN → UE

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information elements				
Paging record list	OP	1 to <Page Count>		
>Paging record	MP		Paging record 10.3.3.25	
Other information elements				
BCCH modification info	OP		BCCH modification info 10.3.8.1	

Multi Bound	Explanation
Page Count	Number of Ues paged in the Paging Type 1 message

If the encoded message does not fill a transport block, the RRC layer shall add padding according to subclause 12.x.

10.2.17 PAGING TYPE 2

This message is used to page an UE in connected mode, when using the DCCH for CN originated paging.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	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	
Paging cause	MP		Paging cause 10.3.3.24	
CN Information elements				
CN domain identity	MP		CN domain identity 10.3.1.1	
Paging Record Type Identifier	MP		Paging Record Type Identifier 10.3.1.10	

10.2.18 PHYSICAL CHANNEL RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	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 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 10.3.3.45	
New C-RNTI	OP		C-RNTI 10.3.3.7	
DRX Indicator	MP		DRX Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MD		DRX cycle length coefficient 10.3.3.9	Default value is the existing value of UTRAN DRX cycle length coefficient
Re-establishment timer	MD		Re-establishment timer 10.3.3.31	Default value is the existing value of the re-establishment timer
CN Information Elements				
CN Information info	OP		CN Information info 10.3.1.3	
RB information elements				
RB with PDCP information list	OP	1 to <MaxRBWithPDCPCount>		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 10.3.4.17	
PhyCH information elements				
Frequency info	MD		Frequency info 10.3.6.24	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.27	Default value is the existing value of the maximum allowed UL TX power
CHOICE *channel requirement*	OP			At least one criticality=reject spare value needed for future extension
>Uplink DPCH info			Uplink DPCH info 10.3.6.65	

Information Element	Need	Multi	Type and reference	Semantics description
>PRACH Info (for RACH)			PRACH Info (for RACH) 10.3.6.36	
Downlink radio resources				
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.17	
Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.21	
CHOICE *mode*	MP			
>FDD				
>>CPCH SET Info	OP		CPCH SET Info 10.3.6.11	
> TDD				(no data)
Downlink information per radio link list	OP	1 to <MaxRLcount>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.18	

Multi Bound	Explanation
MaxRBWithPDCPCount	Maximum number of radio bearers which can have PDCP entity configured
MaxRLcount	Maximum number of radio links to be set up

10.2.19 PHYSICAL CHANNEL RECONFIGURATION COMPLETE

This message is sent from the UE when a physical channel reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	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	
Uplink integrity protection activation info	OP		Integrity protection activation info 10.3.3.17	
CHOICE mode	MP			
>TDD				
>>Uplink Timing Advance	OP		Uplink Timing Advance 10.3.6.69	
> FDD				(no data)
RB Information elements				
Radio bearer uplink ciphering activation time info	OP		RB activation time info 10.3.4.10	
RB with PDCP information list	OP	1 to <MaxRBWithPDCPCount>		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 10.3.4.17	

Multi bound	Explanation
MaxRBWithPDCPCount	Maximum number of radio bearers which can have PDCP entity configured

10.2.20 PHYSICAL CHANNEL RECONFIGURATION FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Failure cause	MP		Failure cause and error information 10.3.3.12	

10.2.21 PHYSICAL SHARED CHANNEL ALLOCATION

Note : Only for TDD

This message is used by UTRAN to assign physical resources to USCH/DSCH transport channels in TDD, for temporary usage by the UE.

RLC-SAP: TM or UM

Logical channel: SHCCH

Direction: UTRAN → UE

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message type	
Integrity check info	CH		Integrity check info 10.3.3.16	
C-RNTI	MP		C-RNTI 10.3.3.7	
Uplink timing advance	MD		Uplink Timing Advance 10.3.6.69	Default value is the existing value for uplink timing advance
Allocation period info	OP		Allocation period info 10.3.6.4	
PUSCH info	OP		PUSCH info 10.3.6.46	
PDSCH info	OP		PDSCH info 10.3.6.30	
Timeslot list	OP	1 .. 14		
>Timeslot number	MP		Integer(0 .. 14)	Timeslot numbers, for which the UE shall report the timeslot ISCP in PUSCH CAPACITY REQUEST message.

10.2.22 PUSCH CAPACITY REQUEST

NOTE : Only for TDD

This message is used by the UE for request of PUSCH resources to the UTRAN.

RLC-SAP: TM

Logical channel: SHCCH

Direction: UE → UTRAN

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
Integrity check info	CH		Integrity check info 10.3.3.16	
C-RNTI	MP		C-RNTI 10.3.3.7	
Traffic Volume	MP		Traffic Volume,measured results list 10.3.7.93	
Timeslot list	OP	1 .. 14		
>Timeslot number	MP		Integer(0 .. 14)	
>Timeslot ISCP	MP			
Primary CCPCH RSCP	OP			

10.2.23 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	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 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 10.3.3.45	
New C-RNTI	OP		C-RNTI 10.3.3.7	
DRX Indicator	MP		DRX Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MD		UTRAN DRX cycle length coefficient 10.3.3.9	Default value is the existing value of UTRAN DRX cycle length coefficient
Re-establishment timer	MD		Re-establishment timer 10.3.3.31	Default value is the existing value of the re-establishment timer
CN information elements				
CN Information info	OP		CN Information info 10.3.1.3	
RB information elements				
RB information to reconfigure list	MP	1to <MaxReconRBCount>		
>RB information to reconfigure	MP		RB information to reconfigure 10.3.4.13	
RB information to be affected list	OP	1 to <MaxOtherRBcount>		
>RB information to be affected	MP		RB information to be affected 10.3.4.12	
TrCH Information Elements				
Uplink transport channels				
UL Transport channel information common for all transport channels	OP		UL Transport channel information	

Information Element	Need	Multi	Type and reference	Semantics description
			common for all transport channels 10.3.5.21	
Deleted TrCH information list	OP	1 to <MaxDelTrCHCount>		
> Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.6	
Added or Reconfigured TrCH information list	OP	1 to <MaxReconfAddTrCHCount>		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
CHOICE *mode*	OP			
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.4	
>> Added or Reconfigured TrCH information for DRAC list	OP	1 to <MaxDRACReconAddTrCHCount>		
>>>DRAC static information	MP		DRAC static information 10.3.5.8	
>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 10.3.5.7	
Deleted TrCH information list	OP	1 to <MaxDelTrCHCount>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <MaxReconfAddTrCHCount>		
>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 10.3.6.24	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.27	Default value is the existing maximum UL TX power
CHOICE *channel requirement*	OP			At least one spare choice (criticality = reject) required
>Uplink DPCH info			Uplink	

Information Element	Need	Multi	Type and reference	Semantics description
			DPCH info 10.3.6.65	
>PRACH Info (for RACH)			PRACH Info (for RACH) 10.3.6.36	
Downlink radio resources				
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.17	
Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.21	
CHOICE *mode*	MP			
>FDD				
>>CPCH SET Info	OP		CPCH SET Info 10.3.6.11	
>TDD				(no data)
Downlink information per radio link list	OP	1 to <MaxRLcount>		
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.18	

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxOtherRBcount	Maximum number of RBs to be affected
MaxReconfRBcount	Maximum number of RBs to be reconfigured
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCHCount	Maximum number of transport channels to add and reconfigure
MaxDRACReconAddTrCHCount	Maximum number of transport channels to add and reconfigure for DRAC
MaxSysInfoBlockFACHCount	Maximum number of references to system information blocks on the FACH

10.2.24 RADIO BEARER RECONFIGURATION COMPLETE

This message is sent from the UE when a RB and signalling link reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	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	
Uplink integrity protection activation info	OP		Integrity protection activation info 10.3.3.17	
CHOICE mode	MP			
>TDD				
>>Uplink Timing Advance	OP		Uplink Timing Advance 10.3.6.69	
>FDD				(no data)
RB Information elements				
Radio bearer uplink ciphering activation time info	OP		RB activation time info 10.3.4.10	
RB with PDCP information list	OP	1 to <MaxRBWithPDCPCount>		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 10.3.4.17	

Multi bound	Explanation
MaxRBWithPDCPCount	Maximum number of radio bearers which can have PDCP entity configured

10.2.25 RADIO BEARER RECONFIGURATION FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Failure cause	MP		Failure cause and error information 10.3.3.12	

10.2.26 RADIO BEARER RELEASE

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	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 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 10.3.3.45	
New C-RNTI	OP		C-RNTI 10.3.3.7	
DRX Indicator	MP		DRX Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MD		DRX cycle length coefficient 10.3.3.9	Default value is the existing value of UTRAN DRX cycle length coefficient
Re-establishment timer	MD		Re-establishment timer 10.3.3.31	Default value is the existing value of the re-establishment timer
CN Information Elements				
CN Information info	OP		CN Information info 10.3.1.3	
RB Information Elements				
RB information to release list	MP	1 to <MaxRelRBcount>		
>RB information to release	MP		RB information to release 10.3.4.14	
RB information to be affected list	OP	1 to <MaxOtherRBcount>		
>RB information to be affected	MP		RB information to be affected 10.3.4.12	
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	

Information Element	Need	Multi	Type and reference	Semantics description
			10.3.5.21	
Deleted TrCH information list	OP	1 to <MaxDelTrCHCount>		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.6	
Added or Reconfigured TrCH information list	OP	1 to <MaxReconfAddTrCHCount>		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
CHOICE *mode*	OP			
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.4	
>> Added or Reconfigured TrCH information for DRAC list	OP	1 to <MaxDRACReconAddTrCHCount>		
>>>DRAC static information	MP		DRAC static information 10.3.5.8	
>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 10.3.5.7	
Deleted TrCH information list	OP	1 to <MaxDelTrCHCount>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <MaxReconfAddTrCHCount>		
>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 10.3.6.24	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.27	Default value is the existing maximum UL TX power
CHOICE *channel requirement*	OP			At least one spare choice (criticality = reject) required
>Uplink DPCH info			Uplink DPCH info 10.3.6.65	
>PRACH Info (for RACH)			PRACH Info	

Information Element	Need	Multi	Type and reference	Semantics description
			(for RACH) 10.3.6.36	
Downlink radio resources				
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.17	
Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.21	
CHOICE *mode*	MP			
>FDD				
>>CPCH SET Info	OP		CPCH SET Info 10.3.6.11	
>TDD				(no data)
Downlink information per radio link list	OP	1 to <MaxRLcount>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.18	

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxRelRBcount	Maximum number of RBs to be released
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxSysInfoBlockFACHCount	Maximum number of references to system information blocks on the FACH
MaxReconfAddTrCHCount	Maximum number of transport channels to add and reconfigure
MaxDRACReconAddTrCHCount	Maximum number of transport channels to add and reconfigure for DRAC

10.2.27 RADIO BEARER RELEASE COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	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
Uplink integrity protection activation info	OP		Integrity protection activation info 10.3.3.17	
CHOICE mode	MP			
>TDD				
>>Uplink Timing Advance	OP		Uplink Timing Advance 10.3.6.69	This information element shall be present in case of handover procedure Calculated timing advance value for the new cell after handover in a synchronous TDD network
>FDD				(no data)
RB Information elements				
Radio bearer uplink ciphering activation time info	OP		RB activation time info 10.3.4.10	

10.2.28 RADIO BEARER RELEASE FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Failure cause	MP		Failure cause and error information 10.3.3.12	

10.2.29 RADIO BEARER SETUP

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	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 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 10.3.3.45	
New C-RNTI	OP		C-RNTI 10.3.3.7	
DRX Indicator	MP		DRX Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MD		DRX cycle length coefficient 10.3.3.9	Default value is the existing value of UTRAN DRX cycle length coefficient
Re-establishment timer	MD		Re-establishment timer 10.3.3.31	Default value is the existing value of the re-establishment timer
CN Information Elements				
CN Information info	OP		CN Information info 10.3.1.3	
RB Information Elements				
Signalling RB information to setup list	OP	1 to <MaxSRBcount>		For each signalling radio bearer established
>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.19	
RAB information to setup list	MP	1 to <MaxRABcount>		For each RAB established
>RAB information for setup	MP		RAB information to setup 10.3.4.9	
RB information to be affected list	OP	1 to <MaxOtherRBcount>		
>RB information to be affected	MP		RB information to be affected 10.3.4.12	

Information Element	Need	Multi	Type and reference	Semantics description
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 10.3.5.21	
Deleted TrCH information list	OP	1 to <MaxDelTrCHCount>		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.6	
Added or Reconfigured TrCH information list	OP	1 to <MaxReconfAddTrCHCount>		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
CHOICE *mode*	OP			
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.4	
>> Added or Reconfigured TrCH information for DRAC list	OP	1 to <MaxDRACReconAddTrCHCount>		
>>>DRAC static information	MP		DRAC static information 10.3.5.8	
>TDD				(no data)
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels10.3.5.7	
Deleted TrCH information list	OP	1 to <MaxDelTrCHCount>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <MaxReconfAddTrCHCount>		
>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 10.3.6.24	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL	Default value is the existing maximum UL TX power

Information Element	Need	Multi	Type and reference	Semantics description
			TX power 10.3..6.27	
CHOICE *channel requirement*	OP			At least one spare choice (criticality = reject) required
>Uplink DPCH info			Uplink DPCH info 10.3.6.65	
>PRACH Info (for RACH)			PRACH Info (for RACH) 10.3.6.36	
Downlink radio resources				
Downlink information common for all radio links	OP		Downlink information common for all radio links10.3.6.17	
Downlink PDSCH information	OP		Downlink PDSCH information10.3.6.21	
CHOICE *mode*	MP			
>FDD				
>>CPCH SET Info	OP		CPCH SET Info 10.3.6.11	
>TDD				(no data)
Downlink information per radio link list	OP	1 to <MaxRLcount>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.18	

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconfAddcount	Maximum number of Transport CHannels reconfigured or added
MaxDRACReconfAddcount	Maximum number of Transport CHannels reconfigured or added for DRAC
MaxSRBcount	Maximum number of signalling RBs that could be setup with this message
MaxRABcount	Maximum number of RABs that could be setup with this message
MaxRBcount	Maximum number of RBs pre RAB that could be setup with this message
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure

10.2.30 RADIO BEARER SETUP COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	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	
Uplink integrity protection activation info	OP		Integrity protection activation info 10.3.3.17	
CHOICE mode	OP			
>TDD				
>>Uplink Timing Advance	OP		Uplink Timing Advance 10.3.6.69	This information element shall be present in case of handover procedure. Calculated timing advance value for the new cell after handover in a synchronous TDD network
>FDD				(no data)
Hyper frame number	MP		Hyper frame number 10.3.3.13	
RB Information elements				
Radio bearer uplink ciphering activation time info	OP		RB activation time info 10.3.4.10	

10.2.31 RADIO BEARER SETUP FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Failure cause	MP		Failure cause and error information 10.3.3.12	

10.2.32 RNTI REALLOCATION

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	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 protection mode info	OP		Integrity protection mode info 10.3.3.19	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
New U-RNTI	OP		U-RNTI 10.3.3.45	
New C-RNTI	OP		C-RNTI 10.3.3.7	
DRX Indicator	MP		DRX Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MD		UTRAN DRX cycle length coefficient 10.3.3.9	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	
RB Information elements				
RB with PDCP information list	OP	1 to <MaxRBWithPDCPCount>		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 10.3.4.17	

10.2.33 RNTI REALLOCATION COMPLETE

This message is used to confirm the new RNTI information for the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Uplink integrity protection activation info	OP		Integrity protection activation info 10.3.3.17	
RB Information elements				
Radio bearer uplink ciphering activation time info	OP		RB activation time info 10.3.4.10	
RB with PDCP information list	OP	1 to <MaxRBWithPDCPCount>		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 10.3.4.17	

Multi bound	Explanation
MaxRBWithPDCPCount	Maximum number of radio bearers which can have PDCP entity configured

10.2.34 RNTI REALLOCATION FAILURE

This meessage is sent to indicate a failure to act on a received RNTI REALLOCATION message.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Failure cause	MP		Failure cause and error information 10.3.3.12	

10.2.35 RRC CONNECTION RE-ESTABLISHMENT

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements				
U-RNTI	CV-CCCH		U-RNTI 10.3.3.45	
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 10.3.3.45	
New C-RNTI	OP		C-RNTI 10.3.3.7	
DRX Indicator	MP		DRX Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MD		UTRAN DRX cycle length coefficient 10.3.3.9	Default value is the existing value of UTRAN DRX cycle length coefficient
Re-establishment timer	MD		Re-establishment timer 10.3.3.31	Default value is the existing value of the re-establishment timer
CN Information Elements				
CN Information info	OP		CN Information info 10.3.1.3	
RB Information Elements				
Signalling RB information to setup list	OP	1 to <MaxSRBcount>		For each signalling radio bearer established
>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.19	
RAB information for setup list	OP	1 to <MaxRABcount>		For each RAB established
>RAB information for setup	MP		RAB information for setup 10.3.4.9	
RB information to release list	OP	1 to <MaxRelRBcount>		
>RB information to release	MP		RB information to release	

Information Element	Need	Multi	Type and reference	Semantics description
			10.3.4.14	
RB information to reconfigure list	OP	1 to <MaxReconRBcount>		
>RB information to reconfigure	MP		RB information to reconfigure 10.3.4.13	
RB information to be affected list	OP	1 to <MaxOtherRBcount>		
>RB information to be affected	MP		RB information to be affected 10.3.4.12	
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 10.3.5.21	
Deleted TrCH information list	OP	1 to <MaxDelTrCHCount>		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.6	
Added or Reconfigured TrCH information list	OP	1 to <MaxReconfAddTrCHCount>		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
CHOICE *mode*	OP			
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.4	
>> Added or Reconfigured TrCH information for DRAC list	OP	1 to <MaxDRACReconAddTrCHCount>		
>>>DRAC static information	MP		DRAC static information 10.3.5.8	
>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 10.3.5.7	
Deleted TrCH information list	OP	1 to <MaxDelTrCHCount>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information	

Information Element	Need	Multi	Type and reference	Semantics description
			10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <MaxReconfAddTrCHCount>		
>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 10.3.6.24	Default value is the existing value of frequency information
Uplink radio resources			Maximum allowed UL TX power 10.3.6.27	
Maximum allowed UL TX power	MD			Default value is the existing maximum UL TX power
CHOICE *channel requirement*	OP		Uplink DPCH info 10.3.6.65	At least one spare choice (criticality = reject) required
>Uplink DPCH info			PRACH Info (for RACH) 10.3.6.36	
>PRACH Info (for RACH)				
Downlink radio resources				
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.17	
Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.21	
CHOICE *mode*	MP			
>FDD				
>>CPCH SET Info	OP		CPCH SET Info 10.3.6.11	
>TDD				(no data)
Downlink information per radio link list	OP	1 to <MaxRLcount>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.18	

Condition	Explanation
CCCH	This IE is only sent when CCCH is used

Multi Bound	Explanation
MaxSRBcount	Maximum number of signalling RBs that could be setup with this message
MaxRABcount	Maximum number of RABs that could be setup with this message
MaxSetupRBcount	Maximum number of RBs to be setup
MaxRelRBcount	Maximum number of RBs to be released
MaxReconRBcount	Maximum number of RBs to be reconfigured
MaxOtherRBcount	Maximum number of RBs to be affected.
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconfAddTrCHCount	Maximum number of transport channels to add and reconfigure
MaxDRACReconAddTrCHCount	Maximum number of transport channels to add and reconfigure for DRAC
MaxRLcount	Maximum number of radio links

10.2.36 RRC CONNECTION RE-ESTABLISHMENT COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	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	
Uplink integrity protection activation info	OP		Integrity protection activation info 10.3.3.17	
CHOICE mode	OP			
>TDD				
>>Uplink Timing Advance	OP		Uplink Timing Advance 10.3.6.69	This information element shall be present in case of handover procedure. Calculated timing advance value for the new cell after handover in a synchronous TDD network
>FDD				(no data)
RB Information elements				
Radio bearer uplink ciphering activation time info	OP		RB activation time info 10.3.4.10	
RB with PDCP information list	OP	1 to <MaxRBWithPDCPCount>		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 10.3.4.17	

Multi bound	Explanation
MaxRBWithPDCPCount	Maximum number of radio bearers which can have PDCP entity configured

10.2.37 RRC CONNECTION RE-ESTABLISHMENT REQUEST

NOTE: Functional description of this message to be included here

RLC-SAP: TM

Logical channel: CCCH

Direction: UE → UTRAN

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
U-RNTI	MP		U-RNTI 10.3.3.45	
Integrity check info	CH		Integrity check info 10.3.3.16	
Protocol error indicator	MD		Protocol error indicator 10.3.3.29	Default value is FALSE
Measurement information elements				
Measured results on RACH	OP		Measured results on RACH 10.3.7.70	
Other information elements				
Protocol error information	CV-*ProtErr*		Protocol error information 10.3.8.9	

Condition	Explanation
ProtErr	If the IE "Protocol error indicator" has the value "TRUE"

10.2.38 RRC CONNECTION REJECT

The network transmits this message when the requested RRC connection cannot be accepted.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element	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	
Rejection cause	MP		Rejection cause 10.3.3.32	
Wait time	MP		Wait time 10.3.3.47	
Redirection info	OP		Redirection info 10.3.3.30	

10.2.39 RRC CONNECTION RELEASE

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	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
Number of RRC Message Transmissions	CH Cell_DCH		Number of RRC Message Transmissions 10.3.3.23	
Release cause	MP		Release cause 10.3.3.33	

Condition	Explanation
Cell_DCH	This IE is present when UE is in CELL_DCH state.

10.2.40 RRC CONNECTION RELEASE COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	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	

10.2.41 RRC CONNECTION REQUEST

RRC Connection Request is the first message transmitted by the UE when setting up an RRC Connection to the network.

RLC-SAP: TM

Logical channel: CCCH

Direction: UE → UTRAN

Information Element	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	
Initial UE capability	MP		Initial UE capability 10.3.3.14	
Establishment cause	MP		Establishment cause 10.3.3.11	
Protocol error indicator	MD		Protocol error indicator 10.3.3.29	Default value is FALSE
Measurement information elements				
Measured results on RACH	OP		Measured results on RACH 10.3.7.70	

If the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.x.

10.2.42 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	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	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	MP		U-RNTI 10.3.3.45	
New C-RNTI	OP		C-RNTI 10.3.3.7	
UTRAN DRX cycle length coefficient	MP		DRX cycle length coefficient 10.3.3.9	
Re-establishment timer	MD		Re-establishment timer 10.3.3.31	Default value is the existing value of the re-establishment timer
Capability update requirement	MD		Capability update requirement 10.3.3.2	Default value is defined in section 10.3.3.3
RB Information Elements				
Signalling RB information to setup list	MP	3 to 4		Information for signalling radio bearers, in the order RB 0 up to 3.
>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.19	
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 10.3.5.21	
Added or Reconfigured TrCH information list	MP	1 to <MaxReconfAddTrCHCount>		
>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	

Information Element	Need	Multi	Type and reference	Semantics description
			channels 10.3.5.7	
Added or Reconfigured TrCH information list	MP	1 to <MaxReconfAddTrCHCount>		
>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 10.3.6.24	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.27	Default value is the existing maximum UL TX power
CHOICE *channel requirement*	OP			At least one spare choice (criticality = reject) required
>Uplink DPCH info			Uplink DPCH info 10.3.6.65	
>PRACH Info (for RACH)			PRACH Info (for RACH) 10.3.6.36	
Downlink radio resources				
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.17	
Downlink information per radio link list	OP	1 to <MaxRLcount>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.18	

Multi Bound	Explanation
MaxReconfAddTrCHCount	Maximum number of new transport channels to set
MaxRLcount	Maximum number of radio links to be set up

10.2.43 RRC CONNECTION SETUP COMPLETE

This message confirms the establishment of the RRC Connection by the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
Hyper frame number	MP		Hyper frame number 10.3.3.13	
UE radio access capability	MP		UE radio access capability 10.3.3.41	
UE system specific capability	OP		Inter-system message 10.3.8.6	

10.2.44 RRC STATUS

This message is sent to indicate a protocol error.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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
Other information elements				
Protocol error information	MP		Protocol error information 10.3.8.9	

10.2.45 SECURITY MODE COMMAND

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN to UE

Information Element	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
Ciphering algorithm	MP		Ciphering algorithm 10.3.3.4	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	Only present if ciphering shall be controlled
Integrity protection mode info	OP		Integrity protection mode info10.3.3.19	Only present if integrity protection shall be controlled
CN Information elements				
CN domain identity	MP		CN domain identity 10.3.1.1	Indicates which cipher and integrity protection keys are is applicable

10.2.46 SECURITY MODE COMPLETE

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to UTRAN

Information Element	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
Hyper frame number	OP		Hyper frame number 10.3.3.13	Only present if there is no active radio bearers towards "CN domain identity" where the SECURITY MODE COMMAND was initiated or if none of these radio bearers uses ciphered connection.
Uplink integrity protection activation info	OP		Integrity protection activation info 10.3.3.17	
RB Information elements				
Radio bearer uplink ciphering activation time info	OP		RB activation time info 10.3.4.10	

10.2.47 SECURITY MODE FAILURE

This meessage is sent to indicate a failure to act on a received SECURITY MODE CONTROL message.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Failure cause	MP		Failure cause and error information 10.3.3.12	

10.2.48 SIGNALLING CONNECTION RELEASE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	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
CN information elements				
Signalling Flow related information list	MP	1 to <maxFlowID>		Flow identifier to be provided for each signalling flow to be released.
>Flow Identifier	MP		Flow Identifier 10.3.1.4	

Multi Bound	Explanation
MaxFlowId	Maximum number of flow identifiers

10.2.49 SYSTEM INFORMATION

Information Element	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
CHOICE *mode*	MP			
>FDD				
>>SFNprime	CV 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)
>TDD				(no data)
CHOICE Segment combination	MP			
>Combination 1				
>>First Segment			First Segment, 10.2.49.1	
>Combination 2				
>>Subsequent Segment			Subsequent or last Segment, 10.2.49.2	
>Combination 3				
>>Last segment			Subsequent or last segment, 10.2.49.2	
>Combination 4				
>>Complete list		1..16		Note 1
>>>Complete			Complete SIB, 10.2.49.3	
>>Last Segment			Subsequent or last Segment, 10.2.49.2	
>Combination 5				
>>Complete list		1..16		Note 1
>>>Complete			Complete SIB, 10.2.49.3	
>Combination 6				(no data)

If the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.x.

Note 1: If Combination 4 or 5 contains a Master information block Master information shall be located as the first IE in the list.

10.2.49.1 First Segment

This segment type is used to transfer the first segment of a segmented system information block.

Information Element	Need	Multi	Type and reference	Semantics description
Other information elements				
SIB type	MP		SIB Type, 10.3.8.15	
SEG_COUNT	MP		SEG COUNT, 10.3.8.12	
SIB data	MP		SIB data, 10.3.8.14	

10.2.49.2 Subsequent or last Segment

This segment type is used to transfer a subsequent or last segment of a segmented system information block.

Information Element	Need	Multi	Type and reference	Semantics description
Other information elements				
SIB type	MP		SIB Type, 10.3.8.15	
Segment index	MP		Segment Index, 10.3.8.13	
SIB data	MP		SIB data, 10.3.8.14	

10.2.49.3 Complete SIB

This segment type is used to transfer a non-segmented system information block.

Information Element	Need	Multi	Type and reference	Semantics description
Other information elements				
SIB type	MP		SIB Type, 10.3.8.15	
SIB content	MP		SIB Content, 10.2.49.4.1	

10.2.49.4 System Information Blocks

10.2.49.4.1 SIB Content

SIB Segments are the result of the segmentation of a 'SIB Content' IE. The SIB content IE is developed hereafter:

Information Element	Need	Multi	Type and reference	Semantics description
CHOICE SIB type	MP			
>Master information block			10.2.49.4.2	
>System information block type 1			10.2.49.4.3	
>System information block type 2			10.2.49.4.4	
>System information block type 3			10.2.49.4.5	
>System information block type 4			10.2.49.4.6	
>System information block type 5			10.2.49.4.7	
>System information block type 6			10.2.49.4.8	
>System information block type 7			10.2.49.4.9	
>System information block type 8			10.2.49.4.10	
>System information block type 9			10.2.49.4.11	
>System information block type 10			10.2.49.4.12	
>System information block type 11			10.2.49.4.13	
>System information block type 12			10.2.49.4.14	
>System information block type 13			10.2.49.4.15	
>System information block type 13.1			10.2.49.4.15.1	
>System information block type 13.2			10.2.49.4.15.2	
>System information block type 13.3			10.2.49.4.15.3	
>System information block type 13.4			10.2.49.4.15.4	
>System information block type 14			10.2.49.4.16	
>System information block type 15			10.2.49.4.17	
>System information block type 16			10.2.49.4.18	

Condition	Explanation
SIB Type	The common value of the 'SIB type' field in the segment(s).

10.2.49.4.2 Master Information Block

Information Element	Need	Multi	Type and reference	Semantics description
Other information elements				
MIB Value tag	MP		MIB Value tag 10.3.8.7	
CN information elements				
Supported PLMN types	MP		PLMN Type 10.3.1.12	
PLMN Identity	CV GSM		PLMN Identity 10.3.1.11	
ANSI-41 information elements				
ANSI-41 Core Network Information	CV ANSI-41		ANSI-41 Core Network Information 10.3.9.1	
CHOICE mode	MP			
>TDD				
>>SFN prime	MP		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)
>FDD				(no data)
References to other system information blocks	MP		References to other system information blocks 10.3.8.10	

Condition	Explanation
GSM	The IE is mandatory if the IE "Supported PLMN Types" is set to 'GSM-MAP' or 'GSM-MAP AND ANSI-41', and not needed otherwise
ANSI-41	The IE is mandatory if the IE "Supported PLMN Types" is set to 'ANSI-41' or 'GSM-MAP AND ANSI-41', and not needed otherwise

10.2.49.4.3 System Information Block type 1

The system information block type 1 contains NAS system information as well as UE timers and counters to be used in idle mode.

Information Element	Need	Multi	Type and reference	Semantics description
CN information elements				
CN common GSM-MAP NAS system information	MP		NAS system information (GSM-MAP) 10.3.1.9	
CN domain system information list	MP	1 to <maxCNdomains>		Send CN information for each CN domain.
>CN domain system information	MP		CN domain system information 10.3.1.2	
UE information				
UE Timers and constants in idle mode	MP		UE Timers and constants in idle mode 10.3.3.43	

Multi Bound	Explanation
MaxCNdomains	Maximum number of CN domains

10.2.49.4.4 System Information Block type 2

The system information block type 2 contains the URA identity and information for periodic cell and URA update. It also includes the UE timers and counters to be used in connected mode.

Information Element	Need	Multi	Type and reference	Semantics description
UTRAN mobility information elements				
URA identity list	MP	1 ..<maxURAcount>		
>URA identity	MP		URA identity 10.3.2.5	
UE information elements				
UE Timers and constants in connected mode	MP		UE Timers and constants in connected mode 10.3.3.42	

Multi Bound	Explanation
MaxURAcount	Maximum number of URAs in a cell

10.2.49.4.5 System Information Block type 3

The system information block type 3 contains parameters for cell selection and re-selection. The block may also contain scheduling information for other system information blocks.

Information Element	Need	Multi	Type and reference	Semantics description
References to other system information blocks	OP		References to other system information blocks 10.3.8.10	
UTRAN mobility information elements				
Cell identity	MP		Cell identity 10.3.2.2	
Cell selection and re-selection info	MP		Cell selection and re-selection info 10.3.2.3	
Cell Access Restriction	MP		Cell Access Restriction 10.3.2.1	

10.2.49.4.6 System Information Block type 4

The system information block type 4 contains parameters for cell selection and re-selection to be used in connected mode. The block may also contain scheduling information for other system information blocks.

Information Element	Need	Multi	Type and reference	Semantics description
References to other system information blocks	OP		References to other system information blocks 10.3.8.10	
UTRAN mobility information elements				
Cell identity	MP		Cell identity 10.3.2.2	
Cell selection and re-selection info	MP		Cell selection and re-selection info 10.3.2.3	
Cell Access Restriction	MP		Cell Access Restriction 10.3.2.1	

10.2.49.4.7 System Information Block type 5

The system information block type 5 contains parameters for the configuration of the common physical channels in the cell. The block may also contain scheduling information for other system information blocks.

Information Element	Need	Multi	Type and reference	Semantics description
References to other system information blocks	OP		References to other system information blocks 10.3.8.10	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.24	
Maximum allowed UL TX power	OP		Maximum allowed UL TX power 10.3.6.27	
CHOICE *mode*	MP			
>TDD				
>>Midamble configuration	MD		Midamble configuration 10.3.6.28	Default value is defined in 10.3.6.23
>FDD				(no data)
Primary CCPCH info	OP		Primary CCPCH info 10.3.6.41	Note 1
PRACH system information	MP		PRACH system information 10.3.6.39	
Secondary CCPCH system information	MP		Secondary CCPCH system information 10.3.6.53	
CBS DRX Level 1 information	CV CTCH		CBS DRX Level 1 information 10.3.8.3	

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

Condition	Explanation
CTCH	The IE is mandatory if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed in the message

10.2.49.4.8 System Information Block type 6

The system information block type 6 contains parameters for the configuration of the common and shared physical channels to be used in connected mode. The block may also contain scheduling information for other system information blocks.

Information Element	Need	Multi	Type and reference	Semantics description
References to other system information blocks	OP		References to other system information blocks 10.3.8.10	
PhyCH information elements				
Frequency info	OP		Frequency info 10.3.6.24	
Maximum allowed UL TX power	OP		Maximum allowed UL TX power 10.3.6.27	
Primary CCPCH info	OP		Primary CCPCH info 10.3.6.41	Note 1
CHOICE *mode*	MP			
>FDD				
>>PICH Power offset	MP		PICH Power offset 10.3.6.35	
>>AICH Power offset	MP		AICH Power offset 10.3.6.3	
>TDD				
>>PUSCH system information	OP		PUSCH system information 10.3.6.48	
>>PDSCH system information	OP		PDSCH system information 10.3.6.31	
PRACH system information	MP		PRACH system information 10.3.6.39	
Secondary CCPCH system information	MP		Secondary CCPCH system information 10.3.6.53	
CBS DRX Level 1 information	CV CTCH		CBS DRX Level 1 information 10.3.8.3	

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

NOTE 3: TFS for PCH shall be listed at the top of FACH/PCH information if PCH exists.(FACHcount=1)

Condition	Explanation
CTCH	The IE is mandatory if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed

10.2.49.4.9 System Information Block type 7

The system information block type 7 contains the fast changing parameters UL interference and Dynamic persistence level

Information Element	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>FDD				
>>UL interference	MP		UL interference 10.3.6.64	
>TDD				(no data)
PhyCH information elements				
PRACHs listed in system information block type 5	MP	1 .. <maxPRACHcount>		The order of the PRACHs is the same as in system information block type 5.
>Dynamic persistence level	MP		Dynamic persistence level 10.3.6.23	
PRACHs listed in system information block type 6	OP	1 .. <maxPRACHcount>		The order of the PRACHs is the same as in system information block type 6.
>Dynamic persistence level	MP		Dynamic persistence level 10.3.6.23	

Multi Bound	Explanation
MaxPRACHcount	Maximum number of PRACHs

10.2.49.4.10 System Information Block type 8

NOTE : Only for FDD

The system information block type 8 contains static CPCH information to be used in the cell.

Information Element	Need	Multi	Type and reference	Semantics description
UE information				
CPCH parameters	MP		CPCH parameters 10.3.3.6	
PhyCH information elements				
CPCH set info list	MP	1 .. <maxCPCHsetcount>		
>CPCH set info	MP		CPCH set info 10.3.6.11	

Multi Bound	Explanation
MaxCPCHsetcount	Maximum number of CPCH sets per Node B

10.2.49.4.11 System Information Block type 9

NOTE : Only for FDD

The system information block type 9 contains CPCH information to be used in the cell.

Information Element	Need	Multi	Type and reference	Semantics description
PhyCH information elements				
CPCH set persistence levels list	MP	1 .. <maxCPCHsetcount>		
>CPCH set persistence levels	MP		CPCH persistence levels 10.3.6.10	

Multi Bound	Explanation
MaxCPCHsetcount	Maximum number of CPCH sets per Node B

10.2.49.4.12 System Information Block type 10

NOTE : Only for FDD

The system information block type 10 contains information to be used by UEs having their DCH controlled by a DRAC procedure.

Information Element	Need	Multi	Type and reference	Semantics description
UE information				
DRAC system information	MP		DRAC system information 10.3.3.8	DRAC information is sent for each class of terminal

10.2.49.4.13 System Information Block type 11

The system information block type 11 contains measurement control information to be used in the cell. The block may also contain scheduling information for other system information blocks.

Information Element	Need	Multi	Type and reference	Semantics description
References to other system information blocks	OP		References to other system information blocks 10.3.8.10	
Measurement information elements				
FACH measurement occasion info	OP		FACH measurement occasion info 10.3.7.8	
Measurement control system information	MP		Measurement control system information 10.3.7.72	

10.2.49.4.14 System Information Block type 12

The system information block type 12 contains measurement control information to be used in connected mode.

Information Element	Need	Multi	Type and reference	Semantics description
References to other system information blocks	OP		References to other system information blocks 10.3.8.10	
Measurement information elements				
FACH measurement occasion info	OP		FACH measurement occasion info 10.3.7.8	
Measurement control system information	MP		Measurement control system information 10.3.7.72	

10.2.49.4.15 System Information Block type 13

The system information block type 13 contains ANSI-41 system information.

Information Element	Need	Multi	Type and reference	Semantics description
Other information elements				
References to other system information blocks	OP		References to other system information blocks 10.3.8.10	
CN Information Elements				
CN Domain system information list		1 to <maxCNdomains>		Send CN information for each CN domain.
>CN Domain system information			CN Domain system information 10.3.1.2	
UE Information				
UE timers and constants in idle mode	OP		UE timers and constants in idle mode 10.3.3.43	
Capability update requirement	OP		Capability update requirement 10.3.3.2	

10.2.49.4.15.1 System Information Block type 13.1

The system information block type 13.1 contains the ANSI-41 RAND information.

Information Element	Need	Multi	Type and reference	Semantics description
ANSI-41 information elements				
ANSI-41 RAND information	MP		ANSI-41 RAND information 10.3.9.5	

10.2.49.4.15.2 System Information Block type 13.2

The system information block type 13.2 contains the ANSI-41 User Zone Identification information.

Information Element	Need	Multi	Type and reference	Semantics description
ANSI-41 information elements				
ANSI-41 User Zone Identification information	MP		ANSI-41 User Zone Identification information 10.3.9.6	

10.2.49.4.15.3 System Information Block type 13.3

The system information block type 13.3 contains the ANSI-41 Private Neighbor List information.

Information Element	Need	Multi	Type and reference	Semantics description
ANSI-41 information elements				
ANSI-41 Private Neighbor List information	MP		ANSI-41 Private Neighbor List information 10.3.9.4	

10.2.49.4.15.4 System Information Block type 13.4

The system information block type 13.4 contains the ANSI-41 Global Service Redirection information.

Information Element	Need	Multi	Type and reference	Semantics description
ANSI-41 information elements				
ANSI-41 Global Service Redirection information	MP		ANSI-41 Global Service Redirection information 10.3.9.2	

10.2.49.4.16 System Information Block type 14

NOTE : Only for TDD

The system information block type 14 contains parameters for common and dedicated physical channel uplink outer loop power control information to be used in both idle and connected mode. The block may also contain scheduling information for other system information blocks.

Information Element	Need	Multi	Type and reference	Semantics description
Other information elements				
References to other system information blocks	OP		References to other system	

			information blocks 10.3.8.10	
PhyCH information elements				
Primary CCPCH Tx Power	OP		Primary CCPCH Tx Power 10.3.6.42	For path loss calculation
Individual Timeslot interference list	MP	1 to ….<maxTS count>		
>Individual Timeslot interference	MP		Individual Timeslot interference 10.3.6.26	
RACH Constant Value	OP		Constant Value 10.3.6.9	Operator controlled RACH Margin
DPCH Constant Value	OP		Constant Value 10.3.6.9	Operator controlled UL DPCH Margin
USCH Constant Value	OP		Constant Value 10.3.6.9	Operator controlled USCH Margin

Multi Bound	**Explanation**
MaxTScount	Maximum number of timeslots

10.2.49.4.17 System Information Block type 15

The system information block type 15 contains information useful for LCS. In particular it allows the UE based method to perform localization without dedicated signaling. For the UE assisted methods the signaling is reduced.

Information Element	**Need**	**Multi**	**Type and Reference**	**Semantics description**
References to other system information blocks	OP		References to other system information blocks 10.3.8.10	
LCS GPS assistance for SIB	OP		LCS GPS assistance for SIB 10.3.7.47	
LCS OTDOA assistance for SIB	OP		LCS OTDOA assistance for SIB 10.3.7.61	

Multi Bound	**Explanation**
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.2.49.4.18 System Information Block type 16

The system information block type 16 contains radio bearer, transport channel and physical channel parameters to be stored by UE in idle and connected mode for use during handover to UTRAN. The block may also contain scheduling information for other system information blocks.

Information Element	Need	Multi	Type and Reference	Semantics description
Other information elements				
References to other system information blocks	OP		References to other system information blocks 10.3.8.10	
RB information elements				
Predefined radio configurations list	MP	1 to <maxPredefConfigCount>		
>Predefined configuration identity	MP		Predefined configuration identity 10.3.4.5	
> Predefined configuration value tag	OP		Predefined configuration value tag 10.3.4.6	
>Predefined RB configuration	MP		Predefined RB configuration 10.3.4.7	
TrCH Information Elements				
>Predefined TrCH configuration	MP		Predefined TrCH configuration 10.3.5.12	
PhyCH Information Elements				
>Predefined PhyCH configuration	MP		Predefined PhyCH configuration 10.3.6.40	

Multi Bound	Explanation
MaxPredefConfigCount	Maximum number of predefined configurations
MaxSRBcount	Maximum number of signalling RBs that could be setup with this message
MaxRBcount	Maximum number of RBs
MaxTrCH	Maximum number of transport channels

10.2.50 SYSTEM INFORMATION CHANGE INDICATION

This message is used to send information on FACH to the UEs in state CELL_FACH about coming modification of the system information.

RLC-SAP: TM

Logical channel: BCCH

Direction: UTRAN → UE

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
Other information elements				
BCCH modification info	MP		BCCH modification info 10.3.8.1	

If the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.x.

10.2.51 TRANSPORT CHANNEL RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	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 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 10.3.3.45	
New C-RNTI	OP		C-RNTI 10.3.3.7	
DRX Indicator	MP		DRX Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MD		DRX cycle length coefficient 10.3.3.9	Default value is the existing value of UTRAN DRX cycle length coefficient
Re-establishment timer	MD		Re-establishment timer 10.3.3.31	Default value is the existing value of the re-establishment timer
CN Information Elements				
CN Information info	OP		CN Information info 10.3.1.3	
RB information elements				
RB with PDCP information list	OP	1 to <MaxRBWithPDCPCount>		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 10.3.4.17	
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 10.3.5.21	
Added or Reconfigured TrCH	MP	1 to		

Information Element	Need	Multi	Type and reference	Semantics description
information list		<MaxReconfAddTrCHCount>		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
CHOICE *mode*	OP			
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.4	
>> Added or Reconfigured TrCH information for DRAC list	OP	1 to <MaxDRACReconAddTrCHCount>		
>>>DRAC static information	MP		DRAC static information 10.3.5.8	
>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 10.3.5.7	
Added or Reconfigured TrCH information list	MP	1 to <MaxReconfAddTrCHCount>		
>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 10.3.6.24	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.27	Default value is the existing maximum UL TX power
CHOICE *channel requirement*	OP			At least one spare choice (criticality = reject) required
>Uplink DPCH info			Uplink DPCH info 10.3.6.65	
>PRACH Info (for RACH)			PRACH Info (for RACH) 10.3.6.36	
Downlink radio resources				
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.17	
Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.21	
CHOICE *mode*	MP			
>FDD				
>>CPCH set Info	OP		CPCH set Info	

Information Element	Need	Multi	Type and reference	Semantics description
			10.3.6.11	
>TDD				(no data)
Downlink information per radio link list	OP	1 to <MaxRLcount>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.18	

Multi Bound	Explanation
MaxRBWithPDCPCount	Maximum number of radio bearers which can have PDCP entity configured
MaxRLcount	Maximum number of radio links to be set up
MaxReconAddCount	Maximum number of Transport Channels reconfigured or added
MaxDRACReconAddCount	Maximum number of Transport Channels reconfigured or added for DRAC

10.2.52 TRANSPORT CHANNEL RECONFIGURATION COMPLETE

This message is sent from the UE when a transport channel reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	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	
Uplink integrity protection activation info	OP		Integrity protection activation info 10.3.3.17	
CHOICE mode	OP			
>TDD				
>>Uplink Timing Advance	OP		Uplink Timing Advance 10.3.6.69	This information element shall be present in case of handover procedure. Calculated timing advance value for the new cell after handover in a synchronous TDD network
>FDD				(no data)
RB Information elements				
Radio bearer uplink ciphering activation time info	OP		RB activation time info 10.3.4.10	
RB with PDCP information list	OP	1 to <MaxRBWithPDCPCount>		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 10.3.4.17	

Multi bound	Explanation
MaxRBWithPDCPCount	Maximum number of radio bearers which can have PDCP entity configured

NOTE: The usage of this message for indicating the cell the UE will select in the DCH->RACH/FACH case, is FFS.

10.2.53 TRANSPORT CHANNEL RECONFIGURATION FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Failure cause	MP		Failure cause and error information 10.3.3.12	

10.2.54 TRANSPORT FORMAT COMBINATION CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: TM, AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	CV-notTM		Message Type	
UE information elements				
Integrity check info	CH		Integrity check info 10.3.3.16	
TrCH information elements				
CHOICE channel requirement	MP			
> DPCH TFCS in uplink	OP		Transport Format Combination subset 10.3.5.19	
>TFC Control duration	CV-notTMopt		TFC Control duration 10.3.6.59	

Condition	Explanation
NotTM	The message type is not included when transmitting the message on the transparent mode signalling DCCH
NotTMopt	The information element is not included when transmitting the message on the transparent mode signalling DCCH and is optional otherwise.

If tranparent mode signalling is used and the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.x.

10.2.55 TRANSPORT FORMAT COMBINATION CONTROL FAILURE

This message is sent to indicate that a received TRANSPORT FORMAT COMBINATION CONTROL message could not be handled by the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	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	
Failure cause	MP		Failure cause and error information 10.3.3.12	

10.2.56 UE CAPABILITY ENQUIRY

The UE CAPABILITY ENQUIRY is used by the UTRAN to enquire inter-system classmarks from the UE.

RLC-SAP: TBD

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	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
Capability update requirement	MP		Capability update requirement 10.3.3.2	

10.2.57 UE CAPABILITY INFORMATION

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	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
UE radio access capability	OP		UE radio access capability 10.3.3.41	
Other information elements				
UE system specific capability	OP		Inter-system message 10.3.8.6	Includes inter-system classmark

10.2.58 UE CAPABILITY INFORMATION CONFIRM

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	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

10.2.59 UPLINK DIRECT TRANSFER

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE ->UTRAN

Information Element	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
CN information elements				
Flow Identifier	MP		Flow Identifier 10.3.1.4	Allocated by UE for a particular session
NAS message	MP		NAS message 10.3.1.8	
Measurement information elements				
Measured results on RACH	OP		Measured results on RACH 10.3.7.70	

10.2.60 UPLINK PHYSICAL CHANNEL CONTROL

NOTE : Only for TDD

In TDD this message is used to transfer uplink physical channel parameters to the UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Need	Multi	Type and Reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
Integrity check info	OP		Integrity check info 10.3.3.16	
PhyCH information elements				
CCTrCH power control info	OP		CCTrCH power control info 10.3.6.7	Power control information for one CCTrCH
Timing Advance	OP		UL Timing Advance 10.3.6.69	
Timeslot List	OP	1 to <maxTScount>		
>Individual UL Timeslot interference	MP		Individual Timeslot interference 10.3.6.26	

RACH Constant Value	OP		Constant value 10.3.6.9	Operator controlled RACH Margin
DPCH Constant Value	OP		Constant value 10.3.6.9	Operator controlled UL DPCH Margin
USCH Constant Value	OP		Constant value 10.3.6.9	Operator controlled USCH Margin

Multi bound	Explanation
MaxTScount	Maximum number of reported timeslots = 14

10.2.61 URA UPDATE

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

RLC-SAP: TM

Logical channel: CCCH

Direction: UE→UTRAN

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
U-RNTI	MP		U-RNTI 10.3.3.45	
Integrity check info	CH		Integrity check info 10.3.3.16	
URA update cause	MP		URA update cause 10.3.3.44	
Protocol error indicator	MD		Protocol error indicator 10.3.3.29	Default value is FALSE
Other information elements				
Protocol error information	CV-*ProtErr*		Protocol error information 10.3.8.9	

Condition	Explanation
ProtErr	If the IE “Protocol error indicator” has the value “TRUE”

10.2.62 URA UPDATE CONFIRM

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

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
U-RNTI	CV-CCCH		U-RNTI 10.3.3.45	
Integrity check info	CH		Integrity check info 10.3.3.16	Integrity check info is included if integrity protection is applied
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
New U-RNTI	OP		U-RNTI 10.3.3.45	
New C-RNTI	OP		C-RNTI 10.3.3.7	
DRX Indicator	MP		DRX Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MP		DRX cycle length coefficient 10.3.3.9	
CN Information Elements				
CN Information info	OP		CN Information info 10.3.1.3	
UTRAN mobility information elements				
URA identity	OP		URA identity 10.3.2.5	
RB information elements				
RB with PDCP information list	OP	1 to <MaxRBWithPDCPCount>		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 10.3.4.17	

Condition	Explanation
MaxRBWithPDCPCount	Maximum number of radio bearers which can have PDCP entity configured
CCCH	This IE is only sent when CCCH is used

10.3 Information element functional definitions

10.3.1 CN Information elements

10.3.1.1 CN domain identity

Identifies the type of core network domain.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CN domain identity	MP		Enumerated (CS domain, PS domain, Don't care)	At least 1 spare value needed Criticality: criticality reject is needed

10.3.1.2 CN Domain System Information

Information element	Need	Multi	Type and reference	Semantics description
CN domain identity	MP		CN domain identity 10.3.1.1	
CHOICE CN Type	MP			
>GSM-MAP				
>>CN domain specific NAS system information	MP		NAS system information (GSM-MAP) 10.3.1.9	
>ANSI-41				
>>CN domain specific NAS system information	MP		ANSI-41 NAS system information, 10.3.9.3	
CN domain specific DRX cycle length coefficient	MP		DRX cycle length coefficient, 10.3.3.9	

10.3.1.3 CN Information info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PLMN identity	OP		PLMN identity 10.3.1.11	
CN common GSM-MAP NAS system information	OP		NAS system information (GSM-MAP) 10.3.1.9	
CN domain related information	OP	1 to <MaxNoCNdomains>		
>CN domain identity	MP		CN domain identity 10.3.1.1	
>CN domain specific GSM-MAP NAS system info	MP		NAS system information (GSM-MAP) 10.3.1.9	

Multi Bound	Explanation
MaxNoCNdomains	Maximum number of CN domains=2

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

10.3.1.4 Flow Identifier

This IE is allocated by UE for a particular session

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Flow Identifier	MP		Enumerated (0…15)	

10.3.1.5 IMEI

This IE contains an International Mobile Equipment Identity. Setting specified in [TS 23.003]

Information Element/Group name	Need	Multi	Type and reference	Semantics description
IMEI		15		
>IMEI digit			INTEGER(0..9)	

10.3.1.6 IMSI (GSM-MAP)

This IE contains an International Mobile Subscriber Identity, used towards a GSM-MAP type of PLMN.. Setting specified in [TS 23.003]

Information Element/Group name	Need	Multi	Type and reference	Semantics description
IMSI		6 to 15		
>IMSI digit			INTEGER(0..9)	

10.3.1.7 Location Area Identification

Identifies uniquely a location area for a GSM-MAP type of PLMN. Setting specified in [TS24.008].

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PLMN identity	MP		PLMN identity 10.3.1.11	
LAC	MP		Bit string(16)	

10.3.1.8 NAS message

A non-access stratum message to be transferred transparently through UTRAN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
NAS message	MP		Octet string (1..4095)	

10.3.1.9 NAS system information (GSM-MAP)

This information element contains system information that belongs to the non-access stratum for a GSM-MAP type of PLMN. This information is transparent to RRC. It may contain either information specific to one CN domain (CS or PS) or information common for both CN domains.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
GSM-MAP NAS system information	MP		Octet string(1..8)	

10.3.1.10 Paging record Type identifier

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Paging Record Type Identifier	MP		Enumerated (IMSI (GSM-MAP), TMSI (GSM-MAP)/ P-TMSI, IMSI (DS-41), TMSI (DS-41))	

10.3.1.11 PLMN identity

This information element identifies a Public Land Mobile Network for a GSM-MAP type of PLMN. Setting of digits is defined in [TS 23.003]

Information Element/Group name	Need	Multi	Type and reference	Semantics description
MCC		3		
>MCC digit			INTEGER(0..9)	
MNC		2 to 3		
>MNC digit			INTEGER(0..9)	

10.3.1.12 PLMN Type

Identifies the type of Public Land Mobile Network (PLMN). This IE shall be used to control the interpretation of network dependent messages and information elements in the RRC protocol.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PLMN Type	MP		Enumerated (GSM-MAP, ANSI-41, GSM-MAP and ANSI-41)	At least 1 spare value needed Criticality: reject is needed

10.3.1.13 P-TMSI (GSM-MAP)

This IE contains an Packet Temporary Mobile Subscriber Identity, used towards a GSM-MAP type of PLMN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
P-TMSI	MP		Bit string (32)	Setting specified in [TS 23.003]

10.3.1.14 RAB identity

This information element uniquely identifies a radio access bearer within a CN domain.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *RAB identity type*	MP			
>RAB identity (GSM-MAP)			Bit string (8)	Formatted according to [TS 24.008].
>RAB identity (ANSI-41)			Bit string (8)	

CHOICE *NAS binding info type*	Condition under which the given *RAB identity type* is chosen
RAB identity (GSM-MAP)	PLMN is of type GSM-MAP
RAB identity (ANSI-41)	PLMN is of type ANSI-41

10.3.1.15 Routing Area Code

Identifies a routing area within a location area for a GSM-MAP type of PLMN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Routing Area Code	MP		Bit string(8)	Setting specified in [TS 23.003]

10.3.1.16 Routing Area Identification

Identifies uniquely a routing area for a GSM-MAP type of PLMN. Setting specified in [TS 23.003]

Information Element/Group name	Need	Multi	Type and reference	Semantics description
LAI	MP		Location area identification 10.3.1.7	
RAC	MP		Routing area code 10.3.1.15	

10.3.1.17 Service Descriptor

Identifies a service and/or a protocol entity in the core network.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Service descriptor type*	MP			
>Service Descriptor (GSM-MAP)			Bit string (4)	Protocol Discriminator [TS 24.007] The value of RR in the reference mentioned below is reserved for paging response.
>Service Descriptor (ANSI-41)			Bit string(4)	TIA/EIA IS-834

CHOICE *Service descriptor type*	Condition under which the given *Service descriptor type* is chosen
Service descriptor (GSM-MAP)	PLMN is of type GSM-MAP
Service descriptor (ANSI-41)	PLMN is of type ANSI-41

10.3.1.18 TMSI (GSM-MAP)

This IE contains an Temporary Mobile Subscriber Identity, used towards a GSM-MAP type of PLMN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TMSI (GSM-MAP)	MP		Bit string (32)	Setting specified in [TS 23.003]

10.3.2 UTRAN mobility Information elements

10.3.2.1 Cell Access Restriction

Indicates the restrictions to cell access.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell Barred	MP		Enumerated(not barred, barred)	
Access Class Barred list	MP	16		The first instance of the parameter corresponds to Access Class 0, the second to Access Class 1 and so on up to Access Class 15. UE reads this IE of its access class stored in SIM.
>Access Class Barred	MP		Enumerated(not barred, barred)	
Cell Reserved for operator use	MP		Enumerated(reserved, not reserved)	
Cell Reserved for SoLSA exclusive use	MP		Enumerated(reserved, not reserved)	

Condition	Explanation
Barred	Presence is mandatory if the IE “Cell Barred” has the value “Barred”; otherwise the element is not needed in the message.

10.3.2.2 Cell identity

This information element identifies a cell unambiguously within a PLMN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell identity	MP		bit string(28)	

T_{barred}	CV-Barred	***3GPP***	Integer (0..63)	[s] TS 25.304

10.3.2.3 Cell selection and re-selection info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Mapping Info	MP		Mapping info 10.3.2.4	Contains mapping function for quality measurements
CHOICE *mode*	MP			
>FDD				
>>Cell_selection_and_reselection_quality_measure	MP		Enumerated (CPICH Ec/N0, CPICH SIR)	Choice of measurement (CPICH Ec/N0 or CPICH SIR) to use as quality measure Q. Note 1.
>>$S_{intrasearch}$	OP		Integer (-32..20 by step of 2)	TS 25.304 [dB]
>>$S_{intersearch}$	OP		Integer (-32..20 by step of 2)	TS 25.304 [dB]
>>$S_{searchHCS}$	OP		Integer (-32..20 by step of 2)	TS 25.304 [dB]
>>RAT List	OP	1 to <MaxRAT>		
>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	At least 2 spare values Criticality: reject are needed
>>>$S_{search,RAT}$	MP		Integer (-32..20 by step of 2)	TS 25.304 [dB]
>>>$S_{HCS,RAT}$	OP		Integer (-32..20 by step of 2)	TS 25.304 [dB]
>TDD				
>>$S_{intrasearch}$	OP		Integer (-120..90 by step of 5)	TS 25.304 [dBm]

>>$S_{intersearch}$	OP		Integer (-120..90 by step of 5)	TS 25.304 [dBm]
>>$S_{searchHCS}$	OP		Integer (-120..90 by step of 5)	TS 25.304 [dBm]
>>RAT List	OP	1 to <MaxRAT>		
>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	At least 2 spare values Criticality: reject are needed
>>>$S_{search,RAT}$	OP		Integer (-120..90 by step of 5)	TS 25.304 [dBm]
>>>$S_{HCS,RAT}$	OP		Integer (-120..90 by step of 5)	TS 25.304 [dBm]
$Qhyst_s$	MP		Real (0..40 by step of 2)	[dB]
$Treselection_s$	MP		Integer (0..31)	[s]
HCS Serving cell Information	OP		HCS Serving cell information 10.3.7.12	
Cell Selection and Reselection parameters	OP			Used in Alternative 2 in TS 25.304
>Decoding range	OP			Decoding is done only when the cell measurement exceeds the neighbour cell decoding range.
>$Qoffset_s$	OP			Offset for Ues decoding this cell for cell reselection measurement
>OffsetExp	CV – if Qoffset			Expiration timer for Ues decoding the $Qoffset_s$

NOTE 1: The work in order to support the CPICH SIR measurement is in progress in RAN WG4 and may impact the use of that measurement in this document

Multi bound	**Explanation**
MaxRAT	Maximum number of Radio Access Technologies that have to be considered. Maximum number is 4

10.3.2.4 Mapping Info

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Mapping List	MP	1 to <MaxRAT>		
>RAT	MP		Enumerated (UTRA FDD, UTRA TDD, GSM, cdma2000)	
>Mapping Function Parameter List	MP	1 to <MaxIntervals>		Note 1
>> Function type	MP		Enumerated (linear, function type 2, function type 3, function type 4)	Type of the function within the interval. Note 1
>>Map_parameter_1	MP		Enumerated (0..15)	Parameter describing the mapping function between the quality measurement and the representing quality value, see TS 25.304. Depending on function type and RAT, suitable values can be addressed via this parameter.
>>Map_parameter_2	MP		Enumerated (0..15)	Parameter describing the mapping function between the quality measurement and the representing quality value, see TS 25.304. Depending on function type and RAT, suitable values can be addressed via this parameter.
>>Upper_limit	CV - MaxInt		Enumerated (0..15)	Upper limit of interval for which the map_parameter_1 and map_parameter_2 are valid. Depending on function type and RAT, suitable values can be addressed via this parameter.

Multi Bound	Explanation
MaxRAT	Maximum number of Radio Access Technologies / Modes (UTRA FDD, UTRA TDD, GSM) that have to be considered in the neighbour cell measurements. Maximum number is 4.
MaxIntervals	Maximum number of intervals that define the mapping function between the measurement for the cell quality value Q of a cell and the representing quality value. Maximum number is 1. Note 1

Condition	Explanation
MaxInt	This information is only sent if Mapping Function Parameter List has not reached MaxIntervals.

Note 1: More work may be needed for the elaboration of the mapping function parameters. Thus, MaxIntervals can be extended if needed and function types other than linear can be included.

10.3.2.5 URA identity

Gives the identity of the UTRAN Registration Area. It can be used to indicate to the UE which URA it shall use in case of overlapping URAs.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
URA identity	MP		bit string(16)	

10.3.3 UE Information elements

10.3.3.1 Activation time

Activation Time defines the CFN (Connection Frame Number) in which the operation/changes caused by the related message should be executed.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Activation time	MP		Integer(0..255)	CFN [TS 25.402]

10.3.3.2 Capability Update Requirement

This IE indicates to the UE which specific capabilities to transfer to the network.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE radio access capability update requirement	MP		Boolean	TRUE indicates update required
System specific capability update requirement list	OP	1 to <MaxNoSystemCapability>		
>System specific capability update requirement	MP		Enumerated (GSM)	At least 15 spare values Criticality: reject are needed

Multi Bound	Explanation
MaxNoSystemCapability	Maximum number of system specific capabilities that can be requested in one message.

Default value is

"UE radio capability update requirement" = false

"System specific capability update requirement" not present

10.3.3.3 Cell update cause

Indicates the cause for s cell update.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell update cause	MP		Enumerated (cell reselection, periodic cell update, UL data transmission , paging response, RB control response)	At least 3 spare values, Criticality: reject, are needed

10.3.3.4 Ciphering Algorithm

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Ciphering algorithm	MP		Enumerated (Standard UMTS Encryption Algorithm UEA1)	At least 15 spare values needed. Criticality: Criticality reject is needed.

10.3.3.5 Ciphering mode info

This information element contains the ciphering specific security mode control information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Ciphering mode command	MP		Enumerated (start/restart, stop)	
Ciphering algorithm	CV-*notStop*		Ciphering algorithm 10.3.3.4	
Activation time for DPCH	OP		Activation time 10.3.3.1	Used for radio bearers mapped on RLC-TM
Radio bearer downlink ciphering activation time info	OP		RB activation time info, 10.3.4.10	Used for radio bearers mapped on RLC-AM or RLC-UM

Condition	Explanation
notStop	The IE is mandatory if the IE "Ciphering mode command" has the value "start/restart", otherwise the IE is not needed in the message.

10.3.3.6 CPCH Parameters

NOTE : Only for FDD

These parameters are used by any UE using any CPCH set allocated to the Node B that is broadcasting this system information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Initial Priority Delay	OP	8		Initial delays for ASC priority.
>NS_IP	MP		Integer (0…28)	Number of slots for initial fixed delay for each ASC priority level
Backoff control parameters	MP			
>N_ap_retrans_max	MP		Integer (1…64)	Max number of AP transmissions without AP-AICH response, a PHY parameter.
>N_access_fails	MP		Integer (1…64)	Max number of preamble ramping cycles when NAK response received, a MAC parameter.
>NF_bo_no aich	MP		Integer (0…31)	Number of frames for UE backoff after N ap_retrans_max unsuccessful AP access attempts, a MAC parameter.
>NS_bo_busy	MP		Integer (0…63)	Number of slots for UE fixed backoff after access attempt to busy CPCH, a MAC parameter.
>NF_bo_all_busy	MP		Integer (0…31)	Max number of frames for UE backoff after access attempt to last busy CPCH, a MAC parameter. UE randomly selects backoff value from range (0..NF_bo_all_busy)
>NF_bo_mismatch	MP		Integer (0…127)	Max number of frames for the UE backoff after received mismatch on CD/CA-ICH, a MAC parameter. UE randomly selects backoff value from range (0..NF_bo_mismatch)
>T_CPCH	MP		Enumerated (0, 1)	CPCH channel timing used to determine Tau , a PHY parameter

10.3.3.7 C-RNTI

The cell RNTI (C-RNTI) identifies an UE having a RRC connection within a cell.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
C-RNTI	MP		bit string(16)	

10.3.3.8 DRAC system information

Information element	Need	Multi	Type and reference	Semantics description
DRAC system information	MP	1 .. <maxDRACclasses>		DRAC information is sent for each class of terminal
>Transmission probability	MP		Transmission probability 10.3.3.38	
>Maximum bit rate	MP		Maximum bit rate 10.3.3.21	

Multi bound	Explanation
MaxDRACclasses	Maximum number of UE classes which would require different DRAC parameters

10.3.3.9 DRX cycle length coefficient

A coefficient in the formula to count the paging occasions to be used by a specific UE (specified in 25.304) .

Information Element/Group name	Need	Multi	Type and reference	Semantics description
DRX cycle length coefficient	MP		Integer(2...12)	Refers to 'k' in the formula as specified in 25.304, Discontinuous reception

10.3.3.10 DRX Indicator

Indicates to a UE if DRX shall be used with Cell updating or URA updating or if no DRX at all shall be used.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
DRX indicator	MP		Enumerated(no DRX, DRX with cell updating, DRX with URA updating)	At least 1 spare value, Criticality: reject, are needed

10.3.3.11 Establishment cause

Cause for an RRC connection establishment request.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Establishment cause	MP		Enumerated(Originating Speech Call, Originating CS Data Call, Originating PS Data Call, Terminating Speech Call, Terminating CS Data Call, Terminating PS Data Call, Emergency Call, Inter-system cell re-selection, Location Update (LAU & RAU), IMSI Detach, SMS, Call re-establishment, unspecified)	At least 3 spare values, Criticality: reject, are needed

NOTE: These causes shall be aligned with causes received from higher layers.

10.3.3.12 Failure cause and error information

Cause for failure to perform the requested procedure.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Failure cause	MP		Enumerated (Configuration unacceptable, physical channel failure, incompatible simultaneous reconfiguration, protocol error)	At least 3 spare values, Criticality: reject, are needed
Protocol error information	CV-*ProtErr*		Protocol error information 10.3.8.9	

Condition	Explanation
ProtErr	Presence is mandatory if the IE "Failure cause" has the value "Protocol error"; otherwise the element is not needed in the message.

10.3.3.13 Hyper Frame Number

The hyper frame number (HFN) is used to initialise both the COUNT for ciphering algorithm and the COUNT-I integrity protection algorithm.

For ciphering, HFN forms the most significant bits of COUNT. When the COUNT is initialised: COUNT = HFN (the LSB part of COUNT is set to zero).

For integrity protection, the HFN forms the most significant bits of COUNT-I. When the COUNT-I is initialised: COUNT-I = HFN (the LSB part of COUNT-I is set to zero).

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
HFN	MP		Bit string (20)	Start value for uplink and downlink COUNT and COUNT-I. For RBs using RLC transparent mode or RLC unacknowledged mode, zeros shall be added to form a HFN of 25 bits For integrity protection function, zeros shall be added to form a HFN of 28 bits.

10.3.3.14 Initial UE capability

This is the UE capability information given in the RRC connection request message.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Maximum number of AM entities	MP		Enumerated (2 to 3, 4 to 8, 16 to 32)	At least 1 spare values, Criticality: reject, are needed

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			At least 8 spare choices, Criticality: reject, is needed
>IMSI (GSM-MAP)			IMSI (GSM-MAP) 10.3.1.6	
>TMSI and LAI (GSM-MAP)				
>>TMSI (GSM-MAP)	MP		TMSI (GSM-MAP) 10.3.1.18	
>>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) 10.1.3.13	
>>RAI (GSM-MAP)	MP		Routing Area Identification 10.3.1.16	
>IMEI			IMEI 10.3.1.5	
>ESN (DS-41)			TIA/EIA/IS-2000-4	
>IMSI (DS-41)			TIA/EIA/IS-2000-4	
>IMSI and ESN (DS-41)			TIA/EIA/IS-2000-4	
>TMSI (DS-41)			TIA/EIA/IS-2000-4	

10.3.3.16 Integrity check info

The Integrity check info contains the RRC message sequence number needed in the calculation of XMAC-I [TS 33.102] and the calculated MAC-I.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message authentication code	MP		bit string(32)	MAC-I [TS 33.102]
RRC Message sequence number	MP		Integer (0..15)	The local hyper frame number (HFN) is concatenated with the RRC message sequence number to form the input parameter COUNT-I for the integrity protection algorithm.

10.3.3.17 Integrity protection activation info

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RRC message sequence number list	MP	2 to 3		The RRC sequence number when a new integrity protection configuration shall be applied, for signalling radio bearers in the order RB0, RB2, RB3.
>RRC message sequence number	MP		Integer (0..15)	

10.3.3.18 Integrity protection Algorithm

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Integrity protection algorithm	MP		Enumerated(Standard UMTS Integrity Algorithm UIA1)	At least 15 spare values needed. Criticality: Criticality reject is needed.

10.3.3.19 Integrity protection mode info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Integrity protection mode command	MP		Enumerated(start, modify)	At least 2 spare values, Criticality: reject, are needed
Downlink integrity protection activation info	CV-*modify*		Integrity protection activation info 10.3.3.17	
Integrity protection algorithm	OP		Integrity protection algorithm 10.3.3.18	
Integrity protection initialisation number	CV-*start*		Bitstring(32)	FRESH [TS 33.102]

Condition	Explanation
Start	The IE is mandatory if the IE "Integrity protection mode command" has the value "start ", otherwise it is not needed in the message.
Modify	The IE is only present if the IE “Integrity protection mode command" has the value "modify”

10.3.3.20 LCS capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Standalone location method(s) supported	MP		Boolean	Defines if a UE can measure its location by some means unrelated to UTRAN TRUE means supported
UE based OTDOA supported	MP		Boolean	TRUE means supported
Network Assisted GPS support	MP		Enumerated ('Network based', 'UE based', 'Both', 'None')	Defines if the UE supports network based or UE based GPS methods.
GPS reference time capable	MP		Boolean	Defines if a UE has the capability to measure GPS reference time as defined in 25.215. TRUE means capable
Support for IPDL	MP		Boolean	Defines if a UE has the capability to use IPDL to enhance its 'SFN-SFN observed time difference –type 2' measurement. TRUE means supported

10.3.3.21 Maximum bit rate

NOTE : Only for FDD

Indicates the maximum user bit rate allowed on a DCH controlled by DRAC procedure for the transmission period (Transmission time validity).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Maximum bit rate	MP		integer(0..512 by step of 16)	=kbit/s

10.3.3.22 Measurement capability

For all IEs of type Boolean TRUE means capable

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Need for downlink compressed mode	MP			
>FDD measurements DL	MP		Boolean	
>TDD measurements DL	CV *tdd_sup*		Boolean	
> GSM measurements DL	CV *gsm_sup*		Boolean	
>> GSM 900 DL	MP		Boolean	
>> DCS 1800 DL	MP		Boolean	
>> GSM 1900 DL	MP		Boolean	
> Multi-carrier measurement DL	CV *mc_sup*		Boolean	
Need for uplink compressed mode	MP			
>FDD measurements UL	MP		Boolean	
>TDD measurements UL	CV *tdd_sup*		Boolean	
> GSM measurements UL	CV *gsm_sup*		Boolean	
>> GSM 900 UL	MP		Boolean	
>> DCS 1800 UL	MP		Boolean	
>> GSM 1900 UL	MP		Boolean	
> Multi-carrier measurement UL	CV *mc_sup*		Boolean	

Condition	Explanation
tdd_sup	Presence is mandatory if IE Multi-mode capability = TDD. Otherwise this field is not needed in the message.
gsm_sup	Presence is mandatory if IE Multi-RAT capability = GSM. Otherwise this field is not needed in the message.
mc_sup	Presence is mandatory if IE Multi-RAT capability = multi-carrier. Otherwise this field is not needed in the message.

10.3.3.23 Number of RRC Message Transmissions

This IE indicates how many times the receiver of a message containing this IE shall transmit the RRC response message.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Number of RRC Message Transmissions	MP		Integer(1..8)	

10.3.3.24 Paging cause

Cause for a CN originated page.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Paging cause	MP		Enumerated(Terminating Speech Call, Terminating CS Data Call, Terminating PS Data Call, SMS, Unspecified)	At least 3 spare values, Criticality: reject, are needed

NOTE: These causes shall be aligned with causes received from higher layers.

10.3.3.25 Paging record

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Paging originator	MP			
> CN originator				
>> Paging cause	MP		Paging cause 10.3.3.24	
>> CN domain identity	MP		CN domain identity 10.3.1.1	
>>CHOICE UE Identity	MP			At least 3 spare choice, Criticality: reject, are needed
>>>IMSI (GSM-MAP)			IMSI (GSM-MAP) 10.3.1.6	
>>>TMSI (GSM-MAP)			TMSI (GSM-MAP) 10.3.1.18	
>>>P-TMSI (GSM-MAP)			P-TMSI (GSM-MAP) 10.3.1.13	
>>>IMSI (DS-41)			TIA/EIA/IS-2000-4	
>>>TMSI (DS-41)			TIA/EIA/IS-2000-4	
> UTRAN originator				
>>U-RNTI	MP		U-RNTI 10.3.3.45	

Condition	Explanation
CHOICE *Paging originator*	**Condition under which the given *paging originator* is chosen**
CN Originating	For CN originating pages (idle mode)
UTRAN Originating	For UTRAN originating pages (connected mode)

10.3.3.26 PDCP capability

Indicates which algorithms and which value range of their parameters are supported by the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Support for lossless SRNS relocation	MP		Boolean	TRUE means supported
Supported algorithm types	OP	1 to <maxAlgoTypeCount>		Indicates whether header compression algorithms are supported by the UE or not.
>CHOICE *algorithm type*				This IE shall be defined as extendable (at least 3 spare choices)
>>RFC2507				
>>>Maximum MAX_HEADER	MD		Integer (60..65535)	The largest header size in octets that may be compressed by the UE. Default value is 65535.
>>>Maximum TCP_SPACE	MD		Integer (3..255)	Maximum stored number of headers for TCP connections. Default value is 255.
>>>Maximum NON_TCP_SPACE	MD		Integer (3..65535)	Maximum stored number of headers for non-TCP connections. Default value is 65535.

Multi Bound	Explanation
MaxAlgoTypeCount	Maximum number of algorithm types specified in TS 25.323.

10.3.3.27 Physical channel capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Downlink physical channel capability information elements				
CHOICE *mode*	MP			
>FDD				
>>Maximum number of simultaneous CCTrCH	MP		Integer (1..8)	
>> 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		Enumerated (300, 600, 1200, 2400, 4800, 9600, 19200, 28800, 38400, 48000, 57600, 67200)	Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH) At least 4 spare values needed
>>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
>>Max no of S-CCPCH RL	CV-if_sim_rec		Enumerated(1)	Maximum number of simultaneous S-CCPCH radio links At least 7 spare values needed.
>TDD				
>>Maximum number of simultaneous CCTrCH	MP		Integer (1..8)	
>>Maximum number of timeslots per frame	MP		Integer (1..14)	At least 2 spare values needed.
>>Maximum number of physical channels per frame	MP		Integer (1..224)	At least 32 spare values needed
>>Minimum SF	MP		Enumerated (1, 16)	
>>Support of PDSCH	MP		Boolean	TRUE means supported
Uplink physical channel capability information elements				
CHOICE *mode*	MP			
>FDD				
>>Maximum number of DPDCH bits transmitted per 10 ms	MP		Enumerated (150, 300, 600, 1200, 2400, 4800. 9600, 19200. 28800, 38400, 48000, 57600)	At least 4 spare values needed
>>Support of PCPCH	MP		Boolean	TRUE means supported
>TDD				
>>Maximum number of simultaneous CCTrCH	MP		Integer (1..8)	
>>Maximum Number of timeslots per frame	MP		Integer (1..14)	At least 2 spare values needed
>>Maximum number of physical channels per timeslot	MP		Enumerated (1, 2)	
>>Minimum SF	MP		Enumerated (1, 2, 4, 8, 16)	At least 3 spare values needed
>>Support of PUSCH	MP		Boolean	TRUE means supported

Condition	Explanation
if_sim_rec	Presence is mandatory if IE capability Simultaneous reception of SCCPCH and DPCH = True. Otherwise this field is not needed in the message.

10.3.3.28 Protocol error cause

This IE indicates the cause for a message or information which was not comprehended.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Protocol error cause	MP		Enumerated (Transfer syntax error, Message type non-existent or not implemented, Message not compatible with receiver state, Information element value not comprehended, Message extension not comprehended)	At least 3 spare values are needed.

10.3.3.29 Protocol error indicator

This IE indicates whether a message was transmitted due to a protcol error or not.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Protocol error indicator	MP		Boolean	TRUE means a protocol error occurred. FALSE means a protocol error did not occur.

10.3.3.30 Redirection info

This IE is used to redirect the UE to another frequency or other system.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Redirection Information	MP			At least one spare choice, Criticality: reject, is needed.
>Frequency info			Frequency info 10.3.6.24	
>Inter-system info			Inter-system info 10.3.7.25	

10.3.3.31 Re-establishment timer

This information element indicates timers T314 and T315.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T314	MP		Enumerated(0, 10, 20, 30,60, 180, 600, 1200, 1800)	Maximum RRC Connection re-establishmet time for radio bearers using Tr and UM RLC. Value in seconds
T315	MP		Enumerated (0,10, 30, 60, 180, 600, 1200, 1800)	Maximum RRC Connection re-establishment time for radio bearers using AM RLC. Value in seconds

10.3.3.32 Rejection cause

Cause for rejection of RRC connection establishment request.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Rejection cause	MP		Enumerated(congestion, unspecified)	At least 2 spare values, Criticality: reject, are needed

10.3.3.33 Release cause

Cause for release of RRC connection.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Release cause	MP		Enumerated (normal event, unspecified, pre-emptive release, congestion, re-establishment reject)	At least 3 spare values, Criticality: reject, are needed

10.3.3.34 RF capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>UE power class	MP		Enumerated(1..4)	as defined in 25.101 section 6.2.1
>>Tx/Rx frequency separation	MP		Enumerated(190, 174.8-205.2, 134.8-245.2)	In MHz as defined in 25.101 section 5.3. Note: Not applicable if UE is not operating in frequency band a (as defined in 25.101) At least 1 spare value needed
>TDD				
>>UE power class	MP		Enumerated (1..4)	as defined in 25.102 section 6.2.1
>>Radio frequency bands	MP	1 to <MaxFrequencybands Count>	Enumerated(a, b, c)	as defined in 25.102 section 5.2 At least 1 spare value needed
>>Chip rate capability	MP		Enumerated(3.84Mcps,1.28Mcps)	as defined in 25.102

Multi Bound	Explanation
MaxFrequencybandsCount	Maximum number of frequency bands supported by the UE as defined in 25.102

10.3.3.35 RLC capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Total RLC AM buffer size	MP		Enumerated (2,10,50,100 ,150,500,100 0)	Total receiving and transmitting RLC AM buffer capability in kBytes At least 1 spare value needed
Maximum number of AM entities	MP		Enumerated (2,3,4,8,16,3 2)	At least 2 spare values needed

10.3.3.36 RLC re-configuration indicator

This IE is used to re-configure AM RLC on c-plane and u-plane.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RLC re-configuration indicator	MP		Boolean	TRUE means reconfiguration required

10.3.3.37 Security capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Ciphering algorithm capability	MP		Ciphering algorithm 10.3.3.4	
Integrity protection algorithm capability	MP		Integrity protection algorithm 10.3.3.18	

10.3.3.38 Transmission probability

NOTE : Only for FDD

Indicates the probability for a mobile to be allowed to transmit on a DCH controlled by DRAC procedure.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transmission probability	MP		Real(0.125.. 1.0 by step of 0.125)	probablity

10.3.3.39 Transport channel capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Downlink transport channel capability information elements				
Max no of bits received	MP		Enumerated(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all transport blocks received in TTIs that end within the same arbitrary interval of length T<10 ms At least 3 spare values are needed.
Max convolutionally coded bits received	MP		Enumerated(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all convolutionally coded transport blocks received in TTIs that end within the same arbitrary interval of length T<10 ms At least 3 spare values are needed
Max turbo coded bits received	CV *turbo_dec_sup*		Enumerated(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all turbo coded transport blocks received in TTIs that end within the same arbitrary interval of length T<10 ms At least 3 spare values are needed
Maximum number of simultaneous transport channels	MP		Enumerated(4, 8, 16, 32)	
Max no of received transport blocks	MP		Enumerated(4, 8, 16, 32, 48, 64, 96, 128, 256, 512)	Maximum total number of transport blocks received within TTIs that end at within the same 10ms interval At least 6 spare values needed
Maximum number of TFC in the TFCS	MP		Enumerated(16, 32, 48, 64, 96, 128, 256, 512, 1024)	At least 7 spare values needed
Maximum number of TF	MP		Enumerated(32, 64, 128, 256, 512, 1024)	At least 2 spare values needed
Support for turbo decoding	MP		Boolean	TRUE means supported
Uplink transport channel capability information elements				
Max no of bits transmitted	MP		Enumerated(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all transport blocks transmitted in TTIs that start at the same time At least 3 spare values needed
Max convolutionally coded bits received	MP		Enumerated(640, 1280,	Maximum sum of number of bits of all convolutionally

			2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	coded transport blocks transmitted in TTIs that start at the same time At least 3 spare values needed
Max turbo coded bits received	CV *turbo_enc_sup*		Enumerated(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all turbo coded transport blocks transmitted in TTIs that start at the same time At least 3 spare values needed
Maximum number of simultaneous transport channels	MP		Enumerated(2, 4, 8, 16, 32)	At least 3 spare values needed
Max no of transmitted transport blocks	MP		Enumerated(2, 4, 8, 16, 32, 48, 64, 96, 128, 256, 512)	Maximum total number of transport blocks transmitted within TTIs that start at the same time At least 5 spare values needed
Maximum number of TFC in the TFCS	MP		Enumerated(4, 8, 16, 32, 48, 64, 96, 128, 256, 512, 1024)	At least 5 spare values needed
Maximum number of TF	MP		Enumerated(32, 64, 128, 256, 512, 1024)	At least 2 spare values needed
Support for turbo encoding	MP		Boolean	TRUE means supported

Condition	Explanation
turbo_dec_sup	Presence is mandatory if IE Support of turbo decoding = True. Otherwise this field is not needed in the message.
turbo_enc_sup	Presence is mandatory if IE Support of turbo encoding = True. Otherwise this field is not needed in the message.

10.3.3.40 UE multi-mode/multi-RAT capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Multi-RAT capability	OP	1 to <maxRAT Count>	Enumerated (GSM, multi-carrier)	At least 2 spare values needed
Multi-mode capability	MP		Enumerated (TDD, FDD, FDD/TDD)	

Multi Bound	Explanation
MaxRATCount	Maximum number of Radio Access Technologies supported by the UE

10.3.3.41 UE radio access capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Conformance test compliance	MP		Enumerated(R99)	Indicates the release of TS 34.108 the UE has declared compliance to. At least 7 spare values needed
PDCP capability	MP		PDCP capability 10.3.3.26	
RLC capability	MP		RLC capability 10.3.3.35	
Transport channel capability	MP		Transport channel capability 10.3.3.39	
RF capability	MP		RF capability 10.3.3.34	
Physical channel capability	MP		Physical channel capability 10.3.3.27	
UE multi-mode/multi-RAT capability	MP		UE multi-mode/multi-RAT capability 10.3.3.40	
Security capability	MP		Security capability 10.3.3.37	
LCS capability	MP		LCS capability 10.3.3.20	
CHOICE *mode*	MP			
>FDD				
>>Measurement capability	MP		Measurement capability 10.3.3.22	
>TDD				(no data)

10.3.3.42 UE Timers and Constants in connected mode

This information element indicates timers and constants used by the UE in connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T301	MP		Integer(1... 8)	Value in seconds
T302	MP		Integer(1... 8)	Value in seconds
N302	MP		Integer(1.. 8)	
T303	MP		Integer(1... 8)	Value in seconds
N303	MP		Integer(1.. 8)	
T304	MP		Integer(100, 200, 400, 1000, 2000)	Value in milliseconds At least 3 spare values are needed Criticality: reject is needed
N304	MP		Integer(1.. 8)	
T305	MP		Enumerated(no update, 5, 10, 30, 60, 120, 360, 720)	Value in minutes
T306	MP		Enumerated(no update, 5, 10, 30, 60, 120, 360, 720)	Value in minutes
T307	MP		Integer(5, 10, 15, 20, 30, 40, 50)	Value in seconds At least 1 spare value needed Criticality: reject is needed
T308	MP		Integer(40, 80, 160, 320)	Value in milliseconds
T309	MP		Integer(1… 8)	Value in seconds
T310	MP		Integer(40 .. 320 by step of 40)	Value in milliseconds
N310	MP		Integer(1 .. 8)	
T311	MP		Integer(250 .. 2000 by step of 250)	Value in milliseconds
T312	MP		Integer (0..15)	Value in seconds
N312	MP		Enumerated (1, 50, 100, 200, 400, 600, 800, 1000)	
T313	MP		Integer (0..15)	Value in seconds
N313	MP		Enumerated (1, 50, 100, 200, 400, 600, 800, 1000)	
T314	MP		Enumerated(0, 10, 20, 30, 60, 180, 600, 1200, 1800)	Value in seconds
T315	MP		Enumerated (0,10, 30, 60, 180, 600, 1200,	Value in seconds

			1800)	
N315	MP		Enumerated (1, 50, 100, 200, 400, 600, 800, 1000)	

10.3.3.43 UE Timers and Constants in idle mode

This information element indicates timers andconstants used by the UE in idle mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T300	MP		Integer(1... 8)	Value in seconds
N300	MP		Integer(1.. 8)	
T312	MP		Integer(0 .. 15)	Value in seconds
N312	MP		Enumerated (1, 50, 100, 200, 400, 600, 800, 1000)	

10.3.3.44 URA update cause

Indicates the cause for s URA update..

Information Element/Group name	Need	Multi	Type and reference	Semantics description
URA update cause	MP		Enumerated(change of URA, periodic URA update, re-entered service area)	At least 5 spare values Criticality: reject, are needed

10.3.3.45 U-RNTI

The U-RNTI (UTRAN Radio Network Temporary Identity) is allocated to an UE having a RRC connection and identifies the UE within UTRAN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SRNC identity	MP		bit string(12)	
S-RNTI	MP		bit string(20)	

10.3.3.46 U-RNTI Short

The U-RNTI (UTRAN Radio Network Temporary Identity) is allocated to an UE having a RRC connection and identifies the UE within UTRAN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SRNC identity	MP		bit string(12)	
S-RNTI 2	MP		Integer(0..1023)	

10.3.3.47 Wait time

Wait time defines the time period the UE has to wait before repeating the rejected procedure.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Wait time	MP		Integer(0..15)	Wait time in seconds The value 0 indicates that repetition is not allowed.

10.3.4 Radio Bearer Information elements

10.3.4.1 Downlink RLC STATUS info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timer_Status_Prohibit	OP		Integer(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	Minimum time in ms between STATUS reports At least 16 spare values with criticality reject is needed
Timer_EPC	OP		Integer(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	Time in ms At least 16 spare values with criticality reject is needed
Missing PU Indicator	MP		Boolean	Value true indicates that UE should send a STATUS report for each missing PU that is detected
Timer_STATUS_periodic	OP		Integer(100, 200, 300, 400, 500, 750, 1000, 2000)	Time in milliseconds

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-*LosslessCriteria*		Boolean	TRUE means support
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 <AlgorithmCount>		
>CHOICE *algorithm type*	MP			7 spare values needed, criticality: reject
>>RFC2507				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	OP		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 expected".

Condition	Explanation
LosslessCriteria	This IE is present only if the IE "RLC mode" is "Acknowledged" and the IE "In-sequence delivery " is "True".

Multi Bound	Explanation
AlgorithmCount	The number of algorithm types configured for PDCP entity.

10.3.4.3 PDCP SN info

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Receive PDCP sequence number	MP		Integer(0..65535)	The PDCP sequence number which the sender of the message is expecting next to be received.

10.3.4.4 Polling info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timer_poll_prohibit	OP		Integer(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	Minimum time between polls in ms 16 spare values needed, criticality: reject
Timer_poll	OP		Integer(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	Time in ms. 16 spare values needed, criticality: reject
Poll_PU	OP		Integer(1,2,4,8,16,32,64,128)	Number of PUs , interval between pollings 8 spare values needed, criticality: reject
Poll_SDU	OP		Integer(1,4,16,64)	Number of SDUs , interval between pollings 4 spare values needed, criticality: reject
Last transmission PU poll	MP		Boolean	TRUE indicates that poll is made at last PU in transmission buffer
Last retransmission PU poll	MP		Boolean	TRUE indicates that poll is made at last PU in retransmission buffer
Poll_Window	OP		Integer(50,60,70,80,85,90,95,100)	Percentage of transmission window, threshold for polling 8 spare values needed, criticality: reject
Timer_poll_periodic	OP		Integer100,200, 300, 400, 500, 750, 1000, 2000)	Time in milliseconds Timer for periodic polling. 8 spare values needed, criticality: reject

10.3.4.5 Predefined configuration identity

This information element identifies a pre- defined radio parameter configuration.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Predefined radio configuration identity	MP		Enumerated (0..15)	

10.3.4.6 Predefined configuration value tag

This information element is used to identify different versions of a radio bearer configuration as may be used within one PLMN e.g. to support different UTRAN implementations.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Predefined configuration value tag	MP		Integer(0..15)	

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	MP	1 to <maxSRBcount>		For each signalling radio bearer
>RB identity	MP		RB identity 10.3.4.11	
>CHOICE RLC info type	MP			At least one spare value is needed for future extensions with criticality reject
>>RLC info	MP		RLC info 10.3.4.18	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive
>RB mapping info	MP		RB mapping info 10.3.4.16	
RB information				Only one RAB supported
>RB information list	OP	1 to <MaxRBcount>		For each RB belonging to the RAB
>>RB identity	MP		RB identity 10.3.4.11	
>>PDCP info	OP		PDCP info 10.3.4.2	
>>RLC info	MP		RLC info 10.3.4.18	
>>RB mapping info	MP		RB mapping info 10.3.4.16	

Multi Bound	Explanation
MaxSRBcount	Maximum number of signalling RBs that could be setup with this message
MaxRBcount	Maximum number of RBs

10.3.4.8 RAB info

This IE contains information used to uniquely identify a radio access bearer.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RAB identity	MP		RAB identity 10.3.1.14	
CN domain identity	MP		CN domain identity 10.3.1.1	

10.3.4.9 RAB information for setup

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RAB info	MP		RAB info 10.3.4.8	
RB information to setup list	MP	1 to <MaxSetupRBcount>		
>RB information to setup	MP		RB information to setup 10.3.4.15	

Multi Bound	Explanation
MaxSetupRBcount	The maximum number of RBs to setup.

10.3.4.10 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	OP	1 to <maxReconRBs>		
>RB identity	MP		RB identity 10.3.4.11	
>RLC sequence number	MP		Integer (0..4095)	RLC SN [TS 25.322]

Multi Bound	Explanation
MaxReconRBs	For each radio bearer that is reconfigured

10.3.4.11 RB identity

An identification number for the radio bearer affected by a certain message.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		Integer(0..31)	Values 0-3 shall only be used for signalling radio bearers

10.3.4.12 RB information to be affected

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.11	
RB mapping info	MP		RB mapping info 10.3.4.16	

10.3.4.13 RB information to reconfigure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.11	
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 10.3.4.18	
RB mapping info	OP		RB mapping info 10.3.4.16	
RB suspend/resume	OP		Enumerated(suspend, resume)	

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

10.3.4.14 RB information to release

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.11	

10.3.4.15 RB information to setup

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.11	
PDCP info	OP		PDCP info 10.3.4.2	
RLC info	MP		RLC info 10.3.4.18	
RB mapping info	MP		RB mapping info 10.3.4.16	

Multi Bound	Explanation
MaxSetupRBcount	The maximum number of RBs to setup.

10.3.4.16 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 <maxMuxOptionsCount>		
>Number of RLC logical channels	CV-*UL-RLC info*	1 to 2		1 or 2 logical channels per RLC entity or radio bearer RLC [TS 25.322]
>>Uplink transport channel type	MP		Enumerated(DCH,RACH, CPCH,USCH)	CPCH is FDD only USCH is TDD only
>>Transport channel identity	OP		Transport channel identity 10.3.5.16	This is the ID of a transport channel that this RB could be mapped onto.
>>Logical channel identity	OP		Integer(1..16)	This parameter is used to distinguish logical channels multiplexed by MAC on a transport channel.
>>MAC logical channel priority	OP		Integer(1..8)	This is priority between a user's different RBs (or logical channels). The different priorities for this user's RBs are mapped (through the MAC's C/T MUX) to the TFC selection algorithm. Priority 1 shall have the highest priority and priority 8 the lowest.
>Number of RLC logical channels	CV-*DL-RLC info*	1 to 2		1 or 2 logical channels per RLC entity or radio bearer RLC [TS 25.322]
>>Downlink transport channel type	MP		Enumerated(DCH,FACH, DSCH)	
>>Transport channel identity	OP		Transport channel identity 10.3.5.16	
>>Logical channel identity	OP		Enumerated(1..16)	

Multi Bound	Explanation
MaxMuxOptionsCount	Maximum number of allowed multiplexing options that can be sent is 8

Condition	Explanation
UL-RLC info	If "CHOICE Uplink RLC mode" in IE "RLC info" is present this IE is MP. Otherwise the IE is not needed.
DL-RLC info	If "CHOICE Downlink RLC mode" in IE "RLC info" is present this IE is MP. Otherwise the IE is not needed.

10.3.4.17 RB with PDCP information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.11	
PDCP SN info	MP		PDCP SN info 10.3.4.3	PDCP sequence number info from the UE for lossless SRNS relocation.

10.3.4.18 RLC info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Uplink RLC mode*	OP			Indicates if Acknowledged, Unacknowledged or Transparent mode RLC shall be used. One spare value needed, criticality: reject.
>AM RLC				
>>Transmission RLC discard	OP		Transmission RLC discard 10.3.4.20	
>>Transmission window size	MP		Integer(1,8,16,32,128,256,512,768,1024,1536,2048,2560,3072,3584,4096)	Maximum number of RLC PUs sent without getting them acknowledged. This parameter is needed if acknowledged mode is used. One spare value needed, criticality: reject
>>Timer_RST	MP		Enumerated(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	It is used to detect the loss of RESET ACK PDU. 16 spare values needed, criticality: reject
>>Max_RST	MP		Enumerated(1, 4, 6, 8, 12 16, 24, 32)	The maximum number of retransmission of RESET PDU. 8 spare values needed, criticality: reject
>> Polling info	OP		Polling info 10.3.4.4	
>UM RLC				
>> Transmission RLC discard	OP		Transmission RLC discard10.3.4.20	
>TM RLC				(no specific data)
CHOICE *Downlink RLC mode*	OP			Indicates if Acknowledged, Unacknowledged or Transparent mode RLC shall be used. One spare value needed, criticality: reject.
>AM RLC				
>>In-sequence delivery	MP		Boolean	TRUE indicates that RLC shall preserve the order of higher layer PDUs when these are delivered.
>>Receiving window size	MP		Integer(1,8,16,32,128,256,512,768,1024,1536,2048,2560,3072,3584,4096)	Maximum number of RLC PUs allowed to be received. This parameter is needed if acknowledged mode is used. At least one spare value with criticality reject needed
>>Downlink RLC status Info	OP			
>UM RLC				
>>In-sequence delivery	MP		Boolean	TRUE indicates that RLC shall preserve the order of higher layer PDUs when these are delivered.
>TM RLC				
>>In-sequence delivery	MP		Boolean	TRUE ndicates that RLC shall preserve the order of higher layer PDUs when these are delivered.

10.3.4.19 Signalling RB information to setup

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MD		RB identity 10.3.4.11	Default value is the smallest value not yet used as default in the message (e.g., 0, then 1, and so on)
CHOICE *RLC info type*	MP			
>RLC info			RLC info 10.3.4.18	
RB mapping info	MP		RB mapping info 10.3.4.16	

10.3.4.20 Transmission RLC Discard

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE SDU Discard Mode	MP			Different modes for discharge the RLC buffer on the transmitter side; Timer based with explicit signalling, Timer based without explicit signalling or Discard after Max_DAT retransmissions. For unacknowledged mode only Timer based without explicit signalling is applicable. If No_discard is used, reset procedure shall be done after Max_DAT retransmissions
>Timer based explicit				
>>Timer_MRW	MP		Enumerated(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	It is used to trigger the retransmission of a STATUS PDU containing an MRW SUFI field. 16 spare values needed, criticality: reject
>>Timer_discard	MP		Real(0.1, 0.25, 0.5, 0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 7.5)	Elapsed time in seconds before a SDU is discarded.
>>MaxMRW	MP		Enumerated(1, 4, 6, 8, 12 16, 24, 32)	It is the maximum value for the number of retransmissions of a MRW command 8 spare values needed, criticality: ffs
>Timer based no explicit				
>>Timer_discard	MP		Real(0.1, 0.25, 0.5, 0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 7.5)	Elapsed time in seconds before a SDU is discarded.
>Max DAT retransmissions				
>> Max_DAT	MP		Integer(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40)	Number of retransmissions of a PU before a SDU is discarded.
>No discard				(no data)

CHOICE *SDU Discard Mode*	**Condition under which the given *SDU Discard Mode* is chosen**
Timer based explicit	If the modes for discharge of the RLC buffer on the transmitter side is "Timer based with explicit signalling"
Timer based no explicit	If the modes for discharge of the RLC buffer on the transmitter side is "Timer based without explicit signalling" For unacknowledged mode, only Timer based without explicit signalling is applicable.
Max DAT retransmissions	If the modes for discharge of the RLC buffer on the transmitter side is "Discard after Max_DAT retransmissions"
No discard	If the modes for discharge the of RLC buffer on the transmitter side is "Reset procedure shall be done after Max_DAT retransmissions"

10.3.5 Transport CH Information elements

10.3.5.1 Added or Reconfigured DL TrCH information

Information Element/Group name	Need	**Multi**	**Type and reference**	**Semantics description**
Transport channel identity	MP		Transport channel identity 10.3.5.16	
TFS	MP		Transport Format Set 10.3.5.20	
CHOICE mode	OP			
>TDD				
>> DL DCH TFCS Identity	OP		Transport Format Combination Set Identity 10.3.5.18	
>FDD				(no data)
DCH quality target	OP		Quality target 10.3.5.13	
Transparent mode signalling info	OP		Transparent mode signalling info 10.3.5.15	This IE is not used in RB RELEASE message nor RB RECONFIGURATION message

10.3.5.2 Added or Reconfigured UL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transport channel identity	MP		Transport channel identity 10.3.5.16	
TFS	MP		Transport Format Set 10.3.5.20	
CHOICE mode	OP			
>TDD				
>> UL DCH TFCS Identity	OP		Transport Format Combination Set Identity 10.3.5.18	
>FDD				(no data)

10.3.5.3 Bit mode RLC size info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Bit mode RLC size*	MP			
>Size type 1				1 bit granularity
>>Size part 1	MP		Integer(1..127)	in bits
>Size type 2				8 bit granularity
>>Size part 1	MP		Integer(128..248 by step of 8)	in bits
>>Size part 2	OP		Integer (1..7)	Bits added to size part 1.
>Size type 3				16 bit granularity
>>Size part 1	MP		Integer(256..1008 by step of 16)	in bits
>>Size part 2	OP		Integer (1..15)	Bits added to size part 1.
>Size type 4				64 bit granularity
>>Size part 1	MP		Integer(1024..4992 by step of 64)	in bits
>>Size part 2	OP		Integer (1..63)	Bits added to size part 1.

10.3.5.4 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...<maxCPCHsetcount>)	Identifier for CPCH set info and CPCH persistency value messages

Multi Bound	Explanation
MaxCPCHsetcount	Maximum number of CPCH sets per Node B

10.3.5.5 Deleted DL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transport channel identity	MP		Transport channel identity 10.3.5.16	
CHOICE mode	OP			
>TDD				
>> DL DCH TFCS Identity	OP		Transport Format Combination Set Identity 10.3.5.18	
>FDD				(no data)

10.3.5.6 Deleted UL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transport channel identity	MP		Transport channel identity 10.3.5.16	
CHOICE mode	OP			
>TDD				
>> UL DCH TFCS Identity	OP		Transport Format Combination Set Identity 10.3.5.18	
>FDD				(no data)

10.3.5.7 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 10.3.5.17	
CHOICE *mode*	OP			
>TDD				
>>Individual DL CCTrCH information	OP	1 to >MaxDLCCTrCHCount>		
>>>DL DCH TFCS Identity	MP		Transport format combination set identity 10.3.5.18	
>>>DL DCH TFCS	MP		Transport format combination set 10.3.5.17	
>FDD				
>>DL DCH TFCS	OP		Transport Format Combination Set 10.3.5.17	

Multi Bound	Explanation
MaxDLCCTrCHCount	Maximum number of DL CCTrCH's currently supported by this UE.

10.3.5.8 DRAC Static Information

NOTE : Only for FDD

Contains static parameters used by the DRAC procedure. Meaning and use is described in section 14.6.

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		Enumerated(1.. MaxDRACclasses)	Indicates the class of DRAC parameters to use in SIB10 message

Multi Bound	Explanation
MaxDRACclasses	Maximum number of UE classes which would require different DRAC parameters

10.3.5.9 Gain Factor Information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Gain Factors*	MP			
>Signalled Gain Factors				The values for gain factors β_c and β_d are signalled directly for a TFC.
>>Gain Factor β_c	MP		Integer (0.. 15)	For DPCCH or control part of PRACH
>>Gain Factor β_d	MP		Integer (0..15)	For DPCCH or data part of PRACH
>>Reference TFC number	OP		Integer (0..15)	If this TFC is a reference TFC, indicates the reference number.
>Computed Gain Factors				The gain factors β_c and β_d are computed for a TFC, based on the signalled settings for the associated reference TFC.
>>Reference TFC number	MP		Integer (0.. 15)	Indicates the reference TFC to be used to calculate the gain factors for this TFC.

10.3.5.10 Octet mode RLC size info type1

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Octet mode RLC size*	MP			
>Size type 1				8 bit granularity
>>Size Part 1	MP		Integer (16..264 by step of 8)	
>Size type 2				32 bit granularity
>>Size Part 1	MP		Integer (272..1008 by step of 32)	
>>Size Part 2	OP		Integer (1..3)	Octets added to size part 1.
>Size type 3				64 bit granularity
>>Size Part 1	MP		Integer(1040 ..4944 by step of 64)	
>>Size Part 2	OP		Integer (1..7)	Octets added to size part 1.

10.3.5.11 Octet mode RLC size info type2

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Transport block size*	MP			
>Size type 1			Integer(48..296 by step of 8)	In bits
>Size type 2			Integer(312..1320 by step of 16)	In bits
>Size type 3			Integer(1384 ..4968 by step of 64)	In bits

10.3.5.12 Predefined TrCH configuration

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

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
UL Transport channel information common for all transport channels				
Uplink TFCS	OP		Transport formation combination set 10.3.5.17	
CHOICE mode	MP			
>TDD				
>>Uplink TFCS Identity	OP		Transport format combination set identity 10.3.5.18	
Added or Reconfigured TrCH information				
Added or Reconfigured UL TrCH information	OP	1 to <MaxTrCH>		
>Transport channel identity	MP		Transport channel identity 10.3.5.16	
>TFS	MP		Transport format set 10.3.5.20	
DL Transport channel information common for all transport channels				
Downlink TFCS	OP		Transport format combination set 10.3.5.17	
CHOICE mode	MP			
>TDD				
>>Downlink TFCS Identity	OP		Transport format combination set identity 10.3.5.18	
Downlink transport channels				
TrCH information	OP	1 to <MaxTrCH>		
>Transport channel identity	MP		Transport channel identity 10.3.5.16	
>TFS	MP		Transport format set 10.3.5.20	
>Quality target			Quality target 10.3.5.13	
>Transparent mode signalling info			Transparent mode signalling info 10.3.5.15	

Multi Bound	Explanation
MaxTrCH	Maximum number of transport channels

10.3.5.13 Quality Target

Information Element/Group name	Need	Multi	Type and reference	Semantics description
BLER Quality value	MP		Enumerated (0,1,..63)	The BLER quality value shall be set in the range 0 ≤ TrCH BLER ≤ 1 in the unit BLER_dB where: BLER_dB_0: TrCH BLER = 0 BLER_dB_1: -∞ < Log10(TrCH BLER) < -4.03 BLER_dB_2: -4.03 ≤ Log10(TrCH BLER) < -3.965 BLER_dB_3: -3.965 ≤ Log10(TrCH BLER) < -3.9 ... BLER_dB_61: -0.195 ≤ Log10(TrCH BLER) < -0.13 BLER_dB_62: -0.13 ≤ Log10(TrCH BLER) < -0.065 BLER_dB_63: -0.065 ≤ Log10(TrCH BLER) ≤ 0

10.3.5.14 Semi-static Transport Format Information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transmission time interval	MP		Integer(10, 20, 40, 80)	In ms
Type of channel coding	MP		Enumerated(No coding, Convolutional, Turbo)	
Coding Rate	CV-Coding		Enumerated(1/2, 1/3)	
Rate matching attribute	MP		Integer(1..maxRM)	
CRC size	MP		Integer(0, 8, 12, 16, 24)	in bits

Multi Bound	Explanation
MaxRM	Maximum number that could be set as rate matching attribute for a transport channel is 256.

Condition	Explanation
Coding	This IE is only present if IE "Type of channel coding" is "Convolutional"

10.3.5.15 Transparent mode signalling info

This information element points out a transport channel that is used for transparent mode signalling, and which type of message that is sent on the DCCH mapped on that channel.

There are two modes of this transparent mode signaling. Mode 1 controls all transport channels for one UE. Mode 2 only control a subset of the transport channels for one UE.

Information Element	Need	Multi	Type and reference	Semantics description
Transport channel identity	MP		Transport channel identity 10.3.5.16	Transport channel used for transparent mode signalling DCCH
CHOICE *Transparent signalling mode*	MP			
>Mode 1				
>>Message type	MP		Enumerated (TRANSPORT FORMAT COMBINATION CONTROL)	Indicates which type of message sent on the transparent mode signalling DCCH
>Mode 2				
>>Controlled transport channels list	MP	1 to <MaxTrChCount>		The transport channels that are effected by the rate control commands sent on this transparent mode DCCH
>>>Controlled transport channels	MP		Transport channel identity, 10.3.5.16	

10.3.5.16 Transport channel identity

This information element is used to distinguish transport channels (both common and dedicated transport channels).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transport channel identity	MP		Enumerated(1..64)	

10.3.5.17 Transport Format Combination Set

Indicates the allowed combinations of already defined Transport formats and the mapping between these allowed TFCs and the corresponding TFCI values.

For FDD, Where the UE is assigned access to one or more DSCH transport channels then the UTRAN has the choice of two methods for signalling the mapping between TFCI(field 2) values and the corresponding TFC:

Method #1 - TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given transport format combination (value of CTFC_DSCH). The CTFC_DSCH value specified in the first group applies for all values of TFCI(field 2) between 1 and the specified 'Max TFCI(field2) value'. The CTFC_DSCH value specified in the second group applies for all values of TFCI(field 2) between the 'Max TFCI(field2) value' specified in the last group plus one and the specified 'Max TFCI(field2) value' in the second group. The process continues in the same way for the following groups with the TFCI(field 2) value used by the UE in constructing its mapping table starting at the largest value reached in the previous group plus one.

Method #2 - Explicit

The mapping between TFCI(field 2) value and CTFC_DSCH is spelt out explicitly for each value of TFCI (field2).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *DSCH*	MP			
>FDD without access to DSCH assigned or TDD				This choice is made if the UE is not assigned any DSCH transport channels
>>CHOICE TFCS representation	MP			
>>>Complete reconfiguration		1 to MaxTFCcount		
>>>>CTFC	MP		Integer(0..MaxCTFC)	The first instance of the parameter *Transport format combination* corresponds to Transport format combination 0, the second to transport format combination 1 and so on. Integer number calculated according to clause 14.
>>>>Gain Factor Information	MP			
>>>>Power offset P p-m	MP		Real (-5..10 by step of 1)	In dB. Power offset between the last transmitted preamble and the control part of the message (added to the preamble power to receive the power of the message control part)
>>>Removal		1 to MaxDelTFCcount		
>>>>TFCI	MP		Integer(0.. MaxTFCIValue)	Removal of TFCI. The integer number(s) is a reference to the transport format combinations to be removed.
>>>Addition		1 to MaxAddTFCcount		
>>>>AddCTFC	MP		Integer(0.. MaxCTFC)	Addition of TFCI. The integer number(s) is the calculated transport format combination that is added. The new TFC(s) is inserted into the first available position(s) in the TFCI (counting from zero).
>>>>Gain Factor Information	MP			
>>>>Power offset P p-m	MP		Real (-5..10 by step of 1)	In dB. Power offset between the last transmitted preamble and the control part of the

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				message (added to the preamble power to receive the power of the message control part)
>FDD with access to DSCH assigned				This choice is made if the UE is assigned one or more DSCH transport channels
>>Length of TFCI2	MP		Integer (1..9)	This IE indicates the length measured in number of bits of TFCI(field2)
>>Transport format combination_DCH	MP	1 to <MaxTFCI_1_Combs>		The first instance of the parameter *Transport format combination_DCH* corresponds to TFCI (field 1) = 1, the second to TFCI (field 1) = 2 and so on.
>>>CTFC_DCH	MP		Integer(0..MaxCTFC_DCH)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DSCH transport channels which may be assigned
>>Choice *Signalling method*	MP			
>>>TFCI range				
>>>>TFC mapping on DSCH	MP	1 to <MaxNoTFCIGroups>		
>>>>>Max TFCI(field2) value	MP		Integer(1..512)	This is the Maximum value in the range of TFCI(field2) values for which the specified CTFC_DSCH applies
>>>>>>CTFC_DSCH	MP		Integer(0..MaxCTFC_DSCH)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DCH transport channels which may be assigned
>>>Explicit				
>>>>Transport format combination_DSCH	MP	1 to <MaxTFCI_2_Combs>		The first instance of the parameter *Transport format combination_DSCH* corresponds to TFCI (field2) = 1, the second to TFCI (field 2) = 2 and so on.
>>>>>CTFC_DSCH	MP		Integer(0..MaxCTFC_DSCH)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DCH transport channels which may be assigned

Multi Bound	Explanation
MaxCTFC	Maximum value number of the CTFC value is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14.
MaxTFCCount	Maximum number of Transport Format Combinations.
MaxTFCIValue	The max value of the Transport Format Combinations that currently is defined for this UE.
MaxAddTFCIcount	Maximum number of Transport Format Combinations to be added.
MaxDelTFCcount	Maximum number of Transport Format Combinations to be removed.
MaxTFCI_1_Combs	Maximum number of TFCI (field 1) combinations (given by 2 raised to the power of the length of the TFCI (field 1))
MaxTFCI_2_Combs	Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the

Multi Bound	Explanation
	TFCI (field 2))
MaxNoTFCIGroups	Maximum number of groups, each group described in terms of a range of TFCI(field 2) values for which a single value of CTFC_DSCH applies
MaxCTFC_DCH	Maximum value of CTFC_DCH is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14 where only the DCH transport channels are taken into account in the calculation.
MaxCTFC_DSCH	Maximum value of CTFC_DSCH is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14 where only the DSCH transport channels are taken into account in the calculation..

10.3.5.18 Transport Format Combination Set Identity

NOTE : Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCS ID	MD		Enumerated (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.

10.3.5.19 Transport Format Combination Subset

Indicates which Transport format combinations in the already defined Transport format combination set are allowed.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Subset representation	MP			
>Minimum allowed Transport format combination index	MP		Integer(0..MaxTFCValue-1)	The integer number is a reference to the *Transport format combination,* which arrived at that position in the *Transport Format Combination Set.*
>Allowed transport format combination list	MP	1 to <maxTFCcount>		
>>Allowed transport format combination	MP		Integer(0..MaxTFCValue-1)	The integer number is a reference to the *Transport format combination,* which arrived at that position in the *Transport Format Combination Set.*
>Non-allowed transport format combination list	MP	1 to <MaxTFCcount>		
>>Non-allowed transport format combination	MP		Integer(0..MaxTFCValue)	The integer number is a reference to the *Transport format combination,* which arrived at that position in the *Transport Format Combination Set.*
>Restricted TrCH information	MP	1 to <MaxRstTrCHcount>		
>>Restricted TrCH identity	MP		Integer(0..MaxTrCHValue)	The integer number(s) is a reference to the transport channel that is restricted.
>>Allowed TFIs	OP	1 to <MaxTFcount>		
>>>Allowed TFI	MP		Integer(0..MaxTFValue)	The integer number is a reference to the transport format that is allowed. If no elements are given, all transport formats or the TrCH with non-zero rate are restricted.

Multi Bound	Explanation
MaxTFCcount	Maximum number of Transport Format Combinations that could be sent as the limited set that the UE is allowed to use is 1023.
MaxTFCValue	The max value of the Transport Format Combinations that currently is defined for this UE.
MaxRstTrCHcount	Maximum number of Transport Channels that could be restricted.
MaxTrCHValue	Maximum value of the Transport Channels that currently is defined for this UE.
MaxTFcount	Maximum number of the Transport Formats that is defined.
MaxTFValue	Maximum value of the Transport Formats that is defined.

10.3.5.20 Transport Format Set

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Transport channel type*	MP			
>Dedicated transport channels				The transport channel that is configured with this TFS is of type DCH
>>Dynamic Transport Format Information	MP	1 to maxTFcount		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	MP		Integer(0..4095)	Note
>>>CHOICE *RLC mode*	OP			
>>>> Bit mode RLC size info			Bit mode RLC size info 10.3.5.3	The RLC entity mapped to this transport channels can generate bit specific RLC PDU sizes
>>>> Octet mode RLC size info type1			Octet mode RLC size info type1 10.3.5.10	The RLC entity mapped to this transport channels can only generate octet aligned RLC PDU sizes
>>Semi-static Transport Format Information	MP		Semi-static Transport Format Information 10.3.5.14	
>Common transport channels				The transport channel that is configured with this TFS is of a type not equal to DCH
>>Dynamic Transport Format Information	MP	1 to maxTFcount		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	MP		Integer(0..4095)	Note
>>>CHOICE mode	MP			
>>>>FDD				
>>>>>Octet mode RLC size info type2	OP		Octet mode RLC size info type2 10.3.5.11	
>>>>TDD				
>>>>>CHOICE *RLC mode*	OP			
>>>>>>Bit mode RLC size info			Bit mode RLC size info 10.3.5.3	
>>>>>>Octet mode RLC size info type1			Octet mode RLC size info type1 10.3.5.10	
>>Semi-static Transport Format Information	MP		Semi-static Transport Format Information 10.3.5.14	

Multi Bound	Explanation
MaxTFcount	Maximum number of different transport formats that can be included in the Transport format set for one transport channel is 32.

NOTE: The parameter "rate matching attribute" is in line with the RAN WG1 specifications. However, it is not currently in line with the description in 25.302.

NOTE: For dedicated channels, sizes reflect RLC PDU sizes. In FDD for common channels sizes reflect actual TB size. In TDD for common channels since MAC headers are not octet aligned, to calculate TB size the MAC header bit offset is added to the specified size (similar to the dedicated case). Therefore for TDD DCH TrCH's the 4 bit C/T is added if MAC multiplexing is applied, for FACH the 3 bit TCTF offset is added and for RACH the 2 bit TCTF offset is added.

Note: If the number of transport blocks <> 0, and Optional IE "CHOICE RLC mode" or "CHOICE Transport block size is absent, it implies that no RLC PDU data exists but only parity bits exist. If the number of transport blocks = 0, it implies that neither RLC PDU data nor parity bits exist.

10.3.5.21 UL Transport channel information common for all transport channels

Information Element/Group name	**Need**	**Multi**	**Type and reference**	**Semantics description**
TFC subset	MD		Transport Format Combination Subset 10.3.5.19	Default value is the complete existing set of transport format combinations
CHOICE *mode*	OP			
>TDD				
>>Individual UL CCTrCH information	OP	1 to <MaxULCCTrCHCount>		
>>>UL DCH TFCS Identity	MP		Transport format combination set identity 10.3.5.18	
>>>DL DCH TFCS	MP		Transport format combination set 10.3.5.17	
>FDD				
>>UL DCH TFCS	MP		Transport formation combination set 10.3.5.17	

Multi Bound	**Explanation**
MaxULCCTrCHCount	Maximum number of UL CCTrCH's currently supported by this UE.

10.3.6 Physical CH Information elements

10.3.6.1 AC-to-ASC mapping

Information Element/Group name	Need	Multi	Type and reference	Semantics description
AC-to-ASC mapping table		7		
> AC-to-ASC mapping	MP		Integer(0,…, 7)	Mapping of Access Classes to Access Service Classes (cf. Sec. 8.5.x1.)

10.3.6.2 AICH Info

NOTE : Only for FDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Secondary scrambling code	MD		Secondary scrambling code 10.3.6.55	Default is the same scrambling code as for the Primary CPICH
Channelisation code	MP		Integer(0..255)	SF is fixed and equal to 256
STTD indicator	MP		STTD Indicator 10.3.6.58	
AICH transmission timing	MP		Enumerated (0, 1)	See parameter AICH_Transmission_Timing in TS 25.211

10.3.6.3 AICH Power offset

NOTE : Only for FDD

This is the power per transmitted Acquisition Indicator minus power of the Primary CPICH.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
AICH Power offset	MP		Enumerated(-10..+5)	Offset in dB, granularity of 1 dB

10.3.6.4 Allocation period info

NOTE : Only for TDD

Parameters used by UE to determine period of shared channel allocation.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Allocation Activation Time	MP		Integer (1..256)	Frame number start of the allocation period.
Allocation Duration	MP		Integer (1..256)	Total number of frames for the allocation period.

10.3.6.5 ASC Info

NOTE : Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ASC List	MP	1 to 8		List of Access Service classes
>Access service class	MP		Integer(1..8)	
>Repetition Period	MD		EnumeratedInteger(1, 2, 4, 8)	Default value is continuousValue 1 indicates continuous
>Offset	MP		Integer(0..Repetition Period - 1)	Note that this is empty if repetition period is set to 1

10.3.6.6 Block STTD indicator

Note : Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Block STTD indicator	MP		Boolean	TRUE indicates that block STTD is used

10.3.6.7 CCTrCH power control info

Parameters used by UE to set the SIRtarget 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 10.3.5.18	TFCS Identity of this CCTrCH. Default value is 1.
Uplink DPCH power control info	MP		Uplink DPCH power control info 10.3.6.67	

10.3.6.8 Common timeslot info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
2nd interleaving mode	MD		Enumerated(Frame, Timeslot)	Frame timeslot related interleaving. Default isDefault value is "Frame"
TFCI coding	MD		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Defaults: 0 TFCI bits are not coded. 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3 – 5 TFCI bits coded with 16 bits. 6 – 10 TFCI bits coded with 32 bits.
Puncturing limit	MP		Real(0.40..1. 0 by step of 0.04)	
Repetition period	MD		Integer(1, 2,4,8,16,32,6 4)	Default is continuous allocation. Value 1 indicate continuous
Repetition length	MP		Integer(1.. Repetition period –1)	Note that this is empty if repetition period is set to 1

10.3.6.9 Constant value

This constant value is used by the UE to calculate the initial output power on PRACH according to the Open loop power control procedure.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Constant value	MP		Integer (-10..10)	At least 11 spare values needed Criticality: reject is needed In dB and 1 dB granularity

10.3.6.10 CPCH persistence levels

NOTE : Only for FDD

This IE is dynamic and is used by RNC for load balancing and congestion control. This is broadcast often in the system information message.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CPCH set ID	MP		Integer (1 .. <maxCPCHsetcount>	Identifier for CPCH set info.
Dynamic persistence level	MP	1 to <maxmaxTFs>	Dynamic persistence level 10.3.6.23	Persistence level for transport format.

Multi Bound	Explanation
MaxTFss	Maximum number of TFs in a CPCH set
MaxCPCHsetcount	Maximum number of CPCH sets per Node B

10.3.6.11 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 10.3.5.4	Indicates the ID number for a particular CPCH set allocated to a cell.
TFS	MP		Transport Format Set 10.3.5.20	Transport Format Set Information allocated to this CPCH set.
AP preamble scrambling code	MP		Integer (0..255)	Preamble scrambling code for AP in UL
AP-AICH scrambling code	MP		Integer (0..255)	Scrambling code for AP-AICH in DL
AP-AICH channelisation code	MP		Integer(0..255)	Channelisation code for AP-AICH in DL
CD preamble scrambling code	MP		Integer (0..255)	Preamble scrambling code for CD in UL
CD/CA-ICH scrambling code	MP		Integer (0..255)	Scrambling code for CD/CA-ICH in DL
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 <maxSubChNum>		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		Enumerated (0..11)	
Available CD signatures	OP	1 to <maxSigNum>		Signatures for CD preamble in UL. Note: if not present, all signatures are available for use.
>CD signatures	MP		Enumerated (0..15)	
Slot Format	MP			Indicates slot format of PCPCH for this CPCH set
> PC Preamble Slot Format	MP		Enumerated (0, 1)	Slot format for optional power control preamble in UL
> UL DPCCH Slot Format	MP		Enumerated (0,1,2,3,4,5)	Slot format for UL DPCCH
>DL DPCCH Slot Format	MP		Enumerated (0, 1)	Slot format for DL DPCCH
N_start_message	MP		Integer (1..8)	Number of Frames for start of message indication
Channel Assignment Active	OP		Boolean	When present, indicates that Node B send a CA message and mapping rule shall be used.
CPCH status indication mode	MP		Enumerated (PCPCH availability, PCPCH availability and minimum available Spreading Factor)	Defines the status information type broadcast on the CPCH Status Indication Channel (CSICH)
PCPCH Channel Info.	MP	1 to <maxPCPCHs>		
> UL scrambling code	MP		Integer (0..255)	For PCPCH message part
> DL channelisation code	MP		Integer	For DPCCH in PCPCH

			(0…511)	message part
> DL scrambling code	OP		Integer (0…255)	If not present, the primary DL scrambling code is used
> PCP length	MP		Enumerated (0 access slots, 8 access slots)	Indicates length of power control preamble, 0 access slots (no preamble used) or 8 access slots
> UCSM Info	CV-NCAA			
>> Available Minimum Spreading Factor	MP	1 to <maxSFNum		The UE may use this CPCH at any equal to or greater than the indicated Spreading Factor for PCPCH message part. In UE channel selection mode, the Spreading Factor for initial access is the minimum Spreading Factor.
>>> 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
>> Channel request parameters for UCSM	OP	1 to <maxSigNum>		Required in UE channel selection mode.
>>>Available AP signature	MP	1 to <maxAPSigNum>		AP preamble signature codes for selection of this PCPCH channel.
>>>> AP signature	MP		Enumerated (0..15)	
>>>Available AP access slot subchannel	OP	1 to <maxSubChNum>		Lists the set of subchannels to be used for AP access preambles in combination with the above AP signature. Note: if not present, all subchannels are to be used without access delays.
>>>> AP access slot subchannel	MP		Enumerated (0..11)	
VCAM info	CV-CAA			
> Available Minimum Spreading Factor	MP	1 to <maxSFNum		
>> 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 <maxAPSigNum>		Signatures for AP preamble in UL.
>>> AP signature			Enumerated (0..15)	
>> Available AP sub-channel	OP	1 to < maxAP subCH		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		Enumerated (0..11)	

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

Multi Bound	Explanation
MaxSubChNum	Maximum number of available sub channels (max = 12 subchannels)
MaxCDSigNum	Maximum number of available signatures for CD (max = 16 signatures)
MaxSFNum	Maximum number of available SFs. In case of single code, max=7.
MaxPCPCHs	Maximum number of PCPCH channels in a CPCH Set.
MaxAPSigNum	Maximum number of available signatures for AP (max = 16 signatures)
MaxAPsubCH	Maximum number of available sub channels for AP signature (max=12 sub channels)

NOTE: Criteria for DL poiwer control needs to be defined.

10.3.6.12 CPCH Status Indication mode

CPCH Status Indication mode can take 2 values: PCPCH Availability (PA) mode and PCPCH Availability with Minimum Available Spreading Factor (PAMASF) mode. PAMASF mode is used when Channel Assignment is active. PA mode is used when Channel Assignment is not active (UE Channel Selection is active). These two separate modes are described independently in the section that follows. TS25.211 defines the Status Indicators (Sis) of the CSICH channel which convey the CPCH status information described here. A CSICH may contain from 1 upto a maximum of 60 Status Indicators.

PCPCH Availability (PA) mode

In PA mode, CPCH Status Indication conveys the PCPCH Channel Availability value which is a 1 to 16 bit value which indicates the availability of each of the 1 to 16 defined PCPCHs in the CPCH set. There is one bit of the PCPCH Channel Availability (PCA) value for each defined PCPCH channel. If there are 2 PCPCHs defined in the CPCH set, then there are 2 bits in the PCA value. And likewise for other numbers of defined PCPCH channels up to 16 maximum CPCH channels per set when UE Channel Selection is active.

The number of SIs (Status Indicators) per frame is a function of the number of defined PCPCH channels.

Number of defined PCPCHs	Number of SIs per frame
1, 2, 3	*3*
4,5	*5*
6,7,8,9,10,11,12,13,14,15	*15*
16	*30*

When the number of SIs per frame exceeds the number of defined PCPCHs, the SIs which exceed the number of PCPCHs shall be set to 0. Otherwise, the value of the SI shall indicate the PCA value for one of the defined PCPCHs, where PCA=1 indicates that the PCPCH is available, and PCA=0 indicates that the

PCPCH is not available. SI0 shall indicate the PCA of PCPCH1, SI1 shall indicate the PCA of PCPCH2, etc., for each defined PCPCH.

PCPCH Availability with Minimum Available Spreading Factor (PAMASF) mode

In PAMASF mode is similar to the PA mode with two differences:

1. The first three Status Indicators are used to convey the Minimum Available Spreading Factor (MASF) or maximum data rate which is available at that particular point in time.

2. The remaining Sis each convey a PCA value fo one of the defined PCPCHs in the set, which may include upto 57 CPCHs when Channel Assignment is active.

MASF is a 3 bit number with bits MASF0 throught MASF2 where MASF0 is the MSB of the MASF value and MASF2 is the LSB of the MASF value. MASF value bits map to Status Indicators (SIs) as follows:

MASF0 = SI0

MASF1 = SI1

MASF2 = SI2

The following table defines the SI indicator values to convey the Minimum Available Spreading Factor:

Minimum Available Spreading Factor (MASF)	SI0	SI1	SI2	Semantics description
N/A	0	0	0	No CPCH resources available.
256	0	0	1	Only 256 SF avaialble.
128	0	1	0	Only 128 or greater SF available.
64	0	1	1	Only 64 or greater SF available.
32	1	0	0	Only 32 or greater SF available.
16	1	0	1	Only 16 or greater SF available.
08	1	1	0	Onlu 8 or greater SF available.
04	1	1	1	All SFs available.

The remaining SIs convey PCA values for the PCPCHs defined in the CPCH set, or they are unused and set to 0. The number of SIs (Status Indicators) per frame is a function of the number of defined PCPCH channels.

Number of defined PCPCHs	Number of SIs per frame
1, 2,	*5*
3,4,5,6,7,8,9,10,11,12	*15*
13,14,15,16,17,18,19,20,21,22,23,24,25,26,27	*30*
28….57	*60*

When the number of SIs > (# PCPCHs + 3), the SIs greater than or equal to (#PCPCHs + 3) shall be set to 0. Otherwise, the value of the SI shall indicate the PCA value for one of the defined PCPCHs, where PCA=1 indicates that the PCPCH is available, and PCA=0 indicates that the PCPCH is not available. SI3 shall indicate the PCA of PCPCH1, SI4 shall indicate the PCA of PCPCH2, etc., for each defined PCPCH.

10.3.6.13 Default DPCH Offset Value

NOTE : Only for FDD

Indicates the default offset value within interleaving size at a resolution of 512chip (1/5 slot) to offset CFN in the UE. This is used to distribute discontinuous transmission periods in time and also to distribute NodeB-RNC transmission traffics in time. Even though the CFN is offset by DOFF, the start timing of the interleaving will be the timing that "CFN mod (interleaving size)"=0 (e.g. interleaving size: 2,4,8) in both UE and SRNC.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Default DPCH Offset Value (DOFF)	MP		Integer (0..306688 by step of 512)	Number of chips=. 0 to 599 time 512 chips, see TS 25.402. At least 424 spare values needed Criticality: reject is needed

10.3.6.14 Downlink DPCH info common for all RL

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.16	
Spreading factor	MP		Enumerated(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*				
> SF = 256				
>> Number of bits for Pilot bits			Integer (2,4,8)	In bits
> SF = 128				
>>Number of bits for Pilot bits			Integer(4,8)	In bits
> Otherwise				(no data)

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

10.3.6.15 Downlink DPCH info for each RL

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>Primary CPICH usage for channel estimation	MP		Primary CPICH usage for channel estimation 10.3.6.45	
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.54	
>>DL channelisation code	MP	1 to <maxChan count>		SF of the channelisation code of the data part for each DPCH
>>>Secondary scrambling code	MD		Secondary scrambling code 10.3.6.55	Default is the same scrambling code as for the Primary CPICH
>>>Code number	MP		Integer(0..maxCodeNum)	
>>TPC combination index	MP		TPC combination index 10.3.6.62	
>>SSDT Cell Identity	OP		SSDT Cell Identity 10.3.6.56	
>>Closed loop timing adjustment mode	CH TxDiversity Mode		Enumerated(1 slot, 2 slot)	It is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2".
>TDD				
>>DL CCTrCh List	CV HO list length	1..<maxCCTrCHcount>		
>>>TFCS Identity	CV HO Needed			Identity of this CCTrCh.
>>>Individual Timeslot info list		1 to < max Timeslot count>		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>>>>Individual timeslot info	MP		Individual timeslot info 10.3.6.25	
>>>>Channelisation code list	MP	1 to <max Codes Count>		The first instance of the parameter Channelisation code corresponds to the first DPCH in that timeslot that shall be used first by the physical layer, the second to the DPCH in that timeslot that shall be used second and so on.
>>>>>Channelisation code	MP		Enumerated ((16/1)...(16/16))	

Condition	Explanation
HO list length	MaxCCTRCHcount is 8 in case of handover, otherwise it is equal to one.
HO presence	The element is only present in case of handover

Multi Bound	Explanation
MaxChancount	Maximum number of channelisation codes used for DL DPCH
MaxCodeNum	Maximum number of codes for one spreading factor (SF) is equal to SF-1.
MaxTimeslotcount	Maximum number of timeslots used for DPCHs = 14
MaxCodesCount	Maximum number of codes for one timeslots = 16
MaxMidambleShift	Maximum number of Midamble Shifts = 16

10.3.6.16 Downlink DPCH power control information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>FDD				
>>DPC Mode	MP		Enumerated (Single TPC, TPC triplet in soft)	"Single TPC" is DPC_Mode=0 and "TPC triplet in soft" is DPC_mode=1 in [TS 25.214]
> TDD				(no data)

10.3.6.17 Downlink information common for all radio links

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink DPCH info common for all RL	OP		Downlink DPCH info common for all RL 10.3.6.9.14	
CHOICE *mode*	MP			
>FDD				
>>Default DPCH Offset Value	MD		Default DPCH Offset Value, 10.3.6.13	Default value is 0
>>DPCH compressed mode info	MD		DPCH compressed mode info 10.3.6.22	Default value is the existing value of DPCH compressed mode information information
>>TX Diversity Mode	MD		TX Diversity Mode 10.3.6.63	Default value is the existing value of TX Diversity mode
>>SSDT information	OP		SSDT information 10.3.6.57	
>TDD				
>>Uplink Timing Advance	OP		Uplink Timing Advance 10.3.6.69	

10.3.6.18 Downlink information for each radio link

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Choice mode	MP			
>FDD				
>>Primary CPICH info			Primary CPICH info 10.3.6.43	
>>PDSCH with SHO DCH Info	OP		PDSCH with SHO DCH Info 10.3.6.32	
>>PDSCH code mapping	OP		PDSCH code mapping 10.3.6.29	
>TDD				
>>Primary CCPCH info			Primary CCPCH info 10.3.6.41	
Downlink DPCH info for each RL	OP		Downlink DPCH info for each RL 10.3.6.15	Note 1
Secondary CCPCH info	OP		Secondary CCPCH info 10.3.6.52	
References to system information blocks	OP	1 to <MaxSysInfoBlockFACHCount>		Note 1
>Scheduling information	MP		Scheduling information 10.3.8.11	Note 1

Note1: This IE shall not be set in case of CELL UPDATE CONFIRM message.

Multi Bound	Explanation
MaxSysInfoBlockFACHCount	Maximum number of references to system information blocks on the FACH

10.3.6.19 Downlink information for each radio link short

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Choice mode	MP			
>FDD				
>>Primary CPICH info			Primary CPICH info 10.3.6.43	
Downlink DPCH info for each RL	OP		Downlink DPCH info for each RL 10.3.6.15	

Multi Bound	Explanation
MaxSysInfoBlockFACHCount	Maximum number of references to system information blocks on the FACH

10.3.6.20 Downlink Outer Loop Control

This information element indicates whether the UE is allowed or not to increase its downlink SIR target value above the current value.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
DL Outer loop control	MP		Enumerated(Increase allowed, Increase not allowed)	

10.3.6.21 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 10.3.6.32	
>>PDSCH code mapping	OP		PDSCH code mapping 10.3.6.29	

10.3.6.22 DPCH compressed mode info

NOTE : Only for FDD

This information element indicates the parameters of the downlink compressed mode to be used by the UE in order to perform inter-frequency measurements.

Information Element/Group name	Need	\Multi	Type and reference	Semantics description
TGL	MP		Integer(1..15)	Transmission Gap length expressed in number of slots
CFN	MP		Integer(0..255)	Connection Frame Number when the first compressed frame starts
SN	MP		Integer(0..14)	Slot number when the transmission gap starts (within the CFN)
TGP1	MP		Integer(1..256)	The period of repetition of a set of consecutive frames containing up to 2 transmission gaps, for even gaps.
TGP2	MD		Integer(1..256)	For odd gaps. Default value is the value of TGP1
TGD	MP		Integer(0..35)	Transmission gap distance indicates the number of frames between two consecutive transmission gaps within a transmission gap period. If there is only one transmission gap in the transmission gap period, this parameter shall be set to zero.
PD	MP		Enumerated(1..35, Infinity)	The pattern duration is the total time of the compressed mode pattern (all consecutive TGPs) expressed in number of frames.
PCM	MP		Enumerated (mode 0, mode 1).	Power control mode during the frame after the compressed frame. Indicates whether normal PC mode or compressed PC mode is applied
PRM	MP		Enumerated (mode 0, mode 1).	Power resume mode is the uplink power control algorithm to be used to compute the initial transmit power after the compressed mode gap.
UL/DL mode	MP		Enumerated (DL only, UL/DL)	Defines whether only DL or combined UL/DL compressed mode is used.
Compressed mode method	MP		Enumerated (puncturing, SF/2, upper layer scheduling, none)	Method for generating compressed mode gap None means that compressed mode pattern is stopped
Scrambling code change	CV SF/2		Enumerated (code change, no code change)	Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.
Downlink frame type	MP		Enumerated (A, B)	
DeltaSIR	MP		Real(0..7.5 by step of 0.5)	Delta in DL SIR target value to be set in the UE during the compressed frames
DeltaSIRafter	MP		Real(0..7.5	Delta in DL SIR target value to

Information Element/Group name	Need	\Multi	Type and reference	Semantics description
			by step of 0.5)	be set in the UE one frame after the compressed frames .

Condition	Explanation
SF/2	The information element is mandatory if the value of the "Compressed mode method" IE is "SF/2", otherwise the IE is not needed.

10.3.6.23 Dynamic persistence level

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Dynamic persistence level	MP		Integer(1..8)	Level shall be mapped to a dynamic persistence value in the range 0 .. 1.

10.3.6.24 Frequency info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>FDD				
>>UARFCN uplink (Nu)	MP		Integer(0.. 16383)	[25.101]
>>UARFCN downlink (Nd)	OP		Integer(0 .. 16383)	[25.101] If IE not present, default duplex distance of 190 MHz shall be used.
>TDD				
>>UARFCN (Nt)	MP		Integer(0 .. 16383)	[25.102]

10.3.6.25 Individual timeslot info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timeslot number	MP		Integer(0..14)	Timeslot within a frame
TFCI existence	CH		Boolean	TRUE indicates that the TFCI exists. It shall be coded in the first physical channel of this timeslot.
Burst Type	MD		Enumerated(Type1, Type2)	Short or long midamble for this timeslot. Default value is "Type1".
Midamble Shift	MD		Integer(0..15)	Default value is the midamble shift selected by layer 1.

10.3.6.26 Individual Timeslot interference

Parameters used by the UE for uplink open loop power control in TDD

Information element	Need	Multi	Type and reference	Semantics description
Timeslot number	MP		Integer(0..14)	
UL Timeslot Interference	MP		ULInterferen ce 10.3.6.64	

10.3.6.27 Maximum allowed UL TX power

This information element indicates the maximum allowed uplink transmit power.

Information Element	Need	Multi	Type and reference	Semantics description
Maximum allowed UL TX power	MP		Integer(-50..33)	In dBm At least 44 spare values are needed Criticality: reject is needed

10.3.6.28 Midamble configuration

NOTE : Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Midamble burst type 1	MD		Enumerated(4, 8,16)	Maximum number of midamble shifts for bursttype 1. Default value is 8.
Midamble burst type 2	MD		Enumerated(3, 6)	Maximum number of midamble shifts for bursttype 2. Default value is 3.

Default value is all the subfields set to their default value.

10.3.6.29 PDSCH code mapping

NOTE : Only for FDD

This IE indicates the association between each possible value of TFCI(field 2) and the corresponding PDSCH channelisation code(s). There are three fundamentally different ways that the UTRAN must choose between in order to signal the mapping information, these are described below. The signalling capacity consumed by the different methods will vary depending on the way in which the UTRAN configures usage of the DSCH. A fourth option is also provided which allows the UTRAN to replace individual entries in the TFCI(field 2) to PDSCH code mapping table with new PDSCH code values.

There are four different signalling methods defined. The signalling method shall be selected by the UTRAN.

Method #1 - Using code range

The mapping is described in terms of a number of groups, each group associated with a given spreading factor. The UE maps TFCI(field2) values to PDSCH codes in the following way. The PDSCH code used for TFCI(field 2) = 0 , is given by the SF and code number = 'PDSCH code start' of Group = 1. The PDSCH code used for TFCI(field 2) = 1 , is given by the SF and code number = 'PDSCH code start' + 1. This continues, with unit increments in the value of TFCI(field 2) mapping to unit increments in code number up until the point that code number = 'PDSCH code stop'. The process continues in the same way for the next group with the TFCI(field 2) value used by the UE when constructing its mapping table starting at the largest value reached in the previous group plus one. In the event that 'PDSCH code start' = 'PDSCH code stop' (as may occur when mapping the PDSCH root code to a TFCI (field 2) value) then this is to be interpreted as defining the mapping between the channelisation code and a single TFCI (i.e., TFCI(field 2) should not be incremented twice).

Note that each value of TFCI (field 2) is associated with a given 'code number' and when the 'multi-code info' parameter is greater than 1, then each value of TFCI (field 2) actually maps to a set of PDSCH codes. In this case contiguous codes are assigned, starting at the channelisation code denoted by the 'code number' parameter and including all codes with code numbers up to and including 'code number' - 1 + the value given in the parameter 'multi-code info'.

Method #2 - Using TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given PDSCH channelisation code. The PDSCH code specified in the first group applies for all values of TFCI(field 2) between 0 and the specified 'Max TFCI(field2)'. The PDSCH code specified in the second group applies for all values of TFCI(field 2) between the 'Max TFCI(field2) value' specified in the last group plus one and the specified 'Max TFCI(field2)' in the second group.

The process continues in the same way for the following groups with the TFCI(field 2) value starting at the largest value reached in the previous group plus one.

Method #3 - Explicit

The mapping between TFCI(field 2) value and PDSCH channelisation code is spelt out explicitly for each value of TFCI (field2)

Information Element/Group name	Need	**Multi**	**Type and reference**	**Semantics description**
DL Scrambling Code	MD		Secondary scrambling code 10.3.6.55	Scrambling code on which PDSCH is transmitted. Default is the same scrambling code as for the Primary CPICH
Choice *signalling method*	MP			
>code range				
>>PDSCH code mapping	MP	1 to <MaxNoCodeGroups>		
>>>Spreading factor	MP		Enumerated(4, 8, 16, 32, 64, 128, 256)	At least 1 spare value needed Criticality: reject is needed
>>>multi-code info	MP		Integer(1..16)	This parameter indicates the number of PDSCH transmitted to the UE. The PDSCH codes all have the same SF as denoted by the 'Spreading factor' parameter. Contiguous codes are assigned, starting at the channelisation code denoted by the spreading factor and code number parameter and including all codes, with code numbers up to and including 'code number' - 1 + 'multi-code info'. Note that 'code number'-1+'multi-code info' will not be allowed to exceed 'maxCodeNumComp'
>>Code number (for PDSCH code start)	MP		Integer(0..maxCodeNumComp-1)	
>>Code number (for PDSCH code stop)	MP		Integer(0..maxCodeNumComp-1)	
>TFCI range				
>>DSCH mapping	MP	1 to <MaxNoTFCIGroups>		
>>>Max TFCI(field2) value	MP		Integer(1..1023)	This is the maximum value in the range of TFCI(field 2) values for which the specified PDSCH code applies
>>>Spreading factor (for PDSCH code)	MP		Enumerated(4, 8, 16, 32, 64, 128, 256)	At least 1 spare value needed Criticality: reject is needed
>>>Code number (for PDSCH code)	MP		Integer(0..maxCodeNumComp-1)	
>>>multi-code info	MP		Integer(1..16)	Semantics as described for this parameter above
>Explicit				
>>PDSCH code info	MP	1 to <MaxTFCI_2_Combs>		The first instance of the parameter *PDSCH code* corresponds to TFCI (field2) = 0, the second to TFCI(field 2)

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				= 1and so on.
>>>Spreading factor (for PDSCH code)	MP		Enumerated(4, 8, 16, 32, 64, 128, 256)	At least 1 spare value needed Criticality: reject is needed
>>>Code number (for PDSCH code)	MP		Integer(0..maxCodeNumComp-1)	
>>>multi-code info	MP		Integer(1..16)	Semantics as described for this parameter above
>Replace				This choice is made if the PDSCH code(s) associated with a given value of TFCI(field 2) is to be replaced.
>>Replaced PDSCH code	MP	1 to <MaxReplaceCount>		Identity of the PDSCH code(s) to be used for the specified value of TFCI(field 2). These code identity(s) replace any that had been specified before
>>>TFCI (field 2)	MP		Integer (0..1023)	Value of TFCI(field 2) for which PDSCH code mapping will be changed
>>>Spreading factor (for PDSCH code)	MP		Enumerated(4, 8, 16, 32, 64, 128, 256)	
>>>Code number (for PDSCH code)	MP		Integer(0..maxCodeNumComp-1)	
>>>multi-code info	MP		Integer(1..16)	Semantics as described for this parameter above

Multi Bound	Explanation
MaxCodeNumComp	Maximum number of codes at the defined spreading factor, within the complete code tree.
MaxTFCI_2_Combs	Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI field 2)
MaxNoTFCIGroups	Maximum number of groups, each group described in terms of a range of TFCI(field 2) values for which a single PDSCH code applies.
MaxNoCodeGroups	Maximum number of groups, each group described in terms of a range of PDSCH channelisation code values for which a single spreading factor applies.
MaxReplaceCount	Maximum number of entries in the TFCI(field 2) to PDSCH code mapping table to be replaced

10.3.6.30 PDSCH info

NOTE : Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCS Identity	MD		Transport format combination set Identity 10.3.5.18	TFCS to be used. Default value is 1.
Time info	MP		Time info 10.3.6.61	
Common timeslot info	CH		Common timeslot info 10.3.6.8	Common timeslot info is needed if Common timeslot info needs to be updated.
Timeslot List	CH	1 to <maxTimeslotCount>		Timeslot List is needed if Timeslot List needs to be updated.
>Individual timeslot info	MP		Individual timeslot info 10.3.6.25	The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>Channelisation Code	MP		Enumerated((16/1)..(16/16))	

Multi Bound	Explanation
MaxTimeslotcount	Maximum number of timeslots used for PDSCHs = 14

10.3.6.31 PDSCH system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PDSCH information	MP	1 .. <maxPDSCHcount>		
>PDSCH info	MP		PDSCH info 10.3.6.30	
>DSCH TFS	OP		Transport format set 10.3.5.20	

Multi Bound	Explanation
MaxPDSCHcount	Maximum number of PDSCHs

10.3.6.32 PDSCH with SHO DCH Info

NOTE : Only for FDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
DSCH radio link identifier	MP		Integer(0..511)	This parameter indicates on which radio link the user will be allocated resource on the DSCH. The CPICH scrambling code will be used for this purpose.
TFCI Combining set	OP			This is used to indicate which of the downlink TFCI(field 2) transmissions made on the DPCCHs within the active set should be soft combined on the physical layer. This parameter may only be sent if there is a 'hard' split of the TFCI field and in this case the sending of the parameter is optional.
Radio link identifier	OP	1 to <MaxCombineSet>		
>Primary CPICH info	MP		Primary CPICH info 10.3.6.43	The CPICH scrambling code is used for this purpose

Multi Bound	Explanation
MaxCombineSet	Maximum number of radio links in the DCH active set transmitted from BS's under the CRNC from which the DSCH is being scheduled

10.3.6.33 Persistence scaling factors

This IE defines scaling factors associated with ASC 2 – ASC 7 (multiplicity corresponds to the number of PRACH partitions minus 2) to be applied to the dynamic persistence value. This IE shall not be present in system information if only ASC 0 and ASC 1 are defined. If it is not present for ASC >1, default persistence scaling factor 1 shall be used (see Sec. 8.5.x2).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Access Service Class		1 to 6		
> Persistence scaling factor	MP		Enumerated(0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2)	Scaling factors in the range 0,…,1

10.3.6.34 PICH Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>Secondary scrambling code	MD		Secondary scrambling code 10.3.6.55	Default is the same scrambling code as for the Primary CPICH
>>Channelisation code	MP		Integer(0..255)	SF is fixed and equal to 256
>>Number of PI per frame	MP		Enumerated (18, 36 72 144)	
>>STTD indicator	MP		STTD Indicator 10.3.6.58	
>TDD				
>>Channelisation code	MD		Enumerated ((16/1)...(16/16))	Default value is the channelisation code used by the SCCPCH carrying the associated PCH.
>>Timeslot	MD		Integer(0...14)	Default value is the timeslot used by the SCCPCH carrying the associated PCH.
>>Burst type	MP		Enumerated (Typ1,Typ2)	
>>Midamble shift	MD		Integer (0...maxMidambleShift – 1)	Default value is the midamble shift used by the SCCPCH carrying the associated PCH.
>>Repetition period/length	MD		Enumerated((4/2),(8/2), (8/4),(16/2), (16/4), (32/2),(32/4), (64/2),(64/4))	Default value is “(64/2)”.
>>Offset	MP		Integer (0...Repetition period -1)	SFN mod Repetitionperiod = Offset.
>>Paging indicator length	MD		Integer (2, 4, 8)	Indicates the length of one paging indicator in symbols.. Default value is 2.
>>N_{GAP}	MD		Integer(2, 4, 8)	Number of frames between the last frame carrying PICH for this Paging Occasion and the first frame carrying paging messages for this Paging Occasion. Default value is 4.
>>N_{PCH}	MD		Integer(1 .. 8)	Number of paging groups. Default value is 2.

10.3.6.35 PICH Power offset

NOTE : Only for FDD

This is the power transmitted on the PICH minus power of the Primary CPICH.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PICH Power offset	MP		Enumerated(-10 .. +5)	Offset in dB, granularity 1 dB

10.3.6.36 PRACH info (for RACH)

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>Available Signature	MP	1 to <maxSigNum>		
>>>Signature	MP		Enumerated (0,1.2…..15)	
>>Available SF	MP		Enumerated (32,64,128,256)	In chips per symbol Defines the smallest permitted SF (i.e. the maximum rate)
>>Scrambling code number	MP		Integer (0 .. 15)	Identification of scrambling code see TS 25.213
>>Puncturing Limit	MP		Real(0.40..1.00 by step of 0.04)	
>>Available Sub Channel number	MP	1 to < maxSubChNum >		
>>>Sub Channel number	MP		Enumerated (0..11)	
>TDD				
>>Timeslot	MP		Integer (0...14)	
>>Channelisation code	MP		Enumerated ((8/1)...(8/8), (16/1)...(16/16)	1:1 mapping between spreading code and midamble shift
>>PRACH Midamble	OP		Enumerated (Direct,Direct/Inverted)	Direct or inverted midamble

Multi Bound	Explanation
MaxSubChNum	Maximum number of available sub channels = 12
MaxSigNum	Maximum number of available signatures = 16

10.3.6.37 PRACH partitioning

NOTE : Only for FDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Access Service class	MP	1 to 8		
>Available signature Start Index	MP		Integer(0..15)	
>Available signature End Index	MP		Integer(0..15)	
>Available sub-channel Start Index	MP		Integer(0..11)	
>Available sub-channel End Index	MP		Integer(0..11)	

The list of available signatures is renumbered from signature index 0 to signature index N-1, where N is the number of available signatures, starting with the lowest available signature number and continuing in sequence, in the order of increasing signature numbers.

List of available signatures : 16 or less signatures are available.

Ex : only signatures 0, 5, 10 and 15 are available, then :

Signature 0 is : available signature index 0

Signature 5 is : available signature index 1

Signature 10 is : available signature index 2

Signature 15 is : available signature index 3

The list of available access-slot sub-channels is renumbered from access-slot sub-channel index 0 to access-slot sub-channel index M-1, where M is the number of available access-slot sub-channels, starting with the lowest available access-slot sub-channel number and continuing in sequence, in the order of increasing access-slot sub-channel numbers.

- List of available Access Slot channels : 12 or less sub-channels are available.

Ex : only sub-channels 0,1 ; 4,5 ; 8,9 are present, then :

Sub-channel 0 is : available sub-channel index 0

Sub-channel 1 is : available sub-channel index 1

Sub-channel 4 is : available sub-channel index 2

Sub-channel 5 is : available sub-channel index 3

Sub-channel 8 is : available sub-channel index 4

Sub-channel 9 is : available sub-channel index 5

One ASC has access to all the access-slot sub-channels between the Available sub-channel Start Index and the Available sub-channel End Index, and to all the signatures between the Available signature Start Index and the Available signature End Index.

NOTE: The above text may eventually be moved to a more appropriate location

10.3.6.38 PRACH power offset

NOTE : Only for FDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Power offset P0	MP		Enumerated (1..8)	Power step when no acquisition indicator is received in dB
Preamble Retrans Max	MP		Integer (1..64)	Maximum number of preambles in one preamble ramping cycle

10.3.6.39 PRACH system information

Information element	Need	Multi	Type and reference	Semantics description
PRACH system information	MP	1 .. <maxPRACHcount>		
>PRACH info	MP		PRACH info (for RACH) 10.3.6.36	
>RACH TFS	MP		Transport format set 10.3.5.20	
>RACH TFCS	MP		Transport Format Combination Set 10.3.5.17	
>CHOICE *mode*	MP			
>>FDD				
>>>PRACH partitioning	MP		PRACH partitioning 10.3.3.37	
>>>Persistence scaling factors	OP		Persistence scaling factors 10.3.6.33	
>>>AC-to-ASC mapping	OP		AC-to-ASC mapping 10.3.6.1	Only present in SIB 5
>>>Primary CPICH TX power	MP		Primary CPICH TX power 10.3.6.42	
>>>Constant value	MP		Constant value 10.3.6.9	
>>>PRACH power offset	MP		PRACH power offset 10.3.6.38	
>>>RACH transmission parameters	MP		RACH transmission parameters 10.3.6.49	
>>>AICH info	MP		AICH info 10.3.6.2	
>>TDD				
>>>ASC info	OP		ASC info 10.3.6.5	

Multi bound	Explanation
MaxPRACHcount	Maximum number of PRACHs

10.3.6.40 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 10.3.6.65	
>Uplink DPCH power control info	MP		Uplink DPCH power control info 10.3.6.67	
>>CHOICE mode	MP			
>>>FDD				
>>>>Maximum allowed UL DPCH TX power	CV		Maximum allowed UL DPCH TX power 10.3.6.27	
>>>>PC Preamble	CV		Enumerated(0,8)	
>>>>TFCI existence	MP		Boolean	TRUE means existence
>>>>Puncturing Limit	MP		Real(0.40 ..1 by step of 0.04)	
Downlink radio resources				
Downlink information common for all radio links				
>Downlink DPCH info common for all RL	OP		Downlink DPCH info common for all RL 10.3.6.14	
>Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.16	
>Spreading factor			Enumerated(4, 8, 16, 32, 64, 128, 256)	
>Fixed or Flexible Position	MP		Enumerated (Fixed, Flexible)	
>TFCI existence	MP		Boolean	TRUE means existence
>Number of bits for Pilot bits	OP		Enumerated (2,4,8)	In bits
>CHOICE mode	MP			
>>FDD				
>>>Default DPCH Offset Value	OP		Default DPCH Offset Value 10.3.6.13	

10.3.6.41 Primary CCPCH info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>TX Diversity indicator	MD		Boolean	Default value is "TRUE"
>TDD				
>>Timeslot	CV		Integer (0...7)	PCCPCH timeslot Timeslot is needed if Message Type is System Information otherwise it is absent
>>Cell parameters ID	CV		Integer (0...127)	For the cell parameter table Cell parameters ID is absent in SIB5 and SIB6
>>Sync case	CV		Enumerated (1, 2)	Case 1,2 Sync case is absent in SIB5 and SIB6
>>Repetition period	MD		Integer (1, 2, 4, 8, 16, 32, 64)	Repetition period of the PCCPCH. Value 1 indicates continuous allocation. Default value is 1
>>Repetition length	MP		Integer (1...Repetition period - 1)	Length of the allocation for each repetition. Note that this is empty is Repetition Period is set to 1
>>Offset	MP		Integer (0... Repetition period-1)	SFN modulo Repetition period = offset. Note that this is empty is Repetition Period is set to 1
>>Block STTD indicator	MD		Block STTD indicator 10.3.6.6	Default value is "TRUE"

10.3.6.42 Primary CCPCH TX Power

NOTE : Only for TDD

Information Element/group name	Need	Multi	Type and reference	Semantics description
Primary CCPCH Tx Power	MP		Enumerated(6..43)	In dBm and 1 dB granularity

10.3.6.43 Primary CPICH info

NOTE : Only for FDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary scrambling code	MP		Enumerated(0..511)	

10.3.6.44 Primary CPICH Tx power

NOTE : Only for FDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH Tx Power	MP		Enumerated(-10..50)	In dBm and 1 dB granularity At least 3 spare values are needed for future extensions with criticality reject

10.3.6.45 Primary CPICH usage for channel estimation

NOTE : Only for FDD

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Primary CPICH usage for channel estimation	MP		Enumerated(Primary CPICH may be used, Primary CPICH shall not be used)	

10.3.6.46 PUSCH info

NOTE : Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE PUSCH allocation	MP			
>PUSCH allocation pending			Null	
>PUSCH allocation assignment				
>>PUSCH power control info	OP		PUSCH power control info 10.3.6.47	
>>Time info	MP		Time info 10.3.6.61	
>>Common timeslot info	CH		Common timeslot info 10.3.6.8	Common timeslot info is needed if Common timeslot info needs to be updated.
>>Timeslot List	CH	1 to <maxTimeslotCount>		Timeslot List is needed if Timeslot List needs to be updated.
>>>Individual timeslot info	MP		Individual timeslot info 10.3.6.25	The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>>>Channelisation Code	MP		Enumerated((1/1),)(2/1),(2/2),(4/1)..(4/ 4),(8/1)..(8/8) ,(16/1)..(16/1 6))	

Multi Bound	Explanation
MaxTimeslotcount	Maximum number of timeslots used for PUSCHs = 14

10.3.6.47 PUSCH power control info

NOTE : Only for TDD

Interference level measured for a frequency at the UTRAN access point used by UE to set PUSCH output power.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UL target SIR	MP		Real (-11 .. 20 by step of 0,5)	in dB

10.3.6.48 PUSCH system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PUSCH information	MP	1 .. <maxPUSCHcount>		
>PUSCH info	MP		PUSCH info 10.3.6.46	
>USCH TFS	OP		Transport format set 10.3.5.20	

Multi Bound	Explanation
MaxPUSCHcount	Maximum number of PUSCHs

10.3.6.49 RACH transmission parameters

NOTE : Only for FDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Mmax	MP		Integer(1..32)	Maximum number of preamble cycles
NB01min	MP			Sets lower bound for random back-off
NB01max	MP			Sets upper bound for random back-off

10.3.6.50 Radio link addition information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH info	MP		Primary CPICH info 10.3.6.43	
Downlink DPCH info for each RL	MP		Downlink DPCH info for each RL 10.3.6.15	
TFCI combining indicator	OP		TFCI combining indicator 10.3.6.60	
Secondary CCPCH info	OP		Secondary CCPCH info 10.3.6.52	Note 1
References to system information blocks	OP	1 to <MaxSysInfoBlockFACHCount>		Note 1
>Scheduling information	MP		Scheduling information 10.3.8.11	Note 1

NOTE 1: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

Multi Bound	Explanation
MaxSysInfoBlockFACHCount	Maximum number of references to system information blocks on the FACH

10.3.6.51 Radio link removal information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH info	MP		Primary CPICH info 10.3.6.43	

10.3.6.52 Secondary CCPCH info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Selection Indicator	CV		Enumerated (On, Off)	Needed if send on BCCH.
CHOICE *mode*	MP			
>FDD				
>>Primary CPICH usage for channel estimation	MP		Primary CPICH usage for channel estimation 10.3.6.45	
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.54	
>>Secondary scrambling code	MD		Secondary scrambling code 10.3.6.55	Default is the same scrambling code as for the Primary CPICH
>>STTD indicator	MD		STTD Indicator 10.3.6.58	Default value is "TRUE"
>>Spreading factor	MP		Enumerated(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		Enumerated(0..38144 by step of 256)	Chip Delay of the Secondary CCPCH relative to the Primary CCPCH. Default value is 0.
>TDD				
>>Offset	MD		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	CH		Common timeslot info 10.3.6.8	Common timeslot info is needed if Common timeslot info needs to be updated.
>>Individual timeslot info	MP		Individual timeslot info 10.3.6.25	
>>Channelisation Code	MP		Enumerated((16/1)..(16/16))	

10.3.6.53 Secondary CCPCH system information

Information element	Need	Multi	Type and reference	Semantics description
Secondary CCPCH system information	MP	1 to <maxSCCPCHcount>		
>Secondary CCPCH info	MP		Secondary CCPCH info 10.3.6.52	Note 1
>TFCS	MP		Transport format set 10.3.5.20	For FACHs and PCH
>FACH/PCH information	MP	1 to <maxFACHcount>		
>>TFS	MP		Transport format set 10.3.5.20	For each FACHs 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	CV		PICH info 10.3.6.34	PICH info is present only when PCH is multiplexed on Secondary CCPCH

NOTE 1: The secondary CCPCH carrying the PCH shall be the first Secondary CCPCH information in the list.

NOTE 2: TFS for PCH shall be the first FACH/PCH information in the list if PCH exists.

Multi bound	Explanation
MaxSCCPCHcount	Maximum number of secondary CCPCHs
MaxFACHcount	Maximum number of FACH and PCHs mapped onto secondary CCPCHs

10.3.6.54 Secondary CPICH info

NOTE : Only for FDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Secondary scrambling code	MD		Secondary scrambling code 10.3.6.55	Default is the same scrambling code as for the Primary CPICH
Channelisation code	MP		Enumerated(0..255)	

10.3.6.55 Secondary scrambling code

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Secondary scrambling code	MP		Enumerated(1..15)	At least 1 spare value needed Criticality: reject is needed

10.3.6.56 SSDT cell identity

NOTE : Only for FDD

This IE is used to associate a cell identity with a given radio link

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SSDT cell_id	MP		Enumerated (a, b, c, d, e, f, g, h)	

10.3.6.57 SSDT information

NOTE : Only for FDD

This information element indicates the status (e.g. initiated/terminated) of the Site Selection

Diversity Transmit power control (SSDT). It is used to change the SSDT status. The parameter 'code word set' indicates how cell identities are coded (using many bits or few, values are long, medium, or short).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
S field	MP		Enumerated (1, 2)	in bits
Code Word Set	MP		Enumerated (long, medium, short, SSDT off)	

NOTE: These parameters shall be set optinally associated with DL DPCH info but not for each RL.

10.3.6.58 STTD indicator

Indicates whether STTD is used or not

Information Element/Group name	Need	Multi	Type and reference	Semantics description
STTD Indicator	MP		Boolean	TRUE means that STTD is used

10.3.6.59 TFC Control duration

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFC Control duration	MP		Enumerated (1, 16, 24, 32, 48, 64, 128, 192, 256, 512)	Defines the period in multiples of 10 ms frames for which the defined TFC sub-set is to be applied. At least 8 spare values for future extensions with criticality reject are needed.

10.3.6.60 TFCI Combining Indicator

NOTE : Only for FDD

This IE indicates whether the TFCI (field 2) which will be transmitted on the DPCCH of a newly added radio link should be soft combined with the others in the TFCI (field 2) combining set. This IE can only be sent when the UE is in CELL_DCH state with a DSCH transport channel assigned and when there is a 'hard' split in the TFCI field (such that TFCI1 and TFCI2 have their own separate block coding).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCI combining indicator	MP		Boolean	TRUE means that TFCI is combined

10.3.6.61 Time info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Activation time	MD		Activation time 10.3.3.1	Frame number start of the physical channel existence. Default value is "Now"
Duration	MD		Integer(1..4096)	Total number of frames the physical channel will exist. Default value is "infinite".

10.3.6.62 TPC combination index

NOTE : Only for FDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TPC combination index	MP		Enumerated(0..5)	Radio links with the same index have TPC bits, which for the UE are known to be the same.

10.3.6.63 TX Diversity Mode

NOTE : Only for FDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Mode	MP		Enumerated (none, STTD, closed loop mode1, closed loop mode2)	

10.3.6.64 UL interference

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UL interference	MP		Enumerated (-110..-70)	In dBm and 1 dB step At least 23 spare values with criticality reject are needed

Note: In TDD, this IE is a timeslot specific value

10.3.6.65 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 10.3.6.67	
CHOICE *mode*	MP			
>FDD				
>>Scrambling code type	MP		Enumerated(short, long)	
>>Scrambling code number			Integer(0..77 7215 by step of 16)	
>>Number of DPDCH	CV-Single	1 to <maxDPD CHcount>		maxDPDCH is 1 in HANDOVER TO UTRAN COMMAND
>>>DPDCH channelisation code	MP		Enumerated(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				
>>UL CCTrCH List	CH	1 to <maxULC CTrCHcou nt>		maxULCCTrCHcount is 1 if not in TDD - TDD handover procedure.
>>>TFCS Identity	MD			Default value is 1.
>>>Time info	MP		Time info 10.3.6.61	
>>>Common timeslot info	CH		Common timeslot info 10.3.6.8	Common timeslot info is needed if Common timeslot info needs to be updated.
>>>Timeslot List	CH	1 to < max Timeslot count>		Timeslot List is needed if Timeslot List needs to be updated.
>>>>Individual timeslot info	MP		Individual timeslot info 10.3.6.25	The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>>>>Channelisation Code	MP		Enumerated((1/1),)(2/1),(2/2),(4/1)..(4/ 4),(8/1)..(8/8) ,(16/1)..(16/1 6))	

Condition	Explanation
Single	This IE is included if IE "Number of DPDCH" is "1"

Multi Bound	Explanation
MaxDPDCHcount	Maximum number of DPDCHs
MaxTimeslotcount	Maximum number of timeslots used for DPCHs
MaxULCCTrCHcount	Maximum number of CCTrCHs configured by the message = 8

10.3.6.66 Uplink DPCH info Short

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Uplink DPCH power control info	MP		Uplink DPCH power control info Short 10.3.6.68	
CHOICE *mode*	MP			
>FDD				
>>Scrambling code type	MP		Enumerated(short, long)	
>>Reduced scrambling code number			Integer(0..8191)	Sub-range of values for initial use upon handover to UTRAN.
>>DPDCH channelisation code	MP		Enumerated(4, 8, 16, 32, 64, 128, 256)	SF of the channelisation code for data part There is inly one DPDCH for this case
>>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.
>TDD				(no data)

Multi Bound	Explanation
MaxDPDCHcount	Maximum number of DPDCHs

10.3.6.67 Uplink DPCH power control info

Parameters used by UE to set DPCH initial output power and to use for closed-loop power control in FDD and parameters for uplink open loop power control in TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>DPCCH Power offset	MP		Enumerated(-164,..-6 by step of 2)	In dB
>>PC Preamble	CV		Enumerated (0, 8)	PC Preamble is absent in HANDOVER TO UTRAN COMMAND. Otherwise it is present. Number of power control preamble slots
>>Power Control Algorithm	MP		Enumerated (algorithm 1, algorithm 2)	Specifies algorithm to be used by UE to interpret TPC commands
>>TPC step size	CV algo		Enumerated (1, 2)	In dB
>TDD				
>>Maximum allowed UL DPCH TX power	MD		Maximum allowed UL TX power 10.3.6.27	Default value is according to power class (25.102).
>>UL target SIR	MP		Real (-11 .. 20 by step of 0.5dB)	In dB
>>Individual timeslot interference info	CH HO case	1 to...<TS Count>		
>>> Individual timeslot interference	MP		Individual timeslot interference 10.3.6.26	
>>DPCH Constant Value	CH HO case		Constant Value 10.3.6.9	Quality Margin

Condition	Explanation
algo	The IE is mandatory if “Power Control Algorithm” is set to “algorithm 1”, otherwise the IE is not needed
HO case	This IE shall be present in the case of handover

Multi Bound	Explanation
TS Count	Number of uplink timeslots used for this dedicated CCTrCH

10.3.6.68 Uplink DPCH power control info Short

Parameters used by UE to set DPCH initial output power and to use for closed-loop power control.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>DPCCH Power offset	MP		Enumerated(-164..-6 by step of 2)	In dB
>>PC Preamble	CV		Enumerated (0, 8)	PC Preamble is absent in HANDOVER TO UTRAN COMMAND. Otherwise it is present. Number of power control preamble slots
>>Power Control Algorithm	MP		Enumerated (algorithm 1, algorithm 2)	Specifies algorithm to be used by UE to interpret TPC commands
>>TPC step size	CV algo		Enumerated (1dB, 2dB)	
>TDD				(no data)

Condition	Explanation
algo	The IE is mandatory if “Power Control Algorithm” is set to “algorithm 1”, otherwise the IE is not needed

10.3.6.69 Uplink Timing Advance

NOTE : Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UL Timing Advance	MP		Integer (0..63)	Absolute timing advance value to be used to avoid large delay spread at the NodeB

10.3.7 Measurement Information elements

10.3.7.1 Additional measurements list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Additional measurements	MP	1 to <MaxAdditionalMeas>		
>Additional measurement identity	MP		Measurement identity number 10.3.73	

Multi Bound	Explanation
MaxAdditionalMeas	Maximum number of additional measurements for a given measurement identity

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
Reference time difference to cell	OP		Integer (-153088 ..153088 by step of 512)	In chips.
CHOICE *mode*	MP			
>FDD				
>>Primary CPICH info	OP		Primary CPICH info 10.3.6.43	Not required if measuring RSSI only
>>Primary CPICH Tx power	OP		Primary CPICH Tx power 10.3.6.44	
>>Read SFN indicator	MP		Boolean	TRUE indicates that read of SFN is requested for the target cell
>>TX Diversity Indicator	MP		Boolean	
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.41	
>>Primary CCPCH TX power	OP		Primary CCPCH TX power 10.3.6.42	
>>DL CCTrCH info	OP			List of TFCS ID's to measure
>>DL Timeslot info	OP			List of timeslots to measure
Cell Selection and Re-selection Info	CV		Cell Selection and Re-selection Info 10.3.2.3	Only when sent in system information
>CHOICE *mode*	MP			
>>FDD				
>>>Qmin	MD		Integer (-20..0)	Ec/N0, [dB] Default value is Qmin for the serving cell
>>TDD				
>>> Qmin	MD		Integer (-115..-25 by step of 2)	RSCP, [dBm] Default value is Qmin for the serving cell
>Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.27	[dBm] UE_TXPWR_MAX_RACH in 25.304. Default is the Maxium allowed UL TX power for the serving cell
>CHOICE *signaling option*	MP			
>>Alternative 1				Used when Alternative 1 according to TS 25.304 of how offset parameters should be signalled
>>>$Qoffset_{s,n}$	MD		Real(-50.0..50.0 by step of 1)	Default value is 0.
>>Alternative 2				(no data) Used when Alternative 2 according to TS 25.304 of how offset parameters should be signalled
>HCS neighbouring cell information	OP		HCS Neighbouring cell information 10.3.7.11	

10.3.7.3 Cell measured results

Includes non frequency related measured results for a cell

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell Identity	OP		Cell Identity 10.3.2.2	
SFN-SFN observed time difference	OP		SFN-SFN observed time difference 10.3.7.90	
CHOICE *mode*	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.43	
>>CPICH Ec/N0	OP		Enumerated(-20..0)	In dB
>>CPICH RSCP	OP		Enumerated(-115..-40)	In dBm
>>CPICH SIR	OP		Enumerated(-10..20)	In dB Note 1
>>Pathloss	OP		Enumerated(46..158)	In dB
>>CFN-SFN observed time difference	OP		CFN-SFN observed time difference 10.3.7.6	Note 2
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.41	
>>Primary CCPCH RSCP	OP			
>>DL CCTrCH SIR	OP	1 to <maxCCTrCHcount>		SIR measurements for each DL CCTrCH
>>>Timeslot	OP	1 to <maxTSperCCTrCH count		All timeslots on which the CCTrCH is mapped on
>>>>ISCP	OP			
>>>>RSCP	OP			
>>DL Timeslot ISCP	OP	1 to <maxTStoMEASURE count>		ISCP measurements for each timeslot indicated by the UTRAN
>>>ISCP	OP			

Multi Bound	Explanation
MaxCCTrCHcount	Maximum number of DL CCTrCH allocated to an UE
MaxTSperCCTrCHcount	Maximum number of TS on which a single DL CCTrCH is mapped on
MaxTStoMEASUREcount	Maximum number of TS on which the UE has to measure

NOTE 1: If CPICH SIR can be used has not been concluded in WG4

NOTE 2: Feasibility of performing these measurements with compressed mode is unclear.

10.3.7.4 Cell measurement event results

Includes non frequency related cell reporting quantities

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>Primary CPICH info	MP	1 to <maxCellCount>	Primary CPICH info 10.3.6.43	
>TDD				
>>Primary CCPCH info	MP	1 to <maxCellCount>	Primary CCPCH info 10.3.6.41	

Multi Bound	Explanation
MaxCellCount	Maximum number of cells to report

10.3.7.5 Cell reporting quantities

Includes non frequency related cell reporting quantities

For all boolean types TRUE means inclusion in the report is requested

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SFN-SFN observed time difference	MP		Enumerated(No report, type 1, type 2)	
Cell Identity	MP		Boolean	
CHOICE *mode*	MP			
>FDD				
>>CPICH Ec/N0	MP		Boolean	
>>CPICH RSCP	MP		Boolean	
>>CPICH SIR	MP		Boolean	Note 1
>>Pathloss	MP		Boolean	
>>CFN-SFN observed time difference	MP		Boolean	
>TDD				
>>DL CCTrCH SIR	MP		Boolean	
>>Timeslot ISCP	MP		Boolean	
>>Primary CCPCH RSCP	MP		Boolean	
>>Pathloss	MP		Boolean	

Note 1: If CPICH SIR can be used has not been concluded in WG4

10.3.7.6 CFN-SFN observed time difference

NOTE : Only for FDD

The measured time difference to cell indicates the time difference that is measured by UE between CFN in the UE and the SFN ofh the target neighbouring cell. It is notified to SRNC by Measurement Report message or Measurement Information Element in other RRC messages. This measurement is for FDD only

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CFN-SFN observed time difference	MP		Enumerated(0..9830399)	Number of chip

10.3.7.7 Event results

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE event result	MP			
>Intra-frequency measurement event results			Intra-frequency measurement event results 10.3.7.37	
>Inter-frequency measurement event results			Inter-frequency measurement event results 10.3.7.17	
>Inter-system measurement event results			Inter-system measurement event results 10.3.7.28	For IS-2000 results, include fields of the *Pilot Strength Measurement Message* from Section 2.7.2.3.2.5 of TIA/EIA/IS-2000.5
>Traffic volume measurement event results			Traffic volume measurement event results 10.3.7.95	
>Quality measurement event results			Quality measurement event results 10.3.7.81	This IE is FFS
>UE internal measurement event results			UE internal measurement event results 10.3.7.104	
>LCS measurement event results			LCS measurement event results 10.3.7.58	

CHOICE *event result*	Condition under which the given *event result* is chosen
Intra-frequency measurement event results	If measurement type = intra-frequency measurement
Inter-frequency measurement event results	If measurement type = inter-frequency measurement
Inter-system measurement event results	If measurement type = inter-system measurement
Traffic volume measurement event results	If measurement type = traffic volume measurement
Quality measurement event results	If measurement type = Quality measurement
UE internal measurement event results	If measurement type = UE internal measurement
LCS measurement event results	If measurement type = LCS measurement

10.3.7.8 FACH measurement occasion info

This IE is for FDD only.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
k_UTRA	MP		DRX cycle length coefficient 10.3.3.9	
Other RAT present in inter-system cell info		1 to <MaxInterRat>		
>RAT type	MP		Enumerated(GSM, IS2000)	At least 14 spare values, Criticality: Reject, are needed
>k_Inter_Rat	MP		Integer(0..12)	

Multi Bound	Explanation
MaxInterRat	Maximum number of other radio access technologies that can be present in the inter-system cell info

10.3.7.9 Filter coefficient

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Filter coefficient	MD		Enumerated(1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 64, 128, 256, 512, 1024)	Default value is 1 At least one, criticality: reject, spare value needed for future extension

10.3.7.10 HCS Cell re-selection information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Penalty_time	MD		Enumerated(not used, 10, 20, 30, 40, 50, 60)	Default value = not used
Temporary_offset	CV-*Penalty used*		Enumerated(10, 20, 30, 40, 50, 60, 70, infinity)	

Condition	Explanation
Penalty used	Not allowed if IE Penalty time equals 'not used' else MP

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		Enumerated(not used, 30, 60, 120, 180, 240)	[s] Default value = not used
N_{CR}	CV-*UE speed detector*		Integer(1..16)	Default value = 8
$T_{CrmaxHyst}$	CV-*UE speed detector*		Enumerated(not used, 10, 20..70)	[s] Default value = not used

Condition	Explanation
UE Speed detector	Not allowed if T_{Crmax} equals 'not used' else MP

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
Removed inter-frequency cells	OP	1 .. <MaxInterCells>		
>Inter-frequency cell id	MP		Integer(0 .. MaxInterCells>	
New inter-frequency cells	OP	1 to <MaxInterCells>		
>Inter-frequency cell id	MD		Integer(0 .. MaxInterCells>	The first inter-frequency cell in the list corresponds to inter-frequency cell id 0, the second corresponds to inter-frequency cell id 1 etc
>Frequency info	MD		Frequency info 10.3.6.24	Default value is the value of the previous “frequency info” in the list (note : the first occurence is then MP)
>Cell info	MP		Cell info 10.3.7.2	

Multi Bound	Explanation
MaxInterCells	Maximum number of Inter-frequency cells in a measurement control

10.3.7.14 Inter-frequency event identity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-frequency event identity	MP		Enumerated(2a, 2b, 2c, 2d, 2e, 2f)	

10.3.7.15 Inter-frequency measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-frequency measurement results	OP	1 to <maxNumFreq>		
>Frequency info	MD		Frequency info 10.3.6.24	Default value is the value of the previous “frequency info” in the list (note : the first occurence is then MP)
>UTRA carrier RSSI	OP		Enumerated(-95..-30)	In dBm
>Inter-frequency cell measurement results	OP	1 to <maxInterCells>		
>>Cell measured results	MP		Cell measured results 10.3.7.3	

Multi Bound	Explanation
maxNumFreq	Maximum number of frequencies with inter-frequency cells that can be included in a measurement report
maxInterCells	Maximum number of inter-frequency cells for one frequency that can be included in a measurement report

10.3.7.16 Inter-frequency measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-frequency cell info list	MP		Inter-frequency cell info list 10.3.7.13	Measurement object
Inter-frequency measurement quantity	OP		Inter-frequency measurement quantity 10.3.7.18	
Inter-frequency reporting quantity	OP		Inter-frequency reporting quantity 10.3.7.21	
Reporting cell status	OP		Reporting cell status 10.3.7.88	
Measurement validity	OP		Measurement validity 10.3.7.76	
Inter-frequency set update	OP		Inter-frequency set update 10.3.7.22	
CHOICE report criteria	MP			
>Intra-frequency measurement reporting criteria			Intra-frequency measurement reporting criteria 10.3.7.39	
>Inter-frequency measurement reporting criteria			Inter-frequency measurement reporting criteria 10.3.7.19	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.78	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement

10.3.7.17 Inter-frequency measurement event results

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-frequency event identity	MP		Inter-frequency event identity 10.3.7.34	
Inter-freqency cells	MP	1 to <maxFreq Count>		
>Frequency info	MP		Frequency info 10.3.6.24	
>Non frequency related measurement event results	MP		Cell measurement event results 10.3.7.4	

Multi Bound	Explanation
MaxFreqCount	Maximum number of frequencies to report.

10.3.7.18 Inter-frequency measurement quantity

The quantity the UE shall measure in case of inter-frequency measurement. It also includes the filtering of the measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *reporting criteria*	MP			
>Intra-frequency reporting criteria				
>>Intra-frequency measurement quantity	MP		Intra-frequency measurement quantity 10.3.7.38	
>Inter-frequency reporting criteria				
>>Filter coefficient	MP		Filter coefficient 10.3.7.9	
>>CHOICE *mode*	MP			
>>>FDD				
>>>>Measurement quantity for frequency quality estimate	MP		Enumerated(CPICH Ec/N0, CPICH RSCP)	
>>>TDD				
>>>>Measurement quantity for frequency quality estimate	MP		Enumerated(Primary CCPCH RSCP)	

10.3.7.19 Inter-frequency measurement reporting criteria

The triggering of the event-triggered reporting for an inter-frequency measurements. All events concerning inter-frequency measurements are labelled 2x where x is a,b,c..

Event 2a: Change of best frequency.

Event 2b: The estimated quality of the currently used frequency is below a certain threshold **and** the estimated quality of a non-used frequency is above a certain threshold.

Event 2c: The estimated quality of a non-used frequency is above a certain threshold

Event 2d: The estimated quality of the currently used frequency is below a certain threshold

Event 2e: The estimated quality of a non-used frequency is below a certain threshold

Event 2f: The estimated quality of the currently used frequency is above a certain threshold

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters required for each event	OP	1 to <maxEvent count>		
>Inter-frequency event identity	MP		Inter-frequency event identity 10.3.7.14	
>Treshold used frequency	CV – clause 0			
>W used frequency	CV – clause 0		Real(0, 0.1..2.0 by step of 0.1)	
>Hysteresis	MP		Real(0, 0.5..14.5 by step of 0.5)	In event 2a, 2b, 2c, 2d, 2e, 2f
>Time to trigger	MP		Time to trigger 10.3.7.91	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms.
>Amount of reporting	MP		Enumerated(1, 2, 4, 8, 16, 32, 64, infinity)	
>Reporting interval	MP		Enumerated(0, 0.25, 0.5, 1, 2, 4, 8, 16)	Indicates the interval of periodical reporting when such reporting is triggered by an event. A zero value indicates that event triggered periodical reporting shall not be applied. Interval in seconds
>Parameters required for each non-used frequency	OP	1 to <maxNonusedfrequency>		
>>Threshold non used frequency	CV – clause 1			
>>W non-used frequency	CV-clause 1		Real(0, 0.1..2.0 by step of 0.1)	

Condition	Explanation
Clause 0	2a,2b, 2d, or 2f, otherwise the IE is not needed
Clause 1	The IE is mandatory in if "inter frequency event identity" is set to 2a, 2b, 2c or 2^e, otherwise the IE is not needed

Multi Bound	Explanation
maxEventcount	Maximum number of events that can be listed in measurement reporting criteria
maxNonusedfrequency	Maximum number of non used frequencies that can be listed in measurement reporting criteria

10.3.7.20 Inter-frequency measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-frequency measurement identity number	MD		Measurement identity number 10.3.7.73	The inter-frequency measurement identity number has default value 2.
Inter-frequency cell info list	OP		Inter-frequency cell info list 10.3.7.13	
Inter-frequency measurement quantity	OP		Inter-frequency measurement quantity 10.3.7.18	

10.3.7.21 Inter-frequency reporting quantity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UTRA Carrier RSSI	MP		Boolean	TRUE means report is requested
Frequency quality estimate	MP		Boolean	TRUE means that report is requested
Non frequency related cell reporting quantities	MP		Cell reporting quantities 10.3.7.5	

10.3.7.22 Inter-frequency SET UPDATE

NOTE : Only for FDD

Contains the changes of the active set associated with a non-used frequency. This information makes it possible to use events defined for Intra-frequency measurement within the same non-used frequency for Inter-frequency measurement reporting criteria. This information also controls if the UE should use autonomous updating of the active set associated with a non-used frequency.

Information Element/group name	Need	Multi	Type and reference	Semantics description
UE autonomous update mode	MP		Enumerated (On, On with no reporting, Off)	
Non autonomous update mode	CV-Update			
>Radio link addition information	OP	1 to <MaxAddRLcount>		Radio link addition information required for each RL to add
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.43	Note 1
>Radio link removal information	OP	1 to <MaxDelRLcount>		Radio link removal information required for each RL to remove
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.43	Note 1

Condition	Explanation
Update	The IE is mandatory if IE"UE autonomous update mode" is set to "Off", otherwise the IE is not needed.

Multi bound	Explanation
MaxAddRLcount	Maximum number of radio links which can be added
MaxDelRLcount	Maximum number of radio links which can be removed/deleted

NOTE 1: If it is assumed that CPICH downlink scrambling code is always allocated with sufficient reuse distances, CPICH downlink scrambling code will be enough for designating the different radio links.

10.3.7.23 Inter-system cell info list

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Removed inter-system cells	OP	1 .. <MaxInterSysCells>		
>Inter-system cell id	MP		Integer(0 .. MaxInterSysCells>	
New inter-system cells	OP	1 to <MaxInterSysCells>		
>Inter-system cell id	MD		Integer(0 .. MaxInterSysCells>	The first inter-system cell in the list corresponds to inter-system cell id 0, the second corresponds to inter-system cell id 1 etc.
>CHOICE *Radio Access Technology*	MP			At least one spare choice, Criticality: Reject, is needed.
>>GSM				
>>>$Qoffset_{s,n}$	MD		Integer (-50..50)	Default value if the value of the previous $Qoffset_{s,n}$ in the list (note ; the first occurence is then MP)
>>>HCS Neighbouring cell information	OP		HCS Neighbouring cell information 10.3.7.11	
>>>Qmin	MP			
>>>Maximum allowed UL TX power	MP		Maximum allowed UL TX power 10.3.6.27	
>>> BSIC	MP		BSIC 10.3.8.2	
>>>BCCH ARFCN	MP		Integer (0..1023)	GSM TS 04.18
>>>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, Section 3. 7.3.3.2.27, *Candidate Frequency Neighbor List Message*

Multi Bound	Explanation
MaxInterSysCells	Maximum number of Inter-System cells in a inter-system cell info list

10.3.7.24 Inter-system event identity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-system event identity	MP		Enumerated (3a, 3b, 3c, 3d)	

10.3.7.25 Inter-system info

Inter-system info defines the target system for redirected cell selection.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-system info	MP		Enumerated (GSM)	At least 1 spare value, criticality = reject, required

10.3.7.26 Inter-system measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-system measurement results	OP	1 to <maxInterSys>		
CHOICE system				At least one spare value, criticality = reject, required
>GSM				
>>Frequency	MP			
>>GSM carrier RSSI	OP		bit string(6)	RXLEV GSM TS 05.08
>>Pathloss	OP		Integer(46..158)	In dB
>>BSIC	OP		BSIC 10.3.8.2	
>>Observed time difference to GSM cell	OP		Observed time difference to GSM cell 10.3.7.77	

Multi Bound	Explanation
MaxInterSys	Maximum number of Inter-System cells in a measurement report

10.3.7.27 Inter-system measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-system cell info list	OP		Inter-system cell info list 10.3.7.23	Measurement object
Inter-system measurement quantity	OP		Inter-system measurement quantity 10.3.7.29	
Inter-system reporting quantity	OP		Inter-system reporting quantity 10.3.7.32	
Reporting cell status	OP		Reporting cell status 10.3.7.88	
CHOICE report criteria	MP			
>Inter-system measurement reporting criteria			Inter-system measurement reporting criteria 10.3.7.30	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.78	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement

10.3.7.28 Inter-system measurement event results

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-system event identity	MP		Inter-system event identity 10.3.7.24	
Cells to report	MP	1 to <maxCellCount>		
>Frequency	MP			
>BSIC	MP		BSIC 10.3.8.2	

Multi Bound	Explanation
MaxCellCount	Maximum number of cells to report.

10.3.7.29 Inter-system measurement quantity

The quantity the UE shall measure in case of inter-system measurement. It also includes the filtering of the measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Measurement quantity for UTRAN quality estimate	MP		Intra-frequency measurement quantity 10.3.7.38	
CHOICE *system*	MP			
>GSM				
>>Measurement quantity	MP		Enumerated(GSM Carrier RSSI, Pathloss)	
>>Filter coefficient	MP		Filter coefficient 10.3.7.9	
>>BSIC verification required	MP		Boolean	TRUE means verification is required Note 1
>IS2000				
>>TADD E_c/I_0	MP		Integer(0..63)	Admission criteria for neighbours, see section 2.6.6.2.6 of TIA/EIA/IS-2000.5
>>TCOMP E_c/I_0	MP		Integer(0..15)	Admission criteria for neighbours, see section 2.6.6.2.5.2 of TIA/EIA/IS-2000.5
>>SOFT SLOPE	OP		Integer(0..63)	Admission criteria for neighbours, see section 2.6.6.2.3 and 2.6.6.2.5.2 of TIA/EIA/IS-2000.5
>>ADD_INTERCEPT	OP		Integer(0..63)	Admission criteria for neighbours, see section 2.6.6.2.5.2 of TIA/EIA/IS-2000.5

NOTE 1 The possibility to use this IE is dependant on comments from SMG2.

Also, this IE must be set to "true" if IE "Observed time difference to GSM cell" in IE "Inter-system reporting quantity "is set to "true".

10.3.7.30 Inter-system measurement reporting criteria

The triggering of the event-triggered reporting for an inter-system measurement. All events concerning inter-system 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 <maxEvent count>		
>Inter-system event identity	MP		Inter-system event identity 10.3.7.24	
>Treshold own system	CV – clause 0			
>W	CV – clause 0			In event 3a
>Threshold other system	CV – clause 1			In event 3a, 3b, 3c
>Hysteresis	MP			
>Time to trigger	MP		Time to trigger 10.3.7.91	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report.
>Amount of reporting	MP			
>Reporting interval	MP			Indicates the interval of periodical reporting when such reporting is triggered by an event. A zero value indicates that event triggered periodical reporting shall not be applied.

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

Multi Bound	Explanation
maxEventcount	Maximum number of events that can be listed in measurement reporting criteria

10.3.7.31 Inter-system measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-system measurement identity number	MD		Measurement identity number 10.3.7.73	The inter-system measurement identity number has default value 3.
Inter-system cell info list	OP		Inter-system cell info list 10.3.7.23	
Inter-system measurement quantity	OP		Inter-system measurement quantity 10.3.7.29	

10.3.7.32 Inter-system reporting quantity

For all boolean types TRUE means inclusion in the report is requested

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UTRAN estimated quality	MP		Boolean	
CHOICE *system*	MP			At least one spare choice, criticality = reject, required
>GSM				
>>Pathloss	MP		Boolean	
>>Observed time difference to GSM cell	MP		Boolean	
>>GSM Carrier RSSI	MP		Boolean	
>>BSIC	MP		Boolean	

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
Removed intra-frequency cells	OP	1 .. <MaxIntraCells>		
>Intra-frequency cell id	MP		Integer(0 .. MaxIntraCells >	
New ntra-frequency cell	OP	1 to <MaxIntraCells>		
>Intra-frequency cell id	MD		Integer(0 .. MaxIntraCells >	The first intra-frequency cell in the list corresponds to intra-frequency cell id 0, the second corresponds to intra-frequency cell id 1 etc.
>Cell info	MP		Cell info 10.3.7.2	

Multi Bound	Explanation
MaxIntraCells	Maximum number of intra-frequency cells in a measurement control

10.3.7.34 Intra-frequency event identity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Intra-frequency event identity	MP		Enumerated (1a,1b,1c,1d, 1e,1f,1g,1h,1 I,1j)	

10.3.7.35 Intra-frequency measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Intra-frequency measured results	OP	1 to <maxIntraC ells>		
>Cell measured results	MP		Cell measured results 10.3.7.3	

Multi Bound	Explanation
MaxIntraCells	Maximum number of intra-frequency cells that can be included in a measurement report

10.3.7.36 Intra-frequency measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Intra-frequency cell info list	OP		Intra-frequency cell info list 10.3.7.33	Measurement object Not included for measurement of unlisted set.
Intra-frequency measurement quantity	OP		Intra-frequency measuremen t quantity 10.3.7.38	
Intra-frequency reporting quantity	OP		Intra-frequency reporting quantity 10.3.7.41	
Reporting cell status	OP		Reporting cell status 10.3.7.88	
Measurement validity	OP		Measuremen t validity 10.3.7.76	
CHOICE report criteria	MP			
>Intra-frequency measurement reporting criteria			Intra-frequency measuremen t reporting criteria 10.3.7.39	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.78	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement

10.3.7.37 Intra-frequency measurement event results

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Intra-frequency event identity	MP		Intra-frequency event identity 10.3.7.34	
Cell measured event results	MP		Cell measured event results 10.3.7.4	

10.3.7.38 Intra-frequency measurement quantity

The quantity the UE shall measure in case of intra-frequency measurement. It also includes the filtering of the measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Filter coefficient	MP		Filter coefficient 10.3.7.9	
CHOICE *mode*	MP			
>FDD				
>>Measurement quantity	MP		Enumerated(CPICH Ec/N0, CPICH RSCP, CPICH SIR, Pathloss, UTRA Carrier RSSI)	Pathloss=Primary CPICH Tx power-CPICH RSCP If used in Inter system measurement quantity only Ec/N0 an RSCP is allowed. If used in inter-frequency measurement quantity RSSI is not allowed. Note 1
>TDD				
>>Measurement quantity	MP		Enumerated(Primary CCPCH RSCP, Pathloss, Timeslot ISCP, UTRA Carrier RSSI)	Pathloss=Primary CCPCH Tx power-Primary CCPCH RSCP If used in inter-frequency measurement quantity RSSI is not allowed.

Note 1: If CPICH SIR can be used has not been concluded in WG4

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: DL CCTrCH below a certain threshold (TDD only)

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

Event 1j: 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 <maxEvent count>		
> Intra-frequency event identity	MP		Intra-frequency event identity 10.3.7.34	
>Triggering condition	CV - clause 0		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells)	Indicates which cells that can trigger the event
>Reporting Range	CV - clause 1		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 <maxCells Forbidden >		In event 1a,1b
>>CHOICE *mode*	MP			
>>>FDD				
>>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.43	
>>>TDD				
>>>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.41	
>W	CV – clause 1		Real(0.0..2.0 by step of 0.1)	
>Hysteresis	CV - clause 2		Real(0..7.5 by step of 0.5)	In dB. In event 1a, 1b, 1c,1d, 1g, 1h, 1i or 1j.
>Reporting deactivation threshold	CV - clause 3		Enumerated(not applicable, 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.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				.
>Replacement activation threshold	CV - clause 4		Enumerated(not applicable, 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.
>Time to trigger	MP		Time to trigger 10.3.7.91	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms
>Amount of reporting	MP		Enumerated(1, 2, 4, 8, 16, 32, 64, Infinity)	Measurement is "released" after the indicated amount of reporting from the UE itself.
>Reporting interval	MP		Enumerated(no periodical reporting, 0.25, 0.5, 1, 2, 4, 8, 16)	Indicates the interval of periodical reporting when such reporting is triggered by an event. Interval in seconds

Condition	Explanation
Clause 0	The IE is mandatory if “Intra-frequency event identity“ is set to “1a”,”1b”, “1^{e}” 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”, “1b”, “1c”, “1d”, “1g”, “1h”, “1i” or “1j”, otherwise the IE is not needed
Clause 3	The IE is mandatory if “Intra-frequency event identity“ is set to “1a”, otherwise the IE is not needed
Clause 4	The IE is mandatory if “Intra-frequency event identity“ is set to “1c”, otherwise the IE is not needed

Multi Bound	Explanation
MaxEventCount	Maximum number of events that can be listed in measurement reporting criteria
MaxCellsForbidden	Maximum number of cells that can be forbidden to affect reporting range

NOTE 1: When best PCCPCH in active set changes, all active cells are reported.

10.3.7.40 Intra-frequency measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Intra-frequency measurement identity number	MD		Measurement identity number 10.3.7.73	The intra-frequency measurement identity number has default value 1.
Intra-frequency cell info list	OP		Intra-frequency cell info list 10.3.7.33	
Intra-frequency measurement quantity	OP		Intra-frequency measurement quantity 10.3.7.38	
Intra-frequency reporting quantity for RACH Reporting	OP		Intra-frequency reporting quantity for RACH Reporting 10.3.7.42	
Maximum number of reported cells on RACH	OP		Maximum number of reported cells on RACH 10.3.7.68	
Reporting information for state CELL_DCH	OP		Reporting information for state CELL_DCH 10.3.7.89	Note 1

Note1: The reporting of intra-frequency measurements is activated when state CELL_DCH is entered.

10.3.7.41 Intra-frequency reporting quantity

Contains the reporting quantity information for an intra-frequency measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Reporitng quantities for active set cells	MP		Cell reporting quantities 10.3.7.5	
Reporting quantities for monitored set cells	MP		Cell reporting quantities 10.3.7.5	
Reporting quantities for unlisted set cells	OP		Cell reporting quantities 10.3.7.5	

10.3.7.42 Intra-frequency reporting quantity for RACH reporting

Contains the reporting quantity information for an intra-frequency measurement report, which is sent on the RACH.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SFN-SFN observed time difference	MP		Enumerated(No report, type 1, type 2)	
CHOICE *mode*	MP			
>FDD				
>>Reporting quantity	MP		Enumerated(CPICH Ec/N0, CPICH RSCP, CPICH SIR, Pathloss, No report)	Note 1
>TDD				
>>Reporting quantity	MP		Enumerated(Timeslot ISCP, Primary CCPCH RSCP, No report)	

NOTE 1: If CPICH SIR can be used has not been concluded in WG4

10.3.7.43 LCS Error

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Error reason	MP		Enumerated(There were not enough cells to be received when performing mobile based OTDOA-IPDL. There were not enough GPS satellites to be received, when performing UE-based GPS location. Location calculation assistance data missing. Requested method not supported. Undefined error. Location request denied by the user. Location request not processed by the user and timeout.	
Additional Assistance Data	OP		structure and encoding as for the GPS Assistance Data IE in GSM 09.31 excluding the IEI and length octets	This field is optional. Its presence indicates that the target UE will retain assistance data already sent by the SRNC. The SRNC may send further assistance data for any new location attempt but need not resend previous assistance data. The field may contain the following: GPS Assistance Data necessary additional GPS assistance data

10.3.7.44 LCS GPS acquisition assistance

The Acquisition Assistance field of the GPS Assistance Data Information Element contains parameters that enable fast acquisition of the GPS signals in network-based GPS positioning. Essentially, these parameters describe the range and derivatives from respective satellites to the Reference Location at the Reference Time.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
CHOICE Reference Time				
>Utran reference time				
>>GPS TOW	MP		Integer(0..6.047*10^{11})	GPS Time of Week with scaling factor of 1 usec
>>SFN	MP		Integer(0..4095)	
>GPS reference time only				
>>GPS TOW	MP		Integer(0..6.047*10^{8})	GPS Time of Week with scaling factor of 1 msec
Satellite information	MP	1 to <MAX_N_SAT>		
>SatID	MP		Enumerated(0..63)	Identifies the satellites
>Doppler (0^{th} order term)	MP		Integer(-2048..2047)	Hz, scaling factor 2.5
>Extra Doppler	OP			
>>Doppler (1^{st} order term)	MP		Integer(-42..21)	Scaling factor 1/42
>>Doppler Uncertainty	MP		Real(12.5,25,50,100, 200)	Hz
>Code Phase	MP		Integer(0..1022)	Chips, specifies the center 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		Enumerated(1023,1,2 ,3,4,6,8,12,16,24,32,4 8,64,96,128,192)	Specifies the width of the search window.
>Azimuth and Elevation	OP			
>>Azimuth	MP		Integer(0..31)	Degrees, scale factor 11.25
>>Elevation	MP		Integer(0..7)	Degrees, scale factor 11.25

Multi Bound	Explanation
MAX_N_SAT	Maximum number of satellites included in the IE=16

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

10.3.7.45 LCS GPS almanac

These fields specify the coarse, long-term model of the satellite positions and clocks. With one exception (δi), these parameters are a subset of the ephemeris and clock correction parameters in the Navigation Model, although with reduced resolution and accuracy. The almanac model is useful for receiver tasks that require coarse accuracy, such as determining satellite visibility. The model is valid for up to one year, typically. Since it is a long-term model, the field should be provided for all satellites in the GPS constellation.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Satellite information	MP	1 to <MAX_N_SAT>		
>SatID	MP		Enumerated(0..63)	Satellite ID
>δi	MP		Bit string(16)	
>e	MP		Bit string(16)	
>M_0	MP		Bit string(24)	
>$A^{1/2}$	MP		Bit string(24)	
>$OMEGA_0$	MP		Bit string(24)	
>OMEGADOT	MP		Bit string(16)	
>ω	MP		Bit string(24)	
>af_0	MP		Bit string(11)	
>af_1	MP		Bit string(11)	

Multi Bound	Explanation
MAX_N_SAT	Maximum number of satellites included in the IE=32

10.3.7.46 LCS GPS assistance data

The GPS Assistance Data element contains a single GPS assistance message that supports both UE-assisted and UE-based GPS methods. An Integrity Monitor (IM) shall detect unhealthy (e.g., failed/failing) satellites and also shall inform users of measurement quality in DGPS modes when satellites are healthy. Excessively large pseudo range errors, as evidenced by the magnitude of the corresponding DGPS correction, shall be used to detect failed satellites. Unhealthy satellites should be detected within 10 seconds of the occurrence of the satellite failure. When unhealthy (e.g., failed/failing) satellites are detected, the assistance and/or DGPS correction data shall not be supplied for these satellites. When the error in the IM computed position is excessive for solutions based upon healthy satellites only, DGPS users shall be informed of measurement quality through the supplied UDRE values.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
LCS GPS reference time	OP		LCS GPS reference time 10.3.7.53	
LCS GPS reference location	OP		Ellipsoid point with altitude defined in 23.032	The Reference Location field contains a 3-D location without uncertainty specified as per 23.032. The purpose of this field is to provide the UE with a priori knowledge of its location in order to improve GPS receiver performance.
LCS GPS DGPS corrections	OP		LCS GPS DGPS corrections 10.3.7.48	
LCS GPS navigation model	OP		LCS GPS navigation model 10.3.7.51	
LCS GPS ionospheric model	OP		LCS GPS ionospheric model 10.3.7.49	
LCS GPS UTC model	OP		LCS GPS UTC model 10.3.7.54	
LCS GPS almanac	OP		LCS GPS almanac 10.3.7.45	
LCS GPS acquisition assistance	OP		LCS GPS acquisition assistance 10.3.7.44	
LCS GPS real-time integrity	OP		LCS GPS real-time integrity 10.3.7.52	

10.3.7.47 LCS GPS assistance for SIB

The LCS GPS Assistance for SIB IE contains information for GPS differential corrections. The message contents are based on a Type-1 message of version 2.2 of the RTCM-SC-104 recommendation for differential service. This format is a standard of the navigation industry and is supported by all DGPS receivers.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Cipher parameters	OP			Determines if DGPS correction fields are ciphered
>Ciphering Key Flag	MP		Bitstring(1)	See note 1
>Ciphering Serial Number	MP		Integer(0..65535)	The serial number used in the DES ciphering algorithm
Reference GPS TOW	MP		Integer(0..6.047*10^{11})	GPS Time of Week with scaling factor of 1 usec. This field time-stamps the start of the frame with SFN=0.
Status	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)	This field indicates the status of the differential corrections.
BTS Clock Drift	OP		Enumerated(-0.05..-0.003125 by step of 0.003125, 0.003125..0.05 by step of 0.003125)	This IE provides an estimate of the drift rate of the Node B clock relative to GPS time. It has units of µsec/sec (ppm) and a range of ±0.05. This IE aids the UE in maintaining the relation between GPS and cell timing over a period of time. A positive value for BTS Clock Drift indicates that the BTS clock is running at a greater frequency than desired. If the field is not present the UE shall assume the value 0.
Time Offset (ΔT)	CV-status		Integer(0..4095)	Scaling factor 0.25. This IE indicates how old the measurements are when the IE is transmitted.
IODD	CV-status		Integer(0..255)	This IE is a cyclical counter that indicates the sequence number of the correction data. The value of IODD is initialized to zero when the IODE IE for one or more satellites has changed, or when the visible constellation changes. IODD is incremented each time new differential corrections are issued for the same visible constellation having the same set of IODE values.
DPGS information	CV-Status	1..MAX_N_SAT		The following fields contain the DPGS corrections. If the Cipher information is included these fields are ciphered.
>SatID	MP		Integer(0..31)	The satellite ID number.
>IODE	MP		Integer(0..255)	This IE is the sequence number for the ephemeris for the particular satellite. The MS can use this IE to determine if new ephemeris is used for calculating the corrections that are provided in the broadcast message. This eight-bit IE is incremented for each new set of ephemeris for the satellite and may occupy the numerical range of [0, 239] during normal operations.
>UDRE	MP		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	User Differential Range Error. This field provides an estimate of the uncertainty (1-σ) in the corrections for the particular satellite. The value in this field shall be multiplied by the UDRE Scale Factor in the Status field to determine the final UDRE estimate for the particular satellite.
>Scale factor	MP		Enumerated(0.02 for PRC and 0.002 for RRC, 0.32 for PRC and 0.032 for RRC)	The scaliing factor for the PRC and RRC fields
>PRC	MP		Integer(-	Scaling given by the scale factor field.

			32767..32767)	
>RRC	MP		Integer(-127..127)	Scaling given by the scale factor field.

Multi Bound	Explanation
MAX_N_SAT	Maximum number of satellites included in the IE=16

Condition	Explanation
Status	This IE is mandatory if "status" is not equal to "no data" or "invalid data", otherwise the IE is not needed

Note 1: The UE always receives two (2) cipher keys during the location update procedure. One of the keys is time-stamped to be current one and the other is time-stamped to be the next one. Thus, the UE always has two cipher keys in memory. The Cipher Key Change Indicator in this broadcast message instructs the UE whether to use current or next cipher key for deciphering the received broadcast message. The UE shall interpret this IE as follows:

- **Ciphering Key Flag**(previous message) = **Ciphering Key Flag**(this message) => Deciphering Key not changed
- **Ciphering Key Flag**(previous message) <> **Ciphering Key Flag**(this message) => Deciphering Key changed

10.3.7.48 LCS GPS DGPS corrections

These fields specify the DGPS corrections to be used by the UE.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS TOW	MP		Integer(0..604799)	Seconds. This field indicates the baseline time for which the corrections are valid.
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)	This field indicates the status of the differential corrections
Satellite information	MP	1 to <MAX_N_SAT>		
>SatID	MP		Enumerated(0..63)	Satellite ID
>IODE	MP		Bit string(8)	This IE is the sequence number for the ephemeris for the particular satellite. The UE can use this IE to determine if new ephemeris is used for calculating the corrections that are provided in the broadcast message. This eight-bit IE is incremented for each new set of ephemeris for the satellite and may occupy the numerical range of [0, 239] during normal operations.See [13] for details
>UDRE	MP		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	User Differential Range Error. This field provides an estimate of the uncertainty (1-σ) in the corrections for the particular satellite. The value in this field shall be multiplied by the UDRE Scale Factor in the common Corrections Status/Health field to determine the final UDRE estimate for the particular satellite. See [13] for details
>PRC	MP		Integer(-2048..2048)	Scaling factor 0.32 meters See [13] for details
>RRC	MP		Integer(-125.. 125)	Scaling factor 0.032 meters/sec. See [13] for details
>Delta PRC2	MP		Integer(-127..127)	Meters. See [13] for details
>Delta RRC2	MP		Integer(-7..7)	Scaling factor 0.032 meters/sec. See [13] for details
>Delta PRC3	MP		Enumerated(-127..127)	Meters. See [13] for details
>Delta RRC3	MP		Integer(-7..7)	Scaling factor 0.032 meters/sec. See [13] for details

Multi Bound	Explanation
MAX_N_SAT	Maximum number of satellites included in the IE=16

10.3.7.49 LCS GPS ionospheric model

The Ionospheric Model contains fields needed to model the propagation delays of the GPS signals through the ionosphere. Proper use of these fields allows a single-frequency GPS receiver to remove approximately 50% of the ionospheric delay from the range measurements. The Ionospheric Model is valid for the entire constellation and changes slowly relative to the Navigation Model.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
α_0	MP		Bit string(8)	
α_1	MP		Bit string(8)	
α_2	MP		Bit string(8)	
α_3	MP		Bit string(8)	
β_0	MP		Bit string(8)	
β_1	MP		Bit string(8)	
β_2	MP		Bit string(8)	
β_3	MP		Bit string(8)	

10.3.7.50 LCS GPS measurement

The purpose of the GPS Measurement Information element is to provide GPS measurement information from the UE to the SRNC. This information includes the measurements of code phase and Doppler, which enables the network-based GPS method where the position is computed in the SRNC.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Reference SFN	OP		Integer(0..4095)	The SFN for which the location is valid
GPS TOW	MP		Integer(0..6.047*10^8)	GPS Time of Week with scaling factor of 1 msec. This time is the GPS TOW measured by the UE. If the Reference SFN field is present it is the ms flank closest to the beginning of that frame.
GPS TOW high resolution	CV-capability and request		Integer(0..999)	Gives higher resolution of the previous field.
Measurement Parameters	MP	*1 to <MAX_N_SAT>*		
>Satellite ID	MP		Enumerated(0..63)	
>C/N_0	MP		Integer(0..63)	the estimate of the carrier-to-noise ratio of the received signal from the particular satellite used in the measurement. It is given in whole dBs Typical levels observed by UE-based GPS units will be in the range of 20 – 50 dB.
>Doppler	MP		Integer(-32768..32768)	Hz, scalefactor 0.2.
>Whole GPS Chips	MP		Integer(0..1023)	Unit in GPS chips
>Fractional GPS Chips	MP		Integer(0..(2^{10}-1))	Scale factor 2^{-10}
>Multipath Indicator	MP		Enumerated(NM, low, medium, high)	See note 1
>Pseudorange RMS Error	MP		Enumerated(range index 0..range index 63)	See note 2

Multi Bound	Explanation
MAX_N_SAT	Maximum number of satellites included in the IE=16

Condition	Explanation
Capability and request	This field is included only if the UE has this capability *and* if it was requested in the LCS reporting quantity

Note 1 The following table gives the mapping of the multipath indicator field

Value	Multipath Indication
NM	Not measured
Low	MP error < 5m
Medium	5m < MP error < 43m
High	MP error > 43m

Note 2 The following table gives the bitmapping of the Pseudorange RMS Error field

Range Index	Mantissa	Exponent	Floating-Point value, x_i	Pseudorange value, P
0	000	000	0.5	P < 0.5
1	001	000	0.5625	0.5 <= P < 0.5625
I	X	Y	$0.5 * (1 + x/8) * 2^y$	x_{i-1} <= P < x_i
62	110	111	112	104 <= P < 112
63	111	111	--	112 <= P

10.3.7.51 LCS GPS navigation model

This IE contain information required to manage the transfer of precise navigation data to the GPS-capable UE. This information includes control bit fields as well as satellite ephemeris and clock corrections.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
N_SAT	MP		Enumerated(1..16)	The number of satellites included in this IE
Satellite information	MP	1 to <MAX_N_SAT>		
>SatID	MP		Enumerated(0..63)	Satellite ID
>Satellite Status	MP		Enumerated(NS_NN_U ES_SN ES_NN_U ES_NN_C)	See note 1
>CHOICE Compressed	CV-Satellite Status			
>>uncompressed				Standard formats as defined in [12]
>>>IODE	MP		Bit string(8(1))	
>>>t_{oe}	MP		Bit string(16(1))	
>>>C_{rc}	MP		Bit string(16)	
>>>C_{rs}	MP		Bit string(16)	
>>>C_{ic}	MP		Bit string(16)	
>>>C_{is}	MP		Bit string(16)	
>>>C_{uc}	MP		Bit string(16)	
>>>C_{us}	MP		Bit string(16)	
>>>e	MP		Bit string(32(1))	
>>>M_0	MP		Bit string(32)	
>>>$(A)^{1/2}$	MP		Bit string(32(1))	
>>>Δn	MP		Bit string(16)	
>>>$OMEGA_0$	MP		Bit string(32)	
>>>OMEGAdot	MP		Bit string(24)	
>>>I_0	MP		Bit string(32)	
>>>Idot	MP		Bit string(14)	
>>>ω	MP		Bit string(32)	
>>>t_{oc}	MP		Bit string(16(1))	
>>>Af_0	MP		Bit string(22)	
>>>Af_1	MP		Bit string(16)	
>>>Af_2	MP		Bit string(8)	
>>compressed				Compressed format as defined in 14.11.1
>>>IODE	MP		Bit string(4)	
>>>t_{oe}	MP		Bit string(7)	
>>>C_{rc}	MP		Bit string(12)	
>>>C_{rs}	MP		Bit string(12)	
>>>C_{ic}	MP		Bit string(9)	
>>>C_{is}	MP		Bit string(9)	
>>>C_{uc}	MP		Bit string(11)	
>>>C_{us}	MP		Bit string(11)	
>>>e	MP		Bit string(16)	
>>>M_0	MP		Bit string(22)	
>>>$(A)^{1/2}$	MP		Bit string(13)	
>>>Δn	MP		Bit string(11)	
>>>$OMEGA_0$	MP		Bit string(14)	
>>>OMEGAdot	MP		Bit string(12)	
>>>I_0	MP		Bit string(15)	
>>>Idot	MP		Bit string(11)	
>>>ω	MP		Bit string(21)	
>>>t_{oc}	MP		Bit string(7)	
>>>Af_0	MP		Bit string(7)	
>>>Af_1	MP		Bit string(3)	
>>>Af_2	MP		Bit string(1)	

Note 1: The UE shall interpret enumerated symbols as follows

Symbol	Interpretation
NS_NN_U	New satellite, new Navigation Model - uncompressed
ES_SN	Existing satellite, same Navigation Model
ES_NN_U	Existing satellite, new Navigation Model - uncompressed
ES_NN_C	Existing satellite, new Navigation Model - compressed

CHOICE *Compression*	Explanation
Uncompressed	The parameters are not compressed. This is standard GPS format, as specified in [12].
Compressed	The parameters are compressed with the algorithm in the 14.11.1.

Condition	Explanation
status	Group Included unless status is ES_SN

Multi Bound	Explanation
N_SAT	Number of satellites included in the IE

10.3.7.52 LCS GPS real-time integrity

Contains parameters that describe the real-time status of the GPS constellation. Primarily intended for non-differential applications, the real-time integrity of the satellite constellation is of importance as there is no differential correction data by which the mobile can determine the soundness of each satellite signal. The Real-Time GPS Satellite Integrity data communicates the health of the constellation to the mobile in real-time. The satellites identified in this IE should not be used for position fixes at the moment.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Satellite information	OP	1 to <MAX_N_BAD_SAT>		N_BAD_SAT=the number of bad satellites included in this IE
>BadSatID	MP		Enumerated(0..63)	Satellite ID

Multi Bound	Explanation
MAX_BAD_N_SAT	Maximum number of satellites included in the IE

10.3.7.53 LCS GPS reference time

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS Week	MP		Integer(0..1023)	
GPS TOW	MP		Integer(0..6.047*10[1]) [1])	GPS Time of Week with scaling factor of 1 usec
SFN	MP		Integer(0..4095)	The SFN which the GPS TOW time stamps
GPS TOW Assist	OP	1 to <MAX_N_SAT>		Fields to help the UE with time-recovery (needed to predict satellite signal)
>SatID	MP		Enumerated(0..63)	Identifies the satellite for which the corrections are applicable
>TLM Message	MP		Bit string(14)	A 14-bit value representing the Telemetry Message (TLM) being broadcast by the GPS satellite identified by the particular SatID, with the MSB occurring first in the satellite transmission.
>Anti-Spoof	MP		Boolean	The Anti-Spoof and Alert flags that are being broadcast by the GPS satellite identified by SatID.
>Alert	MP		Boolean	
>TLM Reserved	MP		Bit string(2)	Two reserved bits in the TLM Word being broadcast by the GPS satellite identified by SatID, with the MSB occurring first in the satellite transmission.

Multi Bound	Explanation
MAX_N_SAT	Maximum number of satellites included in the IE=16

10.3.7.54 LCS GPS UTC model

The UTC Model field contains a set of parameters needed to relate GPS time to Universal Time Coordinate (UTC).

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
A_0	MP		Bit string(32)	
A_1	MP		Bit string(24)	
Δt_{LS}	MP		Bit string(8)	
t_{ot}	MP		Bit string(8)	
WN_t	MP		Bit string(8)	
WN_{LSF}	MP		Bit string(8)	
DN	MP		Bit string(8)	
Δt_{LSF}	MP		Bit string(8)	

10.3.7.55 LCS IPDL parameters

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
IP spacing	MP		Enumerated(5,7,10,15,20,30,40 ,50)	The Ips are repeated every IP spacing frame.
IP length	MP		Enumerated(5,10)	The length in symbols of the idle periods
IP offset	MP		Integer(0..9)	Relates the BFN and SFN, should be same as T_cell defined in 25.402
Seed	MP		Integer(0..63)	Seed used to start the random number generator
Burst mode parameters	OP			
>Burst Start	MP		Integer(0..15)	The frame number where the 1st Idle Period Burst occurs within an SFN cycle. Scaling factor 256.
>Burst Length	MP		Integer(10..25)	Number of Idle Periods in a 'burst' of Idle Periods
>Burst freq	MP		Integer(1..16)	Number of 10ms frames between consecutive Idle Period bursts. Scaling factor 256.

The function IP_position(x) described below yields the position of the x^{th} Idle Period relative to a) the start of the SFN cycle when continuous mode or b) the start of a burst when in burst mode. The operator "%" denotes the modulo operator. Regardless of mode of operation, the Idle Period pattern is reset at the start of every SFN cycle. Continuous mode can be considered as a specific case of the burst mode with just one burst spanning the whole SFN cycle. Note also that x will be reset to x=1 for the first idle period in a SFN cycle for both continuous and burst modes and will also, in the case of burst mode, be reset for the first Idle Period in every burst.

Max_dev=150-IP length

rand(x)= (106.rand(x-1) + 1283)mod6075,

rand(0)=seed

IP_position(x) = x*IP_spacing*150 + rand(xmod64)modMax_dev+IP_offset

10.3.7.56 LCS measured results

Information Element/Group name	Need	Multi	Type and reference	Semantics description
LCS Multiple Sets	OP		LCS Multiple Sets 10.3.7.59	
LCS reference cell Identity	OP		Primary CPICH Info 10.3.6.43	
LCS OTDOA measurement	OP		LCS OTDOA measuremen t 10.3.7.62	
LCS Position	OP		LCS Position 10.3.7.65	
LCS GPS measurement	OP		LCS GPS measuremen t 10.3.7.50	
LCS error	OP		LCS error 10.3.7.43	Included if LCS error occurred

10.3.7.57 LCS measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
LCS reporting quantity	MP		LCS reporting quantity 10.3.7.67	
CHOICE reporting criteria	MP			
>LCS reporting criteria			LCS reporting criteria 10.3.7.66	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.78	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement
LCS OTDOA assistance data	OP		LCS OTDOA assistance data 10.3.7.60	
LCS GPS assistance data	OP		LCS GPS assistance data 10.3.7.46	

10.3.7.58 LCS measurement event results

This IE contains the measurement event results that are reported to UTRAN for LCS measurements.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
CHOICE Event ID	MP			
>7a				
>>LCS Position	MP		LCS Position 10.3.7.65	
>7b				
>> LCS OTDOA measurement	MP		LCS OTDOA measurement 10.3.7.62	
>7c				
>> LCS GPS measurement	MP		LCS GPS measurement 10.3.7.50	

10.3.7.59 LCS multiple sets

This element indicates how many OTDOA Measurement Information sets or GPS Measurement Information sets, and Reference cells are included in this element. This element is optional. If this element is absent, a single measurement set is included.

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	OP		Enumerated(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. 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. 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.)	This field indicates how the reference cells listed in this element relate to measurement sets later in this component. This field is conditional and included only if Number of OTDOA-IPDL/GPS Measurement Information Sets is '3' and Number of Reference cells is '2'. If this field 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 cell -> 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.

10.3.7.60 LCS OTDOA assistance data

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
LCS OTDOA reference cell for assistance data	OP		LCS OTDOA reference cell for assistance data 10.3.7.64	
LCS OTDOA measurement assistance data	OP	1..15	LCS OTDOA measurement assistance data 10.3.7.63	
LCS IPDL parameters	OP		LCS IPDL parameters 10.3.7.55	If this element is not included there are no idle periods present

10.3.7.61 LCS OTDOA assistance for SIB

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Ciphering parameters	OP			Determines if DGPS correction fields are ciphered
>Ciphering Key Flag	MP		Bitstring(1)	See note 1
>Ciphering Serial Number	MP		Integer(0..65535)	The serial number used in the DES ciphering algorithm
Search Window Size	MP		Enumerated(10, 20, 30, 40, 50, 60,70, more)	Specifies the maximum size of the search window in chips.
Reference Cell Position	MP		Ellipsoid point or Ellipsoid point with altitude as defined in 23.032	The position of the antenna which defines the serving cell. Used for the UE based method.
LCS IPDL parameters	OP		LCS IPDL parameters 10.3.7.55	If this element is not included there are no idle periods present
Cells to measure on	MP	1 to *<MAX NoCells>*		
>SFN-SFN drift	OP		Enumerated(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)	The SFN-SFN drift value indicate the relatvie time drift in meters per second. Positive and negative values can be indicated as well as no drift value.
>Primary CPICH info	MP		Primary CPICH info 10.3.6.43	
>Frequency info	OP		Frequency info 10.3.6.24	Default the same. Included if different
>SFN-SFN observed time difference	MP		SFN-SFN observed time difference type 1. 10.3.7.90	Gives the relative timing compared to the reference cell
>Fine SFN-SFN	MP		Enumerated(0,0.25,0.5,0.75)	Gives finer resolution for UE-Based
>Cell Position	MD			Default = Same as previous cell
>>Relative North	MP		Integer(-32767..32767)	Seconds, scale factor 0.03. Relative position compared to ref. cell.
>>Relative East	MP		Integer(-32767..327676)	Seconds, scale factor 0.03. Relative position compared to ref. cell.
>>Relative Altitude	MP		Integer(-4095..4095)	Relative altitude in meters compared to ref. cell.

Multi Bound	Explanation
MaxNoCells	The max number of cells included in this IE=16

Note 1: The UE always receives two (2) cipher keys during the location update procedure. One of the keys is time-stamped to be current one and the other is time-stamped to be the next one. Thus, the UE always has two cipher keys in memory. The Cipher Key Change Indicator in this broadcast message instructs the UE whether to use current or next cipher key for deciphering the received broadcast message. The UE shall interpret this IE as follows:

- **Ciphering Key Flag**(previous message) = **Ciphering Key Flag**(this message) => Deciphering Key not changed
- **Ciphering Key Flag**(previous message) <> **Ciphering Key Flag**(this message) => Deciphering Key changed

10.3.7.62 LCS OTDOA measurement

The purpose of the OTDOA Measurement Information element is to provide OTDOA measurements of signals sent from the reference and neighbor cells.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
SFN	MP		Integer(0..4095)	SFN during which the last measurement was performed
UE Rx-Tx time difference	MP		Real(876..1172 by step of 0.25)	The UE Rx-Tx timing can be used to determine the propagation delay
Quality type	OP		Enumerated(STD_10,STD_50,CPICH Ec/N0)	Type of quality in the quality field, default=DEFAULT_QUALITY
CHOICE Quality type	MP			
>STD_10				
>>Reference Quality 10	MP		Enumerated(10..320 by step of 10)	Std of TOA measurements from the cell
>STD_50				
>>Reference Quality 50	MP		Enumerated(50..1600 by step of 50)	Std of TOA measurements from the cell
>CPICH Ec/N0				
>>CPICH Ec/N0	MP		Enumerated(<–24, -24 dB ≤ CPICH Ec/No < –23 dB,.. –1 dB ≤ CPICH Ec/No < –0 dB, >=0 dB)	CPICH Ec/N0 for the measurement
>DEFAULT_QUALITY				
>>Reference Quality	MP		Enumerated(0-19 meters, 20-39 meters, 40-79 meters, 80-159 meters, 160-319 meters, 320-639 meters, 640-1319 meters over 1320 meters)	Estimated error in meters.
Neighbors	MP	0..15		Number of neighbors included in this IE
>Neighbor Identity	OP		Primary CPICH info 10.3.6.43	If this field is left out it the identity is the same as in the first set of multiple sets.
>Neighbor Quality	MP		Bit string(depends on Quality type)	Quality of the OTDOA from the neighbor cell.
>SFN-SFN observed time difference	MP		SFN-SFN observed time difference 10.3.7.90	Gives the timing relative to the reference cell. Only type 2 is allowed. Type 2 means that only the slot timing is accounted for

CHOICE *Quality type*	Condition under which the given quality type is chosen
STD_10	Chosen when the quality type is standard deviation with a step-size of 10 m
STD_50	Chosen when the quality type is standard deviation with a step-size of 50 m
CPICH Ec/N0	Chosen when the quality type is CPICH Ec/N0
Default	Chosen if the quality type field is not included.

10.3.7.63 LCS OTDOA measurement assistance data

This IE gives approximate cell timing in order to decrease the search window.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Primary CPICH info	MP		Primary CPICH info 10.3.6.43	
Frequency info	OP		Frequency info 10.3.6.24	Default the same. Included if different
SFN-SFN observed time difference	MP		SFN-SFN observed time difference type 1. 10.3.7.90	Gives the relative timing compared to the reference cell
Fine SFN-SFN	OP		Real(0,0.25,0.5,0.75)	Gives finer resolution for UE-Based
Search Window Size	MP		Enumerated(10, 20, 30, 40, 50, 60,70, more)	Specifies the maximum size of the search window in chips.
Relative North	OP		Integer(-20000..20000)	Seconds, scale factor 0.03. Relative position compared to ref. cell.
Relative East	OP		Integer(-20000..20000)	Seconds, scale factor 0.03. Relative position compared to ref. cell.
Relative Altitude	OP		Integer(-4000..4000)	Relative altitude in meters compared to ref. cell.

10.3.7.64 LCS OTDOA reference cell for assistance data

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

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Primary CPICH info	MP		Primary CPICH info 10.3.6.43	
Frequency info	OP		Frequency info 10.3.6.24	Default the same. Included if different
Cell Position	OP		Ellipsoid point or Ellipsoid point with altitude as defined in 23.032	The position of the antenna which defines the cell. Can be used for the UE based method.

10.3.7.65 LCS position

The purpose of Location Information element is to provide the location estimate from the UE to the network, if the UE is capable of determining its own position.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Reference SFN	MP		Integer(0..4095)	The SFN for which the location is valid
GPS TOW	CV-Capability and request		Integer(0..6.047*10^{11})	GPS Time of Week with scaling factor of 1 usec. This time-stamps the beginning of the frame defined in Reference SFN
Position estimate	MP		23.032, allowed types are Ellipsoid Point; Ellipsoid point with uncertainty circle; Ellipsoid point with uncertainty ellipse; Ellipsoid point with altitude; Ellipsoid point with altitude and uncertainty ellipse.	

Condition	Explanation
Capability and request	This field is included only if the UE has this capability *and* if it was requested in the LCS reporting quantity and if the method was UE-based GPS

10.3.7.66 LCS reporting criteria

The triggering of the event-triggered reporting for an LCS measurement. There are three types of events. The first, 7a, is for UE-based methods and is triggered when the position has changed more than a threshold. The second one, 7b, is primarily for UE assited methods, but can be used also for UE based. It is triggered when the SFN-SFN measurement has changed more than a certain threshold. The third one, 7c, is triggered when the GPS time and the SFN time has drifted apart more than a certain threshold.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Parameters required for each event	OP	1 to <maxEvent count>		
>Event ID	MP		Enumerated (7a,7b,7c)	7a=Position change 7b=SFN-SFN change, 7c=SFN-GPS TOW change
>Amount of reporting	MP		Enumerated(1, 2, 4, 8, 16, 32, 64,infinite)	
>Report first fix	MP		Boolean	If true the UE reports the position once the measurement control is received, and then each time an event is triggered.
>Measurement interval	MP		Enumerated(5,15,60,300, 900,1800,3600,7200)	Indicates how often the UE should make the measurement
>CHOICE Event ID				
>>7a				
>>>Threshold Position Change	MP		Enumerated(10,20,30,40, 50,100,200,300,500,1000, 2000,5000,10000,20000, 50000,100000)	Indicated how much the position should change compared to last reported position fix in order to trigger the event.
>>7b				
>>>Threshold SFN-SFN change	MP		Real(0.25,0.5,1,2,3,4,5,10,20,50,100, 200,500,1000,2000,5000)	Chips. Indicates how much the SFN-SFN measurement of ANY measured cell is allowed to change before the event is triggered.
>>7c				
>>>Threshold SFN-GPS TOW	MP		Enumerated(1,2,3,5,10,20 ,50,100)	Time in ms. When the GPS TOW and SFN timer has drifted apart more than the specified value the event is triggered)

10.3.7.67 LCS reporting quantity

The purpose of the this element is to express the allowed/required location method(s), and to provide information required QoS.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Method Type	MP		Enumerated(UE assisted, UE based, UE based is preferred but UE assisted is allowed, UE assisted is preferred but UE based is allowed)	
Positioning Methods	MP		Enumerated(OTDOA, GPS OTDOA or GPS)	Indicates which location method or methods should be used. The third option means that both can be reported. OTDOA includes IPDL if idle periods are present.
Response Time	MP		Integer(1,2,4, 8, 16, 32, 64, 128)	Indicates the desired response time in seconds
Accuracy	CV		Bit string(7)	Mandatory in all cases except when Method Type is UE assisted, then it is optional. 23.032
GPS timing of Cell wanted	MP		Boolean	If true the SRNC wants the UE to report the SFN-GPS timing of the reference cell. This is however optional in the UE.
Multiple Sets	MP		Boolean	This field indicates whether UE is requested to send multiple *OTDOA/GPS Measurement Information Sets*. The maximum number of measurement sets is three. This is field is mandatory. UE is expected to include the current measurement set.
Environment Characterization	OP		Enumerated(possibly heavy multipath and NLOS conditions, no or light multipath and usually LOS conditions, not defined or mixed environment)	The first category correspond to e.g. Urban or Bad Urban channels. The second category corresponds to Rural or Suburban channels

Multi Bound	Explanation
N_SAT	Number of satellites included in the IE

10.3.7.68 Maximum number of reported cells on RACH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Maximum number of reported cells	MP		Enumerated (no report, current cell, current cell + best neighbour, current cell+2 best neighbours, …, current cell+6 best neighbours)	

10.3.7.69 Measured results

Contains the measured results of the quantity indicated optionally by Reporting Quantity in Measurement Control. "Measured results" can be used for both event trigger mode and periodical reporting mode. The list should be in the

order of the value of the measurement quality (the first cell should be the best cell). The “best” cell has the largest value when the measurement quantity is “Ec/No”, “RSCP” or “SIR”. On the other hand, the “best” cell has the smallest value when the measurement quantity is “Pathloss”.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Measurement	MP			
>Intra-frequency measured results list			Intra-frequency measured results list 10.3.7.35	
>Inter-frequency measured results list			Inter-frequency measured results list 10.3.7.15	
>Inter-system measured results list			Inter-system measured results list 10.3.7.26	
>Traffic volume measured results list			Traffic volume measured results list 10.3.7.93	
>Quality measured results list			Quality measured results list 10.3.7.79	
>UE Internal measured results			UE Internal measured results 10.3.7.102	
>LCS measured results			LCS measured results 10.3.7.56	

10.3.7.70 Measured results on RACH

Contains the measured results on RACH of the quantity indicated optionally by Reporting Quantity in the system information broadcasted 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” cell has the largest value when the measurement quantity is “Ec/No”, “RSCP” or “SIR”. On the other hand, the “best” cell has the smallest value when the measurement quantity is “Pathloss”.

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/N0			Integer(-20..0)	In dB
>>>CPICH RSCP			Integer(-115..-40)	In dBm
>>>CPICH SIR			Integer(-10..20)	In dB Note 1
>>>Pathloss			Integer(46..158)	In dB
>TDD				
>>Timeslot ISCP	OP			
>>Primary CCPCH RSCP	OP			
Measurement results for monitored cells	OP	1 to 7		
>SFN-SFN observed time difference	OP		SFN-SFN observed time difference 10.3.7.90	It is absent for current cell
>CHOICE *mode*	MP			
>>FDD				
>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.43	
>>>CHOICE measurement quantity	OP			It is absent for current cell
>>>>CPICH Ec/N0			Integer(-20..0)	In dB
>>>>CPICH RSCP			Integer(-115..-40)	In dBm
>>>>CPICH SIR			Integer(-10..20)	In dB Note 1
>>>>Pathloss			Integer(46..158)	In dB
>>TDD				
>>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.41	
>>>Primary CCPCH RSCP	OP			It is absent for current cell

NOTE 1: If CPICH SIR can be used has not been concluded in WG4

Note 2: Monitored cells consist of current cell and neighbouring cells.

10.3.7.71 Measurement Command

Information Element	Need	Multi	Type and reference	Semantics description
Measurement command	MP		Enumerated(Setup,Modify,Release)	

10.3.7.72 Measurement control system information

Information element	Need	Multi	Type and reference	Semantics description
Intra-frequency measurement system information	OP		Intra-frequency measurement system information 10.3.7.40	
Inter-frequency measurement system information	OP		Inter-frequency measurement system information 10.3.7.20	
Inter-system measurement system information	OP		Inter-system measurement system information 10.3.7.31	
Traffic volume measurement system information	OP		Traffic volume measurement system information 10.3.7.99	
UE Internal measurement system information	OP		UE Internal measurement system information 10.3.7.107	

Note1: The reporting of intra-frequency measurements is activated when state CELL_DCH is entered.

Multi Bound	Explanation
MaxMeasTypeCount	Maximum number of measurement types
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.
MaxIntraCells	Maximum number of intra-frequency cells in a measurement control.
MaxInterCells	Maximum number of inter-frequency cells in a measurement control
MaxInterSysCells	Maximum number of inter-system cells in a measurement control.

10.3.7.73 Measurement Identity Number

A reference number that is used by the UTRAN at modification and release of the measurement, and by the UE in the measurement report.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Measurement identity number	MP			

10.3.7.74 Measurement reporting mode

Contains the type of Measurement Report transfer mode and the indication of periodical/event trigger.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Measurement Report Transfer Mode	MP		enumerated (Acknowledged mode RLC, Unacknowledged mode RLC)	
Periodical Reporting / Event Trigger Reporting Mode	MP		Enumerated (Periodical reporting, Event trigger)	

NOTE 1: The work in order to support the CPICH Rx SIR measurement is in progress in RAN WG4 and may impact the use of that measurement in this document

10.3.7.75 Measurement Type

Information Element	Need	Multi	Type and reference	Semantics description
Measurement Type	MP		Enumerated(Intra-frequency, Inter-frequency, Inter-system, Traffic volume, Quality, UE internal, LCS)	

10.3.7.76 Measurement validity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Resume/release	MP		Enumerated('resume', 'release')	Indicates whether a given measurement identifier should be released after transitions to CELL_DCH and/or transitions from CELL_DCH state.
UE state	CV – Resume		Enumerated(CELL_DCH, all states except CELL_DCH, all states)	Indicates the states, in which measurement reporting shall be conducted. The values 'all states except CELL_DCH' and 'all states' are used for measurement type 'traffic volume reporting'.

Condition	Explanation
Resume	This IE is mandatory if "Resume/Release" = Resume, otherwise the IE is not needed

10.3.7.77 Observed time difference to GSM cell

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Observed time difference to GSM cell	OP		Real(0.0..4095*3060/(4096*13 by step of 3060/(4096*13))	In ms

NOTE: Only the section is made.

10.3.7.78 Periodical reporting criteria

Contains the periodical reporting criteria information. It is necessary only in the periodical reporting mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Amount of reporting	OP		Enumerated(1, 2, 4, 8, 16, 32, 64, Infinity)	Measurement is "released" after the indicated amount of reporting from the UE itself
Reporting interval	OP		Real(0.25, 0.5, 1, 2, 3, 4, 6, 8, 12, 16, 20, 24, 28, 32, 64)	Indicates the interval of periodical report. Interval in seconds

10.3.7.79 Quality measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
BLER measurement results	OP	1 to <MaxBLER>		
>Transport channel identity	MP		Transport channel identity 10.3.5.16	
>DL Transport Channel BLER	OP		Real(0.00 ..5.10, by step of 0.02)	In dB= -Log10(Transport channel BLER)
SIR	OP		Integer(-10..20)	In dB

Multi Bound	Explanation
MaxBLER	Maximum number of transport channels with BLER measurements that can be included in a measurement report

10.3.7.80 Quality measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Quality measurement Object	OP		Quality measurement Object 10.3.7.82	IE isFFS
Quality measurement quantity	OP		Quality measurement quantity 10.3.7.83	IE isFFS
Quality reporting quantity	OP		Quality reporting quantity 10.3.7.86	
CHOICE report criteria	MP			
>Quality measurement reporting criteria			Quality measurement reporting criteria 10.3.7.84	IE isFFS
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.78	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement

10.3.7.81 Quality measurement event results (FFS)

NOTE: Only the section is made.

10.3.7.82 Quality measurement object (FFS)

NOTE: Only the section is made.

10.3.7.83 Quality measurement quantity (FFS)

NOTE: Only the section is made.

10.3.7.84 Quality measurement reporting criteria (FFS)

NOTE: Only the section is made.

10.3.7.85 Quality measurement system information

NOTE: Only the section is made.

10.3.7.86 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 <MaxBLER>		The default, if no transport channel identities are present, is that the BLER is reported for all downlink transport channels
>Transport channel identity	MP		Transport channel identity 10.3.5.16	
SIR	MP		Boolean	TRUE means report requested

Multi Bound	Explanation
MaxBLER	Maximum number of transport channels with BLER measurements that can be included in a measurement report

Condition	Explanation
BLER reporting	This information element is absent if 'DL Transport Channel BLER' is 'No' and optional, if if 'DL Transport Channel BLER' is 'Yes'

10.3.7.87 Reference time difference to cell

The reference time difference to cell indicates the time difference between the primary CCPCH of the current cell and the primary CCPCH of a neighbouring cell. It is notified to UE by System Information or Measurement Control message.

In case of macro-diversity the reference is the primary CCPCH of one the cells used in the active set.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *accuracy*	MP			
>40 chips				
>>Reference time difference	MP		Integer(0..38400 by step of 40)	In chips
>256 chips				
>>Reference time difference	MP		Integer(0.. 38400 by step of 256)	In chips
>2560 chips				
>>Reference time difference	MP		Enumerated(0.. 38400 by step of 2560)	In chips

NOTE: Exactly how the reference cell is pointed out in this case in the messages is FFS.

10.3.7.88 Reporting Cell Status

Indicates maximum allowed number of cells to report and whether active set cells and/or monitored set cells should/should not be included in the IE “Measured results”.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Maximum number of reporting cells	MP		Enumerated (mandatory cells only, mandatory cells+1, mandatory cells+2,.. mandatory cells+6)	For other measurement types than intra-frequency measurement, "mandatory cell" = 0.
Choice measurement	MP			At least one spare choice, Criticality: reject, is needed.
>intra-frequency				
>>Active set cell report	MP		Enumerated (include all, exclude all, other)	
>>Monitored set cell report	MP		Enumerated (exclude all, other)	

10.3.7.89 Reporting information for state CELL_DCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Intra-frequency reporting quantity	MP		Intra-frequency reporting quantity 10.3.7.41	
CHOICE report criteria	MP			
>Intra-frequency measurement reporting criteria			Intra-frequency measurement reporting criteria 10.3.7.39	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.78	

10.3.7.90 SFN-SFN observed time difference

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *type*	MP			
>Type 1			Enumerated(0..9830399)	Number of chips
>Type 2			Real(-1279.75..1280.0 by step of 0.25)	Number of chips

10.3.7.91 Time to trigger

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Time to trigger	MP		Enumerated(0, 10, 20, 40, 60, 80, 100, 120, 160, 200, 240, 320, 640, 1280, 2560, 5000)	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms

10.3.7.92 Traffic volume event identity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Traffic volume event identity	MP		Enumerated(4a, 4b)	

10.3.7.93 Traffic volume measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Traffic volume measurement results	OP	1 to <MaxTraf>		
>RB Identity	MP		RB Identity 10.3.4.11	
>RLC buffers payload	OP		Enumerated(0, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2K, 4K, 8K, 16K, 32K, 64K, 128K, 256K, 512K, 1024K)	In bytes And N Kbytes = N*1024 bytes
>Average RLC buffer payload	OP		Enumerated(0, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2K, 4K, 8K, 16K, 32K, 64K, 128K, 256K, 512K, 1024K)	In bytes And N Kbytes = N*1024 bytes
>Variance of RLC buffer payload	OP		Enumerated(0, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2K, 4K, 8K, 16K)	In bytes And N Kbytes = N*1024 bytes

Multi Bound	Explanation
MaxTraf	Maximum number of radio bearers with traffic volume measurements that can be included in a measurement report

10.3.7.94 Traffic volume measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Traffic volume measurement Object	OP		Traffic volume measurement Object 10.3.7.96	
Traffic volume measurement quantity	OP		Traffic volume measurement quantity 10.3.7.97	
Traffic volume reporting quantity	OP		Traffic volume reporting quantity 10.3.7.100	
Measurement validity	OP		Measurement validity 10.3.7.76	
CHOICE report criteria	MP			
>Traffic volume measurement reporting criteria			Traffic volume measurement reporting criteria 10.3.7.98	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.78	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement

10.3.7.95 Traffic volume measurement event results

Contains the event result for a traffic volume measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transport Channel causing the event	MP		Transport channel identity 10.3.5.16	
Traffic volume event identity	MP		Traffic volume event identity 10.3.7.92	

10.3.7.96 Traffic volume measurement object

Contains the measurement object information for a traffic volume measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Traffic volume measurement objects	MP	1 to <MaxTrCH count>		
>Target Transport Channel ID	MP		Transport channel identity 10.3.5.16	

Multi bound	Explanation
MaxTrCHCount	Maximum number of target Transport channels to be measured

10.3.7.97 Traffic volume measurement quantity

Contains the measurement quantity information for a traffic volume measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Measurement quantity	MP		Enumerated(RLC buffer payload, Average RLC buffer payload, Variance of RLC buffer payload)	

10.3.7.98 Traffic volume measurement reporting criteria

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

Event 4a: RLC buffer payload exceeds an absolute threshold

Event 4b: RLC buffer payload 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 count>		
>Transport Channel ID	MP		Transport channel identity 10.3.5.16	
>Parameters required for each Event	OP	1 to 2		
>>Traffic volume event identity	MP		Traffic volume event identity 10.3.7.92	
>>Reporting Threshold	MP		Integer(8,16, 32,64,128,256,512,1024,1536,2048,3072,4096,6144,8192)	Threshold in bytes
Time to trigger	OP		Time to trigger 10.3.7.91	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		Real(0.25, 0.5, 1, 2, 4, 8, 16)	Time in seconds. Indicates the period of time during which it is forbidden to send any new measurement reports with the same measurement ID even if the triggering condition is fulfilled again. Time in seconds
Tx interruption after trigger	OP		Real(0.25, 0.5, 1, 2, 4, 8, 16)	Time in seconds. Indicates whether or not the UE shall block DTCH transmissions on the RACH after a measurement report is triggered.
Amount of reporting	OP		Enumerated(1, 2, 4, 8, 16, 32, 64, Infinity)	Measurement is "released" after the indicated amount of reporting from the UE itself.
Reporting interval	OP		Real(0, 0.25, 0.5, 1, 2, 4, 8, 16)	Interval in seconds. Indicates the interval of periodical report during the event is in the detected state.

Multi Bound	Explanation
MaxTrCHcount	Maximum number of transport channels = 64

10.3.7.99 Traffic volume measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Traffic volume measurement identity number	MD		Measurement identity number 10.3.7.73	The traffic volume measurement identity number has default value 4.
Traffic volume measurement objects	OP		Traffic volume measurement objects 10.3.7.96	
Traffic volume measurement quantity	OP		Traffic volume measurement quantity 10.3.7.97	
Traffic volume reporting quantity	OP		Traffic volume reporting quantity 10.3.7.100	Note 2

Note2: The reporting of traffic volume measurements is activated in state CELL_FACH only.

10.3.7.100 Traffic volume reporting quantity

Contains the reporting quantity information for a traffic volume measurement.

For all boolean types TRUE means inclusion in the report is requested

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RLC buffer payload for each RB	MP		Boolean	
Average RLC buffer payload for each RB	MP		Boolean	
Variance of RLC buffer payload for each RB	MP		Boolean	

10.3.7.101 UE internal event identity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE internal event identity	MP		Enumerated(6a,6b,6c,6d, 6e, 6f, 6g)	

10.3.7.102 UE internal measured results

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>UE Transmitted Power	OP		Real(-50..33)	UE transmitted power In dBm
>>UE Rx-Tx report entries	OP	1 to <maxUsedRLcount>		
>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.43	Primary CPICH info for each cell included in the active set
>>>UE Rx-Tx time difference	MP		UE Rx-Tx time difference 10.3.7.109	UE Rx-Tx time difference in chip for each RL included in the active set
>TDD				
>>UE transmitted Power	OP	1 to <maxUsedUplTScount>		UE transmitted power for each used timeslot (TDD)

Multi Bound	Explanation
MaxUsedRLcount	Maximum number of radio links that can be included in a measurement report for Rx-Tx time difference
MaxUsedUplTScount	Maximum number of TS used for UL transmission

10.3.7.103 UE internal measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE internal measurement quantity	OP		UE internal measurement quantity 10.3.7.105	
UE internal reporting quantity	OP		UE internal reporting quantity 10.3.7.108	
CHOICE report criteria	MP			
>UE internal measurement reporting criteria			UE internal measurement reporting criteria 10.3.7.106	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.78	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement

CHOICE *report criteria*	Condition under which the given *report criteria* is chosen
UE internal measurement reporting criteria	Chosen when UE internal measurement event triggering is required
Periodical reporting criteria	Chosen when periodical reporting is required
No reporting	Chosen when this measurement only is used as additional measurement to another measurement

10.3.7.104 UE internal measurement event results

This IE contains the measurement event results that are reported to UTRAN for UE internal measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE internal event identity	MP		UE internal event identity 10.3.7.101	
CHOICE *mode*	MP			
>FDD				
>Primary CPICH info	CV - clause 1		Primary CPICH info 10.3.6.43	
>TDD				(no data)

Condition	Explanation
Clause 1	This IE is mandatory if "UE internal event identity" is set to "6f" or "6g", otherwise the IE is not needed

10.3.7.105 UE internal measurement quantity

The quantity the UE shall measure in case of UE internal measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Measurement quantity	MP		Enumerated(UE Transmitted Power, UTRA Carrier RSSI, UE Rx-Tx time difference)	
Filter coefficient	MP		Filter coefficient 10.3.7.9	

10.3.7.106 UE internal measurement reporting criteria

The triggering of the event-triggered reporting for a UE internal measurement. All events concerning UE internal measurements are labelled 6x where x is a, b, c…. In TDD, the events 6a - 6d are measured and reported on timeslot basis.

Event 6a: The UE Transmitted Power becomes larger than an absolute threshold

Event 6b: The UE Transmitted Power becomes less than an absolute threshold

Event 6c: The UE Transmitted Power reaches its minimum value

Event 6d: The UE Transmitted Power reaches its maximum value

Event 6e: The UE RSSI reaches the UE's dynamic receiver range

Event 6f: The UE Rx-Tx time difference for a RL included in the active set becomes larger than an absolute threshold

Event 6g: The UE Rx-Tx time difference for a RL included in the active set becomes less than an absolute threshold

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters sent for each UE internal measurement event	OP	1 to <maxEvent count>		
> UE internal event identity	MP		UE internal event identity 10.3.7.101	
>Time-to-trigger	MP		Integer(0, 10, 20, 40, 60, 80, 100, 120, 160, 200, 240, 320, 640, 1280, 2560, 5000)	Time in ms. Indicates the period of time between the timing of event detection and the timing of sending Measurement Report.
>UE Transmitted power Tx power threshold	CV - clause 1		Integer(-50..33)	Power in dBm. In event 6a, 6b.
>UE Rx-Tx time difference threshold	CV - clause 2		Integer(769..1280)	Time difference in chip. In event 6f, 6g.

Condition	Explanation
Clause 1	The IE is mandatory if UE internal event identity" is set to "6a" or "6b", otherwise the IE is not needed
Clause 2	The IE is mandatory if "UE internal event identity" is set to "6f" or "6g", otherwise the IE is not needed

Multi Bound	Explanation
MaxEventcount	Maximum number of events that can be listed in measurement reporting criteria

10.3.7.107 UE internal measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE internal measurement identity number	MD		Measurement identity number 10.3.7.73	The UE internal measurement identity number has default value 5.
UE internal measurement quantity	MP		UE internal measurement quantity 10.3.7.105	

10.3.7.108 UE Internal reporting quantity

For all boolean types TRUE means inclusion in the report is requested

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE Transmitted Power	MP		Boolean	
UE Rx-Tx time difference	MP		Boolean	

10.3.7.109 UE Rx-Tx time difference

The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first significant path, of the downlink DPCH frame from the measured radio link. This measurement is for FDD only.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE Rx-Tx time difference	MP		Integer(876..1172)	In chips. Number of chips.

10.3.8 Other Information elements

10.3.8.1 BCCH modification info

Indicates modification of the System Information on BCCH.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
MIB Value tag	MP			
BCCH Modification time	OP		Integer (0..4094 by step of 2)	Even SFN values.

10.3.8.2 BSIC

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Base transceiver Station Identity Code (BSIC)	MP			GSM TS 03.03
>Network Colour Code (NCC)	MP		Integer (0..7)	
>Base Station Colour Code (BCC)	MP		Integer (0..7)	

10.3.8.3 CBS DRX Level 1 information

This information element contains the CBS discontinuous reception information to be broadcast for CBS DRX Level 1 calculations in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Period of CTCH allocation (N)	MP		Integer (1..256)	$M_{TTI} \leq N \leq 4096 - K$, N multiple of M_{TTI}
CBS frame offset (K)	MP		Integer (0..255)	$0 \leq K \leq N-1$, K multiple of M_{TTI}

10.3.8.4 Cell Value tag

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell Value tag	MP		Enumerated (1..4)	

10.3.8.5 Inter-System handover failure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-System handover failure cause	MD		Enumerated(Configuration unacceptable, physical channel failure, protocol error, unspecified)	Default value is "unspecified". At least 3 spare values, criticality = default, are required

Protocol error information	CV-*ProtErr*		Protocol error information 10.3.8.9	
Inter-System message	OP		Inter-System message 10.3.8.6	

Condition	Explanation
ProtErr	If the IE "Inter-system handover failure cause" has the value "Protocol error"

10.3.8.6 Inter-system message

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, cdma2000)	At least 14 spare values, Criticality: reject, are needed
CHOICE *system*	MP			At least 14 spare choices, Criticality: reject, are needed
>GSM				
>>Message(s)	MP	1..<maxInterSysMessages>	Bitstring (1..512)	Formatted and coded according to GSM specifications
>cdma2000				
>>cdma2000Message	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

Multi Bound	Explanation
MaxInterSysMessages(=4)	Maximum number of Inter System Messages to send

10.3.8.7 MIB Value tag

Information Element/Group name	Need	Multi	Type and reference	Semantics description
MIB Value tag	MP		Enumerated (1..8)	

10.3.8.8 PLMN Value tag

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PLMN Value tag	MP		Enumerated (1..256)	

10.3.8.9 Protocol error information

This information element contains diagnostics information returned by the receiver of a message that was not completely understood.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE diagnostics type	MP			At least one spare choice is needed.
> Protocol error cause			Protocol error cause 10.3.3.28	

10.3.8.10 References to other system information blocks

Information element	Need	Multi	Type and reference	Semantics description
References to other system information blocks	MP	1 to <MaxSysInfoBlockCount>		
>Scheduling information	MD		Scheduling information, 10.3.8.11	

Multi bound	Explanation
MaxSysInfoBlockCount	Maximum number of references to other system information blocks

10.3.8.11 Scheduling information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB type	MP			
CHOICE Value tag	OP			
>PLMN Value tag			PLMN Value tag 10.3.8.8	This IE is included if the following conditions are fulfilled: - the area scope for the system information block is set to “PLMN” in table 8.1.1. a value tag is used to indicate changes in the system information block.
>Cell Value tag			Cell Value tag 10.3.8.4	This IE is included if the following conditions are fulfilled: - the area scope for the system information block is set to “cell” in table 8.1.1. - a value tag is used to indicate changes in the system information block.
Scheduling	MD			see below for default value
>SEG_COUNT	MD		SEG COUNT 10.3.8.12	Default value is 1
>SIB_REP	MP		Integer (4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048)	Repetition period for the SIB in frames
>SIB_POS	MP		Integer (0 ..Rep-2 by step of 2)	Position of the first segment Rep is the value of the SIB_REP IE
>SIB_POS offset info	MD	1..15		see below for default value
>>SIB_OFF	MP		Enumerated (2, 4, 6, ..32)	Offset of subsequent segments

Field	Default value
SIB_POS offset info	The default value is that all segments are consecutive, i.e., that the SIB_OFF = 2 for all segments.
Scheduling	The default value is the scheduling of the SIB as specified in another SIB.

10.3.8.12 SEG COUNT

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SEG_COUNT	MP		Integer (1..16)	Number of segments in the system information block

10.3.8.13 Segment index

Each system information segment has an individual segment index.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Segment index	MP		Integer (0..15)	Segments of a system information block are numbered starting with 0 for the first part.

10.3.8.14 SIB data

Contains the result of the IE 'SIB Content' after segmentation.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB data	MP		Bit string (1..MaxDataLength)	

Multi Bound	Explanation
MaxDataLength	Maximum length of a BCH- or FACH transport block used for broadcast of system information.

10.3.8.15 SIB type

The SIB type identifies a specific system information block.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB type	MP		Enumerated, see below	

The list of values to encode is:

- Master information block,
- System Information Type 1,
- System Information Type 2,
- System Information Type 3,
- System Information Type 4,
- System Information Type 5,

System Information Type 6,

System Information Type 7,

System Information Type 8,

System Information Type 9,

System Information Type 10,

System Information Type 11,

System Information Type 12,

System Information Type 13,

System Information Type 13.1,

System Information Type 13.2,

System Information Type 13.3,

System Information Type 13.4,

System Information Type 14,

System Information Type 15,

System Information Type 16

in addition, at least 12 spare values, criticality : ignore, are needed

10.3.9 ANSI-41 Information elements

10.3.9.1 ANSI 41 Core Network Information

Information element	Need	Multi	Type and reference	Semantics description
P_REV	MP		P_REV 10.3.9.9	
MIN_P_REV	MP		MIN_P_REV 10.3.9.7	
SID	MP		SID 10.3.9.10	
NID	MP		NID 10.3.9.8	

10.3.9.2 ANSI-41 Global Service Redirection information

This Information Element contains ANSI-41 Global Service Redirection information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ANSI-41 Global Service Redirection information	MP		Bit string (size (1..MaxLength))	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.3.9.3 ANSI-41 NAS system information

This Information Element contains ANSI-41 system information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
NAS (ANSI-41) system information	MP		Bit string (size (1..MaxLength))	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.3.9.4 ANSI-41 Private Neighbor List information

This Information Element contains ANSI-41 Private Neighbor List information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ANSI-41 Private Neighbor List information	MP		Bit string (size (1..MaxLength))	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.3.9.5 ANSI-41 RAND information

This Information Element contains ANSI-41 RAND information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ANSI-41 RAND information	MP		Bit string (size (1..MaxLength))	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.3.9.6 ANSI-41 User Zone Identification information

This Information Element contains ANSI-41 User Zone Identification information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ANSI-41 User Zone Identification information	MP		Bit string (size (1..MaxLength))	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.3.9.7 MIN_P_REV

This Information Element contains minimum protocol revision level.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
MIN_P_REV	MP			Minimum protocol revision level

10.3.9.8 NID

This Information Element contains Network identification.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
NID	MP			Network identification

10.3.9.9 P_REV

This Information Element contains protocol revision level

Information Element/Group name	Need	Multi	Type and reference	Semantics description
P_REV	MP			Protocol revision level

10.3.9.10 SID

This Information Element contains System identification

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SID	MP			System identification

10.1.1 ACTIVE SET UPDATE (FDD only)

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
U-RNTI	O			New U-RNTI
Activation time	O			
Ciphering mode info	O			
CN information elements				
PLMN identity	O			(Note 2)

Information Element	Presen	Multi	IE type	Semantics and reference description
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related		0 to		CN related informatio

Information Element	Presen	Multi	IE type	Semantics and reference description
information				n to be provided for each CN domain
>CN domain identity	O			(Note 2)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS sys	(Note 2)

Information Element	Presen	Multi	IE type	Semantics and reference item information description
Phy CH information elements				
Maximum allowed UL TX power	O			
Radio link addition information		0 to		Radio link addition information required for each RL to add

Information Element	Presen	Multi	IE type	Semantics and reference description
>TPC combination index	M			
>Primary CPICH info	M			Note 1
>TFCI combining indicator	O			
>Downlink DPCH info	M			
>Secondary CCPCH Info	O			Note 2
>References to system information blocks		0 to		Note 2

Information Element	Presen	Multi	IE type	Semantics description
>>Scheduling information				Note 2
Radio link removal information		0 to		Radio link removal information required for each RL to remove

Information Element	Presen	Multi	IE type	Semantics and reference description
>Primary CPICH info	M			Note 1
SSDT indicator	O			
Gated Transmission Control Info	O			

Multi bound	Explanation
MaxAddRLcount	Maximum number of radio links which can be added
MaxDelRLcount	Maximum number of radio links which can be removed/deleted
MaxSysInfoFACHCount	Maximum number of references to system information

	blocks on the FACH

NOTE 1: If it is assumed that primary CPICH downlink scrambling code is always allocated with sufficient reuse distances, primary CPICH downlink scrambling code will be enough for designating the different radio links.

NOTE 2: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.2 ACTIVE SET UPDATE COMPLETE (FDD only)

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE →UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.3 ACTIVE SET UPDATE FAILURE (FDD only)

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.4 CELL UPDATE

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

RLC-SAP: TM

Logical channel: CCCH

Direction: UE→UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
U-RNTI	M			
Cell update cause	M			
AM_RLC error indication	O			Indicates AM_RLC unrecoverable error occurred on c-plane in the UE
Measurement information elements				
Measured results on RACH	O			

10.1.5 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: DCCH

Direction: UTRAN→UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
New U-RNTI	O			
New C-RNTI	O			
RLC re-configuration indicator	C-			

Information Element	Presen	Multi	IE type	Semantics and reference description
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficien	

Information Element	Presen	Multi	IE type	Semantics and reference text description
DRX Indicator	O			
Ciphering mode info	O			
UTRAN mobility information elements				
URA identifier	O			
CN information elements				
PLMN identity	O			(Note1,2)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system	

Information Element	Presen	Multi	IE type	Semantics and reference message information description
CN domain related information		0 to		CN related information to be provided for each CN domain

Information Element	Presen	Multi	IE type	Semantics and reference description
>CN domain identity	O			(Note1,2)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1,2)

Information Element	Presen	Multi	IE type	Semantics and reference description
Physical CH information elements				
Uplink Radio Resources				
Maximum allowed ULTX power	O			
PRACH info (for RACH)	O			
CHOICE *mode*				
>FDD				
>>PRACH info (for FAUSCH)	O			
Downlink Radio Resources				

Information Element	Presen	Multi	IE type	Semantics and reference description
CHOICE *mode*				
>FDD				
>>Primary CPICH info	O			
>TDD				
>>Primary CCPCH info	O			
Secondary CCPCH info	O			

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains

Condition	Explanation
AM_RLC_recon	This IE is only sent when the UTRAN requests AM RLC re-configuration

NOTE 1: It depends on the length of these information whether this message can be used to notify these information to UE.

NOTE 2: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

10.1.6 DOWNLINK DIRECT TRANSFER

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN -> UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
CN information elements				
CN Domain Identity	M			
NAS message	M			

10.1.7 DOWNLINK OUTER LOOP CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
PhyCH information elements				
Downlink Outer Loop Control	M			Indicates whether the UE is allowed or not to increase its SIR-target value above its current

				value

10.1.8 HANDOVER TO UTRAN COMMAND

NOTE: Functional description of this message to be included here

RLC-SAP: N/A

Logical channel: N/A

Direction: UTRAN → UE

Information Element	Presen	Multi	IE type	Semantics description
UE information elements				
U-RNTI	M			
Activation time	O			
Ciphering algorithm	O		As defined	Included in case of change of algorithm during handover

Information Element	Presen	Multi	IE type	Semantics and reference description
				n 10..23..36
RB information elements				
Predefined radio configuration identity	M			
PhyCH information elements				
Frequency info_2	M			
>UARFCN uplink (Nu)	M		As	define

Information Element	Presen	Multi	IE type	Semantics description
				and reference
				definition 10.2.6.14
>Radio access mode	M		As defined in 10.	

Information Element	Presen	Multi	IE type	Semantics and reference description
				2.6.14
Maximum allowed UL TX power	M			
Uplink DPCH power control info_2	M			
>DPDCH power offset	M		As	defined in 10.

Information Element	Presen	Multi	IE type	Semantics and reference description
				2.6.4.4
>>Power Control Algorithm	M		Enumerated (algorithm1 or a	Specifies algorithm to be used by UE to interpret TPC commands

Information Element	Presen	Multi	IE type	Semantics description
				and reference
				logorithm 2)
>TPC step size	C-		As	defined in 10.2.6

Information Element	Presen	Multi	IE type	Semantics and reference description
				10.3.6.44
Uplink radio resource information				
>Uplink DPDCH info_2	M			
>>Scrambling code type	M		As defined in 10.2.6.7	

Information Element	Presen	Multi	IE type	Semantics and reference description
				43
>>Scrambling code number	M		As defined in 10.2.6.43	
>>DPDCH channelisation code	M		As defi	

Information Element	Presen	Multi	IE type	Semantics and reference description
			need in 10.2.6.43	
Downlink radio resource information				
>Downlink DPCH power control info	M			
>Downlink information		1 to		Send downlink information for each radio link to be set-

Information Element	Presen	Multi	IE type	Semantics description
				up
>>Primary CCPCH info_2	M			
>>>Primary scrambling code	M		As	defined in 10.2.

Information Element	Presen	Multi	IE type	Semantics and reference description
				6.2.9
>>Downlink DPDCH info_2	M			
>>>Secondary scrambling code	O		As	defined in 10.2.6.9
>>>Spreading factor	M		As	

Information Element	Presen	Multi	IE type	Semantics description
				and reference
				defined in 10.2.6.9
>>>Code number	M		As	defined

Information Element	Presen	Multi	IE type	Semantics and reference description
				n 10.2.6.9

10.1.9 INITIAL DIRECT TRANSFER

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE -> UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description

				~~e r e n c e~~
~~Message Type~~	~~M~~			
~~UE information elements~~				
~~Integrity check info~~	~~O~~			
~~CN information elements~~				
~~Service Descriptor~~	~~M~~			
~~Flow Identifier~~	~~M~~			~~Allocated by UE for a particular session~~
~~CN domain identity~~	~~M~~			
~~NAS message~~	~~M~~			
~~Measurement information elements~~				
~~Measured results on RACH~~	~~O~~			

~~10.1.10 INTER-SYSTEM HANDOVER 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-System 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	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Activation time	O			
Other information Elements				
Inter-System message	M			

10.1.11 INTER-SYSTEM HANDOVER FAILURE

This message is sent on the RRC connection used before the Inter-System 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	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Inter-System handover failure cause	O			FFS
Other Information Elements				
Inter-System message	O			

10.1.12 MEASUREMENT CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Measurement Information elements				
Measurement Identity Number	M			
Measurement Command	M			
Measurement Type	C			
Measurement Reporting Mode	C			

Information Element	Presen	Multi	IE type	Semantics and reference description
Additional measurement identity number		0 to		
CHOICE Measureme				

Information Element	Presen	Multi	IE type	Semantics and reference description
nt				
>Intra-frequency				
>>Intra-frequency cell info		1 to		Measurement object
>>Intra-frequency measurement quantity	C			

Information Element	Presen	Multi	IE type	Semantics and reference description
>>Intra-frequency measurement reporting quantity	O			
>>Maximum number of reporting cells	O			
>>Measurement validity	O			
>>**CHOICE report criteria**				
>>>Intra-frequency measurement reporting criteria				

Information Element	Presen	Multi	IE type	Semantics and reference description
>>>Periodical reporting criteria				
>>>No reporting			NULL	
>Inter-frequency				
>>Inter-frequency cell info		1 to		Measurement object
>>Inter-frequency measurement quantity	C			

Information Element	Presen	Multi	IE type	Semantics and reference description
>>Inter-frequency measurement reporting quantity	O			
>>Maximum number of reporting cells	O			
>>Measurement validity	O			
>>Inter-frequency set Update				
>>**CHOICE report criteria**				

Information Element	Presen	Multi	IE type	Semantics and reference description
>>>Intra-frequency measurement reporting criteria				
>>>Inter-frequency measurement reporting criteria				
>>>Periodical reporting criteria				
>>>No reporting			NULL	
>Inter-system				
>>Inter-system cell info		1 to		Measurement object

Information Element	Presen	Multi	IE type	Semantics and reference description
>>Inter-system measurement quantity	C			
>>Inter-system	O			

Information Element	Presen	Multi	IE type	Semantics and reference description
measurement reporting quantity				
>>Maximum number of reporting cells	O			
>>**CHOICE report criteria**				
>>>Inter-system measurement reporting criteria				
>>>Periodical reporting criteria				
>>>No reporting			NULL	
>Traffic Volume				
>>Traffic volume measurement				

Information Element	Presen	Multi	IE type	Semantics and reference description
Object				
>>Traffic volume measurement quantity	C			
>>Traffic volume measurement reporting quantity	O			
>>Measurement validity	O			
>>**CHOICE report criteria**				
>>>Traffic volume measureme				

Information Element	Presen	Multi	IE type	Semantics and reference description
nt reporting criteria				
>>>Periodical reporting criteria				
>>>No reporting			NULL	
>Quality				
>>Quality measurement Object				
>>Quality measurement quantity	C			

Information Element	Presen	Multi	IE type	Semantics and reference description
>>Quality measurement reporting quantity	O			
>>**CHOICE report criteria**				
>>>Quality measurement reporting criteria				
>>>Periodical reporting criteria				
>>>No reporting			NULL	
>UE internal				
>>UE internal measurement quantity	C			

Information Element	Presen	Multi	IE type	Semantics and reference description
>>UE internal measurement reporting quantity	O			
>>**CHOICE report criteria**				
>>>UE internal measurement reporting criteria				
>>>Periodical reporting criteria				

Information Element	Presen	Multi	IE type	Semantics and reference description
>>>No reporting			NULL	

Condition	Explanation
Setup	This IE is only included if measurement command is Setup
NotRelease	This IE is only included if measurement command is Setup or Modify
Event trigger	This element is only included if the Reporting mode IE is set to event trigger reporting mode.

Multi Bound	Explanation
MaxIntraCells	Maximum number of Intra-frequency cells in a measurement control
MaxInterCells	Maximum number of Inter-frequency cells in a measurement control

MaxInterSysCells	Maximum number of Inter-System cells in a measurement control

CHOICE *Measurement*	Condition under which the given *Measurement* is chosen
Intra-frequency	if measurement type=Intra-frequency measurement
Inter-frequency	if measurement type=Inter-frequency measurement
Inter-system	if measurement type=Intra-system measurement
Traffic volume	if measurement type=traffic volume measurement
Quality	if measurement type=Quality measurement
UE internal	if measurement type=UE internal measurement
CHOICE *reporting criteria*	Condition under which the given *reporting criteria* is chosen
******* measurement reporting criteria	Chosen when event triggering is required
Periodical reporting criteria	Chosen when periodical reporting is required
No reporting	Chosen when this measurement only is used as additional measurement to another measurement

Multi Bound	Explanation

MaxAdditionalMeas	Maximum number of additional measurements for a given measurement identity

10.1.13 MEASUREMENT CONTROL FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE →UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.14 MEASUREMENT REPORT

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE →UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Measurement Information Elements				
Measurement identity number	M			
Measured Results	C MR			

~~Additional Measured results~~		~~0 to~~		
~~>Measured Results~~	~~M~~			
~~**CHOICE event result**~~	~~C~~			
~~>Intra-frequency measurement event results~~				

>Inter-frequency measurement event results				
>Inter-system measurement event results				For IS-2000 results, include fields of the *Pilot Strength Measurement Message* from Section 2.7.2.3.2.5 of TIA/EIA/IS-2000.5
>Traffic volume measurement event results				
>Quality measurement event results				

Condition	Explanation
Event trigger	This element is only included in the message that is sent in event trigger reporting mode.
MR required	This information element is included by the sender only if indicated optionally by Reporting

	~~Quantity in Measurement Control~~

~~Multi Bound~~	~~Explanation~~
~~*MaxAdditionalMeas*~~	~~Maximum number of additional measurements for a given measurement identity~~

~~CHOICE *event result*~~	~~Condition under which the given *event result* is chosen~~
~~Intra-frequency measurement event results~~	
~~Inter-frequency measurement event results~~	
~~Inter-system measurement event results~~	
~~Traffic volume measurement event results~~	
~~Quality measurement event results~~	

~~10.1.15 PAGING TYPE 1~~

~~This message is used to send information on the paging channel. One or several UEs, in idle or connected mode, can be paged in one message, which also can contain other information.~~

~~RLC-SAP: TM~~

~~Logical channel: PCCH~~

~~Direction: UTRAN → UE~~

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE Information elements				
Paging record		0 to		
Other information elements				
BCCH modification info	O			

Multi Bound	Explanation
Page Count	Number of UEs paged in the

	Paging Type 1 message

10.1.16 PAGING TYPE 2

This message is used to page an UE in connected mode, when using the DCCH for CN originated paging.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
CN Information elements				
CN domain identity	M			
Paging Record Type Identifier	M		Enumerate	

				d (I M S I (G S M - M A P) , T M S I (G S M - M A P) / P - T M S I , I M

				SI (DS-41), TMSI (DS-41))
UE Information elements				
Paging cause	M			

10.1.17 PHYSICAL CHANNEL RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New U-RNTI	O		U-RNTI	
New C-RNTI	C -		C-RNTI	
UTRAN DRX cycle length coefficient	O		DRX	cycl

Information Element	Presen	Multi	IE type	Semantics and reference length coefficient description
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			

Information Element	Presen	Multi	IE type	Semantics and reference description
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	

Information Element	Presen	Multi	IE type	Semantics and reference description
CN domain related information		0 to		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS sys	(Note1)

Information Element	Presen	Multi	IE type	Semantics and reference system information description
Phy CH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			

Information Element	Presen	Multi	IE type	Semantics and reference description
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH Info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio		0 to		Send downlink informatio

Information Element	Presen	Multi	IE type	Semantics and reference description
link				n for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-			
>>>Primary CPICH info				
>>TDD				

Information Element	Presen	Multi	IE type	Semantics and reference description
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			For FACH/PCH
>References to system information blocks		0 to		Note 3

Information Element	Presen	Multi	IE type	Semantics and reference description
>>Scheduling information				Note 3
CHOICE mode				
>TDD				
>>PICH info				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control

Information Element	Presen	Multi	IE type	Semantics and reference description
				(Note2)
>>Default DPCH Offset Value	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			

Condition	Explanation
RACH/FACH	This information element is only included in the sent message when using RACH/FACH
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxSysInfoFACHCount	Maximum number of references to system information

	blocks on the FACH
MaxRLcount	Maximum number of radio links to be set up

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH info (for FAUSCH)	
PRACH info (for RACH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.18 PHYSICAL CHANNEL RECONFIGURATION COMPLETE

This message is sent from the UE when a physical channel reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description

				reference
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.19 PHYSICAL CHANNEL RECONFIGURATION FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE →UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				

Integrity check info	O			
Failure cause	M			

10.1.20 PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)

This message is used by UTRAN to assign physical resources to USCH/DSCH transport channels in TDD, for temporary usage by the UE.

RLC-SAP: TM or AM

Logical channel: SHCCH

Direction: UTRAN → UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE Information elements				
Integrity check info	O			
C-RNTI	M			
PUSCH allocation pending	O			

TrCH information elements				
TFCS identity	O			
PhyCH information elements				
PUSCH power control info	O			
Uplink timing advance info	O			
PUSCH info	O			
PDSCH info	O			

10.1.21 PUSCH CAPACITY REQUEST (TDD only)

This message is used by the UE for request of PUSCH resources to the UTRAN.

RLC-SAP: TM

Logical channel: SHCCH

Direction: UE → UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description

				e
Message Type	M			
UE information elements				
Integrity check info	O			
C-RNTI	M			
Measurement information elements				
Traffic amount information		1 to		Send traffic amount information for each Radio Access Bearer in the message
>RB ID	M			
>RLC buffer payload	M			
>Measured results on RACH	O			

Multi Bound	Explanation
RABCount	Number of traffic amount information in the message

10.1.22 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	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New C-RNTI	C -			

Information Element	Presen	Multi	IE type	Semantics and reference description
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	

Information Element	Presen	Multi	IE type	Semantics and reference text description
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system mi	

Information Element	Presen	Multi	IE type	Semantics and reference information description
CN domain related information		0 to		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)

Information Element	Presen	Multi	IE type	Semantics and reference description
CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information				

Information Element	Presen	Multi	IE type	Semantics and reference description
elements				
RB information to reconfigure		0 to		
>RB identity	M			
>PDCP info	O			
>CHOICE *RLC info type*	O			Presence is FFS. For the first release this choice has only one possible value. This

Information Element	Presen	Multi	IE type	Semantics and reference description
				choice type may be extended in future releases.
>>RLC info	O			
>RB mapping info	O			
>RB suspend/resume	O			Not applicable to the signalling bearer.
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				

Information Element	Presen	Multi	IE type	Semantics and reference description
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Deleted TrCH information		0 to		
>Transport channel identity	M			
Added or Reconfigured TrCH		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
information				
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C	1 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>>Dynamic Control				
>>Transmission time validity				
>>Time duration before retry				
>>Silent period duration before release				
Downlink transport channels				

Information Element	Presen	Multi	IE type	Semantics and reference description
Deleted TrCH information		0 to		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>Transport channel identity	M			
>TFS	M			
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			

Information Element	Presen	Multi	IE type	Semantics and reference description
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to		Send downlink information for each radio link

Information Element	Presen	Multi	IE type	Semantics and reference description
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			

Information Element	Presen	Multi	IE type	Semantics and reference description
>References to system information blocks		0 to		Note 3
>>Scheduling				Note 3

Information Element	Presen	Multi	IE type	Semantics and reference description
information				
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				

Information Element	Presen	Multi	IE type	Semantics and reference description
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxRBcount	Maximum number of RBs to be reconfigured

MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCH	Maximum number of transport channels to add and reconfigure
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH info (for RACH)	
PRACH info (for FAUSCH)	

CHOICE *RLC info type*	Condition under which the given *RLC info type* is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.23 RADIO BEARER RECONFIGURATION COMPLETE

This message is sent from the UE when a RB and signalling link reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.24 RADIO BEARER RECONFIGURATION FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description

				~~reference~~
~~Message Type~~	~~M~~			
~~**UE information elements**~~				
~~Integrity check info~~	~~O~~			
~~Failure cause~~	~~M~~			

~~10.1.25 RADIO BEARER RELEASE~~

~~NOTE: Functional description of this message to be included here~~

~~RLC-SAP: AM or UM~~

~~Logical channel: DCCH~~

~~Direction: UTRAN → UE~~

~~Information Element~~	~~Presen~~	~~Multi~~	~~IE type~~	~~Semantics description~~ ~~and reference~~

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New C-RNTI	C -		C-RNTI	
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX	cycl

Information Element	Presen	Multi	IE type	Semantics and reference length coefficient description
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			

Information Element	Presen	Multi	IE type	Semantics and reference description
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	

Information Element	Presen	Multi	IE type	Semantics and reference description
CN domain related information		0 to		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS sys	(Note1)

Information Element	Presen	Multi	IE type	Semantics and reference system information description
RB information elements				
RB information to release		1 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>RB identity	M			
RB information to be affected		0 to		
>RB identity	M			
>RB mapping info	O			

Information Element	Presen	Multi	IE type	Semantics and reference description
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Deleted TrCH information Transport channel identity		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C	1 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>>Dynamic Control				
>>Transmission time validity				
>>Time duration before retry				
>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH information		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to		Editor: this limit should probably also be MaxReconAddFFSTrCH
>Transport channel identity	M			
>TFS	M			

Information Element	Presen	Multi	IE type	Semantics and reference description
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio				

Information Element	Presen	Multi	IE type	Semantics and reference description
resources				
Downlink information per radio link		0 to		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-			
>>>Primary CPICH				

Information Element	Presen	Multi	IE type	Semantics and reference description
info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to		Note 3

Information Element	Presen	Multi	IE type	Semantics and reference description
>Scheduling information				Note 3
Choice *mode*				
>FDD				
>>SSDT indicator				
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Gated Transmission Control info	O, FFS			Note 3

Information Element	Presen	Multi	IE type	Semantics and reference description
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation

MaxRLcount	Maximum number of radio links
MaxDelRBcount	Maximum number of RBs to be released
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH
MaxReconAddFFSTrCH	Maximum number of transport channels to add and reconfigure

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH Info (for RACH)	
PRACH info (for FAUSCH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.26 RADIO BEARER RELEASE COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.27 RADIO BEARER RELEASE FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description

				reference
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.28 RADIO BEARER SETUP

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presen	Multi	IE type	Semantics and reference description

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
CN information elements				
NAS binding info	M			
CN domain identity				
UE Information elements				
Activation time	O			
New C-RNTI	C –		C-RNTI	

Information Element	Presen	Multi	IE type	Semantics and reference description
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX	cycle length coefficient

Information Element	Presen	Multi	IE type	Semantics and reference description
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system info	

Information Element	Presen	Multi	IE type	Semantics and reference information
CN domain related information		0 to		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)

Information Element	Presen	Multi	IE type	Semantics and reference description
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information				

Information Element	Presen	Multi	IE type	Semantics and reference description
elements				
RB information to setup		1 to		
>RB identity	M			
>PDCP info	O			

Information Element	Presen	Multi	IE type	Semantics and reference description
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
RB information to be affected		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>RB identity	M			
>RB mapping info	M			
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in

Information Element	Presen	Multi	IE type	Semantics and reference description
				uplink
Uplink transport channels				
Deleted TrCH information		0 to		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C	1 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				
>>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH information Transport channel		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
identity				
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>Transport channel identity	M			
>TFS	M			
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH Info (for RACH)				

Information Element	Presen	Multi	IE type	Semantics and reference description
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to		Send downlink information for each radio link

Information Element	Presen	Multi	IE type	Semantics and reference description
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	ifDPC			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to		Note 3

Information Element	Presen	Multi	IE type	Semantics and reference description
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			

Information Element	Presen	Multi	IE type	Semantics and reference description
>>Gated Transmission Control info	O			
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation

RACH/FACH	This information element is only sent when using RACH/FACH
IfDPCH	This IE is only sent if "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddcount	Maximum number of Transport CHannels reconfigured or added
MaxRBcount	Maximum number of RBs that could be setup with this message
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH info (for FAUSCH)	
PRACH info (for RACH)	

CHOICE *RLC info type*	Condition under which the given *RLC info type* is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.29 RADIO BEARER SETUP COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	**Presence**	**Multi**	**IE type and reference**	**Semantics description**
Message Type	M			
UE information				

elements				
Integrity check info	O			

10.1.30 RADIO BEARER SETUP FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE →UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.31 RNTI REALLOCATION

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN →UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
New U-RNTI	O			
New C-RNTI	O			
Ciphering mode info	O			
CN information elements				
PLMN identity	O			(Note1,2)
CN common GSM-MAP NAS system	O		GSM-MAP	

information				NAS system information
CN domain related information		0 to		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1,2)
>CN domain specific	O		GSM-	(Note1,2)

GSM-MAP NAS system info				MAP NAS system information

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains

NOTE 1: It depends on the length of these information whether this message can be used to notify these information to UE.

NOTE 2: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

10.1.32 RNTI REALLOCATION COMPLETE

This message is used to confirm the new RNTI information for the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE →UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.33 RRC CONNECTION RE-ESTABLISHMENT

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
New U-RNTI	O			
New C-RNTI	O			
Activation time	O			
Re-establishment timer	O			
CN information elements				
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS	

Information Element	Presen	Multi	IE type	Semantics description
				and reference system information
CN domain related information		0 to		CN related information to be provided for each CN domain

Information Element	Presen	Multi	IE type	Semantics and reference description
>CN domain identity	O		GSM-MAP NAS system information	(Note1)

Information Element	Presen	Multi	IE type	Semantics and reference description
				tion
>CN domain specific GSM-MAP NAS system info	O			(Note1)
NAS binding info	C-			
CN domain identity	C-			
RB information to setup		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>RB identity	M			

Information Element	Presen	Multi	IE type	Semantics and reference description
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
RB information to release		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>RB identity	M			
RB information to reconfigure		0 to		
>RB identity	M			
>CHOICE *RLC info type*	O			

Information Element	Presen	Multi	IE type	Semantics and reference description
>>RLC info				FFS
>>Signalling radio bearer type				
>RB mapping info	O			
>RB suspend/resume	O			Not applicable to the signalling bearer.
Transport Channel Information Elements				
TFCS	O			For uplink TFCS
TFCS	O			For downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS

Information Element	Presen	Multi	IE type	Semantics and reference description
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			For TFC subset in uplink
Uplink transport channels				
Deleted TrCH information		0 to		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C	1 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				
>>>Silent period duration before release				
Downlink transport channels				
Transport channel		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
identity				
>Transport channel identity	M			
Reconfigured TrCH information		0 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>>Transport channel identity	M			
>>TFS	M			
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				

Information Element	Presen	Multi	IE type	Semantics and reference description
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC	C-			

Information Element	Presen	Multi	IE type	Semantics and reference description
combination index				
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET info	O			UL/DL radio resource for CPCH control

Information Element	Presen	Multi	IE type	Semantics and reference description
				(Note3)
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 3: How to map UL and DL radio resource in the message is FFS.

Condition	Explanation
DRAC	These information elements are only sent for transport channels which use the

	DRAC procedure
RBsetup	This information element is only sent when RB information to setup exists
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

CHOICE channel requirement	Condition under which the given channel requirement is chosen
Uplink DPCH info	
PRACH info (for RACH)	

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive
Signalling radio bearer type	

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains
MaxSetupRBcount	Maximum number of RBs to be setup
MaxRelRBcount	Maximum number of RBs to be released
MaxReconRBcount	Maximum number of RBs to be

	reconfigured
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCH	Maximum number of transport channels to add and reconfigure
MaxRLcount	Maximum number of radio links

10.1.34 RRC CONNECTION RE-ESTABLISHMENT COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.35 RRC CONNECTION RE-ESTABLISHMENT REQUEST

NOTE: Functional description of this message to be included here

RLC-SAP: TM

Logical channel: CCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type	Semantics description and reference
Message Type	M			
UE information elements				
Integrity check info	O			
U-RNTI	M			
Measurement information elements				
Measured results on RACH	M			

10.1.36 RRC CONNECTION REJECT

The network transmits this message when the requested RRC connection cannot be accepted.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Initial UE identity	M			
Rejection cause	M			
Wait time	O			

10.1.37 RRC CONNECTION RELEASE

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: DCCH

Direction: UTRAN →UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Release cause	M			
Number of RRC Message Transmissions	M			

10.1.38 RRC CONNECTION RELEASE COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presen	Multi	IE type	Semantics and description

				reference
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.39 RRC CONNECTION REQUEST

RRC Connection Request is the first message transmitted by the UE when setting up an RRC Connection to the network.

RLC-SAP: TM

Logical channel: CCCH

Direction: UE → UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description

Message Type	M			
UE information elements				
Initial UE identity	M			
Establishment cause	M			
Initial UE capability	M			
Measurement information elements				
Measured results on RACH	M			

10.1.40 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	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Initial UE identity	M			
U-RNTI	M			
C-RNTI	O			Only if assigned to a common transport channel
Activation time	O			
UTRAN DRX cycle length coefficient	O		DRX	cycle length

Information Element	Presen	Multi	IE type	Semantics description
				and reference
				coefficient
DRX Indicator	O			
Re-establishment timer	O			
Capability update requirement	M			
RB information elements				
Signalling radio bearers		3 to 4		Information for signalling radio bearers, in the order RB 0 up to

Information Element	Presen	Multi	IE type	Semantics and reference description
				3.
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
TrCH information elements				
TFCS	O			For Uplink TFCS
TFCS	O			For Downlink TFCS
TFCS	O			For SCCPCH TFCS

Information Element	Presen	Multi	IE type	Semantics and reference description
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>>TFCS Identity	O			Downlink TFCS
TFC subset	O			For TFC subset in uplink
CPCH set ID	O			
Uplink transport channels				
Uplink transport channel information		1 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>Transport channel identity	M			
>TFS	M			
Downlink transport channels				
Downlink transport channel information		1 to		

Information Element	Presen	Multi	IE type	Semantics and reference description
>Transport channel identity	M			
>TFS	M			
>Transparent mode signalling info	C if	0 or 1		
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel	O			

Information Element	Presen	Multi	IE type	Semantics and reference description
requirement				
>Uplink DPCH info				
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to		Send downlink information for each radio link to be set-up

Information Element	Presen	Multi	IE type	Semantics and reference description
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
CHOICE *mode*				
>FDD				

Information Element	Presen	Multi	IE type	Semantics and reference description
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note 1)
>>Gated Transmission Control info	O, FFS			Note 2
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
IfTM_DCH	This information is only sent if a DCH carrying transparent mode DCCH information is used, e.g. to send transport format combination commands.
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxULTrCHCoun	Maximum number of new uplink transport channels
MaxDLTrCHCount	Maximum number of new downlink transport channels
MaxRLcoun	Maximum number of radio links to be set up

CHOICE channel requirement	Condition under which the given channel requirement is chosen
Uplink DPCH info	
PRACH info (for RACH)	

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive.

NOTE 1: How to map UL and DL radio resource in the message is FFS.

NOTE 2: The activation time should be present when the Gated Transmission control info is present in this message.

10.1.41 RRC CONNECTION SETUP COMPLETE

This message confirms the establishment of the RRC Connection by the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection hyper frame number	M			
Ciphering hyperframe number	M			

UE radio capability	O			
UE system specific capability	O		Inter-system message	

10.1.42 RRC STATUS

This message is sent to indicate a protocol error.

RLC-SAP: AM

Logical channel: DCCH

Direction: both

Information Element	Presen	Multi	IE type and reference	Semantics description

Message Type	M			

10.1.43 SCCH INFORMATION

RLC-SAP: TM

Logical channel: SCCH

Direction: UTRAN -> UE

Information Element	Presen	Multi	IE type	Semantics and reference description
SCCH info	M		Bit String (3)	Reserved

10.1.44 SECURITY MODE COMMAND

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN to UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
CN Information elements				
CN domain identity	M			Indicates which cipher and integrity protection keys are is applicable
UE information elements				
Ciphering capability	M			
Ciphering mode info	O			Only present if ciphering shall be controlled

Multi Bound	Explanation
MaxReconRBs	For each radio bearer that is reconfigured

10.1.45 SECURITY MODE COMPLETE

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
RB Information elements				
Radio bearer uplink ciphering activation	O		Radio bea	

time info				reference activation time info

Multi Bound	Explanation
MaxReconRBs	For each radio bearer that is reconfigured

10.1.46 SIGNALLING CONNECTION RELEASE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN →UE

Information Element	Presen	Multi	IE type	Semantics descriptio a

				nd reference n
Message Type	M			
CN information elements				
Signalling Flow related information		1 to		Flow identifier to be provided for each signalling flow to be released.
>Flow Identifier	M			

Multi Bound	Explanation
MaxFlowId	Maximum number of flow identifiers

10.1.47 SYSTEM INFORMATION

Information Element	Presen	Multi	IE type	Semantics a descriptio

				~~n~~ ~~d~~ ~~r~~ ~~e~~ ~~f~~ ~~e~~ ~~r~~ ~~e~~ ~~n~~ ~~c~~ ~~e~~ ~~n~~
~~Message type~~	~~O~~			~~The message type is mandatory on the FACH, and absent on the BCH~~
~~CHOICE *mode*~~				
~~>FDD~~				
~~>>SFNprime~~	~~O~~		~~Enumer~~ ~~a~~ ~~t~~ ~~e~~ ~~d~~ ~~(~~ ~~0~~ ~~,~~ ~~2~~ ~~..~~ ~~4~~ ~~0~~ ~~9~~ ~~4~~ ~~)~~	~~The IE is mandatory on the BCH, and absent on the FACH~~ ~~SFN=SFNprime (for first 10ms frame of 20ms TTI), SFN=SFNprime+1 (for last 10ms frame of~~

				20ms TTI)
CHOICE Segment combination	M			
>Combination 1				
>>First Segment			First	Segment
>Combination 2				
>>Subsequent Segment			Subseq	uent Segment
>Combination 3				
>>Last segment				
>Combination 4				
>>Last Segment			Last	Segmen

				t
>>Complete		1..inde	Complet	e
>Combination 5				
>>Complete		1..inde	Complet	e
SI Padding	C			

Condition	Explanation
filling	The padding is constrained to be such that the message fills the transport block.

10.1.47.1 First Segment

This segment type is used to transfer the first segment of a segmented system information block.

Information Element	Presen	Multi	IE type	Semantics descriptio a

				~~n~~ ~~d~~ ~~r~~ ~~e~~ ~~f~~ ~~e~~ ~~r~~ ~~e~~ ~~n~~ ~~c~~ ~~e~~ ~~n~~
~~Other information elements~~				
~~SIB type~~	~~M~~			
~~SEG_COUNT~~	~~M~~			
~~SIB data~~	~~M~~			

~~10.1.47.2 Subsequent Segment~~

~~This segment type is used to transfer a subsequent segment of a segmented system information block.~~

~~Information Element~~	~~Presen~~	~~Multi~~	~~IE type~~	~~Semantics~~ ~~a~~ ~~n~~ ~~d~~ ~~r~~ ~~e~~ ~~f~~ ~~e~~ ~~r~~ ~~e~~ ~~n~~ ~~c~~ ~~e~~ ~~descriptio~~ ~~n~~
~~Other information~~				

elements				
SIB type	M			
Segment index	M			
SIB data	M			

10.1.47.3 Last Segment

This segment type is used to transfer the last segment of a segmented system information block.

Information Element	Presen	Multi	IE type	Semantics and reference description
Other information elements				
SIB type	M			
Segment index	M			
SIB data	M			

10.1.47.4 Complete SIB

This segment type is used to transfer a non-segmented system information block.

Information Element	Presen	Multi	IE type	Semantics and reference description
Other information elements				
SIB type	M			
SIB content	M			

10.1.47.5 System Information Blocks

10.1.47.5.1 SIB Content

SIB Segments are the result of the segmentation of a 'SIB Content' IE. The SIB content IE is developed hereafter:

Information Element	Presen	Multi	IE type	Semantics and reference description

CHOICE SIB type	M			
>Master information block				
>System information block type 1				
>System information block type 2				
>System information block type 3				
>System information block type 4				
>System information block type 5				
>System information block type 6				
>System information block type 7				
>System information block type 8				
>System information block type 9				
>System information block type 10				

>System information block type 11				
>System information block type 12				
>System information block type 13				
>System information block type 13.1				
>System information block type 13.2				
>System information block type 13.3				
>System information block type 13.4				
>System information block type 14				

Condition	Explanation
SIB Type	The common value of the 'SIB type' field in the segment(s).

10.1.47.5.2 Master Information Block

Information Element	Presen	Multi	IE type	Semantics descriptio a

				~~n d r e f e r e n c e~~ ~~n~~
~~Other information elements~~				
~~MIB Value tag~~	~~M~~			
~~CHOICE mode~~				
~~>TDD~~				
~~>>SFNprime~~	~~M~~		~~Integer (0, 2..4094)~~	~~SFN=SFNprime (for first 10ms frame of 20ms TTI), SFN=SFNprime+1 (for last 10ms frame of 20ms TTI)~~
~~Network capability extension indication~~				~~A value of "False" indicates that the Initial UE capability is interpreted according to "Release~~

				~~99 (first release)". If the value is set to "True", a new definition given in a future release is added to this information element.~~
~~Capability Extension Info~~	~~C-Ind~~			~~Note 1~~
~~References to other system information blocks~~		~~1 ..~~		
~~>Scheduling information~~	~~M~~			

~~CN information elements~~				
~~CN Type~~	~~M~~		~~Enumerated (GSM-MAP, ANSI-41, GSM-MAP AND ANSI-~~	

				4 1)
PLMN Identity	C-			
ANSI-41 Information elements	C-			
>P_REV	M			
>MIN_P_REV	M			
>SID	M			
>NID	M			

NOTE 1: This information element may be defined in later releases.

Condition	Explanation
GSM	This information element shall be present in case (CN Type == "GSM-MAP") or (CN Type == "GSM-MAP AND ANSI-41")
ANSI	This information element shall be present in case (CN Type == "ANSI-41") or (CN Type == "GSM-MAP AND ANSI-41")

Multi Bound	Explanation

MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.1.47.5.3 System Information Block type 1

The system information block type 1 contains NAS system information as well as UE timers and counters to be used in idle mode.

Information Element	Presence	Multi	IE type and reference	Semantics description
CN information elements				
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system	

				information
CN domain related information		1 to		Send CN information for each CN domain.
>CN domain identity	M			
>CN domain specific GSM-MAP NAS system information	M		GSM-MAP NAS system	

				information
>CN domain specific DRX cycle length coefficient	M		DRX	cycle length coefficient
UE information				
UE Timers and counters in idle mode	M			

Multi Bound	Explanation
MaxCNdomains	Maximum number of CN domains

10.1.47.5.4 System Information Block type 2

The system information block type 2 contains the URA identity and information for periodic cell and URA update. It also includes the UE timers and counters to be used in connected mode.

Information Element	Presen	Multi	IE type	Semantics and reference description
UTRAN mobility information elements				
URA identity		1		

~~Information for periodic cell and URA update~~	~~M~~			
~~UE information~~				
~~UE Timers and counters in connected mode~~	~~M~~			
~~UTRAN DRX cycle length~~	~~M~~			
~~CHOICE *mode*~~				
~~>FDD~~				
~~>>TX Diversity Timing Mode~~	~~O~~		~~Enumerated (Normal, Cell, Mo~~	~~*Note: The presence of this IE is mandatory if closed loop TX Diversity is used.*~~

			~~de, Macro Cell Mode)~~	

~~Multi Bound~~	~~Explanation~~
~~*MaxURAcount*~~	~~Maximum number of URAs in a cell~~

~~10.1.47.5.5 System Information Block type 3~~

~~The system information block type 3 contains parameters for cell selection and re-selection. The block may also contain scheduling information for other system information blocks.~~

~~Information Element~~	~~Presen~~	~~Multi~~	~~IE type and refe~~	~~Semantics description~~

				~~r e n c e~~
~~References to other system information blocks~~		~~0 ..~~		
~~>Scheduling information~~	~~M~~			
~~UTRAN mobility information elements~~				
~~Cell identity~~	~~M~~			~~The necessity and usage of cell identity is FFS.~~
~~Cell selection and re-selection~~	~~M~~			

info				
Cell Access Restriction	M			

Multi Bound	Explanation
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.1.47.5.6 System Information Block type 4

The system information block type 4 contains parameters for cell selection and re-selection to be used in connected mode. The block may also contain scheduling information for other system information blocks.

Information Element	Presen	Multi	IE type and reference	Semantics description
References to other system information blocks		0 ..		

>Scheduling information	M			
UTRAN mobility information elements				
Cell identity	M			The necessity and usage of cell identity is FFS.
Cell selection and re-selection info	M			
Cell Access Restriction	M			

Multi Bound	Explanation
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.1.47.5.7 System Information Block type 5

The system information block type 5 contains parameters for the configuration of the common physical channels in the cell. The block may also contain scheduling information for other system information blocks.

Information Element	Presen	Multi	IE type	Semantics and reference description
References to other system information blocks		0 ..		
>Scheduling	M			

information				
PhyCH information elements				
Frequency info	O			
Maximum allowed UL TX power	O			
CHOICE *mode*				
>TDD				
>>Midamble configuration	O			The maximum number of midamble shifts for burst type 1: 4, 8 or 16. Default value is 8. The maximum number of midamble shifts for burst type 2: 3 or 6. Default value is 3.
>FDD				
>>Secondary CPICH info	O			Note 2
Primary CCPCH info	O			Note 1
PRACH information		1 ..		

~~>PRACH info~~	~~M~~			
~~>TFS~~	~~M~~			
~~>CHOICE *mode*~~				
~~>>FDD~~				
~~>>>PRACH partitioning~~	~~M~~			
~~>>>Primary CPICH DL TX power~~	~~M~~			
~~>>>Constant value~~	~~M~~			
~~>>>PRACH power offset~~	~~M~~			
~~>>>AICH info~~	~~M~~			
~~>>TDD~~				
~~>>>ASC info~~	~~O~~			
~~Secondary CCPCH information~~		~~1 ..~~		

~~>Secondary CCPCH info~~	~~M~~			
~~>TFCS~~	~~M~~			~~For FACHs and PCH~~
~~>FACH/PCH information~~		~~1 ..~~		
~~>>TFS~~				~~For each FACHs and PCH~~ ~~Note 3~~
~~>>CTCH indicator~~	~~M~~	~~Boolea~~		~~The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE"~~

				that no CTCH is mapped.
>PICH info	C-Pich			
CBS DRX Level 1 information	C-			

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH(FDD only).

NOTE 2: This parameter is needed in case of using adaptive array antenna.

NOTE 3: TFS for PCH shall be listed at the top of FACH/PCH information if PCH exists.(FACHcount=1)

Condition	Explanation
CTCH	Present only when the IE "CTCH indicator" is equal to TRUE for at least one FACH.
Pich	PICH info is present only when PCH is multiplexed on Secondary CCPCH

Multi Bound	Explanation
MaxPRACHcount	Maximum number of PRACHs
MaxSCCPCHcount	Maximum number of secondary CCPCHs
MaxFACHcount	Maximum number of FACHs mapped onto secondary CCPCHs

MaxPCHcount	Maximum number of PCHs mapped onto secondary CCPCHs
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.1.47.5.8 System Information Block type 6

The system information block type 6 contains parameters for the configuration of the common physical channels to be used in connected mode. The block may also contain scheduling information for other system information blocks.

Information Element	Presen	Multi	IE type	Semantics and reference description
References to other system information blocks		0 ..		

~~>Scheduling information~~	~~M~~			
~~**PhyCH information elements**~~				
~~Frequency info~~	~~O~~			
~~Maximum allowed UL TX power~~	~~O~~			
~~Primary CCPCH info~~	~~O~~			~~Note 1~~
~~CHOICE *mode*~~				
~~>FDD~~				
~~>>PICH Power offset~~	~~M~~			
~~>>AICH Power offset~~	~~M~~			
~~>>Secondary CPICH info~~	~~O~~			~~Note 2~~
~~PRACH information~~		~~0 ..~~		

~~>PRACH info~~	~~M~~			
~~>TFS~~	~~M~~			
~~>CHOICE *mode*~~				
~~>>FDD~~				
~~>>>PRACH partitioning~~	~~M~~			
~~>>>Primary CPICH DL TX power~~	~~M~~			
~~>>>Constant value~~	~~M~~			
~~>>>PRACH power offset~~	~~M~~			
~~>>>AICH info~~	~~M~~			
~~Secondary CCPCH information~~		~~0 ..~~		

>Secondary CCPCH info	M			
>TFCS	M			For FACHs and PCH
>FACH/PCH information		1 ..		
>>TFS				For each FACHs and PCH Note 3
>>CTCH indicator	M	Boolea		The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.

>PICH info	C-Pich			
CBS DRX Level 1 information	C-			

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

NOTE 2: This parameter is needed in case of using adaptive array antenna.

NOTE 3: TFS for PCH shall be listed at the top of FACH/PCH information if PCH exists.(FACHcount=1)

Condition	Explanation
CTCH	Present only when the IE "CTCH indicator" is equal to TRUE for at least one FACH.
Pich	PICH info is present only when PCH is multiplexed on Secondary CCPCH

Multi Bound	Explanation
MaxPRACHcount	Maximum number of PRACHs
MaxSCCPCHcount	Maximum number of secondary CCPCHs
MaxFACHcount	Maximum number of FACHs mapped onto secondary CCPCHs
MaxPCHcount	Maximum number of PCHs mapped onto secondary

	CCPCHs
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.1.47.5.9 System Information Block type 7

The system information block type 7 contains the fast changing parameters UL interference and Dynamic persistence level

Information Element	Presen	Multi	IE type	Semantics and reference description
UL interference	M			
PhyCH information elements				
PRACHs listed in system information block type 5		1 ..		The order of the PRACHs is the same as in system information block type 5.

>Dynamic persistence level	M			
PRACHs listed in system information block type 6		0 ..		The order of the PRACHs is the same as in system information block type 6.
>Dynamic persistence level	M			

Multi Bound	Explanation
MaxPRACHcount	Maximum number of PRACHs

10.1.47.5.10 System Information Block type 8 (FDD)

The system information block type 8 contains static CPCH information to be used in the cell.

Information Element	Presen	Multi	IE type	Semantics and reference description
UE information				
CPCH parameters	M			
PhyCH information elements				
CPCH SET info		1 ..		

Multi Bound	Explanation

MaxCPCHsetcount	Maximum number of CPCH sets per Node B

10.1.47.5.11 System Information Block type 9 (FDD)

The system information block type 9 contains CPCH information to be used in the cell.

Information Element	Presen	Multi	IE type and reference	Semantics description
PhyCH information elements				
CPCH set persistency value	M	1 ..		

~~Multi Bound~~	~~Explanation~~
~~MaxCPCHsetcount~~	~~Maximum number of CPCH sets per Node B~~

~~10.1.47.5.12 System Information Block type 10 (FDD)~~

~~The system information block type 10 contains information to be used by UEs having their DCH controlled by a DRAC procedure.~~

~~Information Element~~	~~Presen~~	~~Multi~~	~~IE type~~	~~Semantics description~~ ~~and reference~~
~~**UE information**~~				
~~DRAC information~~		~~1 ..~~		~~DRAC information is sent for each class of terminal~~

>Transmission probability	M			
>Maximum bit rate	M			

Multi Bound	Explanation
MaxDRACclasses	Maximum number of UE classes which would require different DRAC parameters

10.1.47.5.13 System Information Block type 11

The system information block type 11 contains measurement control information to be used in the cell. The block may also contain scheduling information for other system information blocks.

Information Element	Presen	Multi	IE type	Semantics and reference description
References to other system information		0 ..		

~~blocks~~				
~~>Scheduling information~~	~~M~~			
~~Measurement information elements~~				
~~Measurement control information~~		~~1 ..~~		

~~>Measurement type~~	~~M~~			
~~>CHOICE Measurement~~				
~~>>Intra-frequency~~	~~C –~~			
~~>>>Intra-frequency cell info~~		~~1 ..~~		
~~>>>Intra-frequency Measurement~~	~~M~~			

~~quantity~~				
~~>>>Intra-frequency reporting~~ ~~Quantity for RACH~~ ~~Reporting~~	~~M~~			
~~>>>Maximum number of~~ ~~Reported cells on RACH~~	~~M~~			
~~>>Inter-frequency~~	~~C –~~			
~~>>>Inter-frequency cell info~~		~~1 ..~~		
~~>>>Inter-frequency~~	~~M~~			

~~Measurement quantity~~				
~~>>Inter-system~~	~~C –~~			
~~>>>Inter-system cell info~~	~~M~~	~~1 ..~~		
~~>>>Inter-system measurement Quantity~~	~~M~~			
~~>>Traffic volume~~				
~~>>>Traffic volume measurement objects~~	~~O~~			

>>>Traffic volume measurement quantity	O			
>>UE Internal				
>>>UE internal measurement quantity	O			

Condition	Explanation
Measurement	The choice shall be consistent (same name) with the value of the 'Measurement type' IE
Intersys	Measurement type = Inter system measurement
Interfreq	Measurement type = Inter frequency measurement
Intrafreq	Measurement type = Intra frequency measurement
Blocktype	The presence of this IE depends on the definition of the system information block type.

Multi Bound	Explanation
MaxMeasTypeCount	Maximum number of measurement types
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

MaxIntraCells	Maximum number of intra-frequency cells in a measurement control.
MaxInterCells	Maximum number of inter-frequency cells in a measurement control
MaxInterSysCells	Maximum number of inter-system cells in a measurement control.

10.1.47.5.14 System Information Block type 12

The system information block type 12 contains measurement control information to be used in connected mode.

Information Element	Presen	Multi	IE type	Semantics and reference description
References to other system information blocks		0 ..		

~~>Scheduling information~~	~~M~~			
~~Measurement information elements~~				
~~Measurement control information~~		~~1 ..~~		

~~>Measurement Identity Number~~	~~M~~			
~~>Measurement Type~~	~~M~~			
~~>CHOICE Measurement~~				
~~>>Intra-frequency~~	~~C –~~			
~~>>>Intra-frequency cell info~~		~~0 ..~~		
~~>>>Intra-frequency Measurement quantity~~	~~O~~			

>>>Intra-frequency Reporting quantity for RACH reporting	O			
>>>Maximum number of Reported cells on RACH	O			
>>>Intra-frequency reporting Quantity	O			
>>Inter-frequency	C -			
>>>Inter-frequency cell Info		0 ..		

~~>>>Inter-frequency Measurement quantity~~	~~O~~			
~~>>Inter-system~~	~~C -~~			
~~>>>Inter-system cell info~~		~~0 ..~~		
~~>>>Inter-system measurement~~	~~O~~			

~~quantity~~				
~~>>Traffic volume~~				
~~>>>Traffic volume measurement objects~~	~~M~~			
~~>>>Traffic volume measurement quantity~~	~~M~~			
~~>>UE Internal~~				
~~>>>UE internal measurement quantity~~	~~M~~			

~~Condition~~	~~Explanation~~
~~*Measurement*~~	~~The choice shall be consistent (same name) with the value of the 'Measurement type' IE~~
~~*Intersys*~~	~~Measurement type = Inter system measurement~~
~~*Interfreq*~~	~~Measurement type = Inter frequency measurement~~
~~*Intrafreq*~~	~~Measurement type = Intra frequency measurement~~

~~Multi Bound~~	~~Explanation~~

MaxMeasTypeCount	Maximum number of measurement types
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.
MaxIntraCells	Maximum number of intra-frequency cells in a measurement control.
MaxInterCells	Maximum number of inter-frequency cells in a measurement control
MaxInterSysCells	Maximum number of inter-system cells in a measurement control.

Option	Default value
All optional elements	If not present, the value shall be assumed to be that indicated for in idle mode in SIB 11.

10.1.47.5.15 System Information Block type 13

The system information block type 13 contains ANSI-41 system information.

Information Element	Presen	Multi	IE type	Semantics and reference description

				ence
Other information elements				
References to other system information blocks		0 ..		
>Scheduling information	M			
CN Information Elements				
CN information		1 to		Send CN information for each CN domain.

>CN domain identity	M			
>NAS (ANSI-41) system information	M			
>CN DRX cycle length	M			
UE Information				
UE timers and counters in idle mode	O			
Capability update requirement	O			

10.1.47.5.15.1 System Information Block type 13.1

The system information block type 13.1 contains the ANSI-41 RAND information.

Information Element	Presen	Multi	IE type	Semantics and reference description

				nce
ANSI-41 information elements				
ANSI-41 RAND information	M			

10.1.47.5.15.2 System Information Block type 13.2

The system information block type 13.2 contains the ANSI-41 User Zone Identification information.

Information Element	Presen	Multi	IE type	Semantics and reference description
ANSI-41 information elements				
ANSI-41 User Zone Identification information	M			

10.1.47.5.15.3 System Information Block type 13.3

The system information block type 13.3 contains the ANSI-41 Private Neighbor List information.

Information Element	Presen	Multi	IE type	Semantics and reference description
ANSI-41 information elements				
ANSI-41 Private Neighbor List information	M			

10.1.47.5.15.4 System Information Block type 13.4

The system information block type 13.4 contains the ANSI-41 Global Service Redirection information.

Information Element	Presen	Multi	IE type	Semantics and reference description

				ce
ANSI-41 information elements				
ANSI-41 Global Service Redirection information	M			

10.1.47.5.16 System Information Block type 14 (TDD)

The system information block type 14 contains parameters for common and dedicated physical channel uplink outer loop power control information to be used in both idle and connected mode. The block may also contain scheduling information for other system information blocks.

Information Element	Presen	Multi	IE type	Semantics and reference description
Other information elements				
References to other system information blocks		0 ..		

~~>Scheduling information~~	~~M~~			
~~PhyCH information elements~~				
~~Primary CCPCH Tx Power~~	~~O~~			~~For path loss calculation~~
~~Individual Timeslot Info~~		~~1 to~~		
~~>Timeslot~~	~~M~~			

>UL Interference	M			UL Timeslot Interference
RACH Constant Value	O			Operator controlled RACH Margin
DPCH Constant Value	O			Operator controlled UL DPCH Margin
USCH Constant Value	O			Operator controlled USCH Margin

Multi Bound	Explanation
maxTScount	Maximum number of timeslots

10.1.48 SYSTEM INFORMATION CHANGE INDICATION

This message is used to send information on FACH to the UEs in state CELL_FACH about coming modification of the system information.

RLC-SAP: TM

Logical channel: BCCH

Direction: UTRAN → UE

Information Element	Presen	Multi	IE type	Semantics description

				nce
Message Type	M			
Other information elements				
BCCH modification info	M			

10.1.49 TRANSPORT CHANNEL RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE Information				

Information Element	Presen	Multi	IE type	Semantics and reference description
elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New C-RNTI	C -		C-RNTI	
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX	cycle le

Information Element	Presen	Multi	IE type	Semantics description
				and reference length coefficient
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS	O		GSM-M	

Information Element	Presen	Multi	IE type	Semantics and reference description
system information				AP NAS system information
CN domain related information		0 to		CN related information to be provided

Information Element	Presen	Multi	IE type	Semantics and reference description
				for each CN domain
>CN domain identity	O			(Note1)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system	(Note1)

Information Element	Presen	Multi	IE type	Semantics and reference message description
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS

Information Element	Presen	Multi	IE type	Semantics and reference description
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Reconfigured TrCH information		0 to		
>Transport channel identity				
>TFS				
CHOICE mode				

Information Element	Presen	Multi	IE type	Semantics and reference description
>FDD				
>>CPCH set ID	O			
>>DRAC information	C	1 to		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration				

Information Element	Presen	Multi	IE type	Semantics and reference description
before retry				
>>>Silent period duration before release				
Downlink transport channels				
Reconfigured TrCH information		0 to		
>Transport channel identity				
>TFS				

Information Element	Presen	Multi	IE type	Semantics and reference description
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				

Information Element	Presen	Multi	IE type	Semantics and reference description
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				

Information Element	Presen	Multi	IE type	Semantics and reference description
>>>TPC combination index	C-			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to		Note 3

Information Element	Presen	Multi	IE type	Semantics and reference description
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource

Information Element	Presen	Multi	IE type	Semantics and reference description
				for CPCH control (Note2)
>>Gated Transmission Control info	O			
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links to be set up
MaxReconcount	Maximum number of Transport Channels reconfigured
MaxReconTrCHDRAC	Maximum number of Transport CHannels which are controlled by DRAC and which are reconfigured
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH info (for RACH)	

PRACH info (for FAUSCH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3 The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.50 TRANSPORT CHANNEL RECONFIGURATION COMPLETE

This message is sent from the UE when a transport channel reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			

NOTE: The usage of this message for indicating the cell the UE will select in the DCH->RACH/FACH case, is FFS.

10.1.51 TRANSPORT CHANNEL RECONFIGURATION FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE →UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.52 TRANSPORT FORMAT COMBINATION CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: TM, AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	C-			
UE information elements				
Integrity check info	O			
TrCH information elements				
Choice ch				
>TFC subset	O			For DPCH TFCS in uplink
>TFC Control duration	C-			

Condition	Explanation
NotTM	The message type is not included when transmitting the message on the transparent mode signalling DCCH
NotTMopt	The information element is not included when transmitting the message on the transparent mode signalling DCCH and is optional otherwise.

CHOICE *ch*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH info (for RACH)	
PRACH info (for FAUSCH)	

10.1.53 TRANSPORT FORMAT COMBINATION CONTROL FAILURE

This message is sent to indicate that a received TRANSPORT FORMAT COMBINATION CONTROL message could not be handled by the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Failure cause	M			

10.1.54 UE CAPABILITY ENQUIRY

The UE CAPABILITY ENQUIRY is used by the UTRAN to enquire inter-system classmarks from the UE.

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presen	Multi	IE type	Semantics and reference description

				~~e n c e~~
~~Message Type~~	~~M~~			
~~**UE information elements**~~				
~~Integrity check info~~	~~O~~			
~~Capability update requirement~~	~~M~~			

~~10.1.55 UE CAPABILITY INFORMATION~~

~~NOTE: Functional description of this message to be included here~~

~~RLC-SAP: AM or UM~~

~~Logical channel: DCCH~~

~~Direction: UE → UTRAN~~

~~Information Element~~	~~Presen~~	~~Multi~~	~~IE type~~	~~Semantics description~~ ~~a n d r e f e r e n c e~~
~~Message Type~~	~~M~~			

UE information elements				
Integrity check info	O			
UE radio capability	O			
Other information elements				
UE system specific capability	O		Inter-system message	Includes inter-system classmark

10.1.56 UE CAPABILITY INFORMATION CONFIRM

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presen	Multi	IE type	Semantics and re description

				reference
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.57 UPLINK DIRECT TRANSFER

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE ->UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
CN information				

elements				
Flow Identifier	M			Allocated by UE for a particular session
NAS message	M			
Measurement information elements				
Measured results	O			

10.1.58 URA UPDATE

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

RLC-SAP: TM

Logical channel: CCCH

Direction: UE→UTRAN

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information				

elements				
Integrity check info	O			
U-RNTI	M			
URA update cause	M			

10.1.59 URA UPDATE CONFIRM

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

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element	Presen	Multi	IE type	Semantics and reference description
Message Type	M			
UE information elements				
Integrity check info	O			

~~Integrity protection mode info~~	~~O~~			
~~U-RNTI~~	~~C-~~			
~~New U-RNTI~~	~~O~~			
~~New C-RNTI~~	~~O~~			
~~UTRAN DRX cycle length coefficient~~	~~O~~		~~DRX~~ cycle length coefficient	
~~DRX Indicator~~	~~O~~			
~~Ciphering mode info~~	~~O~~			
~~**UTRAN mobility informatio**~~				

n elements				
URA identifier	O			
CN information elements				
PLMN identity	O			(Note1,2)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to		CN related information to be provided for each CN domain

>CN domain identity	O			(Note1,2)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1,2)

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains

Condition	Explanation
CCCH	This IE is only sent when CCCH is used

NOTE 1: It depends on the length of these information whether this message can be used to notify these information to UE.

NOTE 2: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

10.2 Information element functional definitions

10.2.1 CN Information elements

10.2.1.1 CN domain identity

Identifies the type of core network domain.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
CN domain identity	M		Enumer	ated (C

				S domain, PS domain, Don't care)

10.2.1.2 CN Type

Information Element/Group name	Presence	Range	IE type and reference	Semantics description

				e r e n c e
~~CN Type~~	~~M~~		~~Enumerated (GSM-MAP, ANSI-41)~~	~~Identifies the type of core network. This IE shall be used to control the interpretation of network dependent messages and information elements in the RRC protocol.~~

~~10.2.1.3 Flow Identifier~~

~~Information Element/Group name~~	~~Presen~~	~~Range~~	~~IE type~~	~~Semantics description~~
				a n d . r e f e

				reference
Flow Identifier	M		Enumerated (0…15)	Allocated by UE for a particular session

10.2.1.4 IMEI

This IE contains an International Mobile Equipment Identity.

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
IMEI	M			Setting specified in [TS 23.003]
>IMEI digit		15	INTEGER	

				(0..9)

10.2.1.5 IMSI (GSM-MAP)

This IE contains an International Mobile Subscriber Identity, used towards a GSM-MAP type of core network.

Information Element/Group name	Presence	Range	IE type	Semantics description and reference
IMSI (GSM-MAP)	M			Setting specified in [TS 23.003]
>IMSI digit		6 to 15	INTEGER	(0..9)

10.2.1.6 Location Area Identification

Identifies uniquely a location area for a GSM-MAP type of core network.

Information Element/Group name	Presen	Range	IE type	Semantics description
Location Area Identification	M			Setting specified in [TS 23.003]
>PLMN identity	M		PLMN	identity
>LAC	M		Bit string (16)	

~~10.2.1.7 NAS binding info~~

~~A field with non-access stratum information to bind a RB to the non-access stratum. This information is transparent to RRC.~~

~~Information Element/Group name~~	~~Presen~~	~~Range~~	~~IE type~~	~~Semantics description~~ and reference
~~NAS binding info~~	~~M~~		~~Bit string (16)~~	

~~10.2.1.8 NAS message~~

~~A non-access stratum message to be transferred transparently through UTRAN.~~

~~Information Element/Group name~~	~~Presen~~	~~Range~~	~~IE type~~	~~Semantics description~~ and r

				eference
NAS message	M		Bit	string (0..maxNASmessagelength)

10.2.1.9 NAS system information (GSM-MAP)

This information element contains system information that belongs to the non-access stratum for a GSM-MAP type of core network. This information is transparent to RRC. It may contain either information specific to one CN domain (CS or PS) or information common for both CN domains.

Information Element/Group name	Presen	Range	IE type	Semantics description
GSM-MAP NAS system information	M		Bit string(0..maxNASsystemi	

				nfoLength)

10.2.1.10 P-TMSI (GSM-MAP)

This IE contains an Packet Temporary Mobile Subscriber Identity, used towards a GSM-MAP type of core network.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
P-TMSI	M		Bitstring (32)	Setting specified in [TS 23.003]

10.2.1.11 PLMN identity

This information element identifies a Public Land Mobile Network for a GSM-MAP type of core network.

Information Element/Group name	Presen	Range	IE type	Semantics description
PLMN identity				Setting of digits is defined in [TS 24.003]
>MCC, Mobile Country Code	M			
>>MCC digit		3	INTEGER	(0..9)
>MNC, Mobile Network Code	M			
>>MNC digit		3	INTEGER	(0..9)

10.2.1.12 Routing Area Code

Identifies a routing area within a location area for a GSM-MAP type of core network.

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
Routing Area Code	M		Bit string (8)	Setting specified in [TS 23.003]

10.2.1.13 Routing Area Identification

Identifies uniquely a routing area for a GSM-MAP type of core network.

Information Element/Group name	Presen	Range	IE type	Semantics description and re

				~~reference~~
~~Routing Area Identification~~	~~M~~			~~Setting specified in [TS 23.003]~~
~~>LAI~~	~~M~~		~~Location Area Identification~~	
~~>RAC~~	~~M~~		~~Routing Area Code~~	

10.2.1.14 Service Descriptor

The value of RR in the reference mentioned below is reserved for paging response.

Information Element/Group name	Presen	Range	IE type	Semantics description
Service Descriptor	M		Refer to TS 24.007 v3.1.0, section

				n 1 1 . 2 . 3 . 1 . 1

10.2.1.15 TMSI (GSM-MAP)

This IE contains an Temporary Mobile Subscriber Identity, used towards a GSM-MAP type of core network.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
TMSI (GSM-MAP)	M		Bitstring (32)	Setting specified in [TS 23.003]

10.2.2 UTRAN mobility Information elements

10.2.2.1 Cell Access Restriction

Indicates the restrictions to cell access.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Cell Barred	M		Boolean	
Cell Reserved for operator use	M		Boolean	
Cell Reserved for SoLSA exclusive use	M		Boolean	

10.2.2.2 Cell identity

This information element identifies a cell unambiguously within a PLMN.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

				ce
Cell identity	M		Integer (0..268435455)	

10.2.2.3 Cell selection and re-selection info

Information Element/Group name	Presen	Range	IE type	Semantics description
Radio link timeout				
Cell_selection_and_reselection_quality_measure	M		Enumer	Choice of measurement (CPICH Ec/N0 or CPICH RSCP) to use as quality measure

				N0, SIR) Q. Note 1.
Qhyst$_s$	M		Enumerated (0, 0.5, ..., 7.5)	[dB]
Treselection$_s$	M		Integer	[s] (0..31)
Qsearch$_s$	M		Integer	Ec/N0, [dB] (-20..

				0)
~~Cell Selection and Reselection parameters~~	~~O~~			~~Used in Alternative 2 in TS 25.304~~
~~>Decoding range~~	~~O~~			~~Decoding is done only when the cell measurement exceeds the neighbour cell decoding range.~~
~~>Qoffset$_s$~~	~~O~~			~~Offset for UEs decoding this cell for cell reselection measurement~~
~~>OffsetExp~~	~~C – if~~			~~Expiration timer for UEs decoding the Qoffset$_s$~~

~~NOTE 1: The work in order to support the CPICH Rx SIR measurement is in progress in RAN WG4 and may impact the use of that measurement in this document~~

~~10.2.2.4 Information for periodic cell and URA update~~

This information element indicates information to support mechanisms for periodical cell/URA update procedures. It is mapped on System Information message.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
T_periodical_cell_update	M		Enumerated (No updating, 1..1023)	Designate the time period between updating in minutes, or if no periodical updating should be done.

T_periodical_ura_update	M		Enumerated (No updating, 1..1023)	Designate the time period between updating in minutes, or if no periodical updating should be done.

10.2.2.5 URA identity

Gives the identity of the UTRAN Registration Area. It can be used to indicate to the UE which URA it shall use in case of overlapping URAs.

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference

				ce
URA identity			Enumerated (0..65535)	

10.2.3 UE Information elements

10.2.3.1 Activation time

Activation Time defines the CFN (Connection Frame Number) in which the operation/changes caused by the related message should be executed.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description

Activation time			Integer(0..255)	CFN [TS 25.402]

10.2.3.2 AM_RLC error indication

Indicates AM_RLC unrecoverable error occurred on c-plane in the UE.

10.2.3.3 Capability Update Requirement

This IE indicates to the UE which specific capabilities to transfer to the network.

Information Element/Group name	Presen	Range	IE type	Semantics description
UE radio capability update requirement	M		Boolean	
System specific capability update requirement		0 to	Enumer	ated (

				GSM, ...)

10.2.3.4 Cell update cause

Indicates the cause for s cell update.

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference
Cell update cause			Enumer	ated (cell re

				select operation, cell update, UL data transfer

				submission_pooling_response_RB_control_response

				e)

10.2.3.5 Ciphering capability

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Ciphering Algorithm capability	M		Enumerated	

NOTE: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalised.

10.2.3.6 Ciphering hyper frame number

This hyper frame number (HFN) is used to initialise the ciphering algorithm.

For ciphering, HFN is the most significant bits of COUNT. When the COUNT is initialised: COUNT = HFN (the LSB part of COUNT is set to zero).

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

				reference
Ciphering HFN	M		Integer (0...2^20-1)	Start value for uplink and downlink COUNT. For RBs using RLC transparent mode or RLC unacknowledged mode, zeros shall be added to form a HFN of 25 bits

10.2.3.7 Ciphering mode info

This information element contains the ciphering specific security mode control information.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

				encee
Ciphering mode command	M		Enumer	ated (start/restart, modify, stop)
Ciphering algorithm	C-		UEA	ITS

				33.102
Ciphering activation time information	C-			
>Activation time for DPCH	O		Activation time	Used for radio bearers mapped on RLC-TM
>Radio bearer downlink ciphering activation time info	O		Radio bearer activa	Used for radio bearers mapped on RLC-AM or RLC-UM

				tion time info

10.2.3.8 Code resource capability

Information Element/Group name	Presen	Range	IE type	Semantics and reference	description
DL multi-code capability					
UL multi-code capability					
DL Spreading factor capability					
UL Spreading factor capability					

NOTE: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalised.

10.2.3.9 CPCH Parameters (FDD)

These parameters are used by any UE using any CPCH set allocated to the Node B that is broadcasting this system information.

Information Element/Group name	Presen	Range	IE type	Semantics description
NS_{-IP}	M			Number of slots for initial delay for given priority level
Priority level	M			
Backoff control parameters				
$>N_{-ap\_retrans\_max}$	M			Max number of AP transmissions without AP-AICH response (access cycle), a PHY

				parameter.
>N_access_fails	M			Max number of access cycles without AP-AICH response for link failure, a MAC parameter.
>NS_bo_no aich	M			Max number of slots for UE backoff after N ap_retrans_max unsuccessful AP access attempts, a MAC parameter.
>NF_bo_busy	M			Max number of frames for UE backoff after access attempt to busy CPCH, a MAC parameter.
>NF_bo_all_busy	M			Max number of frames for UE

				backoff after access attempt to last busy CPCH, a MAC parameter.
>$N_{F\_bo\_collision}$	M			Max number of frames for UE backoff after collision on CPCH, a MAC parameter.
>$T_{\_CPCH}$	M			CPCH channel timing - Number of slots used to determine Tau values for CPCH channel timing

NOTE: The WG1 and WG2 discussion should be concluded before the contents of these IEs can be finalised. All of the IEs may be considered optional (O) if the UE is programmed with default values for each IE.

10.2.3.10 C-RNTI

The cell RNTI (C-RNTI) identifies an UE having a RRC connection within a cell.

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
C-RNTI			Integer(0..65535)	

10.2.3.11 DRX cycle length coefficient

A coefficient in the formula to count the paging occasions to be used by a specific UE (specified in 25.304) .

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
DRX cycle length coefficient	M		Integer(2..	Refers to 'k' in the

			1 2)	formula as specified in 25.304, Discontinuous reception

10.2.3.12 DRX Indicator

Indicates to a UE if DRX shall be used with Cell updating or URA updating or if no DRX at all shall be used.

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
DRX indicator	M		Enumerated (noDRX, DRXwit	

			~~h c e ll u p d a ti n g , D R X w it h U R A u p d a ti n g)~~	

~~Condition~~	~~Explanation~~
~~*NotStop*~~	~~The IE is present only when the IE "Ciphering mode command" has the values "start/restart" or "modify".~~
~~*Start/restart*~~	~~The IE is present only when the IE "Ciphering mode command" has the value "start/restart".~~

10.2.3.13 Establishment cause

Cause for an RRC connection establishment request.

Information Element/ Group name	Prese	Ran	IE type and reference	Semantics description
Establishment cause	M		Enumerated(Originating Speech Call, Originating CS Data Call, Originating PS Data Call, Terminating Speech Call, Terminating CS Data Call, Terminating PS Data Call, Emergency Call, Inter-system cell re-selection, Location Update (LAU & RAU), IMSI Detach, SMS, Other)	

NOTE: These causes shall be aligned with causes received from higher layers.

10.2.3.14 Failure cause

Cause for failure to perform the requested procedure.

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
Failure cause	M		Enumerated (Configuration unacceptable)	

			~~a b l e , p h y s i c a l c h a n n e l f a i l u r e , i n c o m p a t i b l e s i m u l t a n e o~~	

			usrecoonfigurationn))	

10.2.3.15 Initial UE capability

This is the UE capability information given in the RRC connection request message.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Initial UE Capability Extension Indication	M		Boolean FALSE	A value of "False" indicates that the Initial UE capability is interprete

				~~d according to "Release 99 (first release)". If the value is set to "True", a new definition given in a future release is added to this information element.~~
~~Capability extension info~~	~~C-~~			~~Note 1~~
~~Maximum number of AM entities~~	~~M~~		~~Enumerated (3, 4 or~~	~~If the maximum number of AM entities is three, only two of these entities shall be used for signalling. If the maximum number is~~

				more) four, three entities may be used. This IE needs to be defined as extensible for future releases.
Downlink DCH capability	M		Boolean	This IE refers to the UE capability Maximum number of simultaneous transport channels supported in downlink. This parameter indicates whether UE supports only FACH (false) or also DCHs (true).
Uplink DCH capability	M		Boolean	This IE refers to the UE capability Maximum number of simultaneous transport channels supported

				~~in uplink. This parameter indicates whether UE supports only RACH (false) or also DCHs (true).~~

~~NOTE 1: This information element may be defined in later releases.~~

~~Condition~~	~~Explanation~~
~~C-Extension~~	~~This IE is included only when Signalling link type extension indicator is TRUE.~~

~~10.2.3.16 Initial UE identity~~

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

~~Information Element/Group name~~	~~Presen~~	~~Range~~	~~IE type~~	~~Semantics description~~ ~~and reference~~

CHOICE UE id type	M			
>IMSI (GSM-MAP)			IMSI	(GSM-MAP)
>TMSI (GSM-MAP)			TMSI	(GSM-MAP)
>P-TMSI (GSM-MAP)			P-TMSI	(GSM-MAP)
>IMEI			IMEI	
>ESN (DS-41)			TIA/EIA/IS-2000	

				-4
>IMSI (DS-41)			TIA/EIA/IS-2000-4	
>IMSI and ESN (DS-41)			TIA/EIA/IS-2000-4	
>TMSI (DS-41)			TIA/EIA/IS-2000-4	
LAI (GSM-MAP)			TS 24.008	
RAI (GSM-MAP)			TS	2

				4.0.0.8

CHOICE *UE Id Type*	Condition under which the given *UE Id Type* is used
IMSI(GSM-MAP)	See section 8.5.1
TMSI(GSM-MAP)	See section 8.5.1
P-TMSI(GSM-MAP)	See section 8.5.1
IMEI	See section 8.5.1
ESN (DS-41)	See section 8.5.1
IMSI (DS-41)	See section 8.5.1
IMSI and ESN (DS-41)	See section 8.5.1
TMSI (DS-41)	See section 8.5.1

10.2.3.17 Integrity check info

The Integrity check info contains the RRC message sequence number needed in the calculation of XMAC-I [TS 33.102] and the calculated MAC-I.

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference

				nce
Message authentication code	M		Integer	MAC-I [TS 33.102] (0..2^32-1)
RRC Message sequence number	M			The local hyper frame number (HFN) is concatenated with the RRC message sequence number to form the input parameter COUNT-I for the integrity protection algorithm.

10.2.3.18 Integrity protection hyper frame number

This hyper frame number (HFN) is used to initialise the integrity protection algorithm.

For integrity protection, the HFN is concatenated with the sequence number in the IE "Integrity check info" to form the parameter COUNT-I in the integrity protection algorithm. HFN is the most significant bits of COUNT-I. When the COUNT-I is initialised: COUNT-I = HFN (the LSB part of COUNT-I is set to zero).

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Integrity protection HFN	M			Start value for uplink and downlink COUNT-I

10.2.3.19 Integrity protection mode info

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

Integrity protection mode command	M		Enumerated (start/restart, modify)	
Integrity protection algorithm	M			UIA [TS 33.102]
Integrity protection initialisation number	C-FRESH		Integer (0..$2^{32}-1$)	[TS 33.102]

Condition	Explanation
Start/restart	The IE is present only when the IE "Integrity protection mode command" has the value "start/restart".

10.2.3.20 Inter-system handover failure cause

The purpose of this IE is to provide a reason for the failure of the Inter-system handover.

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
Inter-system handover failure cause	M		Enumerated (unspecified)	

10.2.3.21 Macro diversity capability (FDD)

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Maximum number of RLs	M		Integer	

Parameters	REFERENCE	TY	NOTE
Maximum number of RLs		M	

NOTE: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalised.

10.2.3.22 Maximum bit rate (FDD)

Indicates the maximum user bit rate allowed on a DCH controlled by DRAC procedure for the transmission period (Transmission time validity).

10.2.3.23 Number of RRC Message Transmissions

This IE indicates how many times the receiver of a message containing this IE shall transmit the RRC response message.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Number of RRC Message Transmissions			Integer(1..8)	

10.2.3.24 Paging cause

Cause for a CN originated page.

Information Element/ Group name	Prese	Ran	IE type and reference	Semantics description
Paging cause	M		Enumerated(Terminating Speech Call, Terminating CS Data Call, Terminating PS Data Call,	

			~~SMS,~~ ~~Other)~~	

~~NOTE: These causes shall be aligned with causes received from higher layers.~~

~~10.2.3.25 Paging record~~

~~Information Element/Group name~~	~~Presen~~	~~Range~~	~~IE type~~	~~Semantics description~~
~~Paging originator~~	~~M~~		~~Enume~~	

~~Paging cause~~	~~C isCN~~			
~~CN domain identity~~	~~C isCN~~			
~~**CHOICE CN Identity**~~	~~C~~			
~~>IMSI (GSM-MAP)~~			~~IMSI~~	
~~>TMSI (GSM-MAP)~~			~~TMSI~~	
~~>P-TMSI (GSM-MAP)~~			~~P-~~	

~~>IMSI (DS-41)~~			~~TIA/EI~~	
~~>TMSI (DS-41)~~			~~TIA/EI~~	
~~U-RNTI~~	~~C~~			

Condition	Explanation
IsCN	This information element is included where the page is originated from the CN.
IdleMode	This IE is included for UE not having RRC Connection.
ConnectedMode	This IE is included for UE having RRC Connection.

CHOICE CN *Identity*	Condition under which the given *Identity* is chosen
IMSI	For idle mode pages
TMSI	For idle mode pages
P-TMSI	For idle mode pages
IMSI(DS-41)	For idle mode pages
TMSI(DS-41)	For idle mode pages

10.2.3.26 PDCP capability

Indicates which algorithms and which value range of their parameters are supported by the UE.

Information Element/Group name	Presen	Range	IE type	Semantics a n d r description

				eference
Supported algorithm types	M	0 to	Enumer	ated (RFC2507)
CHOICE *algorithm type*				
>RFC2507				
>>Maximum MAX_HEADER	O		integer (60..65535)	The largest header size in octets that may be compressed by the UE Default value is 65535.

				)
>>Maximum TCP_SPACE	O		integer	Maximum stored number of headers for TCP connections. Default value is 255. (3..255)
>>Maximum NON_TCP_SPACE	O		integer	Maximum stored number of headers for non-TCP connections. Default value is 65535. (3..65535)

Range Bound	Explanation
MaxAlgoTypeCount	Maximum number of algorithm types specified in TS 25.323.

10.2.3.27 Power control capability

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference

				~~e n c e~~
~~Transmission power capability~~	~~M~~			

~~NOTE: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalised.~~

~~10.2.3.28 PRACH partitioning~~

~~Information Element/Group name~~	~~Presen~~	~~Range~~	~~IE type~~	~~Semantics description~~ ~~and reference~~
~~Access Service class~~		~~1 to 8~~		
~~>Available signature Start Index~~	~~M~~		~~Integer(~~	~~0 .. 15)~~
~~>Available signature End Index~~	~~M~~		~~Integer(~~	~~0 .. 1~~

				5)
>Available sub-channel Start Index	M		Integer(	0..11)
>Available sub-channel End Index	M		Integer(	0..11)

The list of available signatures is renumbered from signature index 0 to signature index N-1, where N is the number of available signatures, starting with the lowest available signature number and continuing in sequence, in the order of increasing signature numbers.

- List of available signatures : 16 or less signatures are available.

  Ex : only signatures 0, 5, 10 and 15 are available, then :

  Signature 0 is : available signature index 0

  Signature 5 is : available signature index 1

  Signature 10 is : available signature index 2

  Signature 15 is : available signature index 3

The list of available access-slot sub-channels is renumbered from access-slot sub-channel index 0 to access-slot sub-channel index M-1, where M is the number of available access-slot sub-channels, starting with the lowest available access-slot sub-channel number and continuing in sequence, in the order of increasing access-slot sub-channel numbers.

- List of available Access Slot channels : 12 or less sub-channels are available.

  Ex : only sub-channels 0,1 ; 4,5 ; 8,9 are present, then :

  Sub-channel 0 is : available sub-channel index 0

  Sub-channel 1 is : available sub-channel index 1

  Sub-channel 4 is : available sub-channel index 2

  Sub-channel 5 is : available sub-channel index 3

  Sub-channel 8 is : available sub-channel index 4

  Sub-channel 9 is : available sub-channel index 5

One ASC has access to all the access-slot sub-channels between the Available sub-channel Start Index and the Available sub-channel End Index, and to all the signatures between the Available signature Start Index and the Available signature End Index.

NOTE: The above text may eventually be moved to a more appropriate location

10.2.3.29 Re-establishment timer

This information element indicates timer T314.

Information Element/Group name	Presen	Range	IE type	Semantics description
T314	M			

10.2.3.30 Rejection cause

Cause for rejection of RRC connection establishment request.

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
Rejection cause	M		Enumerated (congestion, unspecified)	

10.2.3.31 Release cause

Cause for release of RRC connection.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Release cause	M		Enumerated (normal event, unspecified, pre-emption	

			~~verelease, congestion, re-establishment reject)~~	

~~10.2.3.32 RLC re-configuration indicator~~

This IE is used to re-configure AM RLC on c-plane.

10.2.3.33 Transmission probability (FDD)

Indicates the probability for a mobile to be allowed to transmit on a DCH controlled by DRAC procedure.

10.2.3.34 Transport channel support capability

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Maximum number of DCHs			Integer	
Support for Transport CH				

NOTE: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalised.

10.2.3.35 UE mode capability

Information Element/Group name	Presen	Range	IE type	Semantics and ref description

				~~reference~~
~~System capability~~		~~0 to~~	~~Enumerated (UMTS, GSM, Other~~	~~s)~~
~~UMTS capability~~		~~0 to~~	~~Enumerated (TDD,~~	

				FDD)
Chip rate capability				
Radio Frequency capability				
Variable duplex distance capability				

Range Bound	Explanation
MaxSystemCount	Maximum number of Systems supported by the UE
MaxModeCount	Maximum number of UMTS modes supported by the UE

NOTE: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalised.

10.2.3.36 UE radio capability

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

				e
Power control capability	M			
Code resource capability	M			
UE mode capability	M			
Transport CH support capability	O			
Ciphering capability	M			
Macro diversity capability	M			
FAUSCH usage support	O			Indicates true/false for "DCH allocation function", "USCH capability request function".
PDCP capability	O			IE shall be absent if PDCP is not supported by the UE.

NOTE: The overall discussion on UE capability parameters should be concluded before the contents of this information element can be finalised.

10.2.3.37 UE Timers and Counters in connected mode

This information element indicates timers and maximum values of each counter used in UE in connected mode.

Information Element/Group name	Presen	Range	IE type	Semantics description
T301	M		Integer	Value in seconds
N301	M		Integer	
T302	M		Integer	Value in seconds
N302	M		Integer	

~~T303~~	~~M~~		~~Integer~~	~~Value in seconds~~
~~N303~~	~~M~~		~~Integer~~	
~~T304~~	~~M~~		~~Enume~~	~~Value in milliseconds~~

~~N304~~	~~M~~		~~Integer~~	
~~T307~~	~~M~~		~~Enume~~	~~Value in seconds~~
~~T308~~	~~M~~		~~Integer~~	~~Value in milliseconds~~
~~T309~~	~~M~~		~~Integer~~	~~Value in seconds~~

~~10.2.3.38 UE Timers and Counters in idle mode~~

~~This information element indicates timers and maximum values of each counter used in UE in idle mode.~~

~~Information Element/Group name~~	~~Presen~~	~~Range~~	~~IE type~~	~~Semantics description~~
~~T300~~	~~M~~		~~Integer~~	~~Value in seconds~~
~~N300~~	~~M~~		~~Integer~~	

T312	M			In sec
T313	M			In sec
N312	M			In sec
N313	M			In sec
N315	M			In sec

10.2.3.39 URA update cause

Indicates the cause for s URA update..

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
URA update cause	M		Enumerated (change of URA	

			, periodic URA update, re-enter red service area)	

10.2.3.40 U-RNTI

The U-RNTI (UTRAN Radio Network Temporary Identity) is allocated to an UE having a RRC connection and identifies the UE within UTRAN.

Information Element/Group name	Presen	Range	IE type	Semantics and reference	description
SRNC identity	M		Integer(0..4095)		
S-RNTI	M		Integer(0..104857)		

10.2.3.41 Wait time

Wait time defines the time period the UE has to wait before repeating the rejected procedure.

Information Element/Group name	Presen	Range	IE type	Semantics and reference	description

				reference
Wait time			Integer(1..16)	Wait time in seconds

10.2.4 Radio Bearer Information elements

10.2.4.1 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	Presen	Range	IE type	Semantics and reference description
Header compression information		0 to		

~~PDCP PDU header~~	~~O~~		~~boolean~~	~~Whether a PDCP PDU header is existent or not.~~ ~~Default is TRUE.~~
~~>Algorithm type~~	~~M~~		~~Enumerated (RFC2507)~~	~~NOTE: The enumerated list contains currently only one specified type. Other values are FFS.~~
~~>Reconfiguration reset~~	~~O~~		~~boolean~~	~~Whether the algorithm shall be reset in the reconfiguration. Default value is~~

				TRUE.
>CHOICE *algorithm type*				
>>RFC2507				
>>>F_MAX_PERIOD	O		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	O		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	O		integer (60..65535)	The largest header size in octets that may be compressed. Default value is

				3 5) 168.
>>>TCP_SPACE	O		integer	Maximum CID value for TCP connections. Default value is 15. (3 . . 2 5 5)
>>>NON_TCP_SPACE	O		integer	Maximum CID value for non-TCP connections. Default value is 15. (3 . . 6 5 5 3 5)
>>>EXPECT_REORDERING	O		boolean	Whether the algorithm shall reorder PDCP SDUs or not. Default value is TRUE (reordering expected).

Range Bound	Explanation
AlgorithmCount	The number of algorithm types configured for PDCP

	entity.

10.2.4.2 Predefined radio configuration identity

This information element identifies a pre- defined radio parameter configuration.

Information Element/Group name	Presence	Range	IE type	Semantics description and reference
Predefined radio configuration identity	M		Enumerated (0...15)	

10.2.4.3 Radio bearer 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	Presen	Range	IE type	Semantics and reference description
Radio bearer activation time		0 to		
>RB identity	M			
>RLC sequence number	M		Integer (0..4095)	RLC SN [TS 25.322]

10.2.4.4 RB identity

An identification number for the radio bearer affected by a certain message.

Information Element/Group name	Presence	Range	IE type	Semantics description and reference
RB identity	M		Integer(0..31)	Values 0-3 shall only be used for signalling radio bearers

10.2.4.5 RB mapping info

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

Information Element/Group name	Presence	Range	IE type	Semantics description and reference

Information for each multiplexing option		1 to		
>Number of RLC logical channels		1 to 2		1 or 2 logical channels per RLC entity or radio bearer
>>Uplink transport channel type	M		Enumerated (DCH, RACH, C	CPCH is FDD only USCH is TDD only

				PCH, USCH)
>>Transport channel identity	O			This is the ID of a transport channel that this RB could be mapped onto.
>>Logical channel identity	O		Integer(1..16)	This parameter is used to distinguish logical channels multiplexed by MAC on a transport channel.
>>MAC logical channel priority	O		Enumerated(1..8)	This is priority between a user's different RBs (or logical channels). The different priorities for this user's RBs are mapped (through

				the MAC's C/T MUX) to the TFC selection algorithm. Priority 1 shall have the highest priority and priority 8 the lowest.
>Number of RLC logical channels		1 to 2		1 or 2 logical channels per RLC entity or radio bearer
>>Downlink transport channel type	M		Enumerated (DCH, FACH, DSCH)	
>>Transport channel identity	O			

>>Logical channel identity	O		Integer(1..16)	

Range Bound	Explanation
MaxMuxOptionsCount	Maximum number of allowed multiplexing options that can be sent is 8

10.2.4.6 RLC info

Information Element/Group name	Presen	Ran	IE type and reference	Semantics description
Uplink RLC info				
>RLC mode	M		enumerated (Acknow	

			~~l e d g e d , N o n A c k n o w l e d g e d , T r a n s p a r e n t)~~	
~~>Transmission RLC discard~~	~~C-~~			
~~>Transmission~~	~~*C-ACK*~~		~~Integer(1,~~	~~Maximum number~~

~~window size~~			~~8, 16, 32, 128, 256, 512, 768, 1024, 1536, 2048, 2560, 3~~	~~of RLC PUs sent without getting them acknowledged. This parameter is needed if acknowledged mode is used.~~

			0 7 2 , 3 5 8 4 , 4 0 9 6)	
>Polling info	C-			
Downlink RLC info				
>RLC mode	M		enumerated (Acknowledged , Unacknowledged , Transparent mode)	Indicates if Acknowledged, Unacknowledged or Transparent mode RLC should be used.

			~~knowledged, Transparent)~~	
~~>In-sequence delivery~~	~~M~~		~~Boolean~~	~~Indication if RLC should preserve the order of higher layer PDUs when these are delivered.~~
~~>Reception RLC discard timer~~	~~C-*timer*~~		~~Enumerated (0.1, 0.~~	~~Elapsed time in seconds before a SDU is discarded. Only present if timer based discard~~

			2 5 , 0 . 5 , 0 . 7 5 , 1 , 1 . 2 5 , 1 . 5 , 1 . 7 5 , 2 , 2 . 5 , 3 , 3 . 5 , 4 , 4 . 5	mode without explicit signalling is chosen.

			~~, 5 , 7 . 5)~~	
~~>Receiving window size~~	~~C-*ACK*~~		~~Integer(1, 8 , 16 , 32 , 128 , 256 , 512 , 768 , 1024 , 1536 , 2048~~	~~Maximum number of RLC PUs allowed to be received. This parameter is needed if acknowledged mode is used.(Necessity is FFS.)~~

			48, 2560, 3072, 3584, 4096)	
>Downlink RLC status Info	C-			

Condition	Explanation
Timer	This IE is only sent if timer based discard is used without explicit signalling
NonTrOp	This IE is optional for UTRAN to send if IE "RLC mode" is "acknowledged" or "non-acknowledged"
AckOp	This IE is optional for UTRAN to send if IE "RLC mode" is

	"acknowledged"
Ack	This IE is only present if IE "RLC mode" is "acknowledged mode"

10.2.4.6.1 Transmission RLC Discard

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
SDU Discard Mode	M		Enumer	Different modes for discharge the RLC buffer on the transmitter side; (Timer based with explicit signalling, Timer based without explicit signalling or Discard after Max_DAT retransmis exp

				~~licit, Timer based no explicit, Max_DAT retra~~	~~sions.~~ ~~For unacknowledged mode only Timer based without explicit signalling is applicable. If No_discard is used, reset procedure shall be done after Max_DAT retransmissions.~~

			No_discard	~~transmissions~~
~~Timer_discard~~	~~C-timer~~		~~Enumerated (0.1, 0.25, 0.5, 0.75~~	~~Elapsed time in seconds before a SDU is discarded.~~

				, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5,

				5, 7, 5)
Max_DAT	C-		Enumerated (1, 2, 3, 4, 5, 6, 7, 8, 9, 10,	Number of retransmissions of a PU before a SDU is discarded.

				15, 20, 25, 30, 35, 40)
Max_RST	C-		Enumerated(1, 4, 6, 8, 12	The maximum number of retransmission of RESET PDU.

				16, 24, 32)

Condition	Explanation
Timer	This IE is only sent if timer based discard is used without explicit signalling
Discard	This IE is only sent when the SDU discard technique is to discard SDUs after a given number of PU re-transmissions
No_discard	This IE is only sent when the SDU discard is not used.

10.2.4.6.2 Polling info

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference

				ce
~~Timer_poll_prohibit~~	~~O~~		~~Enumerated (50, 100, 150, 200, 250, 300, 350, 400~~	~~Minimum time between polls in ms~~

				0 , 4 5 0 , 5 0 0 , 5 5 0 , 6 0 0 , 7 0 0 , 8 0 0 , 9 0 0 , 1 0 0 0)
~~Timer_poll~~	~~O~~		~~Enumer~~	~~Started when poll is~~

				~~at ted (50, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4~~	~~transmitted. New poll when timer expires and no STATUS received. Time in ms~~

				500, 5000, 5500, 6000, 7000, 8000, 9000, 10000)
~~Poll_PU~~	~~O~~		~~Enumerated~~	~~Poll at every Poll_PU PU~~

				(1, 2, 4, 8, 16, 32, 64, 128)
Poll_SDU	O		Enumerated (1, 4, 16, 64)	Poll at every Poll_SDU SDU
Last transmission PU poll	M		Boolean	Indicates if poll at last PU in transmission buffer

Last retransmission PU poll	M		Boolean	Indicates if poll at last PU in retransmission buffer
Poll_Window	O		Enumerated (50, 60, 70, 80, 85, 90, 95, 100)	Poll at Poll_Window % of transmission window
Timer_poll_periodic	O		Enumerated (0,	Timer for periodic polling. Timer in seconds

				1, 0.2, 0.3, 0.4, 0.5, 0.75, 1, 2)

NOTE: At least one or more parameters are necessary when polling info is sent.

10.2.4.6.3 Downlink RLC STATUS info

Information Element/Group name	Presen	Range	IE type	Semantics and description

				reference
Timer_Status_Prohibit	O		Enumerated (160, 320, 640, 1280)	Minimum time in ms between STATUS reports
Timer_EPC	O		Enumerated (50	Timer for EPC. Timer in ms

				, 1 0 0 , 1 5 0 , 2 0 0 , 2 5 0 , 3 0 0 , 3 5 0 , 4 0 0 , 4 5 0 , 5 0 0

				, 5 5 0 , 6 0 0 , 7 0 0 , 8 0 0 , 9 0 0 , 1 0 0 0)
~~Missing PU Indicator~~	~~M~~		~~Boolean~~	~~Indicates if UE should send a STATUS report for each missing PU that is detected~~
~~Timer_STAUS_periodic~~	~~O~~		~~Enumera~~	~~Timer for periodic STATUS~~

				t e d (0 . 1 , 0 . 2 , 0 . 3 , 0 . 4 , 0 . 5 , 0 . 7 5 , 1 , 2)	~~reports. Timer in seconds~~

~~10.2.5 Transport CH Information elements~~

~~10.2.5.1 Dynamic Control (FDD only)~~

Indicates if this transport channel is controlled by DRAC procedure or not.

10.2.5.2 Silent period duration before release (FDD only)

Indicates the maximum silent period duration before releasing the resource. This parameter may be merged with the Fkp-b parameter defined in the 'Transmission stop and resumption control' procedure defined in [1].

NOTE: [1] RAN/WG1 S1.14 document

10.2.5.3 Time duration before retry (FDD only)

Indicates the time duration before retrying to get the transmission permission on a DCH controlled by DRAC procedure, in case permission has not been granted.

10.2.5.4 Transmission time validity (FDD only)

Indicates the duration for which permission is granted on a DCH controlled by DRAC procedure.

10.2.5.5 Transparent mode signalling info

This information element points out a transport channel that is used for transparent mode signalling, and which type of message that is sent on the DCCH mapped on that channel.

There are two modes of this transparent mode signaling. Mode 1 controls all transport channels for one UE. Mode 2 only control a subset of the transport channels for one UE.

Information Element	Presen	Rang	IE type and reference	Semantics description

Transport channel identity	M			Transport channel used for transparent mode signalling DCCH
CHOICE *Transparent signalling mode*				
>Mode 1				
>>Message type	M		Enumerated (TRANSPORTFORMATCOMBINATIONC	Indicates which type of message sent on the transparent mode signalling DCCH

			ONTROL)	
Mode 2				
>>Controlled transport channels	M	1 to	Enumerated (1..64)	The transport channels that are effected by the rate control commands sent on this transparent mode DCCH

10.2.5.6 Transport channel identity

This information element is used to distinguish transport channels (both common and dedicated transport channels).

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

				e
Transport channel identity	M		Enumerated (1..64)	

10.2.5.7 Transport Format Combination Set

Indicates the allowed combinations of already defined Transport formats and the mapping between these allowed TFCs and the corresponding TFCI values.

For FDD, Where the UE is assigned access to one or more DSCH transport channels then the UTRAN has the choice of two methods for signalling the mapping between TFCI(field 2) values and the corresponding TFC:

Method #1 - TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given transport format combination (value of CTFC_DSCH). The CTFC_DSCH value specified in the first group applies for all values of TFCI(field 2) between 1 and the specified 'Max TFCI(field2) value'. The CTFC_DSCH value specified in the second group applies for all values of TFCI(field 2) between the 'Max TFCI(field2) value' specified in the last group plus one and the specified 'Max TFCI(field2) value' in the second group. The process continues in the same way for the following groups with the TFCI(field 2) value used by the UE in constructing its mapping table starting at the largest value reached in the previous group plus one.

Method #2 - Explicit

The mapping between TFCI(field 2) value and CTFC_DSCH is spelt out explicitly for each value of TFCI (field2).

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
CHOICE *DSCH*				
>FDD without access to DSCH assigned or TDD				This choice is made if the UE is not assigned any DSCH transport channels
>>CHOICE TFCS representation	M			
>>>Complete reconfiguration		1 to		
>>>>CTFC		1 to	Integer(0	The first instance of the

Information Element/Group name	Presen	Range	IE type	Semantics and reference	Semantics description
				...Max CTFC-1)	parameter *Transport format combination* corresponds to Transport format combination 0, the second to transport format combination 1 and so on. Integer number calculated according to clause 14.
>>>>Gain Factor β_c	O		Integer (0.. 15)		For DPCCH or control part of PRACH
>>>>Gain Factor β_d	O		Integer		For DPCCH or data

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
			(0..15)	part of PRACH
>>>Removal		1 to		
>>>>TFCI		1 to	Integer(0..MaxTFC	Removal of TFCI. The integer number(s) is a reference to the transport format combinations to be

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference removed.
				Value)
>>>Addition		1 to		
>>>>AddCTFC		1 to	Integer(0..M	Addition of TFCI. The integer number(s) is the calculated

Information Element/Group name	Presen	Range	IE type	Semantics and reference	Semantics description
				axCTFC-1)	transport format combination that is added. The new TFC(s) is inserted into the first available position(s) in the TFCI (counting from zero).
>>>>Gain Factor β_c	O		Integer (0.. 15)		For DPCCH or control part of PRACH
>>>>Gain Factor β_d	O		Integer (0..15)		For DPCCH or data part of PRACH
>FDD with access to DSCH assigned					This choice is made if the UE is

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				assigned one or more DSCH transport channels
>>Length of TFCI2	M		Integer	This IE indicates the length measured in number of bits of TFCI(field 2) (1..9)
>>Transport format combination_DCH		1 to		The first instance of the parameter *Transport format combination_DCH* corresponds to TFCI (field 1) = 1, the second to TFCI (field 1) = 2 and so on.

Information Element/Group name	Presen	Range	IE type	Semantics description
>>>CTFC_DCH	M		Integer(0..MaxCTFC_DCH-1)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DSCH transport channels which may be assigned
>>Choice *Signalling method*				
>>>TFCI range				
>>>>TFC mapping on DSCH		1 to		

Information Element/Group name	Presen	Range	IE type	Semantics description
>>>>>Max TFCI(field2) value	M		Integer(1..512)	This is the Maximum value in the range of TFCI(field2) values for which the specified CTFC_DSCH applies

Information Element/Group name	Presen	Range	IE type	Semantics description
>>>>>>CTFC_DSCH	M		Integer(0..MaxCTFC_DSCH-1)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DCH transport channels which may be assigned
>>>Explicit				
>>>>Transport format combination_DSCH		1 to		The first instance of the parameter *Transport format combination_DSCH* correspon

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				ds to TFCI (field2) = 1, the second to TFCI (field 2) = 2 and so on.
>>>>>CTFC_DSCH	M		Integer(0..MaxCTFC_DSCH-1)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DCH transport channels which may be assigned

Range Bound	Explanation
MaxCTFC	Maximum value number of the CTFC value is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14.
MaxTFCCount	Maximum number of Transport Format Combinations.
MaxTFCValue	The max value of the Transport Format Combinations that currently is defined for this UE.
MaxAddTFCIcount	Maximum number of Transport Format Combinations to be added.
MaxDelTFCcount	Maximum number of Transport Format Combinations to be removed.
MaxTFCI_1_Combs	Maximum number of TFCI (field 1) combinations (given by 2 raised to the power of the length of the TFCI (field 1))
MaxTFCI_2_Combs	Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI (field 2))
MaxNoTFCIGroups	Maximum number of groups, each group described in terms of a range of TFCI(field

Range Bound	Explanation
	2) values for which a single value of CTFC_DSCH applies
MaxCTFC_DCH	Maximum value of CTFC_DCH is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14 where only the DCH transport channels are taken into account in the calculation.
MaxCTFC_DSCH	Maximum value of CTFC_DSCH is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14 where only the DSCH transport channels are taken into account in the calculation..

10.2.5.8 Transport Format Combination Set Identity (TDD only)

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

				reference
TFCS ID	M		Integer	Indicates the identity of every TFCS within a UE (0...3)
Shared Channel Indicator	O		Boolean	Indicates use of shared channels.

10.2.5.9 Transport Format Combination Subset

Indicates which Transport format combinations in the already defined Transport format combination set are allowed.

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
CHOICE Subset representation	M			

>Minimum allowed Transport format combination number			Integer(0..MaxTFCVal ue-1)	The integer number is a reference to the *Transport format combination,* which arrived at that position in the *Transport Format Combination Set.*
>Allowed transport format combination		1 to	Integer(0..MaxTFCVal ue-1)	The integer number(s) is a reference to the *Transport format combination,* which arrived at that position in the *Transport Format Combination Set.*
>Non-allowed transport format combination		1 to	Integer(0..Max	The integer number(s) is a reference to the *Transport format*

				TFCValue) *combination,* which arrived at that position in the *Transport Format Combination Set.*
>Restricted TrCH information		1 to		
>>Restricted TrCH identity	M		Integer(0..MaxTrCHValu	The integer number(s) is a reference to the transport channel that is restricted.

				e)
>>Allowed TFIs	O	1 to	Integer(0 .. MaxTFVale)	The integer number(s) is a reference to the transport format that is allowed. If no elements are given, all transport formats or the TrCH with non-zero rate are restricted.

Range Bound	Explanation
MaxTFCcount	Maximum number of Transport Format Combinations that could be sent as the limited set that the UE is allowed to use is 1023.
MaxTFCValue	The max value of the Transport Format Combinations that currently is defined for this UE.
MaxRstTrCHcount	Maximum number of Transport Channels that could be restricted.
MaxTrCHValue	Maximum value of the Transport Channels that currently is

	defined for this UE.
MaxTFcount	Maximum number of the Transport Formats that is defined.
MaxTFValue	Maximum value of the Transport Formats that is defined.

10.2.5.10 Transport Format Set (TFS)

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
CHOICE *Transport channel type*	M			
>Dedicated transport channels	M			
>>Dynamic Transport Format Information		1 to		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	M		Integer(0..4095)	
>>>>CHOICE *Transparent mode RLC PDU size*				
>>>>>Size type 1				1 bit granularity
>>>>>>Size part 1	M		Enumerate	

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference d (1..128)
>>>>>Size type 2				8 bit granularity
>>>>>>Size part 1	M		Enumer	ated (136, 144..255

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
				6)
>>>>>>>Size part 2	O		Integer	Added to size part 1. (1..7)
>>>>>>Size type 3				16 bit granularity
>>>>>>Size part 1	M		Enumer	ated (272, 288...)

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				024)
>>>>>>Size part 2	O		Integer	Added to size part 1. (1..15)
>>>>>Size type 4				64 bit granularity
>>>>>>Size part 1	M		Enumer	ated(1088, 1 1

Information Element/Group name	Presen	Range	IE type	Semantics description
				52...4992)
>>>>>>Size part 2	O		Integer	Added to size part 1. (1...63)
>>>>CHOICE *Acknowledged mode RLC PDU size*				
>>>>>Size type 1			Enumerated	8 bit granularity

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
				(24, 32..272)
>>>>>Size type 2			Enumerated (304, 336..1	32 bit granularity

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
				0 4 0)
>>>>>Size type 3			Enumer	64 bit granularity a t e d (1 1 0 4 , 1 1 6 8 . . . 4 9 4 4)
>>>>CHOICE				

Information Element/Group name	Presen	Range	IE type	Semantics description
Unacknowledged mode RLC PDU size				
>>>>>Size type 1			Enumerated (16, 24, ..., 264)	8 bit granularity
>>>>>Size type 2			Enumerated (2	32 bit granularity 1-3 octets

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference 96, 328, ..., 1032)
>>>>>Size type 3			Enumerated (1096, 1160, ...	64 bit granularity 1-7octets

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference..5000)
>>>CHOICE mode				
>>>>TDD				
>>>>>Transmission time interval	C-	1 to	Enumer	ated(10, 20, 40, 8

Information Element/Group name	Presen	Range	IE type	Semantics description and reference)
				0)
>>Semi-static Transport Format Information				
>>>Transmission time interval	C-		Enumer	ated (10, 20, 40, 80)

Information Element/Group name	Presen	Range	IE type	Semantics description
>>>Type of channel coding			Enumerated (No coding, Convolutional,	

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference, Turbo)
>>>Coding Rate	C-		Enumer	ated(1/2, 1/3))
>>>Rate matching attribute			Integer(	1...m

Information Element/Group name	Presen	Range	IE type	Semantics description
				and refference axRM)
>>>CRC size	M		Enumer	ated(0, 8, 12, 16, 24)

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
>>>CHOICE mode				
>>>>TDD				
>>>>>2nd interleaving mode	O		Enumerated (Frame related, Times	Frame or timeslot related interleaving. Default Frame related.

Information Element/Group name	Presen	Range	IE type	Semantics description and reference to related)
>Common transport channels				
>>Dynamic Transport Format Information		1 to		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	M		Integer(0..4095)	
>>>CHOICE mode				
>>>>FDD				
>>>>>CHOICE *Transport block size*	C-			
>>>>>>Size type 1			Enumer a	8 bit granularity

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference ted (48, 56, ..., 296))
>>>>>>Size type 2			Enumerated (312, ..., 328)	16 bit granularity

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference ...1320)
>>>>>>>Size type 3			Enumerated(1384, 1448...4968)	64 bit granularity

Information Element/Group name	Presen	Range	IE type	Semantics description and reference)
				)
>>>>TDD				
>>>>>CHOICE *RLC mode*	C-			
>>>>>>CHOICE *Bit mode RLC PDU size*				
>>>>>>>Size type 1				1 bit granularity
>>>>>>>>Size part 1	M		Enumer	ated (1..128

Information Element/Group name	Presen	Range	IE type	Semantics description and reference)
				)
>>>>>>>>Size type 2				8 bit granularity
>>>>>>>>>Size part 1	M		Enumer	ated (136, 144, ..., 256)
>>>>>>>>>Size part 2	O		Integer	Bits Added to size part 1. (1 ...

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
				7)
>>>>>>>Size type 3				16 bit granularity
>>>>>>>>Size part 1	M		Enumer	ated (272, 288, ..., 1024)
>>>>>>>>Size part 2	O		Integer	Bits Added to size part 1. (1

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference ..15)
>>>>>>>>Size type 4				64 bit granularity
>>>>>>>>>Size part 1	M		Enumer	ated (1088, 1152...4992)

Information Element/Group name	Presen	Range	IE type	Semantics description
				)
>>>>>>>>Size part 2	O		Integer	Bits Added to size part 1. (1 .. 63)
>>>>>>CHOICE *Octet mode RLC PDU size*				
>>>>>>>Size type 1				8 bit granularity
>>>>>>>>Size Part 1	M		Enumer	ated (16, 24, ..

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				272)
>>>>>>>Size type 2				32 bit granularity
>>>>>>>>Size Part 1	M		Enumer ated(304, 336...1040))	

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
>>>>>>>>Size Part 2	O		Integer	Octets added to size part 1. (1..3)
>>>>>>>Size type 3				64 bit granularity
>>>>>>>>Size Part 1	M		Enumerated(1104, 1168...49

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
			)	44
>>>>>>>>>Size Part 2	O		Integer	Octets added to size part 1. (1..7)
>>>>>MAC Header Type	O		Integer	Default is DCH MAC header type (only needed for TDD mode) (1..7)
>>Semi-static Transport Format Information				
>>>Transmission time interval	C-		Enumer	ated

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference (10, 20, 40, 80)
>>>Type of channel coding	M		Enumer	ated (No cod

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference, Convolutional, Turbo)
>>>Coding Rate	C-		Enumer	ate

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference ced
				d (1/2, 1/3)
>>>Rate matching attribute	M		Integer(	1 .. maxRM)
>>>CRC size	M		Enumer	ated (0

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
			, 8 , 12 , 16 , 24)	

Range Bound	Explanation
maxTTIcount	Denotes the amount of different TTI that are possible for that transport format.

Condition	Explanation
Blocks	This IE is only present if IE "Number of Transport

	Blocks" is greater than 0.
Coding	This IE is only present if IE "Type of channel coding" is "Convolutional"
TTIdynamic	This IE is mandatory if not defined as semistatic parameter. Otherwise it is absent.
TTIsemistatic	This IE is mandatory if not defined as dynamic parameter. Otherwise it is absent.

Range Bound	Explanation
MaxTFcount	Maximum number of different transport formats that can be included in the Transport format set for one transport channel is 32.
MaxRM	Maximum number that could be set as rate matching attribute for a transport channel is 256.

CHOICE *RLC mode*	Condition under which the given *RLC mode* is chosen
Bit mode RLC PDU size	The RLC entity mapped to this transport channels can generate bit specific RLC PDU sizes
Octet mode RLC PDU size	The RLC entity mapped to this transport channels can only generate octet aligned RLC PDU sizes

CHOICE *Transport channel type*	Condition under which the given *Transport channel type* is chosen
Dedicated transport channels	The transport channel that is configured with this TFS is of type DCH
Common transport channels	The transport channel that is configured with this TFS is of a type not equal to DCH

NOTE: The parameter "rate matching attribute" is in line with the RAN WG1 specifications. However, it is not currently in line with the description in 25.302.

10.2.6 Physical CH Information elements

10.2.6.1 AICH Info (FDD only)

Information Element/Group name	Presen	Range	IE type	Semantics description
Secondary scrambling code	O		Integer(0..14)	

Channelisation code	M		Integer(0..255)	SF is fixed and equal to 256
STTD indicator	M		Boolean	
AICH transmission timing	M		Enumerated (0, 1)	

10.2.6.2 AICH Power offset (FDD only)

This is the power per transmitted Acquisition Indicator minus power of the Primary CPICH.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description

AICH Power offset	M			

10.2.6.3 ASC Info (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Access Service Class 1 Support	O		Boolean	Each PRACH info IE in System Information is associated with an ASC info IE. Any one RACH can support multiple ASCs.
Access Service Class 2 Support	O		Boolean	
Access Service Class 3 Support	O		Boolean	

10.2.6.4 Block STTD indicator (TDD only)

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Block STTD indicator	M		Boolean	

10.2.6.5 Constant value (FDD)

This constant value is used by the UE to calculate the initial output power on PRACH according to the Open loop power control procedure.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Constant value	M			

10.2.6.6 CPCH persistency values (FDD only)

This IE is dynamic and is used by RNC for load balancing and congestion control. This is broadcast often in the system information message.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
CPCH set ID	M			Identifier for CPCH set info.
PV_CPCHn	M	1 to		Persistency value for CPCHn. One PV for each CPCH channel in this CPCH set.

Range Bound	Explanation
MaxCPCHs	Maximum number of CPCH channels in a CPCH set (max=16 with 1 signature per channel)

10.2.6.7 CPCH set info (FDD only)

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	Presen	Range	IE type	Semantics description and reference
CPCH set ID	M			Indicates the ID number for a particular CPCH set allocated to a cell.
AP preamble code	M			256 chip preamble code for AP in UL
AP-AICH channelisation code	M			256 chip channelisation code for AP-AICH in DL
AP access slot subchannel	O	1 to	Enumer	Lists the set of subchannels to be used for AP access preambles. Note: if

				0, 1, 2, … 11) not present, all subchannels are to be used without access delays.
CD preamble code	M			256 chip preamble code for CD in UL
CD-AICH channelisation code	M			256 chip channelisation code for CD-AICH in DL
CD access slot subchannel	O	1 to	Enumerated (0, 1, 2, … 11)	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 signature code	O	1 to	Enumerated	Signature code for CPCH channel

				ed (0, 1, 2, ... 15) CD preamble in UL. Note: if not present, all signatures are available for use.
CPCH channel info	M	1 to		
>UL scrambling code	M			For CPCH message part
>UL channelisation code	M			For CPCH message part
>DL channelisation code	M			For DPCCH in CPCH message part
>NF_{max}	M			Max packet length in frames for CPCH message

				partt
>AP signature code	M	1 to	Enumerated (0, 1, 2, … 15)	AP preamble signature codes for selection of this CPCH channel.
>PCP length	M		Enumerated (0 access slots, 8	Indicates length of power control preamble, 0 access slots (no preamble used) or 8 access slots

				access slots)

Range Bound	Explanation
MaxCPCHs	Maximum number of CPCH channels in a CPCH set (max=16 with 1 signature per channel)
MaxSubChNum	Maximum number of available sub channels (max = 12 subchannels defined)
MaxSigNum	Maximum number of available signatures (max = 16)

NOTE: Whether several CPCH Set Info with different QoS can be set in a cell is FFS.

10.2.6.8 Default DPCH Offset Value (FDD only)

Indicates the default offset value within interleaving size at a resolution of 512chip (1/5 slot) to offset CFN in the UE. This is used to distribute discontinuous transmission periods in time and also to distribute NodeB-RNC transmission traffics in time. Even though the CFN is offset by DOFF, the start timing of the interleaving will be the timing that "CFN mod (interleaving size)"=0 (e.g. interleaving size: 2,4,8) in both UE and SRNC.

Information Element/Group name	Presen	Range	IE type	Semantics description
Default DPCH Offset Value	M		Enumerated (0, 512, 1024, ..., 30720)	Number of chip, granularity of 512 chip. 0 to 599 times 512 chip.

				0 6 6 8 8)

10.2.6.9 Downlink DPCH info

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
CHOICE *mode*				
>FDD				
>>DL channelisation code		1 to		SF of the channelisation code of the data part for each DPCH

Information Element/Group name	Presence	Range	IE type	Semantics description and reference
>>>Secondary scrambling code	O		Integer	(0..14)
>>>Spreading factor	M		Enumerated(4, 16, 32, 64,	

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference 128, 256, 512)
>>>Code number	M		Integer(	0..maxCodeNum)

Information Element/Group name	Presence	Range	IE type	Semantics description
>>Fixed or Flexible Position	M		Enumerated (Fixed, Flexible)	
>>TFCI existence	M		Boolean	
>>Number of bits for Pilot bits	C-SF		Enumerated	

Information Element/Group name	Presence	Range	IE type	Semantics description
				and reference(2, 4, 8 bits)
>>TX Diversity Mode	M			
>>SSDT Cell Id	O			
>TDD				
>>Activation Time	O		Integer	Frame number start of allocation period. Default is activation time in UE information (0...255)

Information Element/Group name	Presence	Range	IE type	Semantics description and reference
			)	elements.
>>Duration	O		Integer (0..255)	Total number of frames. Default = 0 (for infinite)
>>TFCI coding	O		Enumerated (4, 8, 16, 32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits

~~Information Element/Group name~~	~~Presen~~	~~Range~~	~~IE type and reference~~	~~Semantics description~~
				~~coded with 32 bits.~~
~~>>Puncturing Limit~~	~~M~~			
~~>>Repetition period~~	~~O~~		~~Integer (1...Repetition period~~	~~Repetition period of the DPCHs. Default value is 1.~~

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
				-1)
>>Repetition length	O			Length of the allocation for each repetition period. Default value is 1.
>>Individual Timeslot info		1 to <		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				timeslot that shall be used second and so on.
>>>channelisation code		1 to	Enumerated ((1/1), (2/2), (4	The first instance of the parameter Channelisation code corresponds to the first DPCH in that timeslot that shall be used first by the physical layer, the second to the DPCH in that timeslot that shall be used second and so on.

Information Element/Group name	Presen	Range	IE type	Semantics description
			(16/1)...	and reference (1)...(4/4), (8/1)...(8/8), (

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				16/16))
>>>Timeslot	M		Integer	Timeslot within a frame. (0...14)
>>>TFCI presence	O		Boolean	If TFCI exists it shall be coded in the first DPCH in this timeslot. Default value is No TFCI.
>>>Burst type	O		Enumer	Short or long

Information Element/Group name	Presence	Range	IE type	Semantics description
				and reference ce
				ated (Typ1, Typ2)	midamble for this timeslot. Default is burst type 1.
>>>Midamble shift	O		Integer	Midamble shift for this timeslot. Default is set by layer 1 (0...MaxMid

Information Element/Group name	Presen	Range	IE type	Semantics and reference amble Shift t_1) description

Condition	Explanation
STTD	This IE is only sent if STTD is applied
SF	This IE is only sent if SF=128 or 256 is applied. If SF=256, value is 2,4 or 8 If SF=128, value is 4 or 8

Range Bound	Explanation
MaxChancount	Maximum number of channelisation codes used for DL DPCH
MaxCodeNum	Maximum number of codes for one spreading factor (SF) is equal to SF-1.
MaxTimeslotcount	Maximum number of timeslots used for DPCHs
MaxCodesCount	Maximum number of codes for one timeslots
MaxMidambleShift	Maximum number of Midamble Shifts

10.2.6.10 Downlink DPCH power control information

This information element indicates the range of SIR target values and the initial SIR target value to be set in the UE on this physical, channel for the downlink inner loop power control.

Information Element/Group name	Presen	Range	IE type	Semantics and reference	description
DPC Mode	M		Enumer		

				~~ated (mode0, mode1)~~
~~Initial SIR target value~~	~~M~~		~~Enumerated (-10, ..., -9.5, ..., 20)~~	~~Initial SIR value to be used for the DL closed loop power control. Granularity of 0.5 dB.~~
~~Min SIR target value~~	~~M~~		~~Enumerate~~	~~Minimum SIR value that can be set by the DL~~

				d (- 1 0 , . . - 9 . . 5 . . . 2 0) closed loop power control. Granularity of 0.5 dB.
Max SIR target value	M		Enumerated (- 1 0 , . . - 9 . . 5 . . . 2 0)	Maximum SIR value that can be set by the DL closed loop power control. Granularity of 0.5 dB.

10.2.6.11 Downlink Outer Loop Control

This information element indicates whether the UE is allowed or not to increase its downlink SIR target value above the current value.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
DL Outer loop control	M		Boolean	

10.2.6.12 DPCH compressed mode info (FDD only)

This information element indicates the parameters of the downlink compressed mode to be used by the UE in order to perform inter-frequency measurements.

Information Element/Group name	Presen	\Multi	IE type	Semantics and reference description
TGL	M		Enumerate	Transmission Gap length expressed in number

Information Element/Group name	Presen	\Multi	IE type	Semantics description
				and ref erence d (1 .. 15) of slots
CFN	M		Enumer	Connection Frame Number when the first compressed frame starts at ed (0 .. 255)
SN	M		Enumer	Slot number when the transmission gap starts (within the CFN) at ed (0

Information Element/Group name	Presen	\Multi	IE type	Semantics description
				and ref erence ..14)
TGP1	M		Enumer ated (1..256)	The period of repetition of a set of consecutive frames containing up to 2 transmission gaps.
TGP2	O		Enumer ated (1..2	If TGP2 is included, TGP1 is used for the 1st and the consecutive odd gap periods and TGP2 is used for

Information Element/Group name	Presen	\Multi	IE type	Semantics and reference description
				56) the even ones.
TGD	M		Enumerated (0..35)	Transmission gap distance indicates the number of frames between two consecutive transmission gaps within a transmission gap period. If there is only one transmission gap in the transmission gap period, this parameter

Information Element/Group name	Presen	\Multi	IE type	Semantics description
				and reference shall be set to zero.
PD	M		Enumerated (1..35, Infinity)	The pattern duration is the total time of the compressed mode pattern (all consecutive TGPs) expressed in number of frames.
PCM	M		Enumer	Power control

~~Information Element/Group name~~	~~Presen~~	~~\Multi~~	~~IE type and reference~~	~~Semantics description~~
			~~ated (!mode 0!, !mode 1!.~~	~~mode during the frame after the compressed frame. Indicates whether normal PC mode or compressed PC mode is applied~~
~~PRM~~	~~M~~		~~Enumerat~~	~~Power resume mode is the uplink~~

Information Element/Group name	Presen	\Multi	IE type	Semantics and reference description
				ed ('mode 0', 'mode 1') power control algorithm to be used to compute the initial transmit power after the compressed mode gap.
UL/DL mode	M		Enumer	Defines whether only DL or combined UL/DL compressed

Information Element/Group name	Presen	\Multi	IE type	Semantics description
				and reference ed mode is used. (DL only, UL/DL)
Compressed mode method	M		Enumer	Method for generating compressed mode gap (ated (

Information Element/Group name	Presen	\Multi	IE type	Semantics description
				and reference punctturing', 'SF/2', 'none')
Scrambling code	C if		Enumer	Indicates whether

Information Element/Group name	Presen	\Multi	IE type	Semantics description
change				attached ('code change', 'no code change') and referenced to the alternative scrambling code is used for compressed mode method 'SF/2'.

Information Element/Group name	Presen	\Multi	IE type	Semantics description
				and reference change".
Downlink frame type	M		Enumer	ated ("A" or "B")
DeltaSIR	M		Enumer	Delta in DL SIR target a

Information Element/Group name	Presen	\Multi	IE type	Semantics and reference description
				ted (0, 0.5 .. 7.5) value to be set in the UE during the compressed frames Granularity is 0.5 dB.
DeltaSIRafter	M		Enumer	Delta in DL SIR ated (0, 0.5 . target value to be set in the UE one frame after the compressed frames . Granularity is 0.5 dB.

Information Element/Group name	Presen	\Multi	IE type	Semantics and reference description
				.7.5)

Condition	Explanation
SF/2	This information element is only sent when the value of the "Compressed mode method" IE is "SF/2".

10.2.6.13 Dynamic persistence level

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

				ce
Dynamic persistence level	M			

10.2.6.14 Frequency info

Information Element/Group name	Presen	Range	IE type	Semantics description
CHOICE mode				
>FDD				
>>UARFCN uplink (Nu)	M		Enume	[25.101]
>>UARFCN downlink	O		Enume	[25.101]

~~(Nd)~~				
~~>TDD~~				
~~>>UARFCN (Nt)~~	~~M~~		~~Enume~~	~~[25.102]~~
~~CHOICE *mode*~~				
~~>FDD~~				
~~>>Duplex distance~~	~~O~~			~~Default = 190 MHz~~
~~Chip rate~~	~~O~~			~~Default = 3.84 Mcps~~
~~Radio Access Mode~~	~~O~~		~~Enume~~	~~Identifies whether the UTRA RF Channel Number~~

				~~corresponds to FDD or TDD.~~

~~10.2.6.15 Gated Transmission Control info (FDD only)~~

~~This IE is used to start or stop uplink(if possible)/downlink gated transmission of DPCCH.~~

~~Information Element/Group name~~	~~Presen~~	~~Range~~	~~IE type~~	~~Semantics description~~ ~~and reference~~
~~Gating pattern~~	~~M~~		~~Enumerated (peri~~

				odicr randomr)
~~Gating rate~~	~~M~~		~~Enumer~~	~~Indicates gated transmission rate~~ ated (Full rate, 1/3, 1/5 or

				0 (FFS))

10.2.6.16 Maximum allowed UL TX power

This information element indicates the maximum allowed uplink transmit power.

Information Element	Presen	Range	IE type	Semantics description
				and reference
Maximum allowed UL TX power			Enumerated (-50..33	In dBm

				)

10.2.6.17 PDSCH code mapping (FDD only)

This IE indicates the association between each possible value of TFCI(field 2) and the corresponding PDSCH channelisation code. There are three ways that the UTRAN must choose between in order to signal the mapping information, these are described below. The signalling capacity consumed by the different methods will vary depending on the way in which the UTRAN configures usage of the DSCH. In each case the location of the PDSCH code tree root is signalled. A given PDSCH channelisation code within the PDSCH code tree is then identified by spreading factor, SF_{α} and code number (0..(SF_{α} /SF_{root})-1), where SF_{root} is the SF of the root of the PDSCH code sub-tree.

Method #1 - Using code range

The mapping is described in terms of a number of groups, each group associated with a given spreading factor. The UE maps TFCI(field2) values to PDSCH codes in the following way. The PDSCH code used for TFCI(field 2) = 1 , is given by the SF and code number = 'PDSCH code start' of Group = 1. The PDSCH code used for TFCI(field 2) = 2 , is given by the SF and code number = 'PDSCH code start' + 1. This continues, with unit increments in the value of TFC mapping to unit increments in code number up until the point that code number = 'PDSCH code stop'. The process continues in the same way for the next group with the TFCI(field 2) value used by the UE when constructing its mapping table starting at the largest value reached in the previous group plus one. In the event that 'PDSCH code start' = 'PDSCH code stop' (as may occur when mapping the PDSCH root code to a TFCI (field 2) value) then this is to be interpreted as defining the mapping between the channelisation code and a single TFCI (i.e., TFCI(field 2) should not be incremented twice).

Method #2 - Using TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given PDSCH channelisation code. The PDSCH code specified in the first group applies for all values of TFCI(field 2) between 1 and the specified 'Max TFCI(field2)'. The PDSCH code specified in the second group applies for all values of TFCI(field 2) between the 'Max TFCI(field2) value' specified in the last group plus one and the specified 'Max TFCI(field2)' in the second group. The process continues in the same way for the following groups with the TFCI(field 2) value starting at the largest value reached in the previous group plus one.

Method #3 - Explicit

The mapping between TFCI(field 2) value and PDSCH channelisation code is spelt out explicitly for each value of TFCI (field2)

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Root of PDSCH sub tree				
>Spreading factor	M		Enumer	ated (4, 8,

Information Element/Group name	Presen	Range	IE type	Semantics description
				16, 32, 64, 128, 256, 512)
>Code number	M		Integer(0	

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference. maxCodeNumComp-1)
Choice *signalling method*				
>code range				
>>PDSCH code mapping		1 to		

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
>>Spreading factor	M		Enumerated (4, 8, 16, 32	

Information Element/Group name	Presen	Range	IE type	Semantics description
				2, 64, 128, 256, 512)
>>>PDSCH code start				
>>>>Code number	M		Integer(0..m	

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference axCodeNumDSCH-1)
>>>PDSCH code stop				
>>>>Code number	M		Integer(	0...maxCod

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				eNumDSCH-1)
>TFCI range				
>>DSCH mapping		1 to		

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
>>>Max TFCI(field2) value	M		Integer(1..512)	This is the maximum value in the range of TFCI(field2) values for which the specified PDSCH code applies
>>>PDSCH code				
>>>>Spreading factor	M		Enumerated(4, 8,	

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
			16, 32, 64, 128, 256, 512)	
>>>>>Code number	M		Integer(0	

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference ...maxCodeNumDSCH-1)
>Explicit				
>>>PDSCH code		1 to		The first instance of the parameter *PDSCH code* corresponds to TFCI (field2) =

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference 1, the second to TFCI(field 2) = 2and so on.
>>>>Spreading factor	M		Enumerated (4, 8, 16, 32, 6	

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference
				4, 128, 256, 512)
>>>>>Code number	M		Integer(	0..maxCodeN

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				umDSCH-1)

Range Bound	Explanation
MaxCodeNumComp	Maximum number of codes at the defined spreading factor, within the complete code tree.
MaxCodeNumDSCH	Maximum number of codes at the defined spreading factor within the part of the code tree occupied by the PDSCH sub-tree.
MaxTFCI_2_Combs	Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI field 2)

MaxNoTFCIGroups	Maximum number of groups, each group described in terms of a range of TFCI(field 2) values for which a single PDSCH code applies.
MaxNoCodeGroups	Maximum number of groups, each group described in terms of a range of PDSCH channelisation code values for which a single spreading factor applies.

10.2.6.18 PDSCH info (TDD only)

Information Element/Group name	Presen	Range	IE type	Semantics description
Activation time	M		Integer	Frame number start of allocation period. Default is Activation time in UE informatio

				5) n elements
Duration	M		Integer	Total number of frames (0..2555)
Repetition Period	O		Integer	Repetition period Default value is 1 (1, 2, 4, 8, 16, 32, 64)
Repetition length	O		Integer	. Default value is 1 (1..

				Repetition length (1)
TFCI coding	O		Enumerated (4, 8, 16, 32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.

Puncturing Limit	M			
Individual Timeslot info		1 to		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>channelisation codes	M	1 to	Enumerated ((1/1), (2/1),	The first instance of the parameter Channelisation code corresponds to the first PDSCH in that timeslot that shall be used first by the physical layer, the second to the PDSCH in that timeslot

				~~(2/2), (4/1), ... (4/4), (8/1), ... (8/8), ... (16/1)... (16/16)~~ ~~that shall be used second and so on.~~

				)
>Timeslot	M		Integer	Timeslot within a frame (0..14)
TFCI existence	O		Boolean	If the TFCI exists it shall be coded in the first PDSCH in this timeslot. Default value is No TFCI.
>Burst Type	O		Enumerated (Typ1, Typ2)	Short or long midamble for this timeslot. Default is burst type 1.
>Midamble Shift	O		Integer	Midamble shift for this timeslot. (0

				... max Midamble Shift is 1)	Layer 1 sets default.

Range Bound	Explanation
MaxTimeslotcount	Maximum number of timeslots used for PDSCHs
Max Codescount	Maximum number of codes for PDSCH

10.2.6.19 PDSCH with SHO DCH Info (FDD only)

Information Element/Gr	Presen	Range	IE type	Semantics a descriptio

oup name				n d r e f e r e n c e
DSCH radio link identifier	M		Integer(0 . . 5 1 1)	This parameter indicates on which radio link the user will be allocated resource on the DSCH. The CPICH scrambling code will be used for this purpose.
TFCI Combining set				This is used to indicate which of the downlink TFCI(field 2) transmissions made on the DPCCHs within the active set should be

				soft combined on the physical layer.
Radio link identifier		0 to	Integer(0 .. 511)	The CPICH scrambling code is used for this purpose

Range Bound	Explanation
MaxCombineSet	Maximum number of radio links in the DCH active set transmitted from BS's under the CRNC from which the DSCH is being scheduled

10.2.6.20 PICH Info

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
CHOICE *mode*				
>FDD				
>>Secondary scrambling code	O		Integer(0..14)	
>>Channelisation code	M		Integer(0..255)	SF is fixed and equal to 256
>>Number of PI per frame	M		Enumerated(18	

Information Element/Group name	Presence	Range	IE type	Semantics description
				and reference, 36.72.144)
>>STTD indicator	M		Boolean	
>TDD				
>>Channelisation code	O		Enumerated ((1/1));	Default is the channelisation code used by the SCCPCH carrying the associated PCH.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
			(2/2),	(2/1), (4/1), ..., (4/4), (8/1), ...

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
			(16/1)...	...(8/8),(16/16))
>>Timeslot	O		Integer(0...14)	Default is the timeslot used by the SCCPCH carrying the associated PCH.
>Burst type	O		Enumer	Default is the burst

Information Element/Group name	Presence	Range	IE type	Semantics description
				and referenced to the SCCPCH carrying the associated PCH. (Typ1, Typ2)
>>Midamble shift	O		Integer	Default is the midamble shift used by the SCCPCH carrying the associated PCH. (0...maxMida

Information Element/Group name	Presen	Range	IE type	Semantics and reference mbleShift_1) description
Offset	O		Integer	SFN mod (0...Repetition Repetition period = Offset.

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference period)
>>Repetition period	O		Integer	Repetition period of the PICH. Default value is 64.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				32, 64)
>>Repetition length	O		Integer	Length of the allocation for each repetition period. Default value is 2. (2, 4, 8)
>>Paging indicator length	O		Integer	Indicates the length of one paging indicator. Default is 4. (4, 8, 16

Information Element/Group name	Presen	Range	IE type	Semantics and reference) description

10.2.6.21 PICH Power offset (FDD only)

This is the power transmitted on the PICH minus power of the Primary CPICH.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
PICH Power offset	M			

10.2.6.22 PRACH info (for FAUSCH) (FDD only)

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Fast access slot		1 to		
Preamble spreading code		1 to		
Preamble signature		1 to		

~~FAUSCH usage~~				~~Indicates true/false for "use for DCH allocation", "use for USCH capability request".~~

~~Range Bound~~	~~Explanation~~
~~*MaxAS*~~	~~Number of access slots for the preambles (Every 16 chips)~~
~~*MaxPreambleSC*~~	~~Number of preamble spreading codes~~
~~*MaxPreambleSigs*~~	~~Number of allowed preamble signatures~~

~~10.2.6.23 PRACH info (for RACH)~~

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Persistence factor N	M			0-1 step ffs
CHOICE *mode*				
>FDD				
>>Available Signature		1 to		
>>>Signature	M		Enumer	ated (0,1

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				2 … 15)
>>Available SF		1 to		
>>>SF	M		Enumer	ated (32, 64,

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference
				128, 256 chips)
>>Scrambling code word number	M		Enumer	ated (0, 1, 2

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference…255)
>>Puncturing Limit	M		Enumerated(0.40, 0.44…1)	Granularity of 0.04
>>Available Sub		1 to <		

Information Element/Group name	Presen	Range	IE type	Semantics description
Channel number				
>>>Sub Channel number	M		Enumerated (0, 1, 2, …, 1	

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference)
>>>RACH message length	M		Enumerated (10 ms, 20 ms)	The 20 ms length is only used for minimum RACH payload (ffs)
>TDD				
>>Timeslot	M		Integer (0.	

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				..14)
>>Channelisation code	M		Enumerated ((8/1)...(8/8),(16/1)...(	1:1 mapping between spreading code and midamble shift

Information Element/Group name	Presen	Range	IE type	Semantics description
				and refference 16/16)
>>Max PRACH Midamble Shifts	O		Enumerated (4, 8)	The maximum number of midamble shifts for the PRACH: 4 or 8. If no number is specified the default value 8 applies.
>>PRACH Midamble	O		Enumerated (1, 2	Direct or inverted midamble

Information Element/Group name	Presen	Range	IE type	Semantics and reference) description

Range Bound	Explanation
MaxSubChNum	Maximum number of available sub channels = 12
MaxSigNum	Maximum number of available signatures = 16
MaxSf	Maximum number of available SF = 4

10.2.6.24 PRACH power control info (FDD only)

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

UL interference	M		Enumerated(-110...-70)	In dBm
Constant Value	M		Enumerated(-10...10)	In dBm
CHOICE mode				
>FDD				
>>Primary CPICH DL TX power	M		Enumerated(6...43)	In dBm
>>Power offsetΔP_0	M		Enumerated(-10...10)	Power step when no acquisition indicator is received. In dBm

>>Power offsetΔP_1	M		Enumerated (-10..10)	Power step when negative acquisition is received. In dBm
>>Power offset Pp-m	M		Enumerated (-5..10)	Power offset between preamble and the message part. In dBm
>TDD				
>>Primary CCPCH DL Tx power	M			

NOTE: The usage of these parameters needs clarification and is also dependent on the WG1 RACH discussions.

10.2.6.25 PRACH power offset (FDD)

Information Element/Group name	Presen	Range	IE type	Semantics description

				~~e n c e~~
~~Power offset P_0~~	~~M~~			~~Power step when no acquisition indicator is received.~~
~~Power offset P_1~~	~~M~~			~~Power step when negative acquisition is received~~
~~Power offset P_{p-m}~~	~~M~~			~~Power offset between preamble and the message part~~

~~10.2.6.26 Primary CCPCH DL TX Power (TDD only)~~

~~Information Element/group name~~	~~Presen~~	~~Range~~	~~IE type~~	~~Semantics description~~ ~~a n d r e f e r e n c e~~
~~Primary CCPCH DL Tx Power~~	~~M~~		~~Enumer a t~~	~~In dBm and 1 dB granularity~~

				ed (6..43))

10.2.6.27 Primary CCPCH info

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
CHOICE *mode*				
>FDD				
>>STTD indicator	M		Boolean	
>TDD				
>>Timeslot	M		Integer	PSCH timeslot (0..max

				TSCount)
>>Cell parameters ID	C-		Integer	For the cell parameter table (0...127)
>>Sync case	C-		Enumerated (1, 2, 3)	Case 1,2, or 3
>>Offset	O		Integer	SFN modulo Repetition period = offset. Default value is 0. (0...

				Repetition period (1, 2, 4, 8, 16, 32, 64)
>>Repetition period	O		Integer	Repetition period of the PCCPCH. Default value is 1.

				)
>>Repetition length	O		Integer	Length of the allocation for each repetition. Default value is 1. (1..Repetition period-1)
>>Block STTD indicator	O			

Condition	Explanation
C-MessageType	Mandatory in HANDOVER COMMAND message

Range Bound	Explanation

MaxTScount	In synchronisation case 2 and 3 MaxTScount is 6. In synchronisation case 1 MaxTScount is 14.

10.2.6.28 Primary CPICH DL Tx power (FDD)

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Primary CPICH DL Tx Power	M		Enumerated (6..43)	In dBm and 1 dB granularity

10.2.6.29 Primary CPICH info (FDD only)

Information Element/Group name	Presen	Range	IE type	Semantics and description

				and reference
Primary scrambling code	M		Enumerated (0..511)	

10.2.6.30 PUSCH info (TDD only)

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference

Information Element/Group name	Presence	Range	IE type	Semantics description and reference
Activation time	M		Integer (0..255)	Frame number start of allocation period. Default is Activation time in UE information elements
Duration	M		Integer (0..255)	Total number of frames
Puncturing Limit	M			
TFCI coding	O		Enumerated (Default: (4	Describes the way the TFCI bits are coded.

Information Element/Group name	Presence	Range	IE type	Semantics description and reference
				8, 16, 32): 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
Repetition Period	O		Integer	Repetition period of the DPCHs. Default value 1 (1, 2, 4, 8, 16)

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference, 32, 64)
Repetition length	O		Integer	Length of the allocation for each repetition period. Default value is 1 (1.. Repetition

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference length –1)
Individual Timeslot info		1 to		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				be used second and so on.
>channelisation code			Enumerated ((1/1), (2/1), (2/2))	The first instance of the parameter Channelisation code corresponds to the first PUSCH in that timeslot that shall be used first by the physical layer, the second to the PUSCH in that timeslot that shall be used second and so on.

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference, (4/10)...(4/40), (8/10)...(8/80)

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
			(16/1)...(16/16))	
>Timeslot	M		Integer (0...14)	Timeslot number

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
TFCI existence	O		Boolean	If the TFCI exists it shall be coded in the first PUSCH in this timeslot. Default value is No TFCI.
>Burst Type	M		Enumerated (Typ1, Typ2)	Short or long midamble for this timeslot. Default is burst type 1.

Information Element/Group name	Presence	Range	IE type	Semantics description
>Midamble Shift	M		Integer (0...maxMidambleShift_1)	Midamble shift for this timeslot. Layer 1 sets default.

Range Bound	Explanation
MaxPUSCHTimeslotcount	Maximum number of timeslots used for PUSCHs
MaxCodesCount	Maximum number of codes for PUSCH

10.2.6.31 PUSCH power control info (TDD only)

Interference level measured for a frequency at the UTRAN access point used by UE to set PUSCH output power.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
UL Maximum SIR	M		Enumerated (.1dB steps)	Maximum UE transmit power limit
UL target SIR	M			

UL Minimum SIR	O			

10.2.6.32 RF channel number priority

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
RF channel number priority	M			Enable the setting of priority of the UTRA RF Channel Number parameter, to facilitate efficient system/ cell/ channel identification and selection processes

NOTE: a Liaison has been sent to determine whether this IE is necessary

10.2.6.33 Secondary CCPCH info

Information Element/Group name	Presence	Range	IE type	Semantics description
Selection Indicator	C-Attached (On, Off)		Enumerated	
CHOICE *mode*				
>FDD				
>>Secondary scrambling code	O		Integer	(0..14)

Information Element/Group name	Presence	Range	IE type	Semantics description and reference
>>STTD indicator	M		Boolean	
>>Spreading factor	M		Enumerated (4, 16, 32, 64, 128, 256)	

Information Element/Group name	Prese	Range	IE type	and reference	Semantics description
				6)	
>>Code number	M		Integer(0..maxCodeNum)		
>>Pilot symbol existence	M		Boolean		
>>TFCI existence	M		Boolean		
>>Fixed or Flexible Position	M		Enumerated		

Information Element/Group name	Prese	Range	IE type	Semantics description
				(Fixed, Flexible)
>>Timing Offset	O			Time difference between PCCPCH
>TDD				
>>TFCI coding	O		Enumerated (	Describes the way the TFCI bits are coded. Default:

Information Element/Group name	Presence	Range	IE type	Semantics description
				4, 8, 16, 32): 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
>>Repetition period	O		Integer (1, 2, 4, 8, 16, 32, 64)	Repetition period of the SCCPCH. Default value is 1.

Information Element/Group name	Prese	Range	IE type	Semantics description
				and reference)
>>Repetition length	O		Integer	Length of the allocation for each repetition. Default value is 1. (1..Repetition period-1)

Information Element/Group name	Prese	Range	IE type	Semantics description and reference
>>Offset	O		Integer	SFN modulo (0 . . . Repetition Period - 1) Repetition period = offset. Default value is 0.
>>lisation code		1 to <	Enumera	The first instance of the

Information Element/Group name	Prese	Range	IE type	Semantics description
			(2/2),	and reference ted parameter Channelisation code corresponds to the first code in that timeslot that shall be used first by the physical layer, the second to the code in that timeslot that shall be used second and so on. ((1/1), (2/1), (4/1), ..., (4

Information Element/Group name	Prese	Range	IE type	Semantics description
			/4), ,(8/1)...(8/8), (16/1)...	(16/16))

Information Element/Group name	Prese	Range	IE type	Semantics description
>>Time slot	M		Integer (0..14)	Timeslot within a frame
>>TFCI existence	O		Boolean	If the TFCI exists it shall be coded in the first code in this timeslot. Default is No TFCI
>>Burst type			Enumerated (Type 1)	Long or short midamble used in this timeslot. Default is burst type 1

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
			1, Type 2)	
>>Midamble shift	O		Integer	Midamble shift of this timeslot. Layer 1 sets default. (0 .. max Midamble S

Information Element/Group name	Prese	Range	IE type	Semantics description
				and reference (hift-1)

Condition	Explanation
BCCH	This IE is only sent when BCCH is used

Range Bound	Explanation
MaxCodeNum	Maximum number of codes for one spreading factor (SF) is equal to SF-1.
MaxCodesCount	Maximum number of codes in one timeslot.

10.2.6.34 Secondary CPICH info (FDD only)

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
DL scrambling code	C-		Enumerated(0...511)	
Channelisation code	M		Enumerated(0...255)	

Condition	Explanation
PrimCPICH	This IE is only included if the DL scrambling code is different to that of the primary CPICH

10.2.6.35 SSDT cell identity (FDD only)

This IE is used to associate a cell identity with a given radio link

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Temporary id	M		Enumerated (a, b, …)	

				h)

10.2.6.36 SSDT indicator (FDD only)

This information element indicates the status (e.g. initiated/terminated) of the Site Selection

Diversity Transmit power control (SSDT). It is used to change the SSDT status. The parameter 'code word set' indicates how cell identities are coded (using many bits or few, values are long, medium, or short).

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference
S field	M		Enumer	ated (1, 2 bits)

				)
Code Word Set	M		Enumerated (long, medium, short, SSDT off)	

NOTE: These parameters shall be set optinally associated with DL DPCH info but not for each RL.

10.2.6.37 TFC Control duration

Information Element/Group name	Presence	Range	IE type	Semantics description and reference
TFC Control duration	M		Integer (1..16)	Defines the period in multiples of 10 ms frames for which the defined TFC sub-set is to be applied.

10.2.6.38 TFCI Combining Indicator (FDD only)

This IE indicates whether the TFCI (field 2) which will be transmitted on the DPCCH of a newly added radio link should be soft combined with the others in the TFCI (field 2) combining set. This IE is only sent when the UE is in Cell_DCH state with a DSCH transport channel assigned.

Information Element/Group name	Presence	Range	IE type	Semantics description and ref

				reference
TFCI combining indicator	M		Boolean	

10.2.6.39 Timing Advance (TDD only)

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
UL Timing Advance	M		Integer	(0..255)

10.2.6.40 TPC combination index (FDD only)

Information Element/Gr	Presen	Range	IE type	Semantics descriptio

oup name				n
TPC combination index	M		Enume	Radio links with the same index have TPC bits, which for the UE are known to be the same.

10.2.6.41 TX Diversity Mode (FDD only)

Information Element/Group name	Presen	Range	IE type	Semantics description
Mode	M		Enumera	Associated with DL DPCH info

				ted (none, STTD, closed loop mode1, closed lo	~~(but not for each RL)~~

				opp mode2)

NOTE: These parameters shall be set optinally associated with DL DPCH info but not for each RL.

10.2.6.42 UL interference (FDD)

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
UL interference	M			

10.2.6.43 Uplink DPCH info

Information Element/Group name	Presen	Range	IE type	Semantics description
CHOICE *mode*				
>FDD				
>>UL scrambling code				What short or long uplink scrambling code a certain UE should use
>>>Scrambling code type	M		Enumerated (short, long)	

Information Element/Group name	Presen	Range	IE type	Semantics description
>>>Scrambling code number	M		Integer(0...16777215)	(24 bits)
>>Number of DPDCH	M		Integer(1...maxDPDCHcou	

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference ce nt)
>>>DPDCH channelisation code	C-		Enumerated (4, 8, 16, 32, 64, 12	SF of the channelisation code for data part

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference 8, 256)
>>TFCI existence	M	Boolea		
>>Number of FBI bits	O		Enumer	If neither SSDT nor FB Mode Transmit Diversity Signalling is supported, this parameter is not needed and the number of FBI bits is set to "0". (1, 2 bits)
>>Puncturing Limit	M			

Information Element/Group name	Presen	Range	IE type	Semantics description
>TDD				
>>Puncturing Limit	M		Enumerated (0.40, 0.44..1)	Granularity of 0.04
>>TFCI coding	O		Enumerated (4	Describes the way the TFCI bits are coded. Default:

Information Element/Group name	Presence	Range	IE type	Semantics description
				8, 16, 32) 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
>>Activation Time	O		Integer	Frame number start of allocation period (0..255) Default is the Activation time in the UE information elements
>>Duration	O		Integer	Total number of frames (0 Default =

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference ... 255) 0 (for infinite).
>>Repetition period	O		Integer	SFN modulo 64 = repetition period. Default value is 1. (1, 2, 4, 8, 16, 32, 64)
>>Repetition length	O		Integer	Length of the allocation (

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference
				1 .. . Repetition period (1)	for each repetition period. Default value is 1.
>>Individual timeslot info		1 to <		The first instance of the

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>>>channelisation code		1 to <	Enumer	Channelisation codes to be used in the uplink for DPCH ((1/

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
			(2/2),	1), (2/1), (4/1), ..., (4/4), (8/

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
			(16/1)...(8/8), (16/16))	
>>>Timeslot	M		Integer (0..14)	Timeslot of DPCH for each DPCH

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference)
>>>TFCI existence	O		Boolean	If the TFCI exists it shall be coded in the first DPCH in this timeslot. Default value is No TFCI.
>>>Burst	O		Enumerated (Type 1, Type	Short or long midamble for this timeslot. Default is burst type 1

Information Element/Group name	Presen	Range	IE type	Semantics description
				and ref erence e2)
>>>Midamble shift	O		Integer(0...maxMidambleShift_1)	Midamble shift for thistimeslot. Default is set by layer 1.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

Condition	Explanation
Single	This IE is included if IE "Number of DPDCH" is "1"

Range Bound	Explanation
MaxDPDCHcount	Maximum number of DPDCHs
MaxCodesCount	Maximum number of codes for one timeslot
MaxTimeslotcount	Maximum number of timeslots used for DPCHs

10.2.6.44 Uplink DPCH power control info

Parameters used by UE to set DPCH initial output power and to use for closed-loop power control.

Information Element/Gr	Presen	Range	IE type	Semantics and descriptio n

oup name				d r e f e r e n c e n
CHOICE *mode*				
>FDD				
>>DPCCH Power offset	M		Enumerated(-164, -162, ..., 6)	In dB
>>Power Control Algorithm	M		Enumerated(	Specifies algorithm to be used by UE to interpret TPC commands

				algorithm 1 or algorithm 2)
>>TPC step size	C-		Enumer	ated (1dB, 2dB)

>TDD				
>>UL Maximum SIR	M		Enumerated (.1dB steps)	Maximum UE transmit power limit
>>UL target SIR	O			
>>UL Minimum SIR	O			

Condition	Explanation
C-algorithm1	This IE shall be present when the PC algorithm equals algorithm 1

10.2.7 Measurement Information elements

10.2.7.1 CFN-SFN observed time difference (FDD only)

The measured time difference to cell indicates the time difference that is measured by UE between CFN in the UE and the SFN of the target neighbouring cell. It is notified to SRNC by Measurement Report message or Measurement Information Element in other RRC messages. This measurement is for FDD only

Information Element/Group name	Presen	Range	IE type and reference	Semantics description

CFN-SFN observed time difference	M		Enumerated(0..9830399)	Number of chip

10.2.7.2 Inter-frequency cell info

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

Information Element/Group name	Presen	Range	IE type	Semantics description
Frequency info	M			
Cell individual offset	O		Enumerated(-10,...,-9.5	Granularity 0.5 dB

				..10)
Reference time difference to cell	O		Enumerated(-15308..15308)	In chip. This is – 299 to 299 times 512 chip in steps of 512 chip
CHOICE *mode*				
>FDD				
>>Primary CPICH info	O			Not required if measuring RSSI only
>>Primary CPICH Tx power	O			
>TDD				

>Primary CCPCH info	M			
>Primary CCPCH TX power	O			
Cell Selection and Reselection Info	O			
>Qmin	O		Integer	Ec/N0, [dB] (- Default = same as in serving cell -20..0)
>Maximum allowed UL TX power	O			[dBm] UE_TXPWR_MAX_RACH in 25.304. Default = same as in serving cell
>Qoffset$_{s,n}$ [dB]	O		Integer(-20..0, ..., -19..5, ..., 20)	[dB] Default = 0 dB. Used in Alternative 1 in TS 25.304

				)

10.2.7.3 Inter-frequency measurement event results

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

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Event ID	M			
Frequency info				
Choice mode				
>FDD				
>>Primary CPICH info	O			
>TDD				
>>Primary CCPCH info	O			

10.2.7.4 Inter-frequency measurement quantity

The quantity the UE shall measure in case of inter-frequency measurement. It also includes the filtering of the measurements.

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>CHOICE *reporting criteria*				
>>>Intra-frequency measurement quantity	M		Enumerated (CPICH Ec/N0, CPICH RSCP	Pathloss=Primary CPICH Tx power-CPICH RSCP CPICH SIR is FFS

			SCP, CPICH SIR, Pathloss, UTRA Carrier RSSI)	
>>>Measurement quantity for frequency quality estimate	M		Enumerated (CPICH Ec	

			/ N0, CPICH RSCP)	
>TDD				
>>CHOICE *reporting criteria*				
>>>Intra-frequency measurement quantity	M		Enumerated (Primary CCPCH RSCP, P	Pathloss=Primary CCPCH Tx power-Primary CCPCH RSCP

			ath loss, UTRA carrier RSSI)	
>>>Measurement quantity for frequency quality estimate			Enumerated (Primary CCPCH RSCP)	

CHOICE *reporting criteria*	Condition under which the given *reporting criteria* is chosen
Intra-frequency measurement quantity	Used when intra-frequency measurement reporting criteria is used for this measurement
Measurement quantity for frequency quality estimate	Used when inter-frequency measurement reporting criteria is used for this measurement

10.2.7.5 Inter-frequency measurement reporting criteria

The triggering of the event-triggered reporting for an inter-frequency measurements. All events concerning inter-frequency measurements are labelled 2x where x is a,b,c..

Event 2a: Change of best frequency.

Event 2b: The estimated quality of the currently used frequency is below a certain threshold **and** the estimated quality of a non-used frequency is above a certain threshold.

Event 2c: The estimated quality of a non-used frequency is above a certain threshold

Event 2d: The estimated quality of the currently used frequency is below a certain threshold

Event 2e: The estimated quality of a non-used frequency is below a certain threshold

Event 2f: The estimated quality of the currently used frequency is above a certain threshold

Information Element/Group name	Presen	Range	IE type	Semantics description
				and
				r

				e f e r e n c e
Parameters required for each event		0 to		
>Event ID	M		Enumer	a t e d (2 a , 2 b , 2 c ,

				2d, 2e, 2f)
>Treshold used frequency	C –			
>W used frequency	C –		Enumerated (0, 0.1, ..., 2.0)	Granularity 0.1
>Hysteresis	M		Enumerate	In event 2a, 2b, 2c, 2d, 2e, 2f Granularity 0.5 dB

				d (0 , 0 . 5 , . 1 4 . 5)
~~>Time to trigger~~	~~M~~		~~Enumer~~ ~~a~~ ~~t~~ ~~e~~ ~~d~~ ~~(~~ ~~0~~ ~~,~~ ~~1~~ ~~0~~ ~~,~~ ~~2~~ ~~0~~ ~~,~~ ~~4~~ ~~0~~ ~~,~~ ~~6~~ ~~0~~ ~~,~~ ~~8~~ ~~0~~ ~~,~~	~~Indicates the period of time between the timing of event detection and the timing of sending Measurement Report.~~ ~~Time in ms.~~

				100, 120, 160, 200, 240, 320, 640, 1280, 2560

				, 5 0 0 0)
>Amount of reporting	M		Enumerated(1, 2, 4, 8, 16, 32, 64,	
>Reporting interval	M		Enumer	Indicates the interval of periodical reporting when such reporting is

				; 0 . 2 5 ; 0 . 5 ; 1 ; 2 ; 4 ; 8 ; 1 6) triggered by an event. A zero value indicates that event triggered periodical reporting shall not be applied. Interval in seconds
>Parameters required for each non-used frequency		0 to		

>>Threshold non used frequency	C –			
>>W non-used frequency	C-		Enumerated (0, 0.1, ..., 2.0)	Granularity 0.1

Condition	Explanation
Clause 0	This parameter is only sent in event 2a,2b, 2d,, 2f
Clause 1	This parameter is only sent in event 2a, 2b, 2c, 2e

10.2.7.6 Inter-frequency reporting quantity

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
SFN-SFN observed time difference	M		Boolean	Note 1
Cell Identity	M		Boolean	
UTRA Carrier RSSI	M		Boolean	
Frequency quality estimate	M		Boolean	
CHOICE *mode*				
>FDD				
>>CPICH Ec/N0	M		Boolean	
>>CPICH RSCP	M		Boolean	
>>Pathloss	M		Boolean	
>>CFN-SFN observed time difference	M		Boolean	Note 1

>TDD				
Primary CCPCH RSCP	M		Boolean	

NOTE 1: Feasibility of performing these measurements with compressed mode is unclear.

10.2.7.7 Inter-frequency SET UPDATE (FDD only)

Contains the changes of the active set associated with a non-used frequency. This information makes it possible to use events defined for Intra-frequency measurement within the same non-used frequency for Inter-frequency measurement reporting criteria. This information also controls if the UE should use autonomous updating of the active set associated with a non-used frequency.

Information Element/group name	Presen	Range	IE type	Semantics description
UE autonomous update mode	M		Enumer	

			On with no reporting, Off)	
Radio link addition information		0 to		Radio link addition information required for each RL to add
>Primary CPICH info	C-			Note 1

Radio link removal information		0 to		Radio link removal information required for each RL to remove
>Primary CPICH info	C-			Note 1

Condition	Explanation
Update	This IE is only present if IE"UE autonomous update mode" is set to "Off".

Range bound	Explanation
MaxAddRLcount	Maximum number of radio links which can be added
MaxDelRLcount	Maximum number of radio links which can be removed/deleted

NOTE 1: If it is assumed that CPICH downlink scrambling code is always allocated with sufficient reuse distances, CPICH downlink scrambling code will be enough for designating the different radio links.

10.2.7.8 Inter-system cell info

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

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
CHOICE *Radio Access Technology*				
>GSM				
>Qaccept$_{s,n}$	M		Integer (0..63)	Unit according to RXLEV, GSM TS 05.08
>Base transceiver Station Identity Code (BSIC)	M			GSM TS 03.03
>>Network Colour Code	M		Integer (	

(NCC)			0..7)	
>>Base Station Colour Code (BCC)	M		Integer (0..7)	
>BCCH ARFCN	M		Integer (0..1023)	GSM TS 04.18
>>Output power	O			
>IS-2000				
>>System specific measurement info			enumerated (frequency, timeslot, co	For IS-2000, use fields from TIA/EIA/IS-2000.5, Section 3.7.3.3.2.27, *Candidate Frequency Neighbor List Message*

			l o u r c o d e , o u t p u t p o w e r, P N o ff s e t)	

10.2.7.9 Inter-system measurement event results

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

Information Element/Group name	Presen	Range	IE type	Semantics a n d r e f e r e	description

				nce
Event ID	M			
>>Frequency	M			
>>BSIC	M			

Condition	Explanation
GSM	This information element is only sent when the system being measured is a GSM system

10.2.7.10 Inter-system measurement quantity

The quantity the UE shall measure in case of inter-system measurement. It also includes the filtering of the measurements.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
CHOICE mode				
>FDD				

>>Measurement quantity for UTRAN quality estimate	M		Enumerated (CPICH Ec/I0, CPICH RSCP)	
>TDD				
>>Measurement quantity for UTRAN quality estimate	M		Enumerated (Primar	

				y C C P C H R S C P)
~~CHOICE *system*~~				
~~>GSM~~				
~~>>Measurement quantity~~	~~M~~		~~Enumer~~	a t e d (G S M C a r r i e r R S S I , P a t

				~~hl oss)~~
~~>>BSIC verification required~~	~~M~~		~~Boolean~~	~~Note 1~~
~~>IS2000~~				
~~>>TADD E_c/I_0~~	~~M~~		~~Integer(0..63)~~	~~Admission criteria for neighbours, see section 2.6.6.2.6 of TIA/EIA/IS-2000.5~~
~~>>TCOMP E_c/I_0~~	~~M~~		~~Integer(0..15)~~	~~Admission criteria for neighbours, see section 2.6.6.2.5.2 of TIA/EIA/IS-2000.5~~
~~>>SOFT SLOPE~~	~~O~~		~~Integer(0..63)~~	~~Admission criteria for neighbours, see section 2.6.6.2.3 and 2.6.6.2.5.2 of TIA/EIA/IS-2000.5~~
~~>>ADD_INTERCEP~~	~~O~~		~~Integer(0~~	~~Admission criteria for~~

T			. . 6 3)	neighbours, see section 2.6.6.2.5.2 of TIA/EIA/IS-2000.5

NOTE 1 The possibility to use this IE is dependant on comments from SMG2.

Also, this IE must be set to "true" if IE "Observed time difference to GSM cell" in IE "Inter-system measurement reporting quantity "is set to "true".

CHOICE *system*	Condition under which the given *system* is chosen
GSM	Used when the system being measured is a GSM system

10.2.7.11 Inter-system measurement reporting criteria

The triggering of the event-triggered reporting for an inter-system measurement. All events concerning inter-system 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/Gr	Presen	Range	IE type	Semantics descriptio a

oup name				n d r e f e r e n c e
Parameters required for each event		0 to		
>Event ID	M		Enumer	a t e d (3 a , 3 b ,

				3c, 3d)
>Treshold own system	C –			
>W	C –			In event 3a
>Threshold other system	C –			In event 3a, 3b, 3c
>Hysteresis	M			
>Time to trigger	M			Indicates the period of time between the timing of event detection

				and the timing of sending Measurement Report.
>Amount of reporting	M			
>Reporting interval	M			Indicates the interval of periodical reporting when such reporting is triggered by an event. A zero value indicates that event triggered periodical reporting shall not be applied.

Condition	Explanation
Clause 0	This parameter is only sent in event 3a
Clause 1	This parameter is only sent in event 3a, 3b and 3c

10.2.7.12 Inter-system reporting quantity

Information Element/Gr	Presen	Range	IE type	Semantics descriptio a

oup name			nd reference	n
UTRAN estimated quality	M		Boolean	
CHOICE *system*				
>GSM				
>>Pathloss	M		Boolean	
>>Observed time difference to GSM cell	M		Boolean	
>>GSM Carrier RSSI	M		Boolean	
>>BSIC	M		Boolean	

CHOICE *system*	Condition under which the given *system* is chosen
GSM	Used when the system being measured is a GSM system

10.2.7.13 Intra-frequency cell info

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

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Cell individual offset	O		Enumerated (-10, -9, -5, -1, 10)	Granularity 0.5 dB
Reference time difference to cell	O			
CHOICE *mode*				
>FDD				
>>Primary CPICH info	M			

>>Primary CPICH Tx power	O			
>>SFN Measurement Indicator	M		Boolean	
>>STTD Indicator	M		Boolean	
>TDD				
>>Primary CCPCH info	M			
>>Primary CCPCH Tx power	O			
>>DL CCTrCH info	O			List of TFCS ID's to measure
>>DL Timeslot info	O			List of timeslots to measure
Cell Selection and Reselection parameters	O			
>Qmin	O		Integer (-20..0)	Ec/N0 or SIR, [dB]. Note 1. Default = same as in serving cell
>Maximum allowed UL TX power	O			[dBm] UE_TXPWR_MAX_RACH in 25.304. Default = same as in serving

				cell
>$Qoffset_{s,n}$ [dB]	O		Integer(-20, -19, ..., 19, 20)	[dB] Default = 0 dB. Used in Alternative 1 in TS 25.304

10.2.7.14 Intra-frequency measurement event results

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

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Event ID	M			
CHOICE *mode*				
>FDD				

>>Primary CPICH info	O			
>TDD				
>>Primary CCPCH info	O			

10.2.7.15 Intra-frequency measurement quantity

The quantity the UE shall measure in case of intra-frequency measurement. It also includes the filtering of the measurements.

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				

>>Measurement quantity	M		Enumerated (CPICH Ec/N0, CPICH RSCP, CPICH Ec/Ior, Pathloss)	Pathloss=Primary CPICH Tx power-CPICH RSCP Note 1

~~>TDD~~				

>>Measurement quantity	M		Enumerated (Primary CCPCH RSCP, Pathloss, Timeslot ISCP)	Pathloss=Primary CCPCH Tx power-Primary CCPCH RSCP

~~NOTE: If CPICH SIR can be used has not been concluded in WG4~~

~~10.2.7.16 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: DL CCTrCH below a certain threshold (TDD only)~~

~~Event 1i: Timeslot ISCP below a certain threshold (TDD only)~~

~~Event 1j: Timeslot ISCP above a certain threshold (TDD only)~~

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
Parameters required for each event		0 to		
>Event ID	M		Enumer	ated (1a, 1b,

Information Element/Group name	Presen	Range	IE type	Semantics description
				1c, 1d, 1e, 1f, 1g, 1h, 1i, 1j)
>Triggering condition	C -		enumer	Indicates which cells that can trigger the event

Information Element/Group name	Presen	Range	IE type	Semantics and reference (Active set cells, Monitored s	description
				(	

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference et cell ls, Active set cells and

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference
				monitored set cells)
>Reporting Range	C -		Enumer	In event 1a,1b. Granularity 0.5 dB
				ated (0,

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				0..5..14..5)
>Cells forbidden to affect Reporting range	C –	0 to		In event 1a,1b

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
>>CHOICE *mode*				
>>>FDD				
>>>>Primary CPICH info	M			
>>>TDD				
>>>>Primary CCPCH info	M			
>W	C –		Enumer	Granularity 0.1 ated (0, 0.1, ..., 2

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				.0)
>Hysteresis	C & O		Enumerated (0, 0.5, ..., 7.5)	In event 1a, 1b, 1c,1d, 1g, 1h, 1i or 1j. Granularity 0.5 dB
>Reporting deactivation >threshold	C -		Enumerated (0	In event 1a Indicates the maximum number of cells allowed in

Information Element/Group name	Presence	Range	IE type	Semantics description
				and ref ere nce ... 7) the active set in order for event 1a to occur. Value 0 indicates "not applicable".
>Replacement activation threshold	C -		Enumerated (0 ... 7)	In event 1c Indicates the minimum number of cells allowed in the active set in order for event 1c to occur. Value 0 indicates "not applicable".

Information Element/Group name	Presence	Range	IE type	Semantics description
>Time to trigger	M		Enumerated (0, 10, 20, 40, 60, 80, 1	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				0, 120, 160, 200, 240, 320, 6

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				40, 128, 256, 500)
>Amount of reporting	M		Enumer	Measurement is "released" after the indicated amount of reporting from the UE itself. ated (1,

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference
				2, 4, 8, 16, 32, 64, Infinity

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				)
>Reporting interval	M		Enumerated (0, 0.25, 0.5, 1, 2, 4)	Indicates the interval of periodical reporting when such reporting is triggered by an event. A zero value indicates that event triggered periodical reporting shall not be applied. Interval in seconds

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				8, 16)

Condition	Explanation
Clause 0	This parameter is only sent in event 1a,1b, 1e, 1f
Clause 1	This parameter is only sent in event 1a,1b
Clause 2	This parameter is only sent in event 1a,1b, 1c,1d, 1g, 1h, 1i, 1j
Clause 3	This parameter is only sent in event 1a
Clause 4	This parameter is only sent in event 1c

Range Bound	Explanation
MaxCellsForbidden	Maximum number of cells that can be forbidden to affect reporting range

NOTE 1: When best PCCPCH in active set changes, all active cells are reported.

10.2.7.17 Intra-frequency reporting quantity

Contains the reporting quantity information for an intra-frequency measurement.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
For active set cells				
>SFN-SFN observed time difference	M		Enumerated (No rep	

				ort, type 1, type 2)
~~>Cell Identity~~	~~M~~		~~Boolean~~	
~~CHOICE *mode*~~				
~~>>FDD~~				
~~>>>CPICH Ec/N0~~	~~M~~		~~Boolean~~	
~~>>>CPICH RSCP~~	~~M~~		~~Boolean~~	
~~>>>CPICH SIR~~	~~M~~		~~Boolean~~	~~Note 1~~
~~>>>Pathloss~~	~~M~~		~~Boolean~~	
~~>>>CFN-SFN observed time difference~~	~~M~~		~~Boolean~~	
~~>>TDD~~				
~~>>>DL CCTrCH SIR~~	~~M~~		~~Boolean~~	
~~Timeslot ISCP~~	~~M~~		~~Boolean~~	

~~Primary CCPCH RSCP~~	~~M~~		~~Boolean~~	
~~>>>Pathloss~~	~~M~~		~~Boolean~~	
~~For monitored set cells~~				
~~>SFN-SFN observed time difference~~	~~M~~		~~Enumerated (No report, type 1, type 2)~~	
~~>Cell Identity~~	~~M~~		~~Boolean~~	
~~>CHOICE *mode*~~				

>>FDD				
>>>CPICH Ec/N0	M		Boolean	
>>>CPICH RSCP	M		Boolean	
>>>CPICH SIR	M		Boolean	Note 1
>>>Pathloss	M		Boolean	
>>>CFN-SFN observed time difference	M		Boolean	
>>TDD				
>>>DL CCTrCH SIR	M		Boolean	
>>>Timeslot ISCP	M		Boolean	
>>>Primary CCPCH RSCP	M		Boolean	
>>>Pathloss	M		Boolean	

NOTE 1: If CPICH SIR can be used has not been concluded in WG4

10.2.7.18 Intra-frequency reporting quantity for RACH reporting

Contains the reporting quantity information for an intra-frequency measurement report, which is sent on the RACH.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

				nce
~~SFN-SFN observed time difference~~	~~M~~		~~Enumer~~	ated(No report, type 1, type 2)
~~CHOICE *mode*~~				
~~>FDD~~				
~~>>CHOICE quantity~~				
~~>>>CPICH Ec/N0~~			~~NULL~~	

>>>CPICH RSCP			NULL	
>>>CPICH SIR			NULL	Note 1
>>>Pathloss			NULL	
>TDD				
>>Timeslot ISCP				
>>Primary CCPCH RSCP				

NOTE 1: If CPICH SIR can be used has not been concluded in WG4

10.2.7.19 Maximum number of reported cells on RACH

Information Element/Group name	Presen	Range	IE type	Semantics description
Number of reported cells	M		Enumerated (nor	

				report current cell, current cell + best neig

				hbour, current cell+2 best neighbours, …, cur

				rent cell + 6 best neighbours)

10.2.7.20 Measured results

Contains the measured results of the quantity indicated optionally by Reporting Quantity in Measurement Control. "Measured results" can be used for both event trigger mode and periodical reporting mode.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Intra-frequency measurement results		0 to		
Cell Identity	O			
SFN-SFN observed time difference	O			
CHOICE *mode*				
>FDD				
>>Primary CPICH info	M			

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
>>CPICH Ec/N0	O		Enumerated(-20..0)	In dB
>>CPICH RSCP	O		Enumerated(-115...-40)	In dBm

Information Element/Group name	Presen	Range	IE type	Semantics description and reference)
				)
>>CPICH SIR	O		Enumer	In dBat Note 1ed(-10..20)
>>Pathloss	O		Enumer	In dBated(46..158

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				)
>>CFN-SFN observed time difference	O			
>TDD				
>>Primary CCPCH info	M			
>>Primary CCPCH RSCP	O			
>>DL CCTrCH SIR		0 to		SIR measurements for each DL CCTrCH

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
>>>Timeslot		0 to		All timeslots on which the CCTrCH is mapped on
>>>>ISCP	O			
>>>>RSCP	O			

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
>>DL Timeslot ISCP		0 to		ISCP measurements for each timeslot indicated by the UTRAN
>>>ISCP	O			
Inter-frequency measurem		0 to		

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
ent results				
>UTRA carrier	M			
>UTRA carrier RSSI	O		Enumerated(-95...-30)	In dBm
>Inter-frequency cell		0 to		

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
measurement results				
>>Cell Identity	O			
>>SFN-SFN observed time difference	O			
>>CHOICE *mode*				
>>>FDD				
>>>>Primary CPICH info	M			

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
>>>>CPICH Ec/N0	O		Enumerated(-20..0)	In dB
>>>>CPICH RSCP	O		Enumerated(-115...-40)	In dBm

Information Element/Group name	Presen	Range	IE type	Semantics and reference) description
				)
>>>>Pathloss	O		Enumer	In dB ated (46..158)
>>>>CFN-SFN observed time difference	O			
>>>TDD				
>>>>Primary CCPCH info	M			
>>>>Primary CCPCH	O			

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
RSCP				
Inter-system measurement results		0 to		
CHOICE *system*				
>GSM				
>>Frequency	M			
>>GSM carrier RSSI	O		Enumerated(0.	RXLEV GSM TS 05.08

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference.63)
>>Pathloss	O		Enumerated(46..158)	In dB
>>BSIC	O		Bitstring(6)	GSM TS 03.03
>>Observed time difference to GSM cell	O		Enumerated	In steps of 3060/(4096*13) ms

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference(0..4095*30600/(4096*13))
Traffic volume measurement results		0 to		

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
>RB Identity	M			
RLC buffers payload	O		Enumerated (0, 4, 8, 16, 32,	In bytes And Kbytes = N*1024 bytes

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				64, 128, 256, 512, 1024, 2K, 4

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				K, 8K, 16K, 32K, 64K, 128K, 256

Information Element/Group name	Presen	Range	IE type	Semantics description
				6K, 512K, 1024K)
>Average RLC buffer payload	O		Enumerated (0, 4, 8	In bytes And Kbytes = N*1024 bytes

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				, 16, 32, 64, 128, 256, 512, 1

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				0, 2K, 4K, 8K, 16K, 32K, 64K

Information Element/Group name	Presen	Range	IE type	Semantics description
				and reference, 128K, 256K, 512K, 1024K)
>Variance of RLC buffer payload	O		Enumerat	In bytes And Kbytes =

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
			ed(0, 4, 8, 16, 32, 64, 128, 2	N*1024 bytes

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
				56, 512, 1024, 2K, 4K, 8K, 16K

Information Element/Group name	Presen	Range	IE type	Semantics and reference) description
				)
Quality measurement results				
BLER measurement results		0 to		
>Transport channel identity	M			
>DL Transport Channel BLER	O		Enumer	dB%=- Log10(Transport channel BLER) ated (0Granularity 0.02 ,

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
			..5.10)	0.02
DL Physical Channel BER	O		Enumerated (0, 0.02, ..5.10)	dB%=-Log10(Physical channel BER) Granularity 0,02
SIR	O		Enumerated (-1	In dB

Information Element/Group name	Presence	Range	IE type	Semantics description and reference
				0..20)
UE Internal measurement results				
UE Position	O			
CHOICE *mode*				
>FDD				
>>UE Transmitted Power	O		Enumerated(-50..33	UE transmitted power In dBm

Information Element/Group name	Presen	Range	IE type	Semantics and reference description)
>TDD				
UE transmitted Power	O	0 to		UE transmitted power for each used timeslot (TDD)

Range Bound	Explanation
MaxCCTrCHcount	Maximum number of DL CCTrCH

	allocated to an UE
MaxTSperCCTrCHcount	Maximum number of TS on which a single DL CCTrCH is mapped on
maxTStoMEASUREcount	Maximum number of TS on which the UE has to measure
maxUsedUplTScount	Maximum number of TS used for UL transmissions
MaxIntraCells	Maximum number of Intra-frequency cells that can be included in a measurement report
MaxNumFreq	Maximum number of frequencies with intra-frequency cells that can be included in a measurement report
MaxInterCells	Maximum number of Inter-frequency cells for one frequency that can be included in a measurement report
MaxInterSys	Maximum number of Inter-system cells that can be included in a measurement report
MaxTraf	Maximum number of radio bearers with traffic volume measurements that can be included in a measurement report
MaxBLER	Maximum number of transport channels with BLER measurements that can be included in a measurement report

NOTE 1: If CPICH SIR can be used has not been concluded in WG4

10.2.7.21 Measurement Command

Information Element	Presen	Range	IE type	Semantics description
Measurement command	M		Enumerated (Setup, Modify, Release	

				)

10.2.7.22 Measurement Identity Number

A reference number that is used by the UTRAN at modification and release of the measurement, and by the UE in the measurement report.

10.2.7.23 Measurement reporting mode

Contains the type of Measurement Report transfer mode and the indication of periodical/event trigger.

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
Measurement Report Transfer Mode	M		enumerated (Acknowledged mode RLC, Unacknowledged mode RLC)	
Periodical Reporting / Event Trigger Reporting	M		enumerated (Periodical reporting,	

Mode			Event trigger)	

NOTE 1: The work in order to support the CPICH Rx SIR measurement is in progress in RAN WG4 and may impact the use of that measurement in this document

10.2.7.24 Measurement results on RACH

Information Element/group name	Presen	Range	IE type	Semantics description and reference
Measurement result for current cell				
CHOICE *mode*				
>FDD				
>>CHOICE measurement quantity				
>>>CPICH Ec/N0			Enumer	In dB ated (-

				20..0)
>>>CPICH RSCP			Enumerated(-115..-40)	In dBm
>>>CPICH SIR			Enumerated(-10..20)	In dB Note 1
>>>Pathloss			Enumerated(	In dB

				46..158)
>TDD				
>>Timeslot ISCP				
>>Primary CCPCH RSCP				
Measurement results for neighbouring cells		0 to 6		
>SFN-SFN observed time difference	O			
>CHOICE *mode*				
>>FDD				
>>>Primary CPICH info	M			
>>>CHOICE measurement quantity				
>>>>CPICH Ec/N0			Enumerated(-20..	In dB

				..0)
>>>>CPICH RSCP			Enumerated(-115.....-40)	In dBm
>>>>CPICH SIR			Enumerated(-10.....20)	In dB Note 1
>>>>Pathloss			Enumerated(46..	In dB

				.1 5 8)
>>TDD				
>>>Primary CCPCH info	M			
>>>Primary CCPCH RSCP				

NOTE 1: If CPICH SIR can be used has not been concluded in WG4

10.2.7.25 Measurement Type

Information Element	Presen	Range	IE type and refe ren ce	Semantics descri ption
Measurement Type	M		Enumerated(Intr a- freq uen cy, Inter- freq uen cy, Inter-system, Traffic vol um e, Quality,	

			UE internal)	

10.2.7.26 Measurement validity

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

~~Resume/release~~	~~M~~		~~Enumer~~ ated ('resume', 'release')	~~Indicates whether a given measurement identifier should be released after transitions to CELL_DCH and/or transitions from CELL_DCH state.~~

UE state	C – if		Enumer	Indicates the a t e d (' C E L L _ D C H ' , ' a l l s t a t e s e x c e p t C E L L _ D C H ' , ' a l l s t a t e s ' a r e u s e d f o r m e a s u r e m e n t t y p e ' t r a f f i c v o l u m e r e p o r t i n g ' . T h e v a l u e s ' a l l s t a t e s ' a n d ' a l l s t a t e s e x c e p t C E L L _ D C H ' , '	states, in which measurement reporting shall be conducted.

Condition	Explanation
Resume	If "Resume/Release" = Resume

10.2.7.27 Observed time difference to GSM cell

NOTE: Only the section is made.

10.2.7.28 Periodical reporting criteria

Contains the periodical reporting criteria information. It is necessary only in the periodical reporting mode.

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
Amount of reporting	O		Enumer	Measurement is "released" after the indicated amount of reporting from the UE itself (1, 2,

				4, 8, 16, 32, 64, Infinity)
~~Reporting interval~~	~~O~~		~~Enumerated~~	~~Indicates the interval of periodical report.~~ ~~Interval in seconds~~ (0, 0.25, 0.

				5, 1, 2, 3, 4, 6, 8, 12, 16, 20, 24, 28, 32,

				64)

10.2.7.29 Quality measurement event results (FFS)

NOTE: Only the section is made.

10.2.7.30 Quality measurement object (FFS)

NOTE: Only the section is made.

10.2.7.31 Quality measurement quantity (FFS)

NOTE: Only the section is made.

10.2.7.32 Quality measurement reporting criteria (FFS)

NOTE: Only the section is made.

10.2.7.33 Quality reporting quantity

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
DL Transport Channel BLER for each transport channel	M		Boolean	

DL Physical channel BER	M		Boolean	
SIR	M		Boolean	

10.2.7.34 Reference time difference to cell

The reference time difference to cell indicates the time difference between the primary CCPCH of the current cell and the primary CCPCH of a neighbouring cell. It is notified to UE by System Information or Measurement Control message.

In case of macro-diversity the reference is the primary CCPCH of one the cells used in the active set.

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
CHOICE *accuracy*				
>40 chips				
>>Reference time difference	M		Enumerated (0..4	

			(0..3840)	
>256 chips				
>>Reference time difference	M		Enumerated (0..2560..3840)	
>2560 chips				
>>Reference time difference	M		Enumerated (0..2	

			560..3840)

NOTE: Exactly how the reference cell is pointed out in this case in the messages is FFS.

10.2.7.35 SFN Measurement Indicator

Indicates whether the UE should read cell SFN of the target neighbour cell or not.

10.2.7.36 SFN-SFN observed time difference

Information Element/Group name	Presen	Range	IE type and reference	Semantics description
CHOICE *type*				
>Type 1			Enumerated(0..9830399)	Number of chip
>Type 2			Enumerated(-127 9, -1278.5..1280)	Number of chip Granularity of 0.5 chip

10.2.7.37 Traffic volume measurement event results

Contains the event result for a traffic volume measurement.

Information Element/Group name	Presen	Range	IE type	Semantics description
Transport Channel ID	M		Enumerated (1...64)	
Event type	O		Enumerated (Overflow	

				ow, Underflow)

10.2.7.38 Traffic volume measurement object

Contains the measurement object information for a traffic volume measurement.

Information Element/Group name	Presen	Range	IE type	Semantics description
Target Transport Channel ID	M		Enumer	ated (1..

				64)

10.2.7.39 Traffic volume measurement quantity

Contains the measurement quantity information for a traffic volume measurement.

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
Measurement quantity	M		Enumerated (RLC buffer payl	

				load, Average RLC buffer payload, Variance of

				RLC buffer payload)

10.2.7.40 Traffic volume measurement reporting criteria

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

Information Element/Group name	Presen	Range	IE type	Semantics and reference	description
Parameters sent for each transport		1 to			

channel				
>Transport Channel ID	M		Enumerated(1..64)	
>Upper Threshold	M		Enumerated(8, 16, 32, 64, 12	Threshold in bytes

				8, 256, 512, 1024, 1536, 2048, 3072, 4096, 6144, 8192)

>Lower Threshold	O		Enumerated(8,16,32,64,128,256,512,1024,1536,2048,3	Threshold in bytes

				0 7 2 , 4 0 9 6 , 6 1 4 4 , 8 1 9 2)
~~Time to trigger~~	~~M~~		~~Enumer~~	~~Indicates the period of time between the timing of event detection and the timing of sending Measurement Report.~~ ~~a~~ ~~t~~ ~~e~~ ~~d~~ ~~(~~ ~~0~~ ~~,~~ ~~1~~ ~~0~~ ~~,~~ ~~2Time in ms~~ ~~0~~ ~~,~~ ~~4~~ ~~0~~ ~~,~~ ~~6~~ ~~0~~ ~~,~~

				80, 100, 120, 160, 200, 240, 320, 640, 1280,

				2 5 6 0 , 5 0 0 0)
~~Pending time after trigger~~	~~M~~		~~Enumerated~~ (0.25, 0.5, 1, 2, 4, 8, 16)	~~Indicates the period of time during which it is forbidden to send any new measurement reports with the same measurement ID even if the triggering condition is fulfilled again. Time in seconds~~

Tx interruption after trigger	M		Enumerated (0.25, 0.5, 1, 2, 4, 8, 16)	Indicates whether or not the UE shall block DTCH transmissions on the RACH after a measurement report is triggered. Time in seconds
Amount of reporting	M		Enumerated (1, 2,	Measurement is "released" after the indicated amount of reporting from the UE itself.

				4, 8, 16, 32, 64, Infinity)
~~Reporting interval~~	~~M~~		~~Enumerated (0, 0.25, 0~~	~~Indicates the interval of periodical report during the event is in the detected state. Interval in seconds.~~

				5, 10, 20, 40, 80, 160)

Range Bound	Explanation
MaxTrCHcount	Maximum number of transport channels = 64

10.2.7.41 Traffic volume reporting quantity

Contains the reporting quantity information for a traffic volume measurement.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

				e
RLC buffer payload for each RB	M		Boolean	
Average RLC buffer payload for each RAB	M		Boolean	
Variance of RLC buffer payload for each RAB	M		Boolean	

10.2.7.42 UE internal measurement quantity

The quantity the UE shall measure in case of UE internal measurement.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Measurement quantity	M		Enumerated (UE T	

					Transmitted Power, UTRA Carrier RSSI)

10.2.7.43 UE internal measurement reporting criteria

The triggering of the event-triggered reporting for a UE internal measurement. All events concerning UE internal measurements are labelled 6x where x is a, b, c…. In TDD, the events 6a - 6d are measured and reported on timeslot basis.

Event 6a: The UE Transmitted Power becomes larger than an absolute threshold

Event 6b: The UE Transmitted Power becomes less than an absolute threshold

Event 6c: The UE Transmitted Power reaches its minimum value

Event 6d: The UE Transmitted Power reaches its maximum value

Event 6e: The UE RSSI reaches the UE's dynamic receiver range

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Parameters sent for each UE internal measurement event		1 to		
>Event ID	M		Enumera	

				ted(6a,6b,6c,6d,6e)
>Time-to-trigger	M		Enumerated(0,10,20,40,60,	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms

				80, 100, 120, 160, 200, 240, 320, 640, 1280,

				2560, 5000)
>UE Transmitted power Tx power threshold	C -		Enumerated (-50..33)	In event 6a, 6b. Power in dBm

Condition	Explanation
Clause 1	This parameter is only sent in event 6a,6b

10.2.7.44 UE Internal reporting quantity

Information Element/Group name	Presen	Range	IE type	Semantics description
				and ref

				reference
UE Transmitted Power	M		Boolean	
UE Position	M		Boolean	

10.2.8 Other Information elements

10.2.8.1 BCCH modification info

Indicates modification of the System Information on BCCH.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
MIB Value tag	M		Value tag	
BCCH Modification time	O		Integer (0, 2	All even SFN values are allowed.

				, 4 , . . 4 0 9 4)

10.2.8.2 Cell Value tag

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Cell Value tag	M		Enumer	at ed (1 .. 4)

10.2.8.3 Inter-system message

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	Presen	Range	IE type	Semantics and reference	description
System type	M		Enumerated (GSM, 1...15)		
Message(s)	M	1..<ma	Bitstring (1..	Formatted and coded according to specificati	

				5.1.12) on for the indicated system type. See Note 1

Range Bound	Explanation
MaxInterSysMessages(=4)	Maximum number of Inter System Messages to send

NOTE 1: For inter-system handovers to IS 2000 system, this field shall consist of the Universal Handoff Direction message, described in Section 3.7.3.3.2.36 of TIA/EIA IS-2000.5

10.2.8.4 MIB Value tag

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

				e
MIB Value tag	M		Enumerated (1..8)	

10.2.8.5 PLMN Value tag

Information Element/Group name	Presen	Range	IE type	Semantics description
PLMN Value tag	M		Enumerated (1..25	

				6)

10.2.8.6 Scheduling information

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
SIB type	M			
PLMN Value tag	C -			
Cell Value tag	C -			

Scheduling	O			
>SEG_COUNT	O		SEG_COUNT	
>SIB_REP	M		Enumerated (4, 8, 16, 32, 64, 128, 256, 512	Repetition period for the SIB in frames

				2, ..., 1024, 2048)
>SIB_POS	M		Enumerated (0, 2, 4, 6, ..., Rep-2)	Position of the first segment
>SIB_POS offset info	O			

>>SIB_OFF	M	Segco	Enumerated (2, 4, 6, ..., 32)	Offset of subsequent segments

Condition	Explanation
Blocktype	The presence of this IE depends on the value of the preceding SIB type. This IE is mandatory if the specification of the SIB of that SIB type includes as first IE the corresponding Value tag IE.

Option	Default value
SIB_POS offset info	If the SIB_POS offset info is not present, the receiver shall understand that all segments are consecutive, i.e., that the SIB_OFF would have

	been 0, 1, 2, …
SEG_COUNT	If not present, the number of segments is one.
Scheduling	If not present, the SIB is not sent in the area scope.

Range Bound	Explanation
Segcount	The value of the SEG_COUNT IE
Rep	The value of the SIB_REP IE

10.2.8.7 SEG COUNT

Information Element/Group name	Presen	Range	IE type	Semantics description and reference
SEG_COUNT	M		Integer (1..16)	Number of segments in the system information block

10.2.8.8 Segment index

Each system information segment has an individual segment index.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Segment index	M		Integer (0..15)	Segments of a system information block are numbered starting with 0 for the first part.

10.2.8.9 Segment type

Information Element/Group name	Presen	Range	IE type	Semantics and reference description

				ce
~~Segment type~~	~~M~~		~~Enumer~~	ated (First segment, Subsequent segment,

				Last segment, Complete)

10.2.8.10 SIB data

Contains the result of the IE 'SIB Content' after segmentation.

Information Element/Group name	Presen	Range	IE type	Semantics description and reference

SIB data	M		Bit string (1..MaxLength)	

Range Bound	Explanation
MaxLength	Maximum length of a BCH- or FACH transport block used for broadcast of system information.

10.2.8.11 SIB type

The SIB type identifies a specific system information block.

Information Element/Group name	Presen	Range	IE type	Semantics and descriptio n r

				~~reference~~
~~SIB type~~	~~M~~		~~Enumerated~~	

~~The list of values to encode is:~~

- ~~Master information block,~~
- ~~System Information Type 1,~~
- ~~System Information Type 2,~~
- ~~System Information Type 3,~~
- ~~System Information Type 4,~~
- ~~System Information Type 5,~~
- ~~System Information Type 6,~~
- ~~System Information Type 7~~
- ~~System Information Type 8,~~
- ~~System Information Type 9,~~
- ~~System Information Type 10,~~
- ~~System Information Type 11,~~
- ~~System Information Type 12~~

~~10.2.8.12 SI Padding~~

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
Padding	M		Bit string (1..MaxLength)	

All the bits of the 'SI Padding' IE shall be set to a fixed value in emission. However, it is not an error for the receiver to receive any other value for those bits.

Range Bound	Explanation

MaxLength	Maximum length of a BCH- or FACH transport block used for broadcast of system information.

10.2.9 ANSI-41 Information elements

10.2.9.1 ANSI-41 Global Service Redirection information

This Information Element contains ANSI-41 Global Service Redirection information.

Information Element/Group name	Presen	Range	IE type	Semantics description
ANSI-41 Global Service Redirection information	M		Bit string (size (1	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

				..MaxLength))

10.2.9.2 ANSI-41 NAS system information

This Information Element contains ANSI-41 system information.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
NAS (ANSI-41) system information	M		Bit string (si	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

				size (1..MaxLength))

10.2.9.3 ANSI-41 Private Neighbor List information

This Information Element contains ANSI-41 Private Neighbor List information.

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
ANSI-41 Private Neighbor List information	M		Bit string	Formatted and coded according to the 3GPP2

				ng (size (1..MaxLength))	document "G3G CDMA DS on ANSI-41"

10.2.9.4 ANSI-41 RAND information

This Information Element contains ANSI-41 RAND information.

Information Element/Group name	Presen	Range	IE type	and reference	Semantics description

ANSI-41 RAND information	M		Bit	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41" (size (1..MaxLength))

10.2.9.5 ANSI-41 User Zone Identification information

This Information Element contains ANSI-41 User Zone Identification information.

Information Element/Group name	Presen	Range	IE type	Semantics description and ref

				reference
ANSI-41 User Zone Identification information	M		Bit string (size (1..MaxLength))	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.2.9.6 MIN_P_REV

This Information Element contains minimum protocol revision level.

Information Element/Gr	Presen	Range	IE type	Semantics a descriptio n

oup name				d r e f e r e n c e n
MIN_P_REV	M			Minimum protocol revision level

10.2.9.7 NID

This Information Element contains Network identification.

Information Element/Group name	Presen	Range	IE type	Semantics and d r e f e r e n c e description
NID	M			Network identification

10.2.9.8 P_REV

This Information Element contains protocol revision level

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
P_REV	M			Protocol revision level

10.2.9.9 SID

This Information Element contains System identification

Information Element/Group name	Presen	Range	IE type	Semantics and reference description
SID	M			System identification

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Turin, Italy, Feb 28 – Mar 3, 2000

Document R2-000633
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	CR	273	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #7	For approval	X	strategic		(for SMG Use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*

(U)SIM		ME	X	UTRAN / Radio	X	Core Network	

Source: TSG-RAN WG2 **Date:** 2000-03-10

Subject: ASN.1 description

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change:

This CR proposes the addition of the ASN.1 definitions for RRC messages and information elements to the RRC specification.

Comments have been used to indicate unfinished items, and a special kind of comment (--TABULAR:) is used to highlight some differences between the tabular notation and the ASN.1 definitions. There may at this phase be cases where these comments have not yet been inserted.

Note that revision control has not been used in clauses 11.1 – 11.4 and 12.1 – 12.2, since these clauses and their contents are entirely new. There are some editorial changes in the first paragraphs of clauses 11 and 12.

Clauses affected: 11, 12

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

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

This chapter contains definitions for RRC PDUs and IEs using a subset of ASN.1 as specified in ~~12.01~~TR 25.921. PDU and IE definitions are grouped into separate ASN.1 modules.

NOTE: The proposal is to keep both chapter 10 and 11 (at least until all messages and information elements are fully discussed and agreed by 3GPP RAN WG2). Chapter 10 is intended to give an abstract description (in English) of the messages and information elements whereas chapter 11 should contain the exact normative definitions with all necessary details.

11.1 General message structure

```
Class-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

     ActiveSetUpdate,
     ActiveSetUpdateComplete,
     ActiveSetUpdateFailure,
     CellUpdate,
     CellUpdateConfirm,
     DownlinkDirectTransfer,
     DownlinkOuterLoopControl,
     HandoverToUTRANCommand,
     HandoverToUTRANComplete,
     InitialDirectTransfer,
     InterSystemHandoverCommand,
     InterSystemHandoverFailure,
     MeasurementControl,
     MeasurementControlFailure,
     MeasurementReport,
     PagingType1,
     PagingType2,
     PhysicalChannelReconfiguration,
     PhysicalChannelReconfigurationComplete,
     PhysicalChannelReconfigurationFailure,
     PhysicalSharedChannelAllocation,
     PUSCHCapacityRequest,
     RadioBearerReconfiguration,
     RadioBearerReconfigurationComplete,
     RadioBearerReconfigurationFailure,
     RadioBearerRelease,
     RadioBearerReleaseComplete,
     RadioBearerReleaseFailure,
     RadioBearerSetup,
     RadioBearerSetupComplete,
     RadioBearerSetupFailure,
     RNTIReallocation,
     RNTIReallocationComplete,
     RNTIReallocationFailure,
     RRCConnectionReEstablishment,
     RRCConnectionReEstablishment-CCCH,
     RRCConnectionReEstablishmentComplete,
     RRCConnectionReEstablishmentRequest,
     RRCConnectionReject,
     RRCConnectionRelease,
     RRCConnectionReleaseComplete,
     RRCConnectionRequest,
     RRCConnectionSetup,
     RRCConnectionSetupComplete,
     RRCStatus,
```

```
    SecurityModeCommand,
    SecurityModeComplete,
    SecurityModeFailure,
    SignallingConnectionRelease,
    SystemInformation-BCH,
    SystemInformation-FACH,
    SystemInformationChangeIndication,
    TransportChannelReconfiguration,
    TransportChannelReconfigurationComplete,
    TransportChannelReconfigurationFailure,
    TransportFormatCombinationControl,
    TransportFormatCombinationControlFailure,
    UECapabilityEnquiry,
    UECapabilityInformation,
    UECapabilityInformationConfirm,
    UplinkDirectTransfer,
    UplinkPhysicalChannelControl,
    URAUpdate,
    URAUpdateConfirm,
    URAUpdateConfirm-CCCH
FROM PDU-definitions

    IntegrityCheckInfo
FROM UserEquipment-IEs;

--**************************************************************
--
-- Downlink DCCH messages
--
--**************************************************************

DL-DCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 DL-DCCH-MessageType
}

DL-DCCH-MessageType ::= CHOICE {
    activeSetUpdate                     ActiveSetUpdate,
    cellUpdateConfirm                   CellUpdateConfirm,
    downlinkDirectTransfer              DownlinkDirectTransfer,
    downlinkOuterLoopControl            DownlinkOuterLoopControl,
    interSystemHandoverCommand          InterSystemHandoverCommand,
    measurementControl                  MeasurementControl,
    pagingType2                         PagingType2,
    physicalChannelReconfiguration      PhysicalChannelReconfiguration,
    radioBearerReconfiguration          RadioBearerReconfiguration,
    radioBearerRelease                  RadioBearerRelease,
    radioBearerSetup                    RadioBearerSetup,
    rntiReallocation                    RNTIReallocation,
    rrcConnectionReEstablishment        RRCConnectionReEstablishment,
    rrcConnectionRelease                RRCConnectionRelease,
    securityModeCommand                 SecurityModeCommand,
    signallingConnectionRelease         SignallingConnectionRelease,
    transportChannelReconfiguration     TransportChannelReconfiguration,
    transportFormatCombinationControl   TransportFormatCombinationControl,
    ueCapabilityEnquiry                 UECapabilityEnquiry,
    ueCapabilityInformationConfirm      UECapabilityInformationConfirm,
    uplinkPhysicalChannelControl        UplinkPhysicalChannelControl,
    uraUpdateConfirm                    URAUpdateConfirm,
    extension                           NULL
}

--**************************************************************
--
-- Uplink DCCH messages
--
--**************************************************************

UL-DCCH-Message ::= SEQUENCE {
```

```
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 UL-DCCH-MessageType
}

UL-DCCH-MessageType ::= CHOICE {
    activeSetUpdateComplete              ActiveSetUpdateComplete,
    activeSetUpdateFailure               ActiveSetUpdateFailure,
    handoverToUTRANComplete              HandoverToUTRANComplete,
    initialDirectTransfer                InitialDirectTransfer,
    interSystemHandoverFailure           InterSystemHandoverFailure,
    measurementReport                    MeasurementReport,
    physicalChannelReconfigurationComplete
                                         PhysicalChannelReconfigurationComplete,
    physicalChannelReconfigurationFailure
                                         PhysicalChannelReconfigurationFailure,
    radioBearerReconfigurationComplete   RadioBearerReconfigurationComplete,
    radioBearerReconfigurationFailure    RadioBearerReconfigurationFailure,
    radioBearerReleaseComplete           RadioBearerReleaseComplete,
    radioBearerReleaseFailure            RadioBearerReleaseFailure,
    radioBearerSetupComplete             RadioBearerSetupComplete,
    radioBearerSetupFailure              RadioBearerSetupFailure,
    rntiReallocationComplete             RNTIReallocationComplete,
    rntiReallocationFailure              RNTIReallocationFailure,
    rrcConnectionReEstablishmentComplete RRCConnectionReEstablishmentComplete,
    rrcConnectionReleaseComplete         RRCConnectionReleaseComplete,
    rrcConnectionSetupComplete           RRCConnectionSetupComplete,
    rrcStatus                            RRCStatus,
    securityModeComplete                 SecurityModeComplete,
    securityModeFailure                  SecurityModeFailure,
    transportChannelReconfigurationComplete
                                         TransportChannelReconfigurationComplete,
    transportChannelReconfigurationFailure
                                         TransportChannelReconfigurationFailure,
    transportFormatCombinationControlFailure
                                         TransportFormatCombinationControlFailure,
    ueCapabilityInformation              UECapabilityInformation,
    uplinkDirectTransfer                 UplinkDirectTransfer,
    extension                            NULL
}

--************************************************************
--
-- Downlink CCCH messages
--
--************************************************************

DL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 DL-CCCH-MessageType
}

DL-CCCH-MessageType ::= CHOICE {
    rrcConnectionReEstablishment         RRCConnectionReEstablishment-CCCH,
    rrcConnectionReject                  RRCConnectionReject,
    rrcConnectionSetup                   RRCConnectionSetup,
    uraUpdateConfirm                     URAUpdateConfirm-CCCH,
    extension                            NULL
}

--************************************************************
--
-- Uplink CCCH messages
--
--************************************************************

UL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 UL-CCCH-MessageType
}
```

```
UL-CCCH-MessageType ::= CHOICE {
     cellUpdate                                CellUpdate,
     rrcConnectionReEstablishmentRequest       RRCConnectionReEstablishmentRequest,
     rrcConnectionRequest                      RRCConnectionRequest,
     uraUpdate                                 URAUpdate,
     extension                                 NULL
}

--********************************************************************
--
-- PCCH messages
--
--********************************************************************

PCCH-Message ::= SEQUENCE {
     message                 PCCH-MessageType
}

PCCH-MessageType ::= CHOICE {
     pagingType1                               PagingType1,
     extension                                 NULL
}

--********************************************************************
--
-- Downlink SHCCH messages
--
--********************************************************************

DL-SHCCH-Message ::= SEQUENCE {
     integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
     message                 DL-SHCCH-MessageType
}

DL-SHCCH-MessageType ::= CHOICE {
     physicalSharedChannelAllocation       PhysicalSharedChannelAllocation,
     extension                             NULL
}

--********************************************************************
--
-- Uplink SHCCH messages
--
--********************************************************************

UL-SHCCH-Message ::= SEQUENCE {
     integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
     message                 UL-SHCCH-MessageType
}

UL-SHCCH-MessageType ::= CHOICE {
     puschCapacityRequest                  PUSCHCapacityRequest,
     extension                             NULL
}

--********************************************************************
--
-- Handover to UTRAN command
--
--********************************************************************

HO-ToUTRAN-CommandMessage ::= SEQUENCE {
     message                 HandoverToUTRANCommand
}

--********************************************************************
--
-- BCCH messages sent on FACH
```

```
--
--**************************************************************

BCCH-FACH-Message ::= SEQUENCE {
     message                BCCH-FACH-MessageType
}

BCCH-FACH-MessageType ::= CHOICE {
     systemInformation                      SystemInformation-FACH,
     systemInformationChangeIndication      SystemInformationChangeIndication,
     extension                              NULL
}

--**************************************************************
--
-- BCCH messages sent on BCH
--
--**************************************************************

BCCH-BCH-Message ::= SEQUENCE {
     message                SystemInformation-BCH
}

END
```

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

     CN-DomainIdentity,
     CN-InformationInfo,
     FlowIdentifier,
     NAS-Message,
     PagingRecordTypeID,
     ServiceDescriptor,
     SignallingFlowInfoList
FROM CoreNetwork-IEs

     URA-Identity
FROM UTRANMobility-IEs

     ActivationTime,
     C-RNTI,
     CapabilityUpdateRequirement,
     CellUpdateCause,
     CipheringAlgorithm,
     CipheringModeInfo,
     DRX-CycleLengthCoefficient,
     DRX-Indicator,
     EstablishmentCause,
```

```
    FailureCauseWithProtErr,
    HyperFrameNumber,
    InitialUE-Capability,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    PagingCause,
    PagingRecordList,
    ProtocolErrorIndicator,
    ProtocolErrorIndicatorWithInfo,
    Re-EstablishmentTimer,
    RedirectionInfo,
    RejectionCause,
    ReleaseCause,
    RLC-ReconfigurationIndicator,
    RRC-MessageTX-Count,
    U-RNTI,
    U-RNTI-Short,
    UE-RadioAccessCapability,
    URA-UpdateCause,
    WaitTime
FROM UserEquipment-IEs

    PredefinedConfigIdentity,
    RAB-Info,
    RAB-InformationSetupList,
    RB-ActivationTimeInfo,
    RB-ActivationTimeInfoList,
    RB-InformationAffectedList,
    RB-InformationReconfigList,
    RB-InformationReleaseList,
    RB-InformationSetupList,
    RB-WithPDCP-InfoList,
    SRB-InformationSetupList,
    SRB-InformationSetupList2
FROM RadioBearer-IEs

    CPCH-SetID,
    DL-AddReconfTransChInfo2List,
    DL-AddReconfTransChInfoList,
    DL-CommonTransChInfo,
    DL-DeletedTransChInfoList,
    DRAC-StaticInformationList,
    TFC-Subset,
    UL-AddReconfTransChInfoList,
    UL-CommonTransChInfo,
    UL-DeletedTransChInfoList
FROM TransportChannel-IEs

    AllocationPeriodInfo,
    CCTrCH-PowerControlInfo,
    ConstantValue,
    CPCH-SetInfo,
    DL-CommonInformation,
    DL-InfoPerRL-List,
    DL-InformationPerRL,
    DL-InformationPerRL-List,
    DL-DPCH-InfoCommon,
    DL-DPCH-PowerControlInfo,
    DL-OuterLoopControl,
    DL-PDSCH-Information,
    FrequencyInfo,
    IndividualTS-InterferenceList,
    MaxAllowedUL-TX-Power,
    PDSCH-Info,
    PRACH-RACH-Info,
    PrimaryCCPCH-TX-Power,
    PUSCH-Info,
    RL-AdditionInformationList,
```

```
     RL-RemovalInformationList,
     UL-DPCH-InfoShort,
     SSDT-Information,
     TFC-ControlDuration,
     TimeslotList,
     TX-DiversityMode,
     UL-ChannelRequirement,
     UL-DPCH-Info,
     UL-DPCH-InfoHO,
     UL-Interference,
     UL-TimingAdvance
FROM PhysicalChannel-IEs

     AdditionalMeasurementID-List,
     EventResults,
     MeasuredResults,
     MeasuredResultsList,
     MeasuredResultsOnRACH,
     MeasurementCommand,
     MeasurementIdentityNumber,
     MeasurementReportingMode,
     PrimaryCCPCH-RSCP,
     TimeslotListWithISCP,
     TrafficVolumeMeasuredResultsList
FROM Measurement-IEs

     BCCH-ModificationInfo,
     InterSystemHO-Failure,
     InterSystemMessage,
     ProtocolErrorInformation,
     SegCount,
     SegmentIndex,
     SFN-Prime,
     SIB-Content,
     SIB-Data,
     SIB-Type
FROM Other-IEs;

-- **************************************************
--
-- ACTIVE SET UPDATE (FDD only)
--
-- **************************************************

ActiveSetUpdate ::= SEQUENCE {
     -- User equipment IEs
          integrityProtectionModeInfo  IntegrityProtectionModeInfo      OPTIONAL,
          cipheringModeInfo            CipheringModeInfo                OPTIONAL,
          activationTime               ActivationTime                   OPTIONAL,
          newU-RNTI                    U-RNTI                           OPTIONAL,
     -- Core network IEs
          cn-InformationInfo           CN-InformationInfo               OPTIONAL,
     -- Radio bearer IEs
          rb-WithPDCP-InfoList         RB-WithPDCP-InfoList             OPTIONAL,
     -- Physical channel IEs
          maxAllowedUL-TX-Power        MaxAllowedUL-TX-Power            OPTIONAL,
          rl-AdditionInformationList   RL-AdditionInformationList       OPTIONAL,
          rl-RemovalInformationList    RL-RemovalInformationList        OPTIONAL,
          tx-DiversityMode             TX-DiversityMode                 OPTIONAL,
          ssdt-Information             SSDT-Information                 OPTIONAL,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- ACTIVE SET UPDATE COMPLETE (FDD only)
--
-- **************************************************
```

```
ActiveSetUpdateComplete ::= SEQUENCE {
     -- User equipment IEs
          ul-IntegProtActivationInfo   IntegrityProtActivationInfo      OPTIONAL,
     -- Radio bearer IEs
          rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfo            OPTIONAL,
          rb-WithPDCP-InfoList         RB-WithPDCP-InfoList             OPTIONAL,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- ************************************************
--
-- ACTIVE SET UPDATE FAILURE (FDD only)
--
-- ************************************************

ActiveSetUpdateFailure ::= SEQUENCE {
     -- User equipment IEs
          failureCause                 FailureCauseWithProtErr,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

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

CellUpdate ::= SEQUENCE {
     -- User equipment IEs
          u-RNTI                       U-RNTI,
          am-RLC-ErrorIndication       BOOLEAN,
          cellUpdateCause              CellUpdateCause,
          protocolErrorIndicator       ProtocolErrorIndicatorWithInfo,
          -- TABULAR: Protocol error information is nested in
          -- ProtocolErrorIndicatorWithInfo.
     -- Measurement IEs
          measuredResultsOnRACH        MeasuredResultsOnRACH            OPTIONAL,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- ************************************************
--
-- CELL UPDATE CONFIRM
--
-- ************************************************

CellUpdateConfirm ::= SEQUENCE {
     -- User equipment IEs
          integrityProtectionModeInfo  IntegrityProtectionModeInfo      OPTIONAL,
          cipheringModeInfo            CipheringModeInfo                OPTIONAL,
          new-U-RNTI                   U-RNTI                           OPTIONAL,
          new-C-RNTI                   C-RNTI                           OPTIONAL,
          drx-Indicator                DRX-Indicator,
          utran-DRX-CycleLengthCoeff   DRX-CycleLengthCoefficient       OPTIONAL,
          rlc-ReconfIndicatorC-Plane   RLC-ReconfigurationIndicator,
          rlc-ReconfIndicatorU-Plane   RLC-ReconfigurationIndicator,
      -- CN information elements
          cn-InformationInfo           CN-InformationInfo               OPTIONAL,
     -- UTRAN mobility IEs
          ura-Identity                 URA-Identity                     OPTIONAL,
     -- Radio bearer IEs
          rb-WithPDCP-InfoList         RB-WithPDCP-InfoList             OPTIONAL,
     -- Physical channel IEs
          maxAllowedUL-TX-Power        MaxAllowedUL-TX-Power            OPTIONAL,
          prach-RACH-Info              PRACH-RACH-Info                  OPTIONAL,
```

```
          dl-InformationPerRL          DL-InformationPerRL              OPTIONAL,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- DOWNLINK DIRECT TRANSFER
--
-- **************************************************

DownlinkDirectTransfer ::= SEQUENCE {
     -- Core network IEs
          cn-DomainIdentity            CN-DomainIdentity,
          nas-Message                  NAS-Message,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- DOWNLINK OUTER LOOP CONTROL
--
-- **************************************************

DownlinkOuterLoopControl ::= SEQUENCE {
     -- Physical channel IEs
          dl-OuterLoopControl          DL-OuterLoopControl,
          dl-DPCH-PowerControlInfo     DL-DPCH-PowerControlInfo         OPTIONAL,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- HANDOVER TO UTRAN COMMAND
--
-- **************************************************

HandoverToUTRANCommand ::= SEQUENCE {
     -- User equipment IEs
          new-U-RNTI                   U-RNTI-Short,
          activationTime               ActivationTime                   OPTIONAL,
          cipheringAlgorithm           CipheringAlgorithm               OPTIONAL,
     -- Radio bearer IEs
          rab-Info                     RAB-Info,
     -- Specification mode information
          specificationMode            CHOICE {
               complete                SEQUENCE {
                    srb-InformationSetupList     SRB-InformationSetupList,
                    rb-InformationSetupList      RB-InformationSetupList,
                    ul-CommonTransChInfo         UL-CommonTransChInfo,
                    ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList,
                    dl-CommonTransChInfo         DL-CommonTransChInfo,
                    dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList,
                    ul-DPCH-Info                 UL-DPCH-InfoHO,
                    dl-CommonInformation         DL-CommonInformation,
                    dl-PDSCH-Information         DL-PDSCH-Information    OPTIONAL,
                    modeSpecificInfo             CHOICE {
                         fdd                     SEQUENCE {
                              cpch-SetInfo            CPCH-SetInfo       OPTIONAL
                         },
                         tdd                     NULL
                    },
                    dl-InformationPerRL-List     DL-InformationPerRL-List
               },
               preconfiguration            SEQUENCE {
                    predefinedConfigIdentity     PredefinedConfigIdentity,
                    ul-DPCH-Info                 UL-DPCH-InfoShort,
```

```
                    dl-DPCH-InfoCommon          DL-DPCH-InfoCommon,
                    dl-InfoPerRL-List           DL-InfoPerRL-List
               }
          },
     -- Physical channel IEs
          frequencyInfo               FrequencyInfo,
          maxAllowedUL-TX-Power       MaxAllowedUL-TX-Power,
          modeSpecificPhysChInfo      CHOICE {
               fdd                         NULL,
               tdd                         SEQUENCE {
                    primaryCCPCH-TX-Power       PrimaryCCPCH-TX-Power,
                    constantValue               ConstantValue,
                    ul-Interference             UL-Interference,
                    cellParametersID            INTEGER (0..127)
               }
          },
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                         OPTIONAL
}

-- **************************************************
--
-- HANDOVER TO UTRAN COMPLETE
--
-- **************************************************

HandoverToUTRANComplete ::= SEQUENCE {
     -- User equipment IEs
          integrityProtectionHFN      HyperFrameNumber,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                         OPTIONAL
}

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

InitialDirectTransfer ::= SEQUENCE {
     -- Core network IEs
          serviceDescriptor           ServiceDescriptor,
          flowIdentifier              FlowIdentifier,
          cn-DomainIdentity           CN-DomainIdentity,
          nas-Message                 NAS-Message,
     -- Measurement IEs
          measuredResultsOnRACH       MeasuredResultsOnRACH           OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                         OPTIONAL
}

-- **************************************************
--
-- INTER-SYSTEM HANDOVER COMMAND
--
-- **************************************************

InterSystemHandoverCommand ::= SEQUENCE {
     -- User equipment IEs
          activationTime              ActivationTime                  OPTIONAL,
     -- Radio bearer IEs
          remainingRAB-Info           RAB-Info                        OPTIONAL,
     -- Other IEs
          interSystemMessage          InterSystemMessage,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                         OPTIONAL
}

-- **************************************************
```

```
--
-- INTER-SYSTEM HANDOVER FAILURE
--
-- ************************************************

InterSystemHandoverFailure ::= SEQUENCE {
     -- Other IEs
          interSystemHO-Failure       InterSystemHO-Failure            OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- ************************************************
--
-- MEASUREMENT CONTROL
--
-- ************************************************

MeasurementControl ::= SEQUENCE {
     -- Measurement IEs
          measurementIdentityNumber   MeasurementIdentityNumber,
          measurementCommand          MeasurementCommand,
          -- TABULAR: The measurement type is included in MeasurementCommand.
          measurementReportingMode    MeasurementReportingMode         OPTIONAL,
          additionalMeasurementList   AdditionalMeasurementID-List     OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- ************************************************
--
-- MEASUREMENT CONTROL FAILURE
--
-- ************************************************

MeasurementControlFailure ::= SEQUENCE {
     -- User equipment IEs
          failureCause                FailureCauseWithProtErr,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- ************************************************
--
-- MEASUREMENT REPORT
--
-- ************************************************

MeasurementReport ::= SEQUENCE {
     -- Measurement IEs
          measurementIdentityNumber   MeasurementIdentityNumber,
          measuredResults             MeasuredResults                  OPTIONAL,
          additionalMeasuredResults   MeasuredResultsList              OPTIONAL,
          eventResults                EventResults                     OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- ************************************************
--
-- PAGING TYPE 1
--
-- ************************************************

PagingType1 ::= SEQUENCE {
     -- User equipment IEs
          pagingRecordList            PagingRecordList                 OPTIONAL,
     -- Other IEs
          bcch-ModificationInfo       BCCH-ModificationInfo            OPTIONAL,
```

```
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                        OPTIONAL
}

-- ************************************************
--
-- PAGING TYPE 2
--
-- ************************************************

PagingType2 ::= SEQUENCE {
     -- User equipment IEs
          pagingCause                 PagingCause,
     -- Core network IEs
          cn-DomainIdentity           CN-DomainIdentity,
          pagingRecordTypeID          PagingRecordTypeID,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                        OPTIONAL
}

-- ************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION
--
-- ************************************************

PhysicalChannelReconfiguration ::= SEQUENCE {
     -- User equipment IEs
          integrityProtectionModeInfo IntegrityProtectionModeInfo      OPTIONAL,
          cipheringModeInfo           CipheringModeInfo                OPTIONAL,
          activationTime              ActivationTime                   OPTIONAL,
          new-U-RNTI                  U-RNTI                           OPTIONAL,
          new-C-RNTI                  C-RNTI                           OPTIONAL,
          drx-Indicator               DRX-Indicator,
          utran-DRX-CycleLengthCoeff  DRX-CycleLengthCoefficient       OPTIONAL,
          re-EstablishmentTimer       Re-EstablishmentTimer            OPTIONAL,
     -- Core network IEs
          cn-InformationInfo          CN-InformationInfo               OPTIONAL,
     -- Radio bearer IEs
          rb-WithPDCP-InfoList        RB-WithPDCP-InfoList             OPTIONAL,
     -- Physical channel IEs
          frequencyInfo               FrequencyInfo                    OPTIONAL,
          maxAllowedUL-TX-Power       MaxAllowedUL-TX-Power            OPTIONAL,
          ul-ChannelRequirement       UL-ChannelRequirement            OPTIONAL,
          -- TABULAR: UL-ChannelRequirement contains the choice
          -- between UL DPCH info and PRACH info for RACH.
          dl-CommonInformation        DL-CommonInformation             OPTIONAL,
          dl-PDSCH-Information        DL-PDSCH-Information             OPTIONAL,
          modeSpecificInfo            CHOICE {
               fdd                         SEQUENCE {
                    cpch-SetInfo                CPCH-SetInfo           OPTIONAL
               },
               tdd                         NULL
          },
          dl-InformationPerRL-List    DL-InformationPerRL-List,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                        OPTIONAL
}

-- ************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION COMPLETE
--
-- ************************************************

PhysicalChannelReconfigurationComplete ::= SEQUENCE {
     -- User equipment IEs
          ul-IntegProtActivationInfo  IntegrityProtActivationInfo      OPTIONAL,
          modeSpecificInfo            CHOICE {
```

```
                fdd                             NULL,
                tdd                             SEQUENCE {
                    ul-TimingAdvance                UL-TimingAdvance        OPTIONAL
                }
            },
        -- Radio bearer IEs
            rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfo           OPTIONAL,
            rb-WithPDCP-InfoList            RB-WithPDCP-InfoList            OPTIONAL,
        -- Extension mechanism
            non-Release99-Information       SEQUENCE {}                     OPTIONAL
}

-- **************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION FAILURE
--
-- **************************************************

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
        -- User equipment IEs
            failureCause                    FailureCauseWithProtErr,
        -- Extension mechanism
            non-Release99-Information       SEQUENCE {}                     OPTIONAL
}

-- **************************************************
--
-- PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)
--
-- **************************************************

PhysicalSharedChannelAllocation ::= SEQUENCE {
        -- User equipment IEs
            c-RNTI                          C-RNTI,
        -- Physical channel IEs
            ul-TimingAdvance                UL-TimingAdvance                OPTIONAL,
            allocationPeriodInfo            AllocationPeriodInfo            OPTIONAL,
            pusch-Info                      PUSCH-Info                      OPTIONAL,
            pdsch-Info                      PDSCH-Info                      OPTIONAL,
            timeslotList                    TimeslotList                    OPTIONAL,
        -- Extension mechanism
            non-Release99-Information       SEQUENCE {}                     OPTIONAL
}

-- **************************************************
--
-- PUSCH CAPACITY REQUEST (TDD only)
--
-- **************************************************

PUSCHCapacityRequest ::= SEQUENCE {
        -- User equipment IEs
            c-RNTI                          C-RNTI,
        -- Measurement IEs
            trafficVolumeMeasuredResultsList
                                            TrafficVolumeMeasuredResultsList,
            timeslotListWithISCP            TimeslotListWithISCP            OPTIONAL,
            primaryCCPCH-RSCP               PrimaryCCPCH-RSCP               OPTIONAL,
        -- Extension mechanism
            non-Release99-Information       SEQUENCE {}                     OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER RECONFIGURATION
--
-- **************************************************

RadioBearerReconfiguration ::= SEQUENCE {
```

```
     -- User equipment IEs
          integrityProtectionModeInfo  IntegrityProtectionModeInfo      OPTIONAL,
          cipheringModeInfo            CipheringModeInfo                OPTIONAL,
          activationTime               ActivationTime                   OPTIONAL,
          new-U-RNTI                   U-RNTI                           OPTIONAL,
          new-C-RNTI                   C-RNTI                           OPTIONAL,
          drx-Indicator                DRX-Indicator,
          utran-DRX-CycleLengthCoeff   DRX-CycleLengthCoefficient       OPTIONAL,
          re-EstablishmentTimer        Re-EstablishmentTimer            OPTIONAL,
     -- Core network IEs
          cn-InformationInfo           CN-InformationInfo               OPTIONAL,
     -- Radio bearer IEs
          rb-InformationReconfigList   RB-InformationReconfigList,
          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
          }                                                              OPTIONAL,
          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,
          dl-CommonInformation         DL-CommonInformation             OPTIONAL,
          dl-PDSCH-Information         DL-PDSCH-Information             OPTIONAL,
          modeSpecificPhysChInfo       CHOICE {
               fdd                          SEQUENCE {
                    cpch-SetInfo                 CPCH-SetInfo            OPTIONAL
               },
               tdd                          NULL
          },
          dl-InformationPerRL-List     DL-InformationPerRL-List,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER RECONFIGURATION COMPLETE
--
-- **************************************************

RadioBearerReconfigurationComplete ::= SEQUENCE {
     -- User equipment IEs
          ul-IntegProtActivationInfo   IntegrityProtActivationInfo      OPTIONAL,
          modeSpecificInfo             CHOICE {
               fdd                          NULL,
               tdd                          SEQUENCE {
                    ul-TimingAdvance             UL-TimingAdvance        OPTIONAL
               }
          },
     -- Radio bearer IEs
          rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfo            OPTIONAL,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
```

```
-- RADIO BEARER RECONFIGURATION FAILURE
--
-- **************************************************

RadioBearerReconfigurationFailure ::= SEQUENCE {
     -- User equipment IEs
          failureCause                FailureCauseWithProtErr,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                          OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER RELEASE
--
-- **************************************************

RadioBearerRelease ::= SEQUENCE {
     -- User equipment IEs
          integrityProtectionModeInfo IntegrityProtectionModeInfo      OPTIONAL,
          cipheringModeInfo           CipheringModeInfo                OPTIONAL,
          activationTime              ActivationTime                   OPTIONAL,
          new-U-RNTI                  U-RNTI                           OPTIONAL,
          new-C-RNTI                  C-RNTI                           OPTIONAL,
          drx-Indicator               DRX-Indicator,
          utran-DRX-CycleLengthCoeff  DRX-CycleLengthCoefficient       OPTIONAL,
          re-EstablishmentTimer       Re-EstablishmentTimer            OPTIONAL,
     -- Core network IEs
          cn-InformationInfo          CN-InformationInfo               OPTIONAL,
     -- Radio bearer IEs
          rb-InformationReleaseList   RB-InformationReleaseList,
          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
          }                                                            OPTIONAL,
          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,
          dl-CommonInformation        DL-CommonInformation             OPTIONAL,
          dl-PDSCH-Information        DL-PDSCH-Information             OPTIONAL,
          modeSpecificPhysChInfo      CHOICE {
               fdd                         SEQUENCE {
                    cpch-SetInfo                CPCH-SetInfo            OPTIONAL
               },
               tdd                         NULL
          },
          dl-InformationPerRL-List    DL-InformationPerRL-List,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                          OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER RELEASE COMPLETE
--
-- **************************************************
```

```
RadioBearerReleaseComplete ::= SEQUENCE {
     -- User equipment IEs
          ul-IntegProtActivationInfo  IntegrityProtActivationInfo      OPTIONAL,
          modeSpecificInfo            CHOICE {
               fdd                         NULL,
               tdd                         SEQUENCE {
                    ul-TimingAdvance            UL-TimingAdvance        OPTIONAL
               }
          },
     -- Radio bearer IEs
          rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfo           OPTIONAL,
          rb-WithPDCP-InfoList        RB-WithPDCP-InfoList             OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER RELEASE FAILURE
--
-- **************************************************

RadioBearerReleaseFailure ::= SEQUENCE {
     -- User equipment IEs
          failureCause                FailureCauseWithProtErr,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER SETUP
--
-- **************************************************

RadioBearerSetup ::= SEQUENCE {
     -- User equipment IEs
          integrityProtectionModeInfo IntegrityProtectionModeInfo      OPTIONAL,
          cipheringModeInfo           CipheringModeInfo                OPTIONAL,
          activationTime              ActivationTime                   OPTIONAL,
          new-U-RNTI                  U-RNTI                           OPTIONAL,
          new-C-RNTI                  C-RNTI                           OPTIONAL,
          drx-Indicator               DRX-Indicator,
          utran-DRX-CycleLengthCoeff  DRX-CycleLengthCoefficient       OPTIONAL,
          re-EstablishmentTimer       Re-EstablishmentTimer            OPTIONAL,
     -- Core network IEs
          cn-InformationInfo          CN-InformationInfo               OPTIONAL,
     -- Radio bearer IEs
          srb-InformationSetupList    SRB-InformationSetupList         OPTIONAL,
          rab-InformationSetupList    RAB-InformationSetupList,
          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
          }                                                              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,
          dl-CommonInformation         DL-CommonInformation             OPTIONAL,
          dl-PDSCH-Information         DL-PDSCH-Information             OPTIONAL,
          modeSpecificPhysChInfo       CHOICE {
               fdd                          SEQUENCE {
                    cpch-SetInfo                 CPCH-SetInfo           OPTIONAL
               },
               tdd                          NULL
          },
          dl-InformationPerRL-List     DL-InformationPerRL-List,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER SETUP COMPLETE
--
-- **************************************************

RadioBearerSetupComplete ::= SEQUENCE {
     -- User equipment IEs
          ul-IntegProtActivationInfo   IntegrityProtActivationInfo      OPTIONAL,
          modeSpecificInfo             CHOICE {
               fdd                          NULL,
               tdd                          SEQUENCE {
                    ul-TimingAdvance             UL-TimingAdvance       OPTIONAL
               }
          },
          hyperFrameNumber             HyperFrameNumber,
     -- Radio bearer IEs
          rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfo            OPTIONAL,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER SETUP FAILURE
--
-- **************************************************

RadioBearerSetupFailure ::= SEQUENCE {
     -- User equipment IEs
          failureCause                 FailureCauseWithProtErr,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RNTI REALLOCATION
--
-- **************************************************

RNTIReallocation ::= SEQUENCE {
     -- User equipment IEs
          integrityProtectionModeInfo  IntegrityProtectionModeInfo      OPTIONAL,
          cipheringModeInfo            CipheringModeInfo                OPTIONAL,
          new-U-RNTI                   U-RNTI                           OPTIONAL,
          new-C-RNTI                   C-RNTI                           OPTIONAL,
          drx-Indicator                DRX-Indicator,
          utran-DRX-CycleLengthCoeff   DRX-CycleLengthCoefficient       OPTIONAL,
     -- CN information elements
          cn-InformationInfo           CN-InformationInfo               OPTIONAL,
     -- Radio bearer IEs
          rb-WithPDCP-InfoList         RB-WithPDCP-InfoList             OPTIONAL,
     -- Extension mechanism
```

```
        non-Release99-Information    SEQUENCE {}                        OPTIONAL
}

-- **************************************************
--
-- RNTI REALLOCATION COMPLETE
--
-- **************************************************

RNTIReallocationComplete ::= SEQUENCE {
    -- User equipment IEs
        ul-IntegProtActivationInfo   IntegrityProtActivationInfo      OPTIONAL,
    -- Radio bearer IEs
        rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfo            OPTIONAL,
        rb-WithPDCP-InfoList         RB-WithPDCP-InfoList             OPTIONAL,
    -- Extension mechanism
        non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RNTI REALLOCATION FAILURE
--
-- **************************************************

RNTIReallocationFailure ::= SEQUENCE {
    -- UE information elements
        failureCause                 FailureCauseWithProtErr,
    -- Extension mechanism
        non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION RE-ESTABLISHMENT
--
-- **************************************************

RRCConnectionReEstablishment ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo  IntegrityProtectionModeInfo      OPTIONAL,
        cipheringModeInfo            CipheringModeInfo                OPTIONAL,
        activationTime               ActivationTime                   OPTIONAL,
        new-U-RNTI                   U-RNTI                           OPTIONAL,
        new-C-RNTI                   C-RNTI                           OPTIONAL,
        drx-Indicator                DRX-Indicator,
        utran-DRX-CycleLengthCoeff   DRX-CycleLengthCoefficient       OPTIONAL,
        re-EstablishmentTimer        Re-EstablishmentTimer            OPTIONAL,
    -- Core network IEs
        cn-InformationInfo           CN-InformationInfo               OPTIONAL,
    -- Radio bearer IEs
        srb-InformationSetupList     SRB-InformationSetupList         OPTIONAL,
        rab-InformationSetupList     RAB-InformationSetupList         OPTIONAL,
        rb-InformationReleaseList    RB-InformationReleaseList        OPTIONAL,
        rb-InformationReconfigList   RB-InformationReconfigList       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             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,
          dl-CommonInformation         DL-CommonInformation             OPTIONAL,
          dl-PDSCH-Information         DL-PDSCH-Information             OPTIONAL,
          modeSpecificPhysChInfo       CHOICE {
               fdd                          SEQUENCE {
                    cpch-SetInfo                 CPCH-SetInfo           OPTIONAL
               },
               tdd                          NULL
          },
          dl-InformationPerRL-List     DL-InformationPerRL-List,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION RE-ESTABLISHMENT for CCCH
--
-- **************************************************

RRCConnectionReEstablishment-CCCH ::= SEQUENCE {
     -- User equipment IEs
          u-RNTI                       U-RNTI,
     -- The rest of the message is identical to the one sent on DCCH.
          rrcConnectionReEstablishment RRCConnectionReEstablishment
}

-- **************************************************
--
-- RRC CONNECTION RE-ESTABLISHMENT COMPLETE
--
-- **************************************************

RRCConnectionReEstablishmentComplete ::= SEQUENCE {
     -- User equipment IEs
          ul-IntegProtActivationInfo   IntegrityProtActivationInfo      OPTIONAL,
          modeSpecificInfo             CHOICE {
               fdd                          NULL,
               tdd                          SEQUENCE {
                    ul-TimingAdvance             UL-TimingAdvance       OPTIONAL
               }
          },
          -- TABULAR: The choice above is optional in the tabular definitions,
          -- but this does not seem to make much sense. Either the choice should
          -- be optional and UL-TimingAdvance mandatory inside the TDD choice,
          -- but not both.
     -- Radio bearer IEs
          rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfo            OPTIONAL,
          rb-WithPDCP-InfoList         RB-WithPDCP-InfoList             OPTIONAL,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION RE-ESTABLISHMENT REQUEST
--
-- **************************************************

RRCConnectionReEstablishmentRequest ::= SEQUENCE {
     -- User equipment IEs
          u-RNTI                       U-RNTI,
          protocolErrorIndicator       ProtocolErrorIndicatorWithInfo,
          -- TABULAR: The IE above is MD in tabular, but making a 2-way choice
```

```
          -- optional wastes one bit (using PER) and produces no additional
          -- information.
     -- Measurement IEs
          measuredResultsOnRACH       MeasuredResultsOnRACH            OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION REJECT
--
-- **************************************************

RRCConnectionReject ::= SEQUENCE {
     -- User equipment IEs
          initialUE-Identity          InitialUE-Identity,
          rejectionCause              RejectionCause,
          waitTime                    WaitTime,
          redirectionInfo             RedirectionInfo                  OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION RELEASE
--
-- **************************************************

RRCConnectionRelease ::= SEQUENCE {
     -- User equipment IEs
          rrc-MessageTX-Count         RRC-MessageTX-Count,
          -- The IE above is conditional on the UE state.
          releaseCause                ReleaseCause,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION RELEASE COMPLETE
--
-- **************************************************

RRCConnectionReleaseComplete ::= SEQUENCE {
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION REQUEST
--
-- **************************************************

RRCConnectionRequest ::= SEQUENCE {
     -- User equipment IEs
          initialUE-Identity          InitialUE-Identity,
          initialUE-Capability        InitialUE-Capability,
          establishmentCause          EstablishmentCause,
          protocolErrorIndicator      ProtocolErrorIndicator,
     -- Measurement IEs
          measuredResultsOnRACH       MeasuredResultsOnRACH            OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
```

```
--
-- RRC CONNECTION SETUP
--
-- ************************************************

RRCConnectionSetup ::= SEQUENCE {
     -- User equipment IEs
          initialUE-Identity          InitialUE-Identity,
          activationTime              ActivationTime                  OPTIONAL,
          new-U-RNTI                  U-RNTI,
          new-c-RNTI                  C-RNTI                          OPTIONAL,
          utran-DRX-CycleLengthCoeff  DRX-CycleLengthCoefficient,
          re-EstablishmentTimer       Re-EstablishmentTimer           OPTIONAL,
          capabilityUpdateRequirement CapabilityUpdateRequirement     OPTIONAL,
     -- Radio bearer IEs
          srb-InformationSetupList    SRB-InformationSetupList2,
     -- Transport channel IEs
          ul-CommonTransChInfo        UL-CommonTransChInfo            OPTIONAL,
          ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
          dl-CommonTransChInfo        DL-CommonTransChInfo            OPTIONAL,
          dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList,
     -- 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,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                     OPTIONAL
}

-- ************************************************
--
-- RRC CONNECTION SETUP COMPLETE
--
-- ************************************************

RRCConnectionSetupComplete ::= SEQUENCE {
     -- User equipment IEs
          hyperFrameNumber            HyperFrameNumber,
          ue-RadioAccessCapability    UE-RadioAccessCapability,
          ue-SystemSpecificCapability InterSystemMessage              OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                     OPTIONAL
}

-- ************************************************
--
-- RRC STATUS
--
-- ************************************************

RRCStatus ::= SEQUENCE {
     -- Other IEs
          protocolErrorInformation    ProtocolErrorInformation,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                     OPTIONAL
}

-- ************************************************
--
-- SECURITY MODE COMMAND
--
-- ************************************************

SecurityModeCommand ::= SEQUENCE {
     -- User equipment IEs
          cipheringAlgorithm          CipheringAlgorithm,
          cipheringModeInfo           CipheringModeInfo               OPTIONAL,
```

```
          integrityProtectionModeInfo  IntegrityProtectionModeInfo      OPTIONAL,
     -- Core network IEs
          cn-DomainIdentity            CN-DomainIdentity,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- SECURITY MODE COMPLETE
--
-- **************************************************

SecurityModeComplete ::= SEQUENCE {
     -- User equipment IEs
          hyperFrameNumber             HyperFrameNumber                 OPTIONAL,
          ul-IntegProtActivationInfo   IntegrityProtActivationInfo      OPTIONAL,
     -- Radio bearer IEs
          rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfoList        OPTIONAL,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- SECURITY MODE FAILURE
--
-- **************************************************

SecurityModeFailure ::= SEQUENCE {
     -- User equipment IEs
          failureCause                 FailureCauseWithProtErr,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- SIGNALLING CONNECTION RELEASE
--
-- **************************************************

SignallingConnectionRelease ::= SEQUENCE {
     -- Core network IEs
          signallingFlowInfoList       SignallingFlowInfoList,
     -- Extension mechanism
          non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- SYSTEM INFORMATION for BCH
--
-- **************************************************

SystemInformation-BCH ::= SEQUENCE {
     -- Other information elements
          modeSpecificInfo                 CHOICE {
               fdd                              SFN-Prime,
               tdd                              NULL
          },
          payload                          CHOICE {
               firstSegment                     FirstSegment,
               subsequentSegment                SubsequentOrLastSegment,
               lastSegment                      SubsequentOrLastSegment,
               lastAndComplete                  SEQUENCE {
                    completeSIB-List                 CompleteSIB-List,
                    lastSegment                      SubsequentOrLastSegment
               },
```

```
                completeSIB-List                CompleteSIB-List,
                spare                           NULL
            }
}

-- ************************************************
--
-- SYSTEM INFORMATION for FACH
--
-- ************************************************

SystemInformation-FACH ::= SEQUENCE {
     -- Other information elements
            payload                         CHOICE {
                firstSegment                    FirstSegment,
                subsequentSegment               SubsequentOrLastSegment,
                lastSegment                     SubsequentOrLastSegment,
                lastAndComplete                 SEQUENCE {
                     completeSIB-List                CompleteSIB-List,
                     lastSegment                     SubsequentOrLastSegment
                },
                completeSIB-List                CompleteSIB-List,
                spare                           NULL
            }
}

-- ************************************************
--
-- First segment
--
-- ************************************************

FirstSegment ::=                        SEQUENCE {
     -- Other information elements
            sib-Type                        SIB-Type,
            seg-Count                       SegCount,
            sib-Data                        SIB-Data
}

-- ************************************************
--
-- Subsequent or last segment
--
-- ************************************************

SubsequentOrLastSegment ::=             SEQUENCE {
     -- Other information elements
            sib-Type                        SIB-Type,
            segmentIndex                    SegmentIndex,
            sib-Data                        SIB-Data
}

-- ************************************************
--
-- Complete SIB
--
-- ************************************************

CompleteSIB-List ::=                    SEQUENCE (SIZE(1..16)) OF
                                            CompleteSIB

CompleteSIB ::=                         SEQUENCE {
     -- Other information elements
            sib-Type                        SIB-Type,
            sib-Content                     SIB-Content
}

-- ************************************************
--
```

```
-- SYSTEM INFORMATION CHANGE INDICATION
--
-- **************************************************

SystemInformationChangeIndication ::= SEQUENCE {
     -- Other IEs
          bcch-ModificationInfo       BCCH-ModificationInfo,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                          OPTIONAL
}

-- **************************************************
--
-- TRANSPORT CHANNEL RECONFIGURATION
--
-- **************************************************

TransportChannelReconfiguration ::= SEQUENCE {
     -- User equipment IEs
          integrityProtectionModeInfo IntegrityProtectionModeInfo      OPTIONAL,
          cipheringModeInfo           CipheringModeInfo                OPTIONAL,
          activationTime              ActivationTime                   OPTIONAL,
          new-U-RNTI                  U-RNTI                           OPTIONAL,
          new-C-RNTI                  C-RNTI                           OPTIONAL,
          drx-Indicator               DRX-Indicator,
          utran-DRX-CycleLengthCoeff  DRX-CycleLengthCoefficient       OPTIONAL,
          re-EstablishmentTimer       Re-EstablishmentTimer            OPTIONAL,
     -- Core network IEs
          cn-InformationInfo          CN-InformationInfo               OPTIONAL,
     -- Radio bearer IEs
          rb-WithPDCP-InfoList        RB-WithPDCP-InfoList             OPTIONAL,
     -- Transport channel IEs
          ul-CommonTransChInfo        UL-CommonTransChInfo             OPTIONAL,
          ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
          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,
     -- Physical channel IEs
          frequencyInfo               FrequencyInfo                    OPTIONAL,
          maxAllowedUL-TX-Power       MaxAllowedUL-TX-Power            OPTIONAL,
          ul-ChannelRequirement       UL-ChannelRequirement            OPTIONAL,
          dl-CommonInformation        DL-CommonInformation             OPTIONAL,
          dl-PDSCH-Information        DL-PDSCH-Information             OPTIONAL,
          modeSpecificPhysChInfo      CHOICE {
               fdd                         SEQUENCE {
                    cpch-SetInfo                CPCH-SetInfo            OPTIONAL
               },
               tdd                         NULL
          },
          dl-InformationPerRL-List    DL-InformationPerRL-List         OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- TRANSPORT CHANNEL RECONFIGURATION COMPLETE
--
-- **************************************************

TransportChannelReconfigurationComplete ::= SEQUENCE {
     -- User equipment IEs
```

```
          ul-IntegProtActivationInfo  IntegrityProtActivationInfo      OPTIONAL,
          modeSpecificInfo            CHOICE {
               fdd                         NULL,
               tdd                         SEQUENCE {
                    ul-TimingAdvance            UL-TimingAdvance        OPTIONAL
               }
          },
     -- Radio bearer IEs
          rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfo           OPTIONAL,
          rb-WithPDCP-InfoList        RB-WithPDCP-InfoList             OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- TRANSPORT CHANNEL RECONFIGURATION FAILURE
--
-- **************************************************

TransportChannelReconfigurationFailure ::= SEQUENCE {
     -- User equipment IEs
          failureCause                FailureCauseWithProtErr,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- TRANSPORT FORMAT COMBINATION CONTROL
--
-- **************************************************

TransportFormatCombinationControl ::= SEQUENCE {
     channelRequirement               CHOICE {
          dpch-TFCS-InUplink               TFC-Subset,
          tfc-ControlDuration              TFC-ControlDuration
     },
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- TRANSPORT FORMAT COMBINATION CONTROL FAILURE
--
-- **************************************************

TransportFormatCombinationControlFailure ::= SEQUENCE {
     -- User equipment IEs
          failureCause                FailureCauseWithProtErr,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
--
-- UE CAPABILITY ENQUIRY
--
-- **************************************************

UECapabilityEnquiry ::= SEQUENCE {
     -- User equipment IEs
          capabilityUpdateRequirement CapabilityUpdateRequirement,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- **************************************************
```

```
--
-- UE CAPABILITY INFORMATION
--
-- ************************************************

UECapabilityInformation ::= SEQUENCE {
     -- User equipment IEs
          ue-RadioAccessCapability    UE-RadioAccessCapability         OPTIONAL,
     -- Other IEs
          ue-SystemSpecificCapability InterSystemMessage               OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- ************************************************
--
-- UE CAPABILITY INFORMATION CONFIRM
--
-- ************************************************

UECapabilityInformationConfirm ::= SEQUENCE {
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- ************************************************
--
-- UPLINK DIRECT TRANSFER
--
-- ************************************************

UplinkDirectTransfer ::= SEQUENCE {
     -- Core network IEs
          flowIdentifier              FlowIdentifier,
          nas-Message                 NAS-Message,
     -- Measurement IEs
          measuredResultsOnRACH       MeasuredResultsOnRACH            OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- ************************************************
--
-- UPLINK PHYSICAL CHANNEL CONTROL
--
-- ************************************************

UplinkPhysicalChannelControl ::= SEQUENCE {
     -- Physical channel IEs
          ccTrCH-PowerControlInfo     CCTrCH-PowerControlInfo          OPTIONAL,
          timingAdvance               UL-TimingAdvance                 OPTIONAL,
          individualTS-InterferenceList
                                      IndividualTS-InterferenceList    OPTIONAL,
          rach-ConstantValue          ConstantValue                    OPTIONAL,
          dpch-ConstantValue          ConstantValue                    OPTIONAL,
          usch-ConstantValue          ConstantValue                    OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                      OPTIONAL
}

-- ************************************************
--
-- URA UPDATE
--
-- ************************************************

URAUpdate ::= SEQUENCE {
     -- User equipment IEs
          u-RNTI                      U-RNTI,
```

```
          ura-UpdateCause             URA-UpdateCause,
          protocolErrorIndicator      ProtocolErrorIndicatorWithInfo,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                       OPTIONAL
}

-- **************************************************
--
-- URA UPDATE CONFIRM
--
-- **************************************************

URAUpdateConfirm ::= SEQUENCE {
     -- User equipment IEs
          integrityProtectionModeInfo IntegrityProtectionModeInfo      OPTIONAL,
          cipheringModeInfo           CipheringModeInfo                OPTIONAL,
          new-U-RNTI                  U-RNTI                           OPTIONAL,
          new-C-RNTI                  C-RNTI                           OPTIONAL,
          drx-Indicator               DRX-Indicator,
          utran-DRX-CycleLengthCoeff  DRX-CycleLengthCoefficient,
     -- CN information elements
          cn-InformationInfo          CN-InformationInfo               OPTIONAL,
     -- UTRAN mobility IEs
          ura-Identity                URA-Identity                     OPTIONAL,
     -- Radio bearer IEs
          rb-WithPDCP-InfoList        RB-WithPDCP-InfoList             OPTIONAL,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                       OPTIONAL
}

-- **************************************************
--
-- URA UPDATE CONFIRM for CCCH
--
-- **************************************************

URAUpdateConfirm-CCCH ::= SEQUENCE {
     -- User equipment IEs
          u-RNTI                      U-RNTI,
     -- The rest of the message is identical to the one sent on DCCH.
          uraUpdateConfirm            URAUpdateConfirm
}

END
```

11.3 Information element definitions

11.3.1 Core network information elements

```
CoreNetwork-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

     DRX-CycleLengthCoefficient
FROM UserEquipment-IEs

     Min-P-REV,
     NAS-SystemInformationANSI-41,
     NID,
     P-REV,
     SID
FROM ANSI-41-IEs

     maxCNdomains,
     maxFlowID,
     maxNoCNdomains
```

```
FROM Constant-definitions;

CN-DomainIdentity ::=            ENUMERATED {
                                      cs-domain,
                                      ps-domain,
                                      not-important,
                                      spare1 }

CN-DomainInformation ::=         SEQUENCE {
     cn-DomainIdentity                CN-DomainIdentity,
     cn-DomainSpecificNAS-Info        NAS-SystemInformationGSM-MAP
}

CN-DomainInformationList ::=     SEQUENCE (SIZE (1..maxNoCNdomains)) OF
                                      CN-DomainInformation

CN-DomainSysInfo ::=             SEQUENCE {
     cn-DomainIdentity                CN-DomainIdentity,
     cn-Type                          CHOICE {
          gsm-MAP                          NAS-SystemInformationGSM-MAP,
          ansi-41                          NAS-SystemInformationANSI-41
     },
     cn-DRX-CycleLengthCoeff          DRX-CycleLengthCoefficient
}

CN-DomainSysInfoList ::=         SEQUENCE (SIZE (1..maxCNdomains)) OF
                                      CN-DomainSysInfo

CN-InformationInfo ::=           SEQUENCE {
     plmn-Identity                    PLMN-Identity                    OPTIONAL,
     cn-CommonGSM-MAP-NAS-SysInfo     NAS-SystemInformationGSM-MAP     OPTIONAL,
     cn-DomainInformationList         CN-DomainInformationList         OPTIONAL
}

Digit ::=                        INTEGER (0..9)

FlowIdentifier ::=               INTEGER (0..15)

IMEI ::=                         SEQUENCE (SIZE (15)) OF
                                      Digit

IMSI-GSM-MAP ::=                 SEQUENCE (SIZE (6..15)) OF
                                      Digit

LAI ::=                          SEQUENCE {
     plmn-Identity                    PLMN-Identity,
     lac                              BIT STRING (SIZE (16))
}

MCC ::=                          SEQUENCE (SIZE (3)) OF
                                      Digit

MNC ::=                          SEQUENCE (SIZE (2..3)) OF
                                      Digit

NAS-Message ::=                  OCTET STRING (SIZE (1..4095))

NAS-SystemInformationGSM-MAP ::= OCTET STRING (SIZE (1..8))

P-TMSI-GSM-MAP ::=               BIT STRING (SIZE(32))

PagingRecordTypeID ::=           ENUMERATED {
                                      imsi-GSM-MAP,
                                      tmsi-GSM-MAP-P-TMSI,
                                      imsi-DS-41,
                                      tmsi-DS-41 }

PLMN-Identity ::=                SEQUENCE {
     mcc                              MCC,
```

```
     mnc                              MNC
}

PLMN-Type ::=                         CHOICE {
     gsm-MAP                              SEQUENCE {
          plmn-Identity                        PLMN-Identity
     },
     ansi-41                              SEQUENCE {
          p-REV                                P-REV,
          min-P-REV                            Min-P-REV,
          sid                                  SID,
          nid                                  NID
     },
     gsm-MAP-and-ANSI-41                  SEQUENCE {
          plmn-Identity                        PLMN-Identity,
          p-REV                                P-REV,
          min-P-REV                            Min-P-REV,
          sid                                  SID,
          nid                                  NID
     },
     spare                                SEQUENCE {}
}

RAB-Identity ::=                      CHOICE {
     gsm-MAP-RAB-Identity                 BIT STRING (SIZE (8)),
     ansi-41-RAB-Identity                 BIT STRING (SIZE (8))
}

RAI ::=                               SEQUENCE {
     lai                                  LAI,
     rac                                  RoutingAreaCode
}

RoutingAreaCode ::=                   BIT STRING (SIZE (8))

ServiceDescriptor ::=                 CHOICE {
     gsm-MAP                              BIT STRING (SIZE (4)),
     ansi-41                              BIT STRING (SIZE (4))
}

SignallingFlowInfo ::=                SEQUENCE {
     flowIdentifier                       FlowIdentifier
}

SignallingFlowInfoList ::=            SEQUENCE (SIZE (1..maxFlowID)) OF
                                          SignallingFlowInfo

TMSI-GSM-MAP ::=                      BIT STRING (SIZE(32))

END
```

11.3.2 UTRAN mobility information elements

```
UTRANMobility-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

     maxIntervals,
     maxRAT,
     maxURAcount
FROM Constant-definitions;

AccessClassBarred ::=                 ENUMERATED {
                                          barred, notBarred }

AccessClassBarredList ::=             SEQUENCE (SIZE (16)) OF
                                          AccessClassBarred
```

```
CellAccessRestriction ::=          SEQUENCE {
     cellBarred                         CellBarred,
     accessClassBarredList              AccessClassBarredList,
     cellReservedForOperatorUse         ReservedIndicator,
     cellReservedForSOLSA               ReservedIndicator
}

CellBarred ::=                     CHOICE {
     barred                             T-Barred,
     notBarred                          NULL
}

CellIdentity ::=                   BIT STRING (SIZE (28))

CellSelectQualityMeasure ::=       ENUMERATED {
                                        cpich-Ec-N0, cpich-SIR }

CellSelectReselectInfo ::=         SEQUENCE {
     mappingInfo                        MappingInfo,
     modeSpecificInfo                   CHOICE {
          fdd                                SEQUENCE {
               cellSelectQualityMeasure           CellSelectQualityMeasure,
               s-Intrasearch                      S-SearchFDD             OPTIONAL,
               s-Intersearch                      S-SearchFDD             OPTIONAL,
               s-SearchHCS                        S-SearchFDD             OPTIONAL,
               rat-List                           RAT-FDD-InfoList        OPTIONAL
          },
          tdd                                SEQUENCE {
               s-Intrasearch                      S-SearchTDD             OPTIONAL,
               s-Intersearch                      S-SearchTDD             OPTIONAL,
               s-SearchHCS                        S-SearchTDD             OPTIONAL,
               rat-List                           RAT-TDD-InfoList        OPTIONAL
          }
     },
     q-Hyst-S                           Q-Hyst-S,
     t-Reselection-S                    T-Reselection-S,
     hcs-ServingCellInformation         HCS-ServingCellInformation      OPTIONAL,
     cellSelectReselectParams           CellSelectReselectParams        OPTIONAL
}

CellSelectReselectParams ::=       SEQUENCE {
     decodingRange                      DecodingRange                   OPTIONAL,
     q-Offset                           Q-Offset                        OPTIONAL
}

-- **TODO**, not defined
DecodingRange ::=                  SEQUENCE {
}

-- **TODO**, not defined yet
HCS-ServingCellInformation ::=     SEQUENCE {
}

MapParameter1 ::=                  INTEGER (0..15)

MapParameter2 ::=                  INTEGER (0..15)

Mapping ::=                        SEQUENCE {
     rat                                RAT,
     mappingFunctionParameterList       MappingFunctionParameterList
}

MappingFunctionParameter ::=       SEQUENCE {
     functionType                       MappingFunctionType,
     mapParameter1                      MapParameter1,
     mapParameter2                      MapParameter2,
     upperLimit                         UpperLimit
}
```

```
MappingFunctionParameterList ::= SEQUENCE (SIZE (1..maxIntervals)) OF
                                     MappingFunctionParameter

MappingFunctionType ::=          ENUMERATED {
                                     linear,
                                     functionType2,
                                     functionType3,
                                     functionType4 }

MappingInfo ::=                  SEQUENCE {
     mappingList                     MappingList
}

MappingList ::=                  SEQUENCE (SIZE (1..maxRAT)) OF
                                     Mapping

-- **TODO**, not defined
OffsetExp ::=                    SEQUENCE {
}

-- Actual value = IE value * 2
Q-Hyst-S ::=                     INTEGER (0..20)

Q-Offset ::=                     SEQUENCE {
     q-Offset-S                      Q-Offset-S,
     offsetExp                       OffsetExp
}

-- **TODO**, not defined
Q-Offset-S ::=                   SEQUENCE {}

RAT ::=                          ENUMERATED {
                                     utra-FDD,
                                     utra-TDD,
                                     gsm,
                                     cdma2000 }

RAT-FDD-Info ::=                 SEQUENCE {
     rat-Identifier                  RAT-Identifier,
     s-SearchRAT                     S-SearchFDD,
     s-HCS-RAT                       S-SearchFDD                 OPTIONAL
}

RAT-FDD-InfoList ::=             SEQUENCE (SIZE (1..maxRAT)) OF
                                     RAT-FDD-Info

RAT-Identifier ::=               ENUMERATED {
                                     gsm, cdma2000 }

RAT-TDD-Info ::=                 SEQUENCE {
     rat-Identifier                  RAT-Identifier,
     s-SearchRAT                     S-SearchTDD                 OPTIONAL,
     s-HCS-RAT                       S-SearchTDD                 OPTIONAL
}

RAT-TDD-InfoList ::=             SEQUENCE (SIZE (1..maxRAT)) OF
                                     RAT-TDD-Info

ReservedIndicator ::=            ENUMERATED {
                                     reserved,
                                     notReserved }

-- Actual value = IE value * 2
S-SearchFDD ::=                  INTEGER (-16..10)

-- Actual value = IE value * 5
S-SearchTDD ::=                  INTEGER (-24..18)

T-Barred ::=                     INTEGER (0..63)
```

```
T-Reselection-S ::=             INTEGER (0..31)

UpperLimit ::=                  INTEGER (0..15)

URA-Identity ::=                BIT STRING (SIZE (16))

URA-IdentityList ::=            SEQUENCE (SIZE (1..maxURAcount)) OF
                                     URA-Identity

END
```

11.3.3 User equipment information elements

```
UserEquipment-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

     CN-DomainIdentity,
     IMEI,
     IMSI-GSM-MAP,
     LAI,
     P-TMSI-GSM-MAP,
     RAI,
     TMSI-GSM-MAP
FROM CoreNetwork-IEs

     RB-ActivationTimeInfoList
FROM RadioBearer-IEs

     FrequencyInfo
FROM PhysicalChannel-IEs

     InterSystemInfo
FROM Measurement-IEs

     ProtocolErrorInformation
FROM Other-IEs

     maxAlgoTypeCount,
     maxDRAC-Classes,
     maxFrequencyBandsCount,
     maxNoSystemCapability,
     maxRAT-Count,
     pageCount
FROM Constant-definitions;

ActivationTime ::=              INTEGER (0..255)

BackoffControlParams ::=        SEQUENCE {
     n-AP-RetransMax                 N-AP-RetransMax,
     n-AccessFails                   N-AccessFails,
     nf-BO-NoAICH                    NF-BO-NoAICH,
     ns-BO-Busy                      NS-BO-Busy,
     nf-BO-AllBusy                   NF-BO-AllBusy,
     nf-BO-Mismatch                  NF-BO-Mismatch,
     t-CPCH                          T-CPCH
}

C-RNTI ::=                      BIT STRING (SIZE (16))

CapabilityUpdateRequirement ::=  SEQUENCE {
     ue-RadioCapabilityUpdateRequirement   BOOLEAN,
     systemSpecificCapUpdateReqList   SystemSpecificCapUpdateReqList   OPTIONAL
}

CellUpdateCause ::=             ENUMERATED {
                                     cellReselection,
```

```
                                    periodicCellUpdate,
                                    ul-DataTransmission,
                                    pagingResponse,
                                    rb-ControlResponse,
                                    spare1, spare2, spare3 }

ChipRateCapability ::=              ENUMERATED {
                                    mcps3-84, mcps1-28 }

CipheringAlgorithm ::=              ENUMERATED {
                                    standardUEA1,
                                    spare1, spare2, spare3, spare4,
                                    spare5, spare6, spare7, spare8,
                                    spare9, spare10, spare11, spare12,
                                    spare13, spare14, spare15 }

CipheringModeCommand ::=            CHOICE {
     startRestart                   CipheringAlgorithm,
     stopCiphering                  NULL
}

CipheringModeInfo ::=               SEQUENCE {
     cipheringModeCommand           CipheringModeCommand,
     -- TABULAR: The ciphering algorithm is included in
     -- the CipheringModeCommand.
     activationTimeForDPCH          ActivationTime                  OPTIONAL,
     rb-DL-CiphActivationTimeInfo   RB-ActivationTimeInfoList       OPTIONAL
}

CN-PagedUE-Identity ::=             CHOICE {
     imsi-GSM-MAP                   IMSI-GSM-MAP,
     tmsi-GSM-MAP                   TMSI-GSM-MAP,
     p-TMSI-GSM-MAP                 P-TMSI-GSM-MAP,
     imsi-DS-41                     IMSI-DS-41,
     tmsi-DS-41                     TMSI-DS-41,
     spare                          NULL
}

CompressedModeMeasCapability ::= SEQUENCE {
     fdd-Measurements               BOOLEAN,
     tdd-Measurements               BOOLEAN,
     gsm-Measurements               GSM-Measurements,
     multiCarrierMeasurements       BOOLEAN
}

ConformanceTestCompliance ::=       ENUMERATED {
                                    r99,
                                    spare1, spare2, spare3, spare4,
                                    spare5, spare6, spare7 }

CPCH-Parameters ::=                 SEQUENCE {
     initialPriorityDelayList       InitialPriorityDelayList        OPTIONAL,
     backoffControlParams           BackoffControlParams
}

DL-PhysChCapabilityFDD ::=          SEQUENCE {
     maxSimultaneousCCTrCH-Count    MaxSimultaneousCCTrCH-Count,
     maxNoDPCH-PDSCH-Codes          INTEGER (1..8),
     maxNoPhysChBitsReceived        MaxNoPhysChBitsReceived,
     supportForSF-512               BOOLEAN,
     supportOfPDSCH                 BOOLEAN,
     simultaneousSCCPCH-DPCH-Reception
                                    SimultaneousSCCPCH-DPCH-Reception
}

DL-PhysChCapabilityTDD ::=          SEQUENCE {
     maxSimultaneousCCTrCH-Count    MaxSimultaneousCCTrCH-Count,
     maxTS-PerFrame                 MaxTS-PerFrame,
     maxPhysChPerFrame              MaxPhysChPerFrame,
```

```
    minimumSF                       MinimumSF-DL,
    supportOfPDSCH                  BOOLEAN
}

DL-TransChCapability ::=        SEQUENCE {
    maxNoBitsReceived               MaxNoBits,
    maxConvCodeBitsReceived         MaxNoBits,
    turboDecodingSupport            TurboSupport,
    maxSimultaneousTransChs         MaxSimultaneousTransChsDL,
    maxReceivedTransportBlocks      MaxTransportBlocksDL,
    maxNumberOfTFC-InTFCS           MaxNumberOfTFC-InTFCS-DL,
    maxNumberOfTF                   MaxNumberOfTF
}

DRAC-SysInfo ::=                SEQUENCE {
    transmissionProbability         TransmissionProbability,
    maximumBitRate                  MaximumBitRate
}

DRAC-SysInfoList ::=            SEQUENCE (SIZE(1..maxDRAC-Classes)) OF
                                    DRAC-SysInfo

DRX-CycleLengthCoefficient ::=  INTEGER (2..12)

DRX-Indicator ::=               ENUMERATED {
                                    noDRX,
                                    drxWithCellUpdating,
                                    drxWithURA-Updating,
                                    spare1 }

ESN-DS-41 ::=                   BIT STRING (SIZE (32))

EstablishmentCause ::=          ENUMERATED {
                                    originatingSpeechCall,
                                    originatingCS-DataCall,
                                    originatingPS-DataCall,
                                    terminatingSpeechCall,
                                    terminatingCS-DataCall,
                                    terminatingPS-DataCall,
                                    emergencyCall,
                                    interSystemCellReselection,
                                    locationUpdate,
                                    imsi-Detach,
                                    sms,
                                    callRe-establishment,
                                    unspecified,
                                    spare1, spare2, spare3 }

FailureCauseWithProtErr ::=     CHOICE {
    configurationUnacceptable       NULL,
    physicalChannelFailure          NULL,
    incompatibleSimultaneousReconfiguration
                                    NULL,
    protocolError                   ProtocolErrorInformation,
    spare                           NULL
}

GSM-Measurements ::=            SEQUENCE {
    gsm900                          BOOLEAN,
    dcs1800                         BOOLEAN,
    gsm1900                         BOOLEAN
}

HyperFrameNumber ::=            BIT STRING (SIZE (20))

IMSI-and-ESN-DS-41 ::=          SEQUENCE {
    imsi-DS-41                      IMSI-DS-41,
    esn-DS-41                       ESN-DS-41
}
```

```
IMSI-DS-41 ::=                  OCTET STRING (SIZE (5..7))

InitialPriorityDelayList ::=    SEQUENCE (SIZE (8)) OF
                                     NS-IP

InitialUE-Capability ::=        SEQUENCE {
     maximumAM-EntityNumber          MaximumAM-EntityNumber
}

InitialUE-Identity ::=          CHOICE {
     imsi                            IMSI-GSM-MAP,
     tmsi-and-LAI                    TMSI-and-LAI-GSM-MAP,
     p-TMSI-and-RAI                  P-TMSI-and-RAI-GSM-MAP,
     imei                            IMEI,
     esn-DS-41                       ESN-DS-41,
     imsi-DS-41                      IMSI-DS-41,
     imsi-and-ESN-DS-41              IMSI-and-ESN-DS-41,
     tmsi-DS-41                      TMSI-DS-41,
     spare                           NULL
}

IntegrityCheckInfo ::=          SEQUENCE {
     messageAuthenticationCode       MessageAuthenticationCode,
     rrc-MessageSequenceNumber       RRC-MessageSequenceNumber
}

IntegrityProtActivationInfo ::=  SEQUENCE {
     rrc-MessageSequenceNumberList   RRC-MessageSequenceNumberList
}

IntegrityProtectionAlgorithm ::= ENUMERATED {
                                     standardUIA1,
                                     spare1, spare2, spare3, spare4,
                                     spare5, spare6, spare7, spare8,
                                     spare9, spare10, spare11, spare12,
                                     spare13, spare14, spare15 }

IntegrityProtectionModeCommand ::= CHOICE {
     startIntegrityProtection        SEQUENCE {
          integrityProtInitNumber         IntegrityProtInitNumber
     },
     modify                          SEQUENCE {
          dl-IntegrityProtActivationInfo   IntegrityProtActivationInfo
     },
     spare                           NULL
}

IntegrityProtectionModeInfo ::=  SEQUENCE {
     integrityProtectionModeCommand   IntegrityProtectionModeCommand,
     -- TABULAR: DL integrity protection activation info and Integrity
     -- protection intialisation number have been nested inside
     -- IntegrityProtectionModeCommand.
     integrityProtectionAlgorithm     IntegrityProtectionAlgorithm     OPTIONAL

}

IntegrityProtInitNumber ::=     BIT STRING (SIZE (32))

LCS-Capability ::=              SEQUENCE {
     standaloneLocMethodsSupported    BOOLEAN,
     ue-BasedOTDOA-Supported          BOOLEAN,
     networkAssistedGPS-Supported     NetworkAssistedGPS-Supported,
     gps-ReferenceTimeCapable         BOOLEAN,
     supportForIDL                    BOOLEAN
}

MaximumAM-EntityNumber ::=      ENUMERATED {
                                     am-2to3,
```

```
                                    am-4to8,
                                    am-16to32,
                                    spare1 }

MaximumAM-EntityNumberRLC-Cap ::=ENUMERATED {
                                    am2, am3, am4, am8, am16, am32,
                                    spare1, spare2 }

-- Actual value = IE value * 16
MaximumBitRate ::=              INTEGER (0..32)

MaxNoDPDCH-BitsTransmitted ::=  ENUMERATED {
                                    b150, b300, b600, b1200, b2400,
                                    b4800, b9600, b19200, b28800, b38400,
                                    b48000, b57600,
                                    spare1, spare2, spare3, spare4 }

MaxNoBits ::=                   ENUMERATED {
                                    b640, b1280, b2560, b3840, b5120,
                                    b6400, b7680, b8960, b10240,
                                    b20480, b40960, b81920, b163840,
                                    spare1, spare2, spare3 }

MaxNoPhysChBitsReceived ::=     ENUMERATED {
                                    b300, b600, b1200, b2400, b4800,
                                    b9600, b19200, b28800, b38400,
                                    b48000, b57600, b67200,
                                    spare1, spare2, spare3, spare4 }

MaxNoSCCPCH-RL ::=              ENUMERATED {
                                    rl1, spare1, spare2, spare3,
                                    spare4, spare5, spare6, spare7 }

MaxNumberOfTF ::=               ENUMERATED {
                                    tf32, tf64, tf128, tf256,
                                    tf512, tf1024, spare1, spare2 }

MaxNumberOfTFC-InTFCS-DL ::=    ENUMERATED {
                                    tfc16, tfc32, tfc48, tfc64, tfc96,
                                    tfc128, tfc256, tfc512, tfc1024,
                                    spare1, spare2, spare3, spare4,
                                    spare5, spare6, spare7 }

MaxNumberOfTFC-InTFCS-UL ::=    ENUMERATED {
                                    tfc4, tfc8, tfc16, tfc32, tfc48, tfc64,
                                    tfc96, tfc128, tfc256, tfc512, tfc1024,
                                    spare1, spare2, spare3, spare4,
                                    spare5 }

-- TABULAR: Used range in Release99 is 1..224
MaxPhysChPerFrame ::=           INTEGER (1..224)

MaxPhysChPerTimeslot ::=        ENUMERATED {
                                    ts1, ts2 }

MaxSimultaneousCCTrCH-Count ::= INTEGER (1..8)

MaxSimultaneousTransChsDL ::=   ENUMERATED {
                                    e4, e8, e16, e32 }

MaxSimultaneousTransChsUL ::=   ENUMERATED {
                                    e2, e4, e8, e16, e32,
                                    spare1, spare2, spare3 }

MaxTransportBlocksDL ::=        ENUMERATED {
                                    tb4, tb8, tb16, tb32, tb48,
                                    tb64, tb96, tb128, tb256, tb512,
                                    spare1, spare2, spare3,
                                    spare4, spare5, spare6 }
```

```
MaxTransportBlocksUL ::=          ENUMERATED {
                                       tb2, tb4, tb8, tb16, tb32, tb48,
                                       tb64, tb96, tb128, tb256, tb512,
                                       spare1, spare2, spare3,
                                       spare4, spare5 }

-- TABULAR: Used range in Release99 is 1..14
MaxTS-PerFrame ::=                INTEGER (1..16)

-- TABULAR: This IE contains dependencies to UE-MultiModeRAT-Capability,
-- the conditional fields have been left mandatory for now.
MeasurementCapability ::=         SEQUENCE {
     downlinkCompressedMode            CompressedModeMeasCapability,
     uplinkCompressedMode              CompressedModeMeasCapability
}

MessageAuthenticationCode ::=     BIT STRING (SIZE (32))

MinimumSF-DL ::=                  ENUMERATED {
                                       sf1, sf16 }

MinimumSF-UL ::=                  ENUMERATED {
                                       sf1, sf2, sf4, sf8, sf16,
                                       spare1, spare2, spare3 }

MultiModeCapability ::=           ENUMERATED {
                                       tdd, fdd, fdd-tdd }

MultiRAT-Capability ::=           ENUMERATED {
                                       gsm, multicarrier,
                                       spare1, spare2 }

MultiRAT-CapabilityList ::=       SEQUENCE (SIZE (1..maxRAT-Count)) OF
                                       MultiRAT-Capability

N-300 ::=                         INTEGER (1..8)

N-302 ::=                         INTEGER (1..8)

N-303 ::=                         INTEGER (1..8)

N-304 ::=                         INTEGER (1..8)

N-310 ::=                         INTEGER (1..8)

N-312 ::=                         ENUMERATED {
                                       s1, s50, s100, s200, s400,
                                       s600, s800, s1000 }

N-313 ::=                         ENUMERATED {
                                       s1, s50, s100, s200, s400,
                                       s600, s800, s1000 }

N-315 ::=                         ENUMERATED {
                                       s1, s50, s100, s200, s400,
                                       s600, s800, s1000 }

N-AccessFails ::=                 INTEGER (1..64)

N-AP-RetransMax ::=               INTEGER (1..64)

NetworkAssistedGPS-Supported ::= ENUMERATED {
                                       networkBased,
                                       ue-Based,
                                       bothNetworkAndUE-Based,
                                       noNetworkAssistedGPS }

NF-BO-AllBusy ::=                 INTEGER (0..31)
```

```
NF-BO-NoAICH ::=                    INTEGER (0..31)

NF-BO-Mismatch ::=                  INTEGER (0..127)

NS-BO-Busy ::=                      INTEGER (0..63)

NS-IP ::=                           INTEGER (0..28)

P-TMSI-and-RAI-GSM-MAP ::=          SEQUENCE {
     p-TMSI                              P-TMSI-GSM-MAP,
     rai                                 RAI
}

PagingCause ::=                     ENUMERATED {
                                         terminatingSpeechCall,
                                         terminatingCS-DataCall,
                                         terminatingPS-DataCall,
                                         sms,
                                         unspecified,
                                         spare1, spare2, spare3 }

PagingRecord ::=                    CHOICE {
     cn-Page                             SEQUENCE {
          pagingCause                         PagingCause,
          cn-DomainIdentity                   CN-DomainIdentity,
          cn-pagedUE-Identity                 CN-PagedUE-Identity
     },
     utran-Page                          SEQUENCE {
          u-RNTI                              U-RNTI
     }
}

PagingRecordList ::=                SEQUENCE (SIZE (1..pageCount)) OF
                                         PagingRecord

PDCP-Capability ::=                 SEQUENCE {
     losslessSRNS-RelocationSupport      BOOLEAN,
     supportedHC-AlgoTypeList            SupportedHC-AlgoTypeList
}

PhysicalChannelCapability ::=       SEQUENCE {
     modeSpecificInfo                    CHOICE {
          fdd                                 SEQUENCE {
               downlinkPhysChCapability            DL-PhysChCapabilityFDD,
               uplinkPhysChCapability              UL-PhysChCapabilityFDD
          },
          tdd                                 SEQUENCE {
               downlinkPhysChCapability            DL-PhysChCapabilityTDD,
               uplinkPhysChCapability              UL-PhysChCapabilityTDD
          }
     }
}

ProtocolErrorCause ::=              ENUMERATED {
                                         transferSyntaxError,
                                         messageTypeNonexistent,
                                         messageNotCompatibleWithReceiverState,
                                         ie-ValueNotComprehended,
                                         messageExtensionNotComprehended,
                                         spare1, spare2, spare3 }

ProtocolErrorIndicator ::=          ENUMERATED {
                                         noError, errorOccurred }

ProtocolErrorIndicatorWithInfo ::= CHOICE {
     noError                             NULL,
     errorOccurred                       ProtocolErrorInformation
}
```

```
RadioFrequencyBand ::=              ENUMERATED {
                                         a, b, c,
                                         spare1 }

RadioFrequencyBandList ::=          SEQUENCE (SIZE (1..maxFrequencyBandsCount)) OF
                                         RadioFrequencyBand

Re-EstablishmentTimer ::=           SEQUENCE {
     t-314                               T-314,
     t-315                               T-315
}

RedirectionInfo ::=                 CHOICE {
     frequencyInfo                       FrequencyInfo,
     interSystemInfo                     InterSystemInfo,
     spare                               NULL
}

RejectionCause ::=                  ENUMERATED {
                                         congestion,
                                         unspecified,
                                         spare1, spare2 }

ReleaseCause ::=                    ENUMERATED {
                                         normalEvent,
                                         unspecified,
                                         pre-emptiveRelease,
                                         congestion,
                                         re-establishmentReject,
                                         spare1, spare2, spare3 }

RF-Capability ::=                   SEQUENCE {
     modeSpecificInfo                    CHOICE {
          fdd                                 SEQUENCE {
               ue-PowerClass                       UE-PowerClass,
               txRxFrequencySeparation             TxRxFrequencySeparation
          },
          tdd                                 SEQUENCE {
               ue-PowerClass                       UE-PowerClass,
               radioFrequencyBandList              RadioFrequencyBandList,
               chipRateCapability                  ChipRateCapability
          }
     }
}

RFC2507 ::=                         SEQUENCE {
     maximumMaxHeader                    INTEGER (60..65535)     DEFAULT 65535,
     maximumTCP-Space                    INTEGER (3..255)        DEFAULT 255,
     maximumNonTCP-Space                 INTEGER (3..65535)      DEFAULT 65535
}

RLC-Capability ::=                  SEQUENCE {
     totalRLC-AM-BufferSize              TotalRLC-AM-BufferSize,
     maximumAM-EntityNumber              MaximumAM-EntityNumberRLC-Cap
}

RLC-ReconfigurationIndicator ::= BOOLEAN

RRC-MessageSequenceNumberList ::=SEQUENCE (SIZE (2..3)) OF
                                         RRC-MessageSequenceNumber

RRC-MessageSequenceNumber ::=       INTEGER (0..15)

RRC-MessageTX-Count ::=             INTEGER (1..8)

S-RNTI ::=                          BIT STRING (SIZE (20))

S-RNTI-2 ::=                        INTEGER (0..1023)
```

```
SecurityCapability ::=          SEQUENCE {
     cipheringAlgorithm              CipheringAlgorithm,
     integrityProtectionAlgorithm    IntegrityProtectionAlgorithm
}

SimultaneousSCCPCH-DPCH-Reception ::= CHOICE {
     notSupported                    NULL,
     supported                       MaxNoSCCPCH-RL
}

SRNC-Identity ::=               BIT STRING (SIZE (12))

SupportedHC-AlgoType ::=        CHOICE {
     rfc2507                         RFC2507,
     spare                           NULL
}

SupportedHC-AlgoTypeList ::=    SEQUENCE (SIZE (1..maxAlgoTypeCount)) OF
                                     SupportedHC-AlgoType

SystemSpecificCapUpdateReq ::=  ENUMERATED {
                                     gsm, spare1, spare2, spare3,
                                     spare4, spare5, spare6, spare7,
                                     spare8, spare9, spare10, spare11,
                                     spare12, spare13, spare14, spare15 }

SystemSpecificCapUpdateReqList ::= SEQUENCE (SIZE (1..maxNoSystemCapability))
                                      OF SystemSpecificCapUpdateReq

T-300 ::=                       INTEGER (1..8)

T-301 ::=                       INTEGER (1..8)

T-302 ::=                       INTEGER (1..8)

T-303 ::=                       INTEGER (1..8)

T-304 ::=                       ENUMERATED {
                                     ms100, ms200, ms400,
                                     ms1000, ms2000,
                                     spare1, spare2, spare3 }

T-305 ::=                       ENUMERATED {
                                     noUpdate, m5, m10, m30,
                                     m60, m120, m360, m720 }

T-306 ::=                       ENUMERATED {
                                     noUpdate, m5, m10, m30,
                                     m60, m120, m360, m720 }

T-307 ::=                       ENUMERATED {
                                     s5, s10, s15, s20,
                                     s30, s40, s50, spare1 }

T-308 ::=                       ENUMERATED {
                                     ms40, ms80, ms160, ms320 }

T-309 ::=                       INTEGER (1..8)

T-310 ::=                       ENUMERATED {
                                     ms40, ms80, ms120, ms160,
                                     ms200, ms240, ms280, ms320 }

T-311 ::=                       ENUMERATED {
                                     ms250, ms500, ms750, ms1000,
                                     ms1250, ms1500, ms1750, ms2000 }

T-312 ::=                       INTEGER (0..15)
```

```
T-313 ::=                           INTEGER (0..15)

T-314 ::=                           ENUMERATED {
                                        s0, s10, s20, s30, s60,
                                        s180, s600, s1200, s1800 }

T-315 ::=                           ENUMERATED {
                                        s0, s50, s100, s200, s400,
                                        s600, s800, s1000 }

T-CPCH ::=                          ENUMERATED {
                                        ct0, ct1 }

TMSI-and-LAI-GSM-MAP ::=            SEQUENCE {
    tmsi                                TMSI-GSM-MAP,
    lai                                 LAI
}

TMSI-DS-41 ::=                      OCTET STRING (SIZE (2..12))

TotalRLC-AM-BufferSize ::=          ENUMERATED {
                                        kb2, kb10, kb50, kb100,
                                        kb150, kb500, kb1000,
                                        spare1 }

-- Actual value = IE value * 0.125
TransmissionProbability ::=         INTEGER (1..8)

TransportChannelCapability ::=      SEQUENCE {
    dl-TransChCapability                DL-TransChCapability,
    ul-TransChCapability                UL-TransChCapability
}

TurboSupport ::=                    CHOICE {
    notSupported                        NULL,
    supported                           MaxNoBits
}

TxRxFrequencySeparation ::=         ENUMERATED {
                                        mhz190, mhz174-8-205-2,
                                        mhz134-8-245-2, spare1 }

U-RNTI ::=                          SEQUENCE {
    srnc-Identity                       SRNC-Identity,
    s-RNTI                              S-RNTI
}

U-RNTI-Short ::=                    SEQUENCE {
    srnc-Identity                       SRNC-Identity,
    s-RNTI-2                            S-RNTI-2
}

UE-ConnTimersAndConstants ::=       SEQUENCE {
    t-301                               T-301,
    t-302                               T-302,
    n-302                               N-302,
    t-303                               T-303,
    n-303                               N-303,
    t-304                               T-304,
    n-304                               N-304,
    t-305                               T-305,
    t-306                               T-306,
    t-307                               T-307,
    t-308                               T-308,
    t-309                               T-309,
    t-310                               T-310,
    n-310                               N-310,
    t-311                               T-311,
```

```
     t-312                          T-312,
     n-312                          N-312,
     t-313                          T-313,
     n-313                          N-313,
     t-314                          T-314,
     t-315                          T-315,
     n-315                          N-315
}

UE-IdleTimersAndConstants ::=    SEQUENCE {
     t-300                          T-300,
     n-300                          N-300,
     t-312                          T-312,
     n-312                          N-312
}

UE-MultiModeRAT-Capability ::=   SEQUENCE {
     multiRAT-CapabilityList        MultiRAT-CapabilityList     OPTIONAL,
     multiModeCapability            MultiModeCapability
}

UE-PowerClass ::=                INTEGER (1..4)

UE-RadioAccessCapability ::=     SEQUENCE {
     conformanceTestCompliance      ConformanceTestCompliance,
     pdcp-Capability                PDCP-Capability,
     rlc-Capability                 RLC-Capability,
     transportChannelCapability     TransportChannelCapability,
     rf-Capability                  RF-Capability,
     physicalChannelCapability      PhysicalChannelCapability,
     ue-MultiModeRAT-Capability     UE-MultiModeRAT-Capability,
     securityCapability             SecurityCapability,
     lcs-Capability                 LCS-Capability,
     modeSpecificInfo               CHOICE {
          fdd                           SEQUENCE {
               measurementCapability         MeasurementCapability
          },
          tdd                           NULL
     }
}

UL-PhysChCapabilityFDD ::=       SEQUENCE {
     maxNoDPDCH-BitsTransmitted     MaxNoDPDCH-BitsTransmitted,
     supportOfPCPCH                 BOOLEAN
}

UL-PhysChCapabilityTDD ::=       SEQUENCE {
     maxSimultaneousCCTrCH-Count    MaxSimultaneousCCTrCH-Count,
     maxTS-PerFrame                 MaxTS-PerFrame,
     maxPhysChPerTimeslot           MaxPhysChPerTimeslot,
     minimumSF                      MinimumSF-UL,
     supportOfPUSCH                 BOOLEAN
}

UL-TransChCapability ::=         SEQUENCE {
     maxNoBitsTransmitted           MaxNoBits,
     maxConvCodeBitsTransmitted     MaxNoBits,
     turboDecodingSupport           TurboSupport,
     maxSimultaneousTransChs        MaxSimultaneousTransChsUL,
     maxTransmittedBlocks           MaxTransportBlocksUL,
     maxNumberOfTFC-InTFCS          MaxNumberOfTFC-InTFCS-UL,
     maxNumberOfTF                  MaxNumberOfTF
}

URA-UpdateCause ::=              ENUMERATED {
                                    changeOfURA,
                                    periodicURAUpdate,
                                    re-enteredServiceArea,
                                    spare1, spare2, spare3,
```

```
                                    spare4, spare5 }

WaitTime ::=                        INTEGER (0..15)

END
```

11.3.4 Radio bearer information elements

```
RadioBearer-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

     CN-DomainIdentity,
     RAB-Identity
FROM CoreNetwork-IEs

     TransportChannelIdentity
FROM TransportChannel-IEs

     algorithmCount,
     maxMuxOptionsCount,
     maxOtherRBcount,
     maxPredefConfigCount,
     maxRABcount,
     maxRB-WithPDCPcount,
     maxRBcount,
     maxReconRBcount,
     maxReconRBs,
     maxRelRBcount,
     maxSetupRBcount,
     maxSRBcount
FROM Constant-definitions;

AlgorithmSpecificInfo ::=        CHOICE {
     rfc2507-Info                     RFC2507-Info,
     spare                            NULL
}

DL-AM-RLC-Mode ::=               SEQUENCE {
     inSequenceDelivery               BOOLEAN,
     receptionRLC-DiscardTimer        ReceptionRLC-DiscardTimer        OPTIONAL,
     -- TABULAR: The CV in the specification is unclear - which IE does
     -- it refer to?
     dl-RLC-StatusInfo                DL-RLC-StatusInfo
}

DL-LogicalChannelMapping ::=     SEQUENCE {
     dl-TransportChannelType          DL-TransportChannelType,
     transportChannelIdentity         TransportChannelIdentity         OPTIONAL,
     logicalChannelIdentity           LogicalChannelIdentity           OPTIONAL
}

DL-LogicalChannelMappingList ::= SEQUENCE (SIZE (1..2)) OF
                                      DL-LogicalChannelMapping

DL-RLC-Mode ::=                  CHOICE {
     dl-AM-RLC-Mode                   DL-AM-RLC-Mode,
     dl-UM-RLC-Mode                   DL-UM-RLC-Mode,
     dl-TM-RLC-Mode                   DL-TM-RLC-Mode
}

DL-RLC-StatusInfo ::=            SEQUENCE {
     timerStatusProhibit              TimerStatusProhibit              OPTIONAL,
     timerEPC                         TimerEPC                         OPTIONAL,
     missingPU-Indicator              BOOLEAN,
     timerStatusPeriodic              TimerStatusPeriodic              OPTIONAL
}
```

```
DL-TM-RLC-Mode ::=              SEQUENCE {
     inSequenceDelivery             BOOLEAN
}

DL-TransportChannelType ::=     ENUMERATED {
                                    dch, fach, dsch }

DL-UM-RLC-Mode ::=              SEQUENCE {
     inSequenceDelivery             BOOLEAN
}

ExplicitDiscard ::=             SEQUENCE {
     timerMRW                       TimerMRW,
     timerDiscard                   TimerDiscard,
     maxMRW                         MaxMRW
}

ExpectReordering ::=            ENUMERATED {
                                    reorderingNotExpected,
                                    reorderingExpected }

HeaderCompressionInfo ::=       SEQUENCE {
     reconfigurationReset           BOOLEAN,
     -- TABULAR: Optional boolean values are not very efficient...
     algorithmSpecificInfo          AlgorithmSpecificInfo
}

HeaderCompressionInfoList ::=   SEQUENCE (SIZE (1..algorithmCount)) OF
                                    HeaderCompressionInfo

LogicalChannelIdentity ::=      INTEGER (1..16)

MAC-LogicalChannelPriority ::=  INTEGER (1..8)

MaxDAT ::=                      ENUMERATED {
                                    dat1, dat2, dat3, dat4, dat5, dat6,
                                    dat7, dat8, dat9, dat10, dat15, dat20,
                                    dat25, dat30, dat35, dat40 }

MaxMRW ::=                      ENUMERATED {
                                    mm1, mm4, mm6, mm8, mm12, mm16,
                                    mm24, mm32, spare1, spare2, spare3,
                                    spare4, spare5, spare6, spare7, spare8 }

MaxRST ::=                      ENUMERATED {
                                    rst1, rst4, rst6, rst8, rst12,
                                    rst16, rst24, rst32,
                                    spare1, spare2, spare3, spare4,
                                    spare5, spare6, spare7, spare8 }

NoExplicitDiscard ::=           ENUMERATED {
                                    dt0-1, dt0-25, dt0-5, dt0-75, dt1,
                                    dt1-25, dt1-5, dt1-75, dt2, dt2-5,
                                    dt3, dt3-5, dt4, dt4-5, dt5, dt7-5 }

PDCP-Info ::=                   SEQUENCE {
     losslessSRNS-RelocSupport      BOOLEAN,
     pdcp-PDU-Header                PDCP-PDU-Header                 OPTIONAL,
     headerCompressionInfoList      HeaderCompressionInfoList       OPTIONAL
}

PDCP-InfoReconfig ::=           SEQUENCE {
     pdcp-Info                      PDCP-Info,
     pdcp-SN-Info                   PDCP-SN-Info
}

PDCP-PDU-Header ::=             ENUMERATED {
                                    present, absent }
```

```
PDCP-SN-Info ::=                INTEGER (0..65535)

Poll-PU ::=                     ENUMERATED {
                                     pu1, pu2, pu4, pu8, pu16,
                                     pu32, pu64, pu128,
                                     spare1, spare2, spare3, spare4,
                                     spare5, spare6, spare7, spare8 }

Poll-SDU ::=                ENUMERATED {
                                sdu1, sdu4, sdu16, sdu64,
                                spare1, spare2, spare3, spare4 }

PollingInfo ::=                 SEQUENCE {
     timerPollProhibit              TimerPollProhibit               OPTIONAL,
     timerPoll                      TimerPoll                       OPTIONAL,
     poll-PU                        Poll-PU                         OPTIONAL,
     poll-SDU                       Poll-SDU                        OPTIONAL,
     lastTransmissionPU-Poll        BOOLEAN,
     lastRetransmissionPU-Poll      BOOLEAN,
     pollWindow                     PollWindow                      OPTIONAL,
     timerPollPeriodic              TimerPollPeriodic               OPTIONAL
}

PollWindow ::=                  ENUMERATED {
                                     pw50, pw60, pw70, pw80, pw85,
                                     pw90, pw95, pw100,
                                     spare1, spare2, spare3, spare4,
                                     spare5, spare6, spare7, spare8 }

PredefinedConfigIdentity ::=    INTEGER (0..15)

PredefinedConfigValueTag ::=    INTEGER (0..15)

PreDefRadioConfiguration ::=    SEQUENCE {
     predefinedConfigIdentity       PredefinedConfigIdentity,
     predefinedConfigValueTag       PredefinedConfigValueTag,
     predefinedRB-Configuration     PredefinedRB-Configuration
}

PreDefRadioConfigurationList ::= SEQUENCE (SIZE (1..maxPredefConfigCount)) OF
                                     PreDefRadioConfiguration

PredefinedRB-Configuration ::=  SEQUENCE {
     srb-InformationList            SRB-InformationList,
     rb-InformationList             RB-InformationList              OPTIONAL
}

RAB-Info ::=                    SEQUENCE {
     rab-Identity                   RAB-Identity,
     cn-DomainIdentity              CN-DomainIdentity
}

RAB-InformationSetup ::=        SEQUENCE {
     rab-Info                       RAB-Info,
     rb-InformationSetupList        RB-InformationSetupList
}

RAB-InformationSetupList ::=    SEQUENCE (SIZE (1..maxRABcount)) OF
                                     RAB-InformationSetup

RB-ActivationTimeInfo ::=       SEQUENCE {
     rb-Identity                    RB-Identity,
     rlc-SequenceNumber             RLC-SequenceNumber
}

RB-ActivationTimeInfoList ::=   SEQUENCE (SIZE (1..maxReconRBs)) OF
                                     RB-ActivationTimeInfo

RB-Identity ::=                 INTEGER (0..31)
```

```
RB-InformationAffected ::=          SEQUENCE {
     rb-Identity                         RB-Identity,
     rb-MappingInfo                      RB-MappingInfo
}

RB-InformationAffectedList ::=      SEQUENCE (SIZE (1..maxOtherRBcount)) OF
                                         RB-InformationAffected

RB-InformationList ::=              SEQUENCE (SIZE (1..maxRBcount)) OF
                                         RB-InformationSetup

RB-InformationReconfig ::=          SEQUENCE {
     rb-Identity                         RB-Identity,
     pdcp-Info                           PDCP-InfoReconfig                OPTIONAL,
     rlc-InfoChoice                      RLC-InfoChoice                   OPTIONAL,
     rb-MappingInfo                      RB-MappingInfo                   OPTIONAL,
     rb-SuspendResume                    RB-SuspendResume                 OPTIONAL
}

RB-InformationReconfigList ::=      SEQUENCE (SIZE (1..maxReconRBcount)) OF
                                         RB-InformationReconfig

RB-InformationRelease ::=           SEQUENCE {
     rb-Identity                         RB-Identity
}

RB-InformationReleaseList ::=       SEQUENCE (SIZE (1..maxRelRBcount)) OF
                                         RB-InformationRelease

RB-InformationSetup ::=             SEQUENCE {
     rb-Identity                         RB-Identity,
     pdcp-Info                           PDCP-Info                        OPTIONAL,
     rlc-Info                            RLC-Info,
     rb-MappingInfo                      RB-MappingInfo
}

RB-InformationSetupList ::=         SEQUENCE (SIZE (1..maxSetupRBcount)) OF
                                         RB-InformationSetup

RB-MappingInfo ::=                  SEQUENCE (SIZE (1..maxMuxOptionsCount)) OF
                                         RB-MappingOption

RB-MappingOption ::=                SEQUENCE {
     ul-LogicalChannelMappingList        UL-LogicalChannelMappingList     OPTIONAL,
     dl-LogicalChannelMappingList        DL-LogicalChannelMappingList     OPTIONAL
}

RB-SuspendResume ::=                ENUMERATED {
                                         suspend, resume }

RB-WithPDCP-Info ::=                SEQUENCE {
     rb-Identity                         RB-Identity,
     pdcp-SN-Info                        PDCP-SN-Info
}

RB-WithPDCP-InfoList ::=            SEQUENCE (SIZE (1..maxRB-WithPDCPcount)) OF
                                         RB-WithPDCP-Info

ReceivingWindowSize ::=             ENUMERATED {
                                         rw1, rw8, rw16, rw32, rw128, rw256,
                                         rw512, rw768, rw1024, rw1536, rw2048,
                                         rw2560, rw3072, rw3584, rw4096 }

ReceptionRLC-DiscardTimer ::=       ENUMERATED {
                                         dt100, dt250, dt500, dt750, dt1000,
                                         dt1250, dt1500, dt1750, dt2000, dt2500,
                                         dt3000, dt3500, dt4000, dt4500,
```

```
                                    dt5000, dt7500 }

RFC2507-Info ::=                    SEQUENCE {
     f-MAX-PERIOD                       INTEGER (1..655355)             OPTIONAL,
     f-MAX-TIME                         INTEGER (1..255)                OPTIONAL,
     max-HEADER                         INTEGER (60..65535)             OPTIONAL,
     tcp-SPACE                          INTEGER (3..255)                OPTIONAL,
     non-TCP-SPACE                      INTEGER (3..65535)              OPTIONAL,
     expectReordering                   ExpectReordering
     -- TABULAR: The IE above has only two possible values, so using Optional
     -- would be wasteful
}

RLC-Info ::=                        SEQUENCE {
     ul-RLC-Mode                        UL-RLC-Mode                     OPTIONAL,
     dl-RLC-Mode                        DL-RLC-Mode                     OPTIONAL
}

RLC-InfoChoice ::=                  CHOICE {
     rlc-Info                           RLC-Info,
     spare                              NULL
}

RLC-SequenceNumber ::=              INTEGER (0..4095)

SRB-InformationList ::=             SEQUENCE (SIZE (1..maxSRBcount)) OF
                                        SRB-InformationSetup

SRB-InformationSetup ::=            SEQUENCE {
     rb-Identity                        RB-Identity,
     rlc-InfoChoice                     RLC-InfoChoice,
     rb-MappingInfo                     RB-MappingInfo
}

SRB-InformationSetupList2 ::=       SEQUENCE (SIZE (3..4)) OF
                                        SRB-InformationSetup

SRB-InformationSetupList ::=        SEQUENCE (SIZE (1..maxSRBcount)) OF
                                        SRB-InformationSetup

TimerEPC ::=                        ENUMERATED {
                                        te50, te100, te150, te200, te250,
                                        te300, te350, te400, te450, te500,
                                        te550, te600, te700, te800,
                                        te900, te1000 }

TimerDiscard ::=                    ENUMERATED {
                                        td0-1, td0-25, td0-5, td0-75,
                                        td1, td1-25, td1-5, td1-75,
                                        td2, td2-5, td3, td3-5, td4,
                                        td4-5, td5, td7-5 }

TimerMRW ::=                        ENUMERATED {
                                        tm50, tm100, tm150, tm200, tm250,
                                        tm300, tm350, tm400, tm450, tm500,
                                        tm550, tm600, tm700, tm800, tm900, tm1000,
                                        spare1, spare2, spare3, spare4, spare5,
                                        spare6, spare7, spare8, spare9, spare10,
                                        spare11, spare12, spare13, spare14,
                                        spare15, spare16 }

TimerPoll ::=                       ENUMERATED {
                                        tp50, tp100, tp150, tp200, tp250,
                                        tp300, tp350, tp400, tp450, tp500,
                                        tp550, tp600, tp700, tp800,
                                        tp900, tp1000,
                                        spare1, spare2, spare3, spare4, spare5,
                                        spare6, spare7, spare8, spare9, spare10,
                                        spare11, spare12, spare13, spare14,
```

```
                                    spare15, spare16 }

TimerPollPeriodic ::=               ENUMERATED {
                                        tper100, tper200, tper300, tper400,
                                        tper500, tper750, tper1000, tper2000,
                                        spare1, spare2, spare3, spare4,
                                        spare5, spare6, spare7, spare8 }

TimerPollProhibit ::=               ENUMERATED {
                                        tpp50, tpp100, tpp150, tpp200, tpp250,
                                        tpp300, tpp350, tpp400, tpp450, tpp500,
                                        tpp550, tpp600, tpp700, tpp800,
                                        tpp900, tpp1000,
                                        spare1, spare2, spare3, spare4, spare5,
                                        spare6, spare7, spare8, spare9, spare10,
                                        spare11, spare12, spare13, spare14,
                                        spare15, spare16 }

TimerRST ::=                        ENUMERATED {
                                        tr50, tr100, tr150, tr200, tr250, tr300,
                                        tr350, tr400, tr450, tr500, tr550,
                                        tr600, tr700, tr800, tr900, tr1000,
                                        spare1, spare2, spare3, spare4, spare5,
                                        spare6, spare7, spare8, spare9, spare10,
                                        spare11, spare12, spare13, spare14,
                                        spare15, spare16 }

TimerStatusPeriodic ::=             ENUMERATED {
                                        tsp50, tsp100, tsp150, tsp200, tsp250,
                                        tsp300, tsp350, tsp400, tsp450, tsp500,
                                        tsp550, tsp600, tsp700, tsp800,
                                        tsp900, tsp1000,
                                        spare1, spare2, spare3, spare4, spare5,
                                        spare6, spare7, spare8, spare9, spare10,
                                        spare11, spare12, spare13, spare14,
                                        spare15, spare16 }


TimerStatusProhibit ::=             ENUMERATED {
                                        tsp160, tsp320, tsp640, tsp1280 }

TransmissionRLC-Discard ::=         CHOICE {
    timerBasedExplicit                  ExplicitDiscard,
    timerBasedNoExplicit                NoExplicitDiscard,
    maxDAT-Retransmission               MaxDAT,
    noDiscard                           NULL
}

TransmissionWindowSize ::=          ENUMERATED {
                                        tw1, tw8, tw16, tw32, tw128, tw256,
                                        tw512, tw768, tw1024, tw1536, tw2048,
                                        tw2560, tw3072, tw3584, tw4096 }

UL-AM-RLC-Mode ::=                  SEQUENCE {
    transmissioRLC-Discard              TransmissionRLC-Discard,
    transmissionWindowSize              TransmissionWindowSize,
    timerRST                            TimerRST,
    max-RST                             MaxRST,
    pollingInfo                         PollingInfo                     OPTIONAL
}

UL-LogicalChannelMapping ::=        SEQUENCE {
    ul-TransportChannelType             UL-TransportChannelType,
    transportChannelIdentity            TransportChannelIdentity        OPTIONAL,
    logicalChannelIdentity              LogicalChannelIdentity          OPTIONAL,
    mac-LogicalChannelPriority          MAC-LogicalChannelPriority      OPTIONAL
}

UL-LogicalChannelMappingList ::= SEQUENCE (SIZE (1..2)) OF
```

```
                                    UL-LogicalChannelMapping

UL-RLC-Mode ::=                     CHOICE {
     ul-AM-RLC-Mode                      UL-AM-RLC-Mode,
     ul-UM-RLC-Mode                      UL-UM-RLC-Mode,
     ul-TM-RLC-Mode                      NULL,
     spare                               NULL
}

UL-TransportChannelType ::=         ENUMERATED {
                                         dch, rach, cpch, usch }

UL-UM-RLC-Mode ::=                  SEQUENCE {
     transmissionRLC-Discard             TransmissionRLC-Discard          OPTIONAL
}

END
```

11.3.5 Transport channel information elements

```
TransportChannel-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

     maxAddTFC-Count,
     maxCPCHsetcount,
     maxCTFC,
     maxCTFC-DCH,
     maxCTFC-DSCH,
     maxDelTFC-Count,
     maxDelTrCHcount,
     maxDL-CCTrCHcount,
     maxDRAC-Classes,
     maxDRACReconAddTrCHcount,
     maxFACHcount,
     maxNoTFCI-Groups,
     maxReconAddTrCHcount,
     maxRM,
     maxRstTrCH-Count,
     maxTF-Count,
     maxTF-Value,
     maxTFC-Count,
     maxTFC-Value,
     maxTFC-Value-1,
     maxTFCI-1-Combs,
     maxTFCI-2-Combs,
     maxTFCI-Value,
     maxTFcount,
     maxTrCH,
     maxTrChCount,
     maxTrChValue,
     maxUL-CCTrCHcount
FROM Constant-definitions;

AddCTFC-List ::=                    SEQUENCE (SIZE (1..maxAddTFC-Count)) OF
                                         CTFC

Addition ::=                        SEQUENCE {
     ctfc                                CTFC,
     gainFactorInformation               GainFactorInformation,
     powerOffsetPp-m                     PowerOffsetPp-m
}

AdditionList ::=                    SEQUENCE (SIZE (1..maxAddTFC-Count)) OF
                                         Addition

AllowedTFI-List ::=                 SEQUENCE (SIZE (1..maxTF-Count)) OF
                                         INTEGER (0..maxTF-Value)
```

```
AllowedTFC-List ::=                 SEQUENCE (SIZE (1..maxTFC-Count)) OF
                                        TFC-Value

BitModeRLC-SizeInfo ::=             CHOICE {
     sizeType1                          INTEGER (1..127),
     sizeType2                          SEQUENCE {
          part1                             INTEGER (0..15),
          part2                             INTEGER (1..7)              OPTIONAL
          -- Actual size = (part1 * 8) + 128 + part2
     },
     sizeType3                          SEQUENCE {
          part1                             INTEGER (0..47),
          part2                             INTEGER (1..15)             OPTIONAL
          -- Actual size = (part1 * 16) + 256 + part2
     },
     sizeType4                          SEQUENCE {
          part1                             INTEGER (0..62),
          part2                             INTEGER (1..63)             OPTIONAL
          -- Actual size = (part1 * 64) + 1024 + part2
     }
}

BLER-QualityValue ::=               INTEGER (0..63)

ChannelCodingType ::=               CHOICE {
     noCoding                           NULL,
     convolutional                      CodingRate,
     turbo                              NULL
}

CodingRate ::=                      ENUMERATED {
                                        half,
                                        third }

CommonDynamicTF-Info ::=            SEQUENCE {
     numberOfTransportBlocks            NumberOfTransportBlocks,
     modeSpecificInfo                   CHOICE {
          fdd                               SEQUENCE {
               octetModeRLC-SizeInfoType2       OctetModeRLC-SizeInfoType2
          },
          tdd                               SEQUENCE {
               commonTDD-Choice                 CHOICE {
                    bitModeRLC-SizeInfo             BitModeRLC-SizeInfo,
                    octetModeRLC-SizeInfoType1      OctetModeRLC-SizeInfoType1
               }                                                        OPTIONAL
          }
     }
}

CommonDynamicTF-InfoList ::=        SEQUENCE (SIZE (1..maxTFcount)) OF
                                        CommonDynamicTF-Info

CommonTransChTFS ::=                SEQUENCE {
     dynamicTF-InformationList          CommonDynamicTF-InfoList,
     semistaticTF-Information           SemistaticTF-Information
}

CompleteReconf ::=                  SEQUENCE {
     ctfc                               CTFC,
     gainFactorInformation              GainFactorInformation,
     powerOffsetPp-m                    PowerOffsetPp-m
}

CompleteReconfList ::=              SEQUENCE (SIZE (1..maxTFC-Count)) OF
                                        CompleteReconf

ComputedGainFactors ::=             SEQUENCE {
     referenceTFC-Number                ReferenceTFC-Number
```

```
}

ControlledTrChList ::=          SEQUENCE (SIZE (1..maxTrChCount)) OF
                                     TransportChannelIdentity

CPCH-SetID ::=                  INTEGER (1..maxCPCHsetcount)

CRC-Size ::=                    ENUMERATED {
                                     crc0, crc8, crc12, crc16, crc24 }

CTFC-DCH ::=                    INTEGER (0..maxCTFC-DCH)

CTFC-DSCH ::=                   INTEGER (0..maxCTFC-DSCH)

CTFC ::=                        INTEGER (0..maxCTFC)

DedicatedDynamicTF-Info ::=     SEQUENCE {
     numberOfTransportBlocks         NumberOfTransportBlocks,
     rlcMode                         CHOICE {
          bitMode                         BitModeRLC-SizeInfo,
          octetModeType1                  OctetModeRLC-SizeInfoType1
     }                                                          OPTIONAL
}

DedicatedDynamicTF-InfoList ::= SEQUENCE (SIZE (1..maxTFcount)) OF
                                     DedicatedDynamicTF-Info

DedicatedTransChTFS ::=         SEQUENCE {
     dynamicTF-InformationList       DedicatedDynamicTF-InfoList,
     semistaticTF-Information        SemistaticTF-Information
}

DeletedUL-TransChInformation ::= SEQUENCE {
     transportChannelIdentity        TransportChannelIdentity
}

DL-AddReconfTransChInfo2List ::= SEQUENCE (SIZE (1..maxReconAddTrCHcount)) OF
                                     DL-AddReconfTransChInformation2

DL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxReconAddTrCHcount)) OF
                                     DL-AddReconfTransChInformation

DL-AddReconfTransChInformation ::= SEQUENCE {
     trasportChannelIdentity         TransportChannelIdentity,
     transportFormatSet              TransportFormatSet,
     modeSpecificInfo                CHOICE {
          fdd                             NULL,
          tdd                             SEQUENCE {
               dl-DCH-TFCS-Identity            TFCS-Identity          OPTIONAL
          }
     }                                                              OPTIONAL,
     dch-QualityTarget               QualityTarget                  OPTIONAL,
     tm-SignallingInfo               TM-SignallingInfo              OPTIONAL
}

DL-AddReconfTransChInformation2 ::= SEQUENCE {
     trasportChannelIdentity         TransportChannelIdentity,
     transportFormatSet              TransportFormatSet,
     qualityTarget                   QualityTarget
}

DL-CommonTransChInfo ::=        SEQUENCE {
     sccpch-TFCS                     TFCS                           OPTIONAL,
     modeSpecificInfo                CHOICE {
          fdd                             SEQUENCE {
               dl-DCH-TFCS                     TFCS                   OPTIONAL
          },
          tdd                             SEQUENCE {
               individualDL-CCTrCH-InfoList    IndividualDL-CCTrCH-InfoList
```

```
                                                                    OPTIONAL
          }
     }
}

DL-DeletedTransChInfoList ::=    SEQUENCE (SIZE (1..maxDelTrCHcount)) OF
                                      DL-DeletedTransChInformation

DL-DeletedTransChInformation ::= SEQUENCE {
     transportChannelIdentity         TransportChannelIdentity,
     modeSpecificInfo                 CHOICE {
          fdd                              NULL,
          tdd                              SEQUENCE {
               dl-DCH-TFCS-Identity             TFCS-Identity          OPTIONAL
          }
     }                                                                  OPTIONAL
}

DL-PreDefTrChInfoList ::=        SEQUENCE (SIZE (1..maxTrCH)) OF
                                      DL-PreDefTrChInformation

DL-PreDefTrChInformation ::=     SEQUENCE {
     trasportChannelIdentity          TransportChannelIdentity,
     transportFormatSet               TransportFormatSet,
     qualityTarget                    QualityTarget                  OPTIONAL,
     tm-SignallingInfo                TM-SignallingInfo              OPTIONAL
}

DRAC-ClassIdentity ::=           INTEGER (1..maxDRAC-Classes)

DRAC-StaticInformation ::=       SEQUENCE {
     transmissionTimeValidity         TransmissionTimeValidity,
     timeDurationBeforeRetry          TimeDurationBeforeRetry,
     drac-ClassIdentity               DRAC-ClassIdentity
}

DRAC-StaticInformationList ::=   SEQUENCE (SIZE (1..maxDRACReconAddTrCHcount))
                                      OF DRAC-StaticInformation

FACH-PCH-Information ::=         SEQUENCE {
     transportFormatSet               TransportFormatSet,
     ctch-Indicator                   BOOLEAN
}

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

GainFactor ::=                   INTEGER (0..15)

GainFactorInformation ::=        CHOICE {
     signalledGainFactors             SignalledGainFactors,
     computedGainFactors              ComputedGainFactors
}

IndividualDL-CCTrCH-Info ::=     SEQUENCE {
     dl-DCH-TFCS-Identity             TFCS-Identity,
     dl-DCH-TFCS                      TFCS
}

IndividualUL-CCTrCH-InfoList ::= SEQUENCE (SIZE (1..maxUL-CCTrCHcount)) OF
                                      IndividualUL-CCTrCH-Info

IndividualUL-CCTrCH-Info ::=     SEQUENCE {
     ul-DCH-TFCS-Identity             TFCS-Identity,
     ul-DCH-TFCS                      TFCS
}

IndividualDL-CCTrCH-InfoList ::= SEQUENCE (SIZE (1..maxDL-CCTrCHcount)) OF
                                      IndividualDL-CCTrCH-Info
```

```
-- **TODO**, extensibility?
MessType ::=                        ENUMERATED {
                                         transportFormatCombinationControl }

Non-allowedTFC-List ::=             SEQUENCE (SIZE (1..maxTFC-Count)) OF
                                         INTEGER (0..maxTFC-Value)

NumberOfTransportBlocks ::=         INTEGER (0..4095)

OctetModeRLC-SizeInfoType1 ::=      CHOICE {
     sizeType1                           INTEGER (0..31),
     -- Actual size = (8 * sizeType1) + 16
     sizeType2                           SEQUENCE {
          part1                               INTEGER (0..23),
          part2                               INTEGER (1..3)              OPTIONAL
          -- Actual size = (32 * part1) + 272 + (part2 * 8)
     },
     sizeType3                           SEQUENCE {
          part1                               INTEGER (0..61),
          part2                               INTEGER (1..7)              OPTIONAL
          -- Actual size = (64 * part1) + 1040 + (part2 * 8)
     }
}

OctetModeRLC-SizeInfoType2 ::=      SEQUENCE {
     sizeType1                           INTEGER (0..31),
     -- Actual size = (sizeType1 * 8) + 48
     sizeType2                           INTEGER (0..63),
     -- Actual size = (sizeType2 * 16) + 312
     sizeType3                           INTEGER (0..56)
     -- Actual size = (sizeType3 *64) + 1384
}

PowerOffsetPp-m ::=                 INTEGER (-5..10)

PreDefTransChConfiguration ::=      SEQUENCE {
     ul-TFCS                             TFCS                              OPTIONAL,
     ul-AddReconfTrChInfoList            UL-PreDefTrChInfoList             OPTIONAL,
     dl-TFCS                             TFCS                              OPTIONAL,
     dl-TrChInfoList                     DL-PreDefTrChInfoList             OPTIONAL,
     modeSpecificInfo                    CHOICE {
          fdd                                 NULL,
          tdd                                 SEQUENCE {
               ul-DCH-TFCS-Identity                TFCS-Identity,
               dl-DCH-TFCS-Identity                TFCS-Identity
          }
          -- TABULAR: The two separate choices in tabular have been
          -- combined here.
     }
}

QualityTarget ::=                   SEQUENCE {
     bler-QualityValue                   BLER-QualityValue
}

RateMatchingAttribute ::=           INTEGER (1..maxRM)

ReferenceTFC-Number ::=             INTEGER (0..15)

Removal ::=                         SEQUENCE {
     tfci                                TFCI
}

RemovalList ::=                     SEQUENCE (SIZE (1..maxDelTFC-Count)) OF
                                         Removal

RestrictedTrChIdentity ::=          INTEGER (0..maxTrChValue)
```

```
RestrictedTrChInfo ::=          SEQUENCE {
     restrictedTrChIdentity          RestrictedTrChIdentity,
     allowedTFI-List                 AllowedTFI-List                 OPTIONAL
}

RestrictedTrChInfoList ::=      SEQUENCE (SIZE (1..maxRstTrCH-Count)) OF
                                     RestrictedTrChInfo

SemistaticTF-Information ::=    SEQUENCE {
     transmissionTimeInterval        TransmissionTimeInterval,
     channelCodingType               ChannelCodingType,
     rateMatchingAttribute           RateMatchingAttribute,
     crc-Size                        CRC-Size
}

SignalledGainFactors ::=        SEQUENCE {
     gainFactorBetaC                 GainFactor,
     gainFactorBetaD                 GainFactor,
     referenceTFC-Number             ReferenceTFC-Number
}

TFC-DCH-List ::=                SEQUENCE (SIZE (1..maxTFCI-1-Combs)) OF
                                     CTFC-DCH

TFC-DSCH-List ::=               SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
                                     CTFC-DSCH

TFC-MappingOnDSCH ::=           SEQUENCE {
     maxTFCI-Field2Value             INTEGER (1..512),
     ctfc-DSCH                       CTFC-DSCH
}

TFC-MappingOnDSCH-List ::=      SEQUENCE (SIZE (1..maxNoTFCI-Groups)) OF
                                     TFC-MappingOnDSCH

TFC-Subset ::=                  CHOICE {
     minimumAllowedTFC-Number        TFC-Value,
     allowedTFC-List                 AllowedTFC-List,
     non-allowedTFC-List             Non-allowedTFC-List,
     restrictedTrChInfoList          RestrictedTrChInfoList
}

TFC-Value ::=                   INTEGER (0..maxTFC-Value-1)

TFCI ::=                        INTEGER (0..maxTFCI-Value)

TFCI2-Length ::=                INTEGER (1..9)

TFCS ::=                        CHOICE {
     fddWithoutAccessOrTDD           SEQUENCE {
          tfcsRepresentation              CHOICE {
               completeReconfList              CompleteReconfList,
               removalList                     RemovalList,
               additionList                    AdditionList
          }
     },
     fddWithAccess                   SEQUENCE {
          tfci2-Length                    TFCI2-Length,
          tfc-DCH-List                    TFC-DCH-List,
          signallingMethod                CHOICE  {
               tfci-Range                      SEQUENCE {
                    tfc-MappingOnDSCH-List          TFC-MappingOnDSCH-List
               },
               explicit                        SEQUENCE {
                    tfc-DSCH-List                   TFC-DSCH-List
               }
          }
     }
}
```

```
TFCS-Identity ::=                SEQUENCE {
     tfcs-ID                          INTEGER (1..8),
     sharedChannelIndicator           BOOLEAN
}

TimeDurationBeforeRetry ::=      INTEGER (1..256)

TM-SignallingInfo  ::=           SEQUENCE {
     transportChannelIdentity         TransportChannelIdentity,
     tm-SignallingMode                CHOICE {
          mode1                            SEQUENCE {
               messType                         MessType
          },
          mode2                            SEQUENCE {
               controlledTrChList               ControlledTrChList
          }
     }
}

TransmissionTimeInterval ::=     ENUMERATED {
                                      tti10, tti20, tti40, tti80 }

TransmissionTimeValidity ::=     INTEGER (1..256)

TransportChannelIdentity ::=     INTEGER (1..64)

TransportFormatSet ::=           CHOICE {
     dedicatedTransChTFS              DedicatedTransChTFS,
     commonTransChTFS                 CommonTransChTFS
}

UL-AddReconfTransChInfoList ::=  SEQUENCE (SIZE (1..maxReconAddTrCHcount)) OF
                                      UL-AddReconfTransChInformation

UL-AddReconfTransChInformation ::= SEQUENCE {
     transportChannelIdentity         TransportChannelIdentity,
     transportFormatSet               TransportFormatSet,
     modeSpecificInfo                 CHOICE {
          fdd                              NULL,
          tdd                              SEQUENCE {
               ul-DCH-TFCS-Identity             TFCS-Identity          OPTIONAL
          }
     }                                                                  OPTIONAL
}

UL-CommonTransChInfo ::=         SEQUENCE {
     tfc-Subset                       TFC-Subset                        OPTIONAL,
     modeSpecificInfo                 CHOICE {
          fdd                              SEQUENCE {
               ul-DCH-TFCS                      TFCS
          },
          tdd                              SEQUENCE {
               ul-DCH-TFCS-Identity             TFCS-Identity
          }
     }                                                                  OPTIONAL
}

UL-DeletedTransChInfoList ::=    SEQUENCE (SIZE (1..maxDelTrCHcount)) OF
                                      DeletedUL-TransChInformation

UL-DeletedTransChInformation ::= SEQUENCE {
     transportChannelIdentity         TransportChannelIdentity,
     modeSpecificInfo                 CHOICE {
          fdd                              NULL,
          tdd                              SEQUENCE {
               individualUL-CCTrCH-InfoList     IndividualUL-CCTrCH-InfoList
                                                                        OPTIONAL
          }
```

```
     }                                                                  OPTIONAL
}

UL-PreDefTrChInfoList ::=        SEQUENCE (SIZE (1..maxTrCH)) OF
                                      UL-PreDefTrChInformation

UL-PreDefTrChInformation ::=     SEQUENCE {
     transportChannelIdentity         TransportChannelIdentity,
     transportFormatSet               TransportFormatSet
}

END
```

11.3.6 Physical channel information elements

```
PhysicalChannel-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

     maxAddRLcount,
     maxAP-SigNum,
     maxAP-SubCH,
     maxChanCount,
     maxCodeCount,
     maxCodeNum,
     maxCodeNumComp-1,
     maxCombineSet,
     maxCPCH-SetCount,
     maxDelRLcount,
     maxDPDCHcount,
     maxFACH-Count,
     maxMidambleShift-1,
     maxNoCodeGroups,
     maxNoTFCI-Groups,
     maxPCPCHs,
     maxPDSCHcount,
     maxPRACHcount,
     maxPUSCHcount,
     maxReplaceCount,
     maxRLcount,
     maxSCCPCHcount,
     maxSigNum,
     maxSF-Num,
     maxSubChNum,
     maxTFCI-2-Combs,
     maxTFs,
     maxTimeslotCount,
     maxTScount,
     maxUL-CCTrCHcount
FROM Constant-definitions

     ActivationTime
FROM UserEquipment-IEs

     CPCH-SetID,
     FACH-PCH-InformationList,
     TFCS,
     TFCS-Identity,
     TransportFormatSet
FROM TransportChannel-IEs

     SIB-ReferenceListFACH
FROM Other-IEs;

AC-To-ASC-Mapping ::=            INTEGER (0..7)

AC-To-ASC-MappingTable ::=       SEQUENCE (SIZE (7)) OF
                                      AC-To-ASC-Mapping
```

```
AccessServiceClass ::=          SEQUENCE {
     availableSignatureStartIndex     INTEGER (0..15),
     availableSignatureEndIndex       INTEGER (0..15),
     availableSubChannelStartIndex    INTEGER (0..11),
     availableSubChannelEndIndex      INTEGER (0..11)
}

AccessServiceClassIndex ::=     INTEGER (1..8)

AICH-Info ::=                   SEQUENCE {
     secondaryScramblingCode          SecondaryScramblingCode          OPTIONAL,
     channelisationCode256            ChannelisationCode256,
     sttd-Indicator                   STTD-Indicator,
     aich-TransmissionTiming          AICH-TransmissionTiming
}

AICH-PowerOffset ::=            INTEGER (-10..5)

AICH-TransmissionTiming ::=     ENUMERATED {
                                     e0, e1 }

AllocationPeriodInfo ::=        SEQUENCE {
     allocationActivationTime         INTEGER (1..256),
     allocationDuration               INTEGER (1..256)
}

AP-AICH-ChannelisationCode ::=  INTEGER (0..255)

AP-AICH-ScramblingCode ::=      INTEGER (0..255)

AP-PreambleScramblingCode ::=   INTEGER (0..255)

AP-Signature ::=                INTEGER (0..15)

AP-Subchannel ::=               INTEGER (0..11)

ASC ::=                         SEQUENCE {
     accessServiceClass               AccessServiceClass,
     repetitionPeriodAndOffset        ASC-RepetitionPeriodAndOffset    OPTIONAL
     -- TABULAR: The offset is nested in the repetition period
}

ASC-Info ::=                    SEQUENCE {
     asc-List                         ASC-List
}

ASC-List ::=                    SEQUENCE (SIZE (1..8)) OF
                                     ASC

ASC-RepetitionPeriodAndOffset ::=CHOICE {
     rp1                              NULL,
     rp2                              INTEGER (0..1),
     rp4                              INTEGER (0..3),
     rp8                              INTEGER (0..7)
}

AvailableAP-SignatureList ::=   SEQUENCE (SIZE (1..maxAP-SigNum)) OF
                                     AP-Signature

AvailableAP-SubchannelList ::=  SEQUENCE (SIZE (1..maxAP-SubCH)) OF
                                     AP-Subchannel

AvailableMinimumSF-VCAM ::=     SEQUENCE {
     minimumSpreadingFactor           MinimumSpreadingFactor,
     nf-Max                           NF-Max,
     maxAvailablePCPCH-Number         MaxAvailablePCPCH-Number,
     availableAP-SignatureList        AvailableAP-SignatureList,
     availableAP-SubchannelList       AvailableAP-SubchannelList       OPTIONAL
```

```
}

AvailableMinimumSF-ListUCSM ::=  SEQUENCE (SIZE (1..maxSF-Num)) OF
                                      MinimumSpreadingFactor

AvailableMinimumSF-ListVCAM ::=  SEQUENCE (SIZE (1..maxSF-Num)) OF
                                      AvailableMinimumSF-VCAM

AvailableSignatureList ::=       SEQUENCE (SIZE (1..maxSigNum)) OF
                                      Signature

AvailableSubChannelNumber ::=    INTEGER (0..11)

AvailableSubChannelNumberList ::=SEQUENCE (SIZE (1..maxSubChNum)) OF
                                      AvailableSubChannelNumber

BlockSTTD-Indicator ::=          BOOLEAN

BurstType ::=                    ENUMERATED {
                                      short1, long2 }

BurstType1 ::=                   ENUMERATED { ms4, ms8, ms16 }

BurstType2 ::=                   ENUMERATED { ms3, ms6 }

CCTrCH-PowerControlInfo ::=      SEQUENCE {
     tfcs-Identity                    TFCS-Identity                       OPTIONAL,
     ul-DPCH-PowerControlInfo         UL-DPCH-PowerControlInfo
}

CD-AccessSlotSubchannel ::=      INTEGER (0..11)

CD-AccessSlotSubchannelList ::=  SEQUENCE (SIZE (1..maxSubChNum)) OF
                                      CD-AccessSlotSubchannel

CD-CA-ICH-ChannelisationCode ::= INTEGER (0..255)

CD-CA-ICH-ScramblingCode ::=     INTEGER (0..255)

CD-PreambleScramblingCode ::=    INTEGER (0..255)

CD-SignatureCode ::=             INTEGER (0..15)

CD-SignatureCodeList ::=         SEQUENCE (SIZE (1..maxSigNum)) OF
                                      CD-SignatureCode

CellParametersID ::=             INTEGER (0..127)

CFN ::=                          INTEGER (0..255)

ChannelAssignmentActive ::=      CHOICE {
     notActive                        NULL,
     isActive                         VCAM-Info
}

ChannelisationCode256 ::=        INTEGER (0..255)

ChannelReqParamsForUCSM ::=      SEQUENCE {
     availableAP-SignatureList        AvailableAP-SignatureList,
     availableAP-SubchannelList       AvailableAP-SubchannelList
}

ChannelReqParamsForUCSM-List ::= SEQUENCE (SIZE (1..maxSigNum)) OF
                                      ChannelReqParamsForUCSM

ClosedLoopTimingAdjMode ::=      ENUMERATED {
                                      slot1, slot2 }

CodeNumber ::=                   INTEGER (0..maxCodeNum)
```

```
CodeNumberDSCH ::=                INTEGER (0..maxCodeNumComp-1)

CodeRange ::=                     SEQUENCE {
     pdsch-CodeMapList                 PDSCH-CodeMapList,
     codeNumberStart                   CodeNumberDSCH,
     codeNumberStop                    CodeNumberDSCH
}

CodeWordSet ::=                   ENUMERATED {
                                       longCWS,
                                       mediumCWS,
                                       shortCWS,
                                       ssdtOff }

CommonTimeslotInfo ::=            SEQUENCE {
     secondInterleavingMode            SecondInterleavingMode           OPTIONAL,
     tfci-Coding                       TFCI-Coding                      OPTIONAL,
     puncturingLimit                   PuncturingLimit,
     repetitionPeriodAndLength         RepetitionPeriodAndLength        OPTIONAL
}

CommonTimeslotInfoSCCPCH ::=      SEQUENCE {
     secondInterleavingMode            SecondInterleavingMode           OPTIONAL,
     tfci-Coding                       TFCI-Coding                      OPTIONAL,
     puncturingLimit                   PuncturingLimit,
     repetitionPeriodLengthAndOffset   RepetitionPeriodLengthAndOffset  OPTIONAL
}

CompressedModeMethod ::=          CHOICE {
     puncturing                        NULL,
     sf-2                              ScramblingCodeChange,
     upperLayerScheduling              NULL,
     noCompressing                     NULL
}

-- Values from -10 to 10 are used in Release 99
ConstantValue ::=                 INTEGER (-10..21)

CPCH-PersistenceLevelsList ::=    SEQUENCE (SIZE (1..maxCPCH-SetCount)) OF
                                       CPCH-PersistenceLevels

CPCH-PersistenceLevels ::=        SEQUENCE {
     cpch-SetID                        CPCH-SetID,
     dynamicPersistenceLevelTF-List    DynamicPersistenceLevelTF-List
}

CPCH-SetInfo ::=                  SEQUENCE {
     cpch-SetID                        CPCH-SetID,
     transportFormatSet                TransportFormatSet,
     ap-PreambleScramblingCode         AP-PreambleScramblingCode,
     ap-AICH-ScramblingCode            AP-AICH-ScramblingCode,
     ap-AICH-ChannelisationCode        AP-AICH-ChannelisationCode,
     cd-PreambleScramblingCode         CD-PreambleScramblingCode,
     cd-CA-ICH-ScramblingCode          CD-CA-ICH-ScramblingCode,
     cd-CA-ICH-ChannelisationCode      CD-CA-ICH-ChannelisationCode,
     cd-AccessSlotSubchannelList       CD-AccessSlotSubchannelList      OPTIONAL,
     cd-SignatureCodeList              CD-SignatureCodeList             OPTIONAL,
     slotFormat                        SlotFormat,
     n-StartMessage                    N-StartMessage,
     channelAssignmentActive           ChannelAssignmentActive,
     -- TABULAR: VCAM info has been nested inside ChannelAssignmentActive,
     -- which in turn is mandatory since it's only a binary choice.
     cpch-StatusIndicationMode         CPCH-StatusIndicationMode,
     pcpch-ChannelInfoList             PCPCH-ChannelInfoList
}

CPCH-SetInfoList ::=              SEQUENCE (SIZE (1..maxCPCH-SetCount)) OF
                                       CPCH-SetInfo
```

```
CPCH-StatusIndicationMode ::=    ENUMERATED {
                                      pcpch-Availability,
                                      pcpch-AvailabilityAndMinAvailableSF }

-- Actual value = IE value * 512, only values from 0 to 599 used in Release 99.
DefaultDPCH-OffsetValue ::=      INTEGER (0..1023)

-- Actual value = IE value * 0.5
DeltaSIR ::=                     INTEGER (0..15)

DL-CCTrCh ::=                    SEQUENCE {
     individualTS-InfoDL-CCTrCHList   IndividualTS-InfoDL-CCTrCHList
}

DL-CCTrCh-HO ::=                 SEQUENCE {
     tfcs-Identity                    TFCS-Identity,
     individualTS-InfoDL-CCTrCHList   IndividualTS-InfoDL-CCTrCHList
}

DL-CCTrChList ::=                CHOICE {
     single                           DL-CCTrCh,
     handover                         SEQUENCE (SIZE (1..8)) OF DL-CCTrCh-HO
}

DL-ChannelisationCode ::=        SEQUENCE {
     secondaryScramblingCode          SecondaryScramblingCode          OPTIONAL,
     codeNumber                       CodeNumber
}

DL-ChannelisationCodeList ::=    SEQUENCE (SIZE(1..maxChanCount)) OF
                                      DL-ChannelisationCode

DL-CommonInformation ::=         SEQUENCE {
     dl-DPCH-InfoCommon               DL-DPCH-InfoCommon               OPTIONAL,
     modeSpecificInfo                 CHOICE {
          fdd                              SEQUENCE {
               defaultDPCH-OffsetValue          DefaultDPCH-OffsetValue OPTIONAL,
               dpch-CompressedModeInfo          DPCH-CompressedModeInfo OPTIONAL,
               tx-DiversityMode                 TX-DiversityMode        OPTIONAL,
               ssdt-Information                 SSDT-Information        OPTIONAL
          },
          tdd                              SEQUENCE {
               ul-TimingAdvance                 UL-TimingAdvance        OPTIONAL
          }
     }
}

DL-CommonInformationPredef ::=   SEQUENCE {
     dl-DPCH-InfoCommon               DL-DPCH-InfoCommon               OPTIONAL,
     modeSpecificInfo                 CHOICE {
          fdd                              SEQUENCE {
               defaultDPCH-OffsetValue          DefaultDPCH-OffsetValue OPTIONAL
          },
          tdd                              NULL
     }
}

DL-DPCCH-SlotFormat ::=          ENUMERATED {
                                      slf0, slf1 }

DL-DPCH-InfoCommon ::=           SEQUENCE {
     dl-DPCH-PowerControlInfo         DL-DPCH-PowerControlInfo,
     spreadingFactor                  SF-DL-DPCH,
     -- TABULAR: The number of pilot bits is nested inside the spreading factor.
     positionFixedOrFlexible          PositionFixedOrFlexible,
     tfci-Existence                   BOOLEAN
}
```

```
DL-DPCH-InfoPerRL ::=               CHOICE {
     fdd                                 SEQUENCE {
          pCPICH-UsageForChannelEst           PCPICH-UsageForChannelEst   OPTIONAL,
          secondaryCPICH-Info                 SecondaryCPICH-Info         OPTIONAL,
          dl-ChannelisationCodeList           DL-ChannelisationCodeList,
          tpc-CombinationIndex                TPC-CombinationIndex,
          ssdt-CellIdentity                   SSDT-CellIdentity           OPTIONAL,
          closedLoopTimingAdjMode             ClosedLoopTimingAdjMode     OPTIONAL
     },
     tdd                                 SEQUENCE {
          dl-CCTrChList                       DL-CCTrChList
     }
}

DL-DPCH-PowerControlInfo ::=        SEQUENCE {
     modeSpecificInfo                    CHOICE {
          fdd                                 SEQUENCE {
               dpc-Mode                            DPC-Mode                OPTIONAL
          },
          tdd                                 NULL
     }
}

DL-FrameType ::=                    ENUMERATED {
                                         dl-FrameTypeA, dl-FrameTypeB }

DL-InfoPerRL ::=                    SEQUENCE {
     dl-InformationPerRL                 DL-InformationPerRL-Short,
     dl-DPCH-InfoPerRL                   DL-DPCH-InfoPerRL
}

DL-InfoPerRL-List ::=               SEQUENCE (SIZE (1..maxRLcount)) OF
                                         DL-InfoPerRL

DL-InformationPerRL ::=             SEQUENCE {
     modeSpecificInfo                    CHOICE {
          fdd                                 SEQUENCE {
               primaryCPICH-Info                   PrimaryCPICH-Info,
               pdsch-SHO-DCH-Info                  PDSCH-SHO-DCH-Info      OPTIONAL,
               pdsch-CodeMapping                   PDSCH-CodeMapping       OPTIONAL
          },
          tdd                                 SEQUENCE {
               primaryCCPCH-Info                   PrimaryCCPCH-Info
          }
     },
     dl-DPCH-InfoPerRL                   DL-DPCH-InfoPerRL                 OPTIONAL,
     secondaryCCPCH-Info                 SecondaryCCPCH-Info               OPTIONAL,
     sib-ReferenceList                   SIB-ReferenceListFACH             OPTIONAL
}

DL-InformationPerRL-List ::=        SEQUENCE (SIZE (1..maxRLcount)) OF
                                         DL-InformationPerRL

DL-InformationPerRL-Short ::=       SEQUENCE {
     modeSpecificInfo                    CHOICE {
          fdd                                 SEQUENCE {
               primaryCPICH-Info                   PrimaryCPICH-Info
          },
          tdd                                 NULL
     },
     dl-DPCH-InfoPerRL                   DL-DPCH-InfoPerRL                 OPTIONAL
}

DL-OuterLoopControl ::=             ENUMERATED {
                                         increaseAllowed, increaseNotAllowed }

DL-PDSCH-Information ::=            SEQUENCE {
     pdsch-SHO-DCH-Info                  PDSCH-SHO-DCH-Info,
     pdsch-CodeMapping                   PDSCH-CodeMapping
```

```
}

DL-TS-ChannelisationCode ::=     ENUMERATED {
                                      cc16-1, cc16-2, cc16-3, cc16-4,
                                      cc16-5, cc16-6, cc16-7, cc16-8,
                                      cc16-9, cc16-10, cc16-11, cc16-12,
                                      cc16-13, cc16-14, cc16-15, cc16-16 }

DL-TS-ChannelisationCodeList ::= SEQUENCE (SIZE (1..maxCodeCount)) OF
                                      DL-TS-ChannelisationCode

DPC-Mode ::=                     ENUMERATED {
                                      singleTPC,
                                      tpcTripletInSoft }

-- The actual value of DPCCH power offset is the value of this IE * 2.
DPCCH-PowerOffset ::=            INTEGER (-82..-3)

DPCH-CompressedModeInfo ::=      SEQUENCE {
     tgl                              TGL,
     cfn                              CFN,
     sn                               Timeslot,
     tgp1                             TGP,
     tgp2                             TGP                                 OPTIONAL,
     tgd                              TGD,
     pd                               PD,
     pcm                              PCM,
     prm                              PRM,
     ul-DL-Mode                       UL-DL-Mode,
     compressedModeMethod             CompressedModeMethod,
     -- TABULAR: Scrambling code change is nested inside CompressedModeMethod
     dl-FrameType                     DL-FrameType,
     deltaSIR                         DeltaSIR,
     deltaSIRAfter                    DeltaSIR
}

DPDCH-ChannelisationCode ::=     ENUMERATED {
                                      e4, e8, e16, e32,
                                      e64, e128, e256 }

DPDCH-ChannelisationCodeList ::= SEQUENCE (SIZE (1..maxDPDCHcount)) OF
                                      DPDCH-ChannelisationCode

DSCH-Mapping ::=                 SEQUENCE {
     maxTFCI-Field2Value              MaxTFCI-Field2Value,
     spreadingFactor                  SF-PDSCH,
     codeNumber                       CodeNumberDSCH,
     multiCodeInfo                    MultiCodeInfo
}

DSCH-MappingList ::=             SEQUENCE (SIZE (1..maxNoTFCI-Groups)) OF
                                      DSCH-Mapping

DSCH-RadioLinkIdentifier ::=     INTEGER (0..511)

DurationTimeInfo ::=             INTEGER (1..4096)

DynamicPersistenceLevel ::=      INTEGER (1..8)

DynamicPersistenceLevelList ::=  SEQUENCE (SIZE (1..maxPRACHcount)) OF
                                      DynamicPersistenceLevel

DynamicPersistenceLevelTF-List ::= SEQUENCE (SIZE (1..maxTFs)) OF
                                      DynamicPersistenceLevel

FACH-PCH-Information ::=         SEQUENCE {
     transportFormatSet               TransportFormatSet,
     ctch-Indicator                   BOOLEAN
}
```

```
FACH-PCH-InformationList ::=     SEQUENCE (SIZE(1..maxFACH-Count)) OF
                                      FACH-PCH-Information

FBI-BitNumber ::=                INTEGER (1..2)

FrequencyInfo ::=                SEQUENCE {
     modeSpecificInfo                 CHOICE {
          fdd                              SEQUENCE {
               uarfcn-UL                        UARFCN-Nu,
               uarfcn-DL                        UARFCN-Nd               OPTIONAL
          },
          tdd                              SEQUENCE {
               uarfcn-Nt                        UARFCN-Nt
          }
     }
}

IndividualTimeslotInfo ::=       SEQUENCE {
     timeslotNumber                   Timeslot,
     tfci-Existence                   BOOLEAN,
     -- The IE above is CH, but since it is a boolean it's kept mandatory.
     burstType                        BurstType,
     midambleShift                    MidambleShift
}

IndividualTS-InfoDL-CCTrCH ::=   SEQUENCE {
     individualTimeslotInfo           IndividualTimeslotInfo,
     dl-TS-ChannelisationCodeList     DL-TS-ChannelisationCodeList
}

IndividualTS-InfoDL-CCTrCHList ::= SEQUENCE (SIZE (1..maxTimeslotCount)) OF
                                      IndividualTS-InfoDL-CCTrCH

IndividualTS-InfoPDSCH ::=       SEQUENCE {
     individualTimeslotInfo           IndividualTimeslotInfo,
     pdsch-ChannelisationCode         PDSCH-ChannelisationCode
}

IndividualTS-InfoPDSCH-List ::=  SEQUENCE (SIZE (1..maxTimeslotCount)) OF
                                      IndividualTS-InfoPDSCH

IndividualTS-InfoPUSCH ::=       SEQUENCE {
     individualTimeslotInfo           IndividualTimeslotInfo,
     pusch-ChannelisationCode         PUSCH-ChannelisationCode
}

IndividualTS-InfoPUSCH-List ::=  SEQUENCE (SIZE (1..maxTimeslotCount)) OF
                                      IndividualTS-InfoPUSCH

IndividualTS-InfoUL-CCTrCH ::=   SEQUENCE {
     individualTimeslotInfo           IndividualTimeslotInfo,
     channelisationCode               UL-TS-ChannelisationCode
}

IndividualTS-InfoUL-CCTrCH-List ::= SEQUENCE (SIZE (1..maxTimeslotCount)) OF
                                      IndividualTS-InfoUL-CCTrCH

IndividualTS-Interference ::=    SEQUENCE {
     timeslot                         Timeslot,
     ul-TimeslotInterference          UL-Interference
}

IndividualTS-InterferenceList ::=SEQUENCE (SIZE (1..maxTScount)) OF
                                      IndividualTS-Interference

-- Value range of -50..33 is used for Release 99
MaxAllowedUL-TX-Power ::=        INTEGER (-50..77)
```

```
MaxAvailablePCPCH-Number ::=     INTEGER (1..64)

MaxTFCI-Field2Value ::=          INTEGER (1..1023)

MidambleConfiguration ::=        SEQUENCE {
     burstType1                       BurstType1,
     burstType2                       BurstType2
}

MidambleShift ::=                INTEGER (0..maxMidambleShift-1)

MinimumSpreadingFactor ::=       ENUMERATED {
                                      sf4, sf8, sf16, sf32,
                                      sf64, sf128, sf256 }

MultiCodeInfo ::=                INTEGER (1..16)

N-GAP ::=                        ENUMERATED {
                                      f2, f4, f8 }

N-PCH ::=                        INTEGER (1..8)

N-StartMessage ::=               INTEGER (1..8)

-- **TODO**, not defined yet
NB01Max ::=                      SEQUENCE {
}

-- **TODO**, not defined yet
NB01Min ::=                      SEQUENCE {
}

NF-Max ::=                       INTEGER (1..64)

NumberOfFBI-Bits ::=             INTEGER (1..2)

PagingIndicatorLength ::=        ENUMERATED {
                                      pi2, pi4, pi8 }

PC-Preamble ::=                  ENUMERATED {
                                      pcp0, pcp8 }

PC-PreambleSlotFormat ::=        ENUMERATED {
                                      slf0, slf1 }

PCM ::=                          ENUMERATED {
                                      pc-mode0, pc-mode1 }

PCP-Length ::=                   ENUMERATED {
                                      as0, as8 }

PCPCH-ChannelInfo ::=            SEQUENCE {
     pcpch-UL-ScramblingCode          INTEGER (0..255),
     pcpch-DL-ChannelisationCode      INTEGER (0..511),
     pcpch-DL-ScramblingCode          INTEGER (0..255),
     pcp-Length                       PCP-Length,
     ucsm-Info                        UCSM-Info                    OPTIONAL
}

PCPCH-ChannelInfoList ::=        SEQUENCE (SIZE (1..maxPCPCHs)) OF
                                      PCPCH-ChannelInfo

PCPICH-UsageForChannelEst ::=    ENUMERATED {
                                      mayBeUsed,
                                      shallNotBeUsed }

-- Here the value 0 represents "infinity" in the tabular notation.
PD ::=                           INTEGER (0..35)
```

```
PDSCH-ChannelisationCode ::=     ENUMERATED {
                                      cc16-1, cc16-2, cc16-3, cc16-4,
                                      cc16-5, cc16-6, cc16-7, cc16-8,
                                      cc16-9, cc16-10, cc16-11, cc16-12,
                                      cc16-13, cc16-14, cc16-15, cc16-16 }


PDSCH-CodeInfo ::=               SEQUENCE {
     spreadingFactor                  SF-PDSCH,
     codeNumber                       CodeNumberDSCH,
     multiCodeInfo                    MultiCodeInfo
}

PDSCH-CodeInfoList ::=           SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
                                      PDSCH-CodeInfo

PDSCH-CodeMap ::=                SEQUENCE {
     spreadingFactor                  SF-PDSCH,
     multiCodeInfo                    MultiCodeInfo
}

PDSCH-CodeMapList ::=            SEQUENCE (SIZE (1..maxNoCodeGroups)) OF
                                      PDSCH-CodeMap

PDSCH-CodeMapping ::=            SEQUENCE {
     dl-ScramblingCode                SecondaryScramblingCode,
     signallingMethod                 CHOICE {
          codeRange                        CodeRange,
          tfci-Range                       DSCH-MappingList,
          explicit                         PDSCH-CodeInfoList,
          replace                          ReplacedPDSCH-CodeInfoList
     }
}

PDSCH-Info ::=                   SEQUENCE {
     tfcs-Identity                    TFCS-Identity                    OPTIONAL,
     timeInfo                         TimeInfo,
     commonTimeslotInfo               CommonTimeslotInfo               OPTIONAL,
     individualTimeslotInfoList       IndividualTS-InfoPDSCH-List      OPTIONAL
}

PDSCH-SHO-DCH-Info ::=           SEQUENCE {
     dsch-RadioLinkIdentifier         DSCH-RadioLinkIdentifier,
     tfci-CombiningSet                TFCI-CombiningSet,
     rl-IdentifierList                RL-IdentifierList                OPTIONAL
}

PDSCH-SysInfo ::=                SEQUENCE {
     pdsch-Info                       PDSCH-Info,
     dsch-TFS                         TransportFormatSet               OPTIONAL
}

PDSCH-SysInfoList ::=            SEQUENCE (SIZE (1..maxPDSCHcount)) OF
                                      PDSCH-SysInfo

PersistenceScalingFactor ::=     ENUMERATED {
                                      psf0-9, psf0-8, psf0-7, psf0-6,
                                      psf0-5, psf0-4, psf0-3, psf0-2 }

PersistenceScalingFactorList ::= SEQUENCE (SIZE (1..6)) OF
                                      PersistenceScalingFactor

PI-CountPerFrame ::=             ENUMERATED {
                                      e18, e36, e72, e144 }

PICH-Info ::=                    CHOICE {
     fdd                              SEQUENCE {
          secondaryScramblingCode          SecondaryScramblingCode     OPTIONAL,
          channelisationCode256            ChannelisationCode256,
```

```
          pi-CountPerFrame                PI-CountPerFrame,
          sttd-Indicator                  STTD-Indicator
     },
     tdd                                  SEQUENCE {
          channelisationCode                   TDD-PICH-CCode              OPTIONAL,
          timeslot                             Timeslot                    OPTIONAL,
          burstType                            BurstType,
          midambleShift                        MidambleShift               OPTIONAL,
          repetitionPeriodLengthOffset         RepPerLengthOffset-PICH     OPTIONAL,
          pagingIndicatorLength                PagingIndicatorLength       OPTIONAL,
          n-GAP                                N-GAP                       OPTIONAL,
          n-PCH                                N-PCH                       OPTIONAL
     }
}

PICH-PowerOffset ::=             INTEGER (-10..5)

PilotBits128 ::=                 ENUMERATED {
                                      pb4, pb8 }

PilotBits256 ::=                 ENUMERATED {
                                      pb2, pb4, pb8 }

PositionFixedOrFlexible ::=      ENUMERATED {
                                      fixed,
                                      flexible }


PowerControlAlgorithm ::=        CHOICE {
     algorithm1                       TPC-StepSize,
     algorithm2                       NULL
}

PowerOffsetP0 ::=                INTEGER (1..8)

PRACH-Midamble ::=               ENUMERATED {
                                      direct,
                                      direct-Inverted }

PRACH-Partitioning ::=           SEQUENCE (SIZE (1..8)) OF
                                      AccessServiceClass

PRACH-PowerOffset ::=            SEQUENCE {
     powerOffsetP0                    PowerOffsetP0,
     preambleRetransMax               PreambleRetransMax
}

PRACH-RACH-Info ::=              SEQUENCE {
     modeSpecificInfo                 CHOICE {
          fdd                              SEQUENCE {
               availableSignatureList           AvailableSignatureList,
               availableSF                      SF-PRACH,
               scramblingCodeWordNumber         ScramblingCodeWordNumber,
               puncturingLimit                  PuncturingLimit,
               availableSubChannelNumberList    AvailableSubChannelNumberList
          },
          tdd                              SEQUENCE {
               timeslot                         Timeslot,
               channelisationCode               TDD-PRACH-CCode,
               prach-Midamble                   PRACH-Midamble          OPTIONAL
          }
     }
}

PRACH-SystemInformation ::=      SEQUENCE {
     prach-RACH-Info                  PRACH-RACH-Info,
     rach-TransportFormatSet          TransportFormatSet,
     rach-TFCS                        TFCS,
     modeSpecificInfo                 CHOICE {
          fdd                              SEQUENCE {
```

```
                prach-Partitioning              PRACH-Partitioning,
                persistenceScalingFactorList    PersistenceScalingFactorList
                                                                    OPTIONAL,
                ac-To-ASC-MappingTable          AC-To-ASC-MappingTable  OPTIONAL,
                primaryCPICH-TX-Power           PrimaryCPICH-TX-Power,
                constantValue                   ConstantValue,
                prach-PowerOffset               PRACH-PowerOffset,
                rach-TransmissionParameters     RACH-TransmissionParameters,
                aich-Info                       AICH-Info
           },
           tdd                              SEQUENCE {
                asc-Info                        ASC-Info                OPTIONAL
           }
      }
}

PRACH-SystemInformationList ::=  SEQUENCE (SIZE (1..maxPRACHcount)) OF
                                      PRACH-SystemInformation

PreambleRetransMax ::=           INTEGER (1..64)

-- **TODO**, tabular definition a little unclear
PreDefPhyChConfiguration ::=     SEQUENCE {
     ul-DPCH-InfoPredef              UL-DPCH-InfoPredef,
     dl-CommonInformationPredef      DL-CommonInformationPredef
}

PrimaryCCPCH-Info ::=            CHOICE {
     fdd                             SEQUENCE {
          tx-DiversityIndicator           BOOLEAN
     },
     tdd                             SEQUENCE {
          timeslot                        Timeslot                    OPTIONAL,
          cellParametersID                CellParametersID            OPTIONAL,
          syncCase                        SyncCase                    OPTIONAL,
          repetitionPeriodLengthAndOffset  RepetitionPeriodLengthAndOffset
                                                                      OPTIONAL,
          blockSTTD-Indicator             BlockSTTD-Indicator         OPTIONAL
     }
}

PrimaryCCPCH-InfoSI ::=          CHOICE {
     fdd                             SEQUENCE {
          tx-DiversityIndicator           BOOLEAN
     },
     tdd                             SEQUENCE {
          repetitionPeriodLengthAndOffset  RepetitionPeriodLengthAndOffset
                                                                      OPTIONAL,
          blockSTTD-Indicator             BlockSTTD-Indicator         OPTIONAL
     }
}

PrimaryCCPCH-TX-Power ::=        INTEGER (6..43)

PrimaryCPICH-Info ::=            SEQUENCE {
     primaryScramblingCode           PrimaryScramblingCode
}

-- Value range -10 .. 50 used for Release 99
PrimaryCPICH-TX-Power ::=        INTEGER (-10..53)

PrimaryScramblingCode ::=        INTEGER (0..511)

PRM ::=                          ENUMERATED {
                                      pr-mode0, pr-mode1 }

PuncturingLimit ::=              ENUMERATED {
                                      pl0-40, pl0-44, pl0-48, pl0-52, pl0-56,
                                      pl0-60, pl0-64, pl0-68, pl0-72, pl0-76,
```

```
                                    pl0-80, pl0-84, pl0-88, pl0-92, pl0-96,
                                    pl1 }

PUSCH-AllocationAssignment ::=  SEQUENCE {
    pusch-PowerControlInfo          PUSCH-PowerControlInfo          OPTIONAL,
    timeInfo                        TimeInfo,
    commonTimeslotInfo              CommonTimeslotInfo              OPTIONAL,
    timeslotInfoList                IndividualTS-InfoPUSCH-List     OPTIONAL

}

PUSCH-ChannelisationCode ::=    ENUMERATED {
                                    cc1-1, cc2-1, cc2-2,
                                    cc4-1, cc4-2, cc4-3, cc4-4,
                                    cc8-1, cc8-2, cc8-3, cc8-4,
                                    cc8-5, cc8-6, cc8-7, cc8-8,
                                    cc16-1, cc16-2, cc16-3, cc16-4,
                                    cc16-5, cc16-6, cc16-7, cc16-8,
                                    cc16-9, cc16-10, cc16-11, cc16-12,
                                    cc16-13, cc16-14, cc16-15, cc16-16 }

PUSCH-Info ::=                  SEQUENCE {
    pusch-Allocation                CHOICE {
        pusch-AllocationPending         NULL,
        pusch-AllocationAssignment      PUSCH-AllocationAssignment
    }
}

PUSCH-PowerControlInfo ::=      SEQUENCE {
    ul-TargetSIR                    UL-TargetSIR
}

PUSCH-SysInfo ::=               SEQUENCE {
    pusch-Info                      PUSCH-Info,
    usch-TFS                        TransportFormatSet              OPTIONAL
}

PUSCH-SysInfoList ::=           SEQUENCE (SIZE (1..maxPUSCHcount)) OF
                                    PUSCH-SysInfo

RACH-TransmissionParameters ::= SEQUENCE {
    mmax                            INTEGER (1..32),
    nb01Min                         NB01Min,
    nb01Max                         NB01Max
}

ReducedScramblingCodeNumber ::= INTEGER (0..8191)

RepetitionPeriodAndLength ::=   CHOICE {
    repetitionPeriod1               NULL,
    repetitionPeriod2               INTEGER (1..1),
    -- repetitionPeriod2 could just as well be NULL also.
    repetitionPeriod4               INTEGER (1..3),
    repetitionPeriod8               INTEGER (1..7),
    repetitionPeriod16              INTEGER (1..15),
    repetitionPeriod32              INTEGER (1..31),
    repetitionPeriod64              INTEGER (1..63)
}

RepetitionPeriodLengthAndOffset ::= CHOICE {
    repetitionPeriod1               NULL,
    repetitionPeriod2               SEQUENCE {
        length                          NULL,
        offset                          INTEGER (0..1)
    },
    repetitionPeriod4               SEQUENCE {
        length                          INTEGER (1..3),
        offset                          INTEGER (0..3)
    },
```

```
        repetitionPeriod8               SEQUENCE {
            length                          INTEGER (1..7),
            offset                          INTEGER (0..7)
        },
        repetitionPeriod16              SEQUENCE {
            length                          INTEGER (1..15),
            offset                          INTEGER (0..15)
        },
        repetitionPeriod32              SEQUENCE {
            length                          INTEGER (1..31),
            offset                          INTEGER (0..31)
        },
        repetitionPeriod64              SEQUENCE {
            length                          INTEGER (1..63),
            offset                          INTEGER (0..63)
        }
}

ReplacedPDSCH-CodeInfo ::=      SEQUENCE {
        tfci-Field2                     MaxTFCI-Field2Value,
        spreadingFactor                 SF-PDSCH,
        codeNumber                      CodeNumberDSCH,
        multiCodeInfo                   MultiCodeInfo
}

ReplacedPDSCH-CodeInfoList ::=  SEQUENCE (SIZE (1..maxReplaceCount)) OF
                                    ReplacedPDSCH-CodeInfo

RepPerLengthOffset-PICH ::=     CHOICE {
        rpp4-2                          INTEGER (0..3),
        rpp8-2                          INTEGER (0..7),
        rpp8-4                          INTEGER (0..7),
        rpp16-2                         INTEGER (0..15),
        rpp16-4                         INTEGER (0..15),
        rpp32-2                         INTEGER (0..31),
        rpp32-4                         INTEGER (0..31),
        rpp64-2                         INTEGER (0..63),
        rpp64-4                         INTEGER (0..63)
}

RL-AdditionInformation ::=      SEQUENCE {
        primaryCPICH-Info               PrimaryCPICH-Info,
        dl-DPCH-InfoPerRL               DL-DPCH-InfoPerRL,
        tfci-CombiningIndicator         BOOLEAN,
        secondaryCCPCH-Info             SecondaryCCPCH-Info             OPTIONAL,
        sib-ReferenceListFACH           SIB-ReferenceListFACH           OPTIONAL
}

RL-AdditionInformationList ::=  SEQUENCE (SIZE (1..maxAddRLcount)) OF
                                    RL-AdditionInformation

RL-IdentifierList ::=           SEQUENCE (SIZE(1..maxCombineSet)) OF
                                    PrimaryCPICH-Info

RL-RemovalInformation ::=       SEQUENCE {
        primaryCPICH-Info               PrimaryCPICH-Info
}

RL-RemovalInformationList ::=   SEQUENCE (SIZE (1..maxDelRLcount)) OF
                                    RL-RemovalInformation

S-Field ::=                     ENUMERATED {
                                    e1bit, e2bits }

SCCPCH-ChannelisationCode ::=   ENUMERATED {
                                    cc16-1, cc16-2, cc16-3, cc16-4,
                                    cc16-5, cc16-6, cc16-7, cc16-8,
                                    cc16-9, cc16-10, cc16-11, cc16-12,
                                    cc16-13, cc16-14, cc16-15, cc16-16 }
```

```
SCCPCH-SystemInformation ::=     SEQUENCE {
     secondaryCCPCH-Info              SecondaryCCPCH-Info,
     tfcs                             TFCS,
     fach-PCH-InformationList         FACH-PCH-InformationList,
     pich-Info                        PICH-Info                          OPTIONAL
}

SCCPCH-SystemInformationList ::= SEQUENCE (SIZE (1..maxSCCPCHcount)) OF
                                      SCCPCH-SystemInformation

ScramblingCodeChange ::=         ENUMERATED {
                                      codeChange, noCodeChange }

ScramblingCodeType ::=           ENUMERATED {
                                      shortSC,
                                      longSC }

ScramblingCodeWordNumber ::=     INTEGER (0..15)

SecondaryCCPCH-Info ::=          SEQUENCE {
     selectionIndicator               SelectionIndicator                 OPTIONAL,
     -- The IE above is conditional on the logical channel type.
     modeSpecificInfo                 CHOICE {
          fdd                              SEQUENCE {
               pCPICH-UsageForChannelEst        PCPICH-UsageForChannelEst,
               secondaryCPICH-Info              SecondaryCPICH-Info     OPTIONAL,
               secondaryScramblingCode          SecondaryScramblingCode OPTIONAL,
               sttd-Indicator                   STTD-Indicator,
               sf-AndCodeNumber                 SF-AndCodeNumber,
               pilotSymbolExistence             BOOLEAN,
               tfci-Existence                   BOOLEAN,
               positionFixedOrFlexible          PositionFixedOrFlexible,
               timingOffset                     TimingOffset            OPTIONAL
          },
          tdd                              SEQUENCE {
               -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
               commonTimeslotInfo               CommonTimeslotInfoSCCPCH
                                                                        OPTIONAL,
               individualTimeslotInfo           IndividualTimeslotInfo,
               channelisationCode               SCCPCH-ChannelisationCode
          }
     }
}

SecondaryCPICH-Info ::=          SEQUENCE {
     secondaryDL-ScramblingCode       SecondaryScramblingCode          OPTIONAL,
     channelisationCode               ChannelisationCode256
}

-- Value range 1..15 used for Release 99
SecondaryScramblingCode ::=      INTEGER (1..16)

SecondInterleavingMode ::=       ENUMERATED {
                                      frameRelated, timeslotRelated }

SelectionIndicator ::=           ENUMERATED {
                                      on, off }

SF-AndCodeNumber ::=             CHOICE {
     sf4                              INTEGER (0..3),
     sf8                              INTEGER (0..7),
     sf16                             INTEGER (0..15),
     sf32                             INTEGER (0..31),
     sf64                             INTEGER (0..63),
     sf128                            INTEGER (0..127),
     sf256                            INTEGER (0..255)
}
```

```
SF-DL-DPCH ::=                  CHOICE {
     sfd4                            NULL,
     sfd8                            NULL,
     sfd16                           NULL,
     sfd32                           NULL,
     sfd64                           NULL,
     sfd128                          PilotBits128,
     sfd256                          PilotBits256,
     sfd512                          NULL
}

SF-PDSCH ::=                    ENUMERATED {
                                     sfp4, sfp8, sfp16, sfp32,
                                     sfp64, sfp128, sfp256, spare }

SF-PRACH ::=                    ENUMERATED {
                                     sfpr32, sfpr64, sfpr128, sfpr256 }

Signature ::=                   INTEGER (0..15)

SlotFormat ::=                  SEQUENCE {
     pc-PreambleSlotFormat           PC-PreambleSlotFormat,
     ul-DPCCH-SlotFormat             UL-DPCCH-SlotFormat,
     dl-DPCCH-SlotFormat             DL-DPCCH-SlotFormat
}

SSDT-CellIdentity ::=           ENUMERATED {
                                     ssdt-id-a, ssdt-id-b, ssdt-id-c,
                                     ssdt-id-d, ssdt-id-e, ssdt-id-f,
                                     ssdt-id-g, ssdt-id-h }

SSDT-Information ::=            SEQUENCE {
     s-Field                         S-Field,
     codeWordSet                     CodeWordSet
}

STTD-Indicator ::=              BOOLEAN

SyncCase ::=                    ENUMERATED {
                                     sc1, sc2 }

TDD-PICH-CCode ::=              ENUMERATED {
                                     cc16-1, cc16-2, cc16-3, cc16-4,
                                     cc16-5, cc16-6, cc16-7, cc16-8,
                                     cc16-9, cc16-10, cc16-11, cc16-12,
                                     cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode ::=             ENUMERATED {
                                     cc8-1, cc8-2, cc8-3, cc8-4,
                                     cc8-5, cc8-6, cc8-7, cc8-8,
                                     cc16-1, cc16-2, cc16-3, cc16-4,
                                     cc16-5, cc16-6, cc16-7, cc16-8,
                                     cc16-9, cc16-10, cc16-11, cc16-12,
                                     cc16-13, cc16-14, cc16-15, cc16-16 }

TFC-ControlDuration ::=         ENUMERATED {
                                     tfc-cd1, tfc-cd16, tfc-cd24, tfc-cd32,
                                     tfc-cd48, tfc-cd64, tfc-cd128,
                                     tfc-cd192, tfc-cd256, tfc-cd512 }

TFCI-Coding ::=                 ENUMERATED {
                                     tfci-bits-4, tfci-bits-8,
                                     tfci-bits-16, tfci-bits-32 }

-- **TODO**, not defined
TFCI-CombiningSet ::=           SEQUENCE {
}

TGD ::=                         INTEGER (0..35)
```

```
TGL ::=                          INTEGER (1..15)

TGP ::=                          INTEGER (1..256)

TimeInfo ::=                     SEQUENCE {
     activationTime                   ActivationTime                  OPTIONAL,
     duration                         DurationTimeInfo                OPTIONAL
}

Timeslot ::=                     INTEGER (0..14)

TimeslotList ::=                 SEQUENCE (SIZE (1..14)) OF
                                      Timeslot

-- Actual value = IE value * 256
TimingOffset ::=                 INTEGER (0..149)

TPC-CombinationIndex ::=         INTEGER (0..5)

TPC-StepSize ::=                 ENUMERATED {
                                      dB1, dB2 }

TX-DiversityMode ::=             ENUMERATED {
                                      noDiversity,
                                      sttd,
                                      closedLoopMode1,
                                      closedLoopMode2 }

UARFCN-Nd ::=                    INTEGER (0..16383)

UARFCN-Nt ::=                    INTEGER (0..16383)

UARFCN-Nu ::=                    INTEGER (0..16383)

UCSM-Info ::=                    SEQUENCE {
     availableMinimumSF-ListUCSM      AvailableMinimumSF-ListUCSM,
     nf-Max                           NF-Max,
     channelReqParamsForUCSM-List     ChannelReqParamsForUCSM-List    OPTIONAL
}

UL-CCTrCH ::=                    SEQUENCE {
     tfcs-Identity                    TFCS-Identity                   OPTIONAL,
     timeInfo                         TimeInfo,
     commonTimeslotInfo               CommonTimeslotInfo              OPTIONAL,
     timeslotInfoList                 IndividualTS-InfoUL-CCTrCH-List OPTIONAL
}

UL-CCTrCHList ::=                SEQUENCE (SIZE (1..maxUL-CCTrCHcount)) OF
                                      UL-CCTrCH

UL-ChannelRequirement ::=        CHOICE {
     ul-DPCH-Info                     UL-DPCH-Info,
     prach-RACH-Info                  PRACH-RACH-Info,
     spare                            NULL
}

UL-DL-Mode ::=                   ENUMERATED {
                                      dl-Only, ul-DL }

UL-DPCCH-SlotFormat ::=          ENUMERATED {
                                      slf0, slf1, slf2, slf3, slf4, slf5 }

UL-DPCH-Info ::=                 SEQUENCE {
     ul-DPCH-PowerControlInfo         UL-DPCH-PowerControlInfo        OPTIONAL,
     modeSpecificInfo                 CHOICE {
          fdd                              SEQUENCE {
               scramblingCodeType               ScramblingCodeType,
               scramblingCode                   UL-ScramblingCode,
```

```
                dpdch-ChannelisationCodeList     DPDCH-ChannelisationCodeList,
                tfci-Existence                   BOOLEAN,
                fbi-BitNumber                    FBI-BitNumber,
                puncturingLimit                  PuncturingLimit
           },
           tdd                                SEQUENCE {
                ul-CCTrCHList                    UL-CCTrCHList
           }
      }
}

UL-DPCH-InfoHO ::=               SEQUENCE {
      ul-DPCH-PowerControlInfo         UL-DPCH-PowerControlInfoHO       OPTIONAL,
      modeSpecificInfo                 CHOICE {
           fdd                              SEQUENCE {
                scramblingCodeType               ScramblingCodeType,
                scramblingCode                   UL-ScramblingCode,
                dpdch-ChannelisationCodeList     DPDCH-ChannelisationCodeList,
                tfci-Existence                   BOOLEAN,
                fbi-BitNumber                    FBI-BitNumber,
                puncturingLimit                  PuncturingLimit
           },
           tdd                              SEQUENCE {
                ul-CCTrCHList                    UL-CCTrCHList
           }
      }
}

UL-DPCH-InfoPredef ::=           SEQUENCE {
      ul-DPCH-PowerControlInfo         UL-DPCH-PowerControlInfo,
      modeSpecificInfo                 CHOICE {
           fdd                              SEQUENCE {
                maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power   OPTIONAL,
                pc-Preamble                      PC-Preamble             OPTIONAL,
                tfci-Existence                   BOOLEAN,
                puncturingLimit                  PuncturingLimit
           },
           tdd                              NULL
      }
}

UL-DPCH-InfoShort ::=            SEQUENCE {
      ul-DPCH-PowerControlInfo         UL-DPCH-PowerControlInfoShort,
      modeSpecificInfo                 CHOICE {
           fdd                              SEQUENCE {
                scramblingCodeType               ScramblingCodeType,
                reducedScramblingCodeNumber      ReducedScramblingCodeNumber,
                dpdch-ChannelisationCode         DPDCH-ChannelisationCode,
                numberOfFBI-Bits                 NumberOfFBI-Bits
                -- The IE above is CH, which is questionable as such.
                -- There's no point in making a 1-bit integer optional, however.
           },
           tdd                              NULL
      }
}

UL-DPCH-PowerControlInfo ::=     CHOICE {
      fdd                              SEQUENCE {
           dpcch-PowerOffset                DPCCH-PowerOffset,
           pc-Preamble                      PC-Preamble,
           powerControlAlgorithm            PowerControlAlgorithm
           -- TABULAR: TPC step size nested inside PowerControlAlgorithm
      },
      tdd                              SEQUENCE {
           maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power       OPTIONAL,
           ul-TargetSIR                     UL-TargetSIR,
           handoverGroup                    SEQUENCE {
                individualTS-InterferenceList    IndividualTS-InterferenceList,
                dpch-ConstantValue               ConstantValue
```

```
          }                                                                    OPTIONAL
     }
}

UL-DPCH-PowerControlInfoHO ::=   CHOICE {
     fdd                              SEQUENCE {
          dpcch-PowerOffset                DPCCH-PowerOffset,
          powerControlAlgorithm            PowerControlAlgorithm
          -- TABULAR: TPC step size nested inside PowerControlAlgorithm
     },
     tdd                              SEQUENCE {
          maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power       OPTIONAL,
          ul-TargetSIR                     UL-TargetSIR,
          handoverGroup                    SEQUENCE {
               individualTS-InterferenceList    IndividualTS-InterferenceList,
               dpch-ConstantValue               ConstantValue
          }
     }
}

UL-DPCH-PowerControlInfoShort ::=SEQUENCE {
     modeSpecificInfo                 CHOICE {
          fdd                              SEQUENCE {
               dpcch-PowerOffset                DPCCH-PowerOffset,
               powerControlAlgorithm            PowerControlAlgorithm
          },
          tdd                              NULL
     }
}

-- Value range -110 .. -70 used for Release 99
UL-Interference ::=              INTEGER (-110..-47)

-- **TODO**, specification possibly wrong. 777215 mod 16 <> 0...
UL-ScramblingCode ::=            INTEGER (0..48575)

-- Actual value = (IE value * 0.5) - 11
UL-TargetSIR ::=                 INTEGER (0..62)

UL-TimingAdvance ::=             INTEGER (0..63)

UL-TS-ChannelisationCode ::=     ENUMERATED {
                                      cc1-1, cc2-1, cc2-2,
                                      cc4-1, cc4-2, cc4-3, cc4-4,
                                      cc8-1, cc8-2, cc8-3, cc8-4,
                                      cc8-5, cc8-6, cc8-7, cc8-8,
                                      cc16-1, cc16-2, cc16-3, cc16-4,
                                      cc16-5, cc16-6, cc16-7, cc16-8,
                                      cc16-9, cc16-10, cc16-11, cc16-12,
                                      cc16-13, cc16-14, cc16-15, cc16-16 }

VCAM-Info ::=                    SEQUENCE {
     availableMinimumSF-List          AvailableMinimumSF-ListVCAM
}

END
```

11.3.7 Measurement information elements

```
Measurement-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

     CellIdentity
FROM UTRANMobility-IEs

     DRX-CycleLengthCoefficient
FROM UserEquipment-IEs
```

```
    RB-Identity
FROM RadioBearer-IEs

    TransportChannelIdentity
FROM TransportChannel-IEs

    FrequencyInfo,
    MaxAllowedUL-TX-Power,
    PrimaryCCPCH-Info,
    PrimaryCCPCH-TX-Power,
    PrimaryCPICH-Info,
    PrimaryCPICH-TX-Power,
    Timeslot
FROM PhysicalChannel-IEs

    BSIC
FROM Other-IEs

    maxAdditionalMeas,
    maxAddRLcount,
    maxBLER,
    maxCCTrCHcount,
    maxCellCount,
    maxCellsForbidden,
    maxDelRLcount,
    maxEventCount,
    maxFreqCount,
    maxInterCells,
    maxInterRAT,
    maxInterSys,
    maxInterSysCells,
    maxIntraCells,
    maxN-BadSAT,
    maxN-SAT,
    maxNoCells,
    maxNonUsedFrequency,
    maxNumFreq,
    maxTraf,
    maxTrCHcount,
    maxTSperCCTrCHcount,
    maxTStoMeasureCount,
    maxUsedRLcount,
    maxUsedUplTScount
FROM Constant-definitions;

AcquisitionSatInfo ::=          SEQUENCE {
    satID                           INTEGER (0..63),
    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
}

AcquisitionSatInfoList ::=      SEQUENCE (SIZE (1..maxN-SAT)) OF
                                    AcquisitionSatInfo

ActiveSetCellReport ::=         ENUMERATED {
                                    includeAll,
                                    excludeAll,
                                    other }

-- **TODO**, definition to be checked from TS 09.31
AdditionalAssistanceData ::=    SEQUENCE {
}
```

```
AdditionalMeasurementID-List ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                     MeasurementIdentityNumber

AlmanacSatInfo ::=               SEQUENCE {
     satID                           INTEGER (0..63),
     deltaI                          BIT STRING (SIZE (16)),
     e                               BIT STRING (SIZE (16)),
     m0                              BIT STRING (SIZE (24)),
     a-Sqrt                          BIT STRING (SIZE (24)),
     omega0                          BIT STRING (SIZE (24)),
     omegaDot                        BIT STRING (SIZE (16)),
     omega                           BIT STRING (SIZE (24)),
     af0                             BIT STRING (SIZE (11)),
     af1                             BIT STRING (SIZE (11))
}

AlmanacSatInfoList ::=           SEQUENCE (SIZE (1..maxN-SAT)) OF
                                     AlmanacSatInfo

AverageRLC-BufferPayload ::=     ENUMERATED {
                                     pla0, pla4, pla8, pla16, pla32,
                                     pla64, pla128, pla256, pla512,
                                     pla1024, pla2k, pla4k, pla8k, pla16k }

AzimuthAndElevation ::=          SEQUENCE {
     azimuth                         INTEGER (0..31),
     elevation                       INTEGER (0..7)
}

BadSatList ::=                   SEQUENCE (SIZE (1..maxN-BadSAT)) OF
                                     INTEGER (0..63)

BCCH-ARFCN ::=                   INTEGER (0..1023)

BLER-MeasurementResults ::=      SEQUENCE {
     transportChannelIdentity        TransportChannelIdentity,
     dl-TransportChannelBLER         DL-TransportChannelBLER          OPTIONAL
}

BLER-MeasurementResultsList ::=  SEQUENCE (SIZE(1..maxBLER)) OF
                                     BLER-MeasurementResults

BLER-TransChIdList ::=           SEQUENCE (SIZE (1..maxBLER)) OF
                                     TransportChannelIdentity

-- IE value 0 = true value -0.05, IE value 16 = true value -0.003125,
-- IE value 17 = true value 0.003125, IE value 32 = true value 0.05
BTS-ClockDrift ::=               INTEGER (0..31)

BurstModeParameters ::=          SEQUENCE {
     burstStart                      INTEGER (0..15),
     burstLength                     INTEGER (10..25),
     burstFreq                       INTEGER (1..16)
}

CCTrCH-Timeslot ::=              SEQUENCE {
     iscp                            DL-TimeslotISCP                  OPTIONAL,
     rscp                            RSCP                             OPTIONAL
}

CCTrCH-TimeslotList ::=          SEQUENCE (SIZE(1..maxTSperCCTrCHcount)) OF
                                     CCTrCH-Timeslot

CellDCH-ReportCriteria ::=       CHOICE {
     intraFreqReportingCriteria      IntraFreqReportingCriteria,
     periodicalReportingCriteria     PeriodicalReportingCriteria
}

-- Actual value = IE value * 0.5
```

```
CellIndividualOffset ::=          INTEGER (-20..20)

CellInfo ::=                      SEQUENCE {
     cellIndividualOffset              CellIndividualOffset            DEFAULT 1,
     referenceTimeDifferenceToCell     ReferenceTimeDifferenceToCell   OPTIONAL,
     modeSpecificInfo                  CHOICE {
          fdd                               SEQUENCE {
               primaryCPICH-Info                 PrimaryCPICH-Info       OPTIONAL,
               primaryCPICH-TX-Power             PrimaryCPICH-TX-Power   OPTIONAL,
               readSFN-Indicator                 BOOLEAN,
               tx-DiversityIndicator             BOOLEAN
          },
          tdd                               SEQUENCE {
               primaryCCPCH-Info                 PrimaryCCPCH-Info,
               primaryCCPCH-TX-Power             PrimaryCCPCH-TX-Power,
               dl-CCTrCH-Info                    DL-CCTrCH-Info          OPTIONAL,
               dl-TimeslotInfo                   DL-TimeslotInfo         OPTIONAL
          }
     }
}

CellInfoSI ::=                    SEQUENCE {
     cellIndividualOffset              CellIndividualOffset            DEFAULT 1,
     referenceTimeDifferenceToCell     ReferenceTimeDifferenceToCell   OPTIONAL,
     modeSpecificInfo                  CHOICE {
          fdd                               SEQUENCE {
               primaryCPICH-Info                 PrimaryCPICH-Info       OPTIONAL,
               primaryCPICH-TX-Power             PrimaryCPICH-TX-Power   OPTIONAL,
               readSFN-Indicator                 BOOLEAN,
               tx-DiversityIndicator             BOOLEAN
          },
          tdd                               SEQUENCE {
               primaryCCPCH-Info                 PrimaryCCPCH-Info,
               primaryCCPCH-TX-Power             PrimaryCCPCH-TX-Power,
               dl-CCTrCH-Info                    DL-CCTrCH-Info          OPTIONAL,
               dl-TimeslotInfo                   DL-TimeslotInfo         OPTIONAL
          }
     },
     cellSelectionReselectionInfo      CellSelectionReselectionInfo,
     signallingOption                  SignallingOption
}

CellMeasuredResults ::=           SEQUENCE {
     cellIdentity                      CellIdentity                    OPTIONAL,
     sfn-SFN-ObsTimeDifference         SFN-SFN-ObsTimeDifference       OPTIONAL,
     modeSpecificInfo                  CHOICE {
          fdd                               SEQUENCE {
               primaryCPICH-Info                 PrimaryCPICH-Info,
               cpich-Ec-N0                       CPICH-Ec-N0             OPTIONAL,
               cpich-RSCP                        CPICH-RSCP              OPTIONAL,
               cpich-SIR                         CPICH-SIR               OPTIONAL,
               pathloss                          Pathloss                OPTIONAL,
               cfn-SFN-ObsTimeDifference         CFN-SFN-ObsTimeDifference
                                                                         OPTIONAL
          },
          tdd                               SEQUENCE {
               primaryCCPCH-Info                 PrimaryCCPCH-Info,
               dl-CCTrCH-SIR-List                DL-CCTrCH-SIR-List      OPTIONAL,
               dl-TimeslotISCP-List              DL-TimeslotISCP-List    OPTIONAL
          }
     }
}

CellMeasurementEventResults ::=   CHOICE {
     fdd                               SEQUENCE (SIZE (1..maxCellCount)) OF
                                            PrimaryCPICH-Info,
     tdd                               SEQUENCE (SIZE (1..maxCellCount)) OF
                                            PrimaryCCPCH-Info
}
```

```
CellPosition ::=                    SEQUENCE {
     relativeNorth                       INTEGER (-32767..32767),
     relativeEast                        INTEGER (-32767..32767),
     relativeAltitude                    INTEGER (-4095..4095)
}

CellReportingQuantities ::=         SEQUENCE {
     sfn-SFN-OTD-Type                    SFN-SFN-OTD-Type,
     cellIdentity                        CellIdentity,
     modeSpecificInfo                    CHOICE {
          fdd                                 SEQUENCE {
               cpich-Ec-N0                         BOOLEAN,
               cpich-RSCP                          BOOLEAN,
               cpich-SIR                           BOOLEAN,
               pathloss                            BOOLEAN,
               cfn-SFN-ObsTimeDifference           BOOLEAN
          },
          tdd                                 SEQUENCE {
               dl-CCTrCH-SIR                       BOOLEAN,
               timeslotISCP                        BOOLEAN,
               primaryCCPCH-RSCP                   BOOLEAN,
               pathloss                            BOOLEAN
          }
     }
}

CellSelectionReselectionInfo ::= SEQUENCE {
     modeSpecificInfo                    CHOICE {
          fdd                                 Qmin-FDD,
          tdd                                 Qmin-TDD
     }                                                                  OPTIONAL,
     maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power          OPTIONAL,
     signallingOption                    SignallingOption
}

CellToMeasure ::=                   SEQUENCE {
     sfn-sfn-Drift                       INTEGER (0..30)                OPTIONAL,
     primaryCPICH-Info                   PrimaryCPICH-Info,
     frequencyInfo                       FrequencyInfo                  OPTIONAL,
     sfn-SFN-ObservedTimeDifference      SFN-SFN-ObsTimeDifference1,
     fineSFN-SFN                         FineSFN-SFN,
     cellPosition                        CellPosition                   OPTIONAL
}

CellToMeasureInfoList ::=           SEQUENCE (SIZE (1..maxNoCells)) OF
                                         CellToMeasure

CellToReport ::=                    SEQUENCE {
     frequency                           Frequency,
     bsic                                BSIC
}

CellToReportList ::=                SEQUENCE (SIZE (1..maxCellCount)) OF
                                         CellToReport

CFN-SFN-ObsTimeDifference ::=       INTEGER (0..9830399)

CodePhaseSearchWindow ::=           ENUMERATED {
                                         w1023, w1, w2, w3, w4, w6, w8,
                                         w12, w16, w24, w32, w48, w64,
                                         w96, w128, w192 }

CompressedNavModel ::=              SEQUENCE {
     iode                                BIT STRING (SIZE (4)),
     t-oe                                BIT STRING (SIZE (7)),
     c-rc                                BIT STRING (SIZE (12)),
     c-rs                                BIT STRING (SIZE (12)),
     c-ic                                BIT STRING (SIZE (9)),
```

```
     c-is                              BIT STRING (SIZE (9)),
     c-uc                              BIT STRING (SIZE (11)),
     c-us                              BIT STRING (SIZE (11)),
     e                                 BIT STRING (SIZE (16)),
     m0                                BIT STRING (SIZE (22)),
     a-Sqrt                            BIT STRING (SIZE (13)),
     delta-n                           BIT STRING (SIZE (11)),
     omega0                            BIT STRING (SIZE (14)),
     omegaDot                          BIT STRING (SIZE (12)),
     i0                                BIT STRING (SIZE (15)),
     iDot                              BIT STRING (SIZE (11)),
     omega                             BIT STRING (SIZE (21)),
     t-oc                              BIT STRING (SIZE (7)),
     af0                               BIT STRING (SIZE (7)),
     af1                               BIT STRING (SIZE (3)),
     af2                               BIT STRING (SIZE (1))
}

CPICH-Ec-N0 ::=                   INTEGER (-20..0)

-- IE value 0 = <-24 dB, 1 = between -24 and -23 and so on
CPICH-Ec-N0-OTDOA ::=             INTEGER (0..26)

CPICH-RSCP ::=                    INTEGER (-115..-40)

CPICH-SIR ::=                     INTEGER (-10..20)

DGPS-CorrectionSatInfo ::=        SEQUENCE {
     satID                             INTEGER (0..63),
     iode                              BIT STRING (SIZE (8)),
     udre                              UDRE,
     prc                               INTEGER (-2048..2048),
     rrc                               INTEGER (-125..125),
     deltaPRC2                         INTEGER (-127..127),
     deltaRRC2                         INTEGER (-7..7),
     deltaPRC3                         INTEGER (-127..127),
     deltaRRC3                         INTEGER (-7..7)
}

DGPS-CorrectionSatInfoList ::=    SEQUENCE (SIZE (1..maxN-SAT)) OF
                                       DGPS-CorrectionSatInfo

DGPS-Information ::=              SEQUENCE {
     satID                             SatID,
     iode                              IODE,
     udre                              UDRE,
     scaleFactor                       ScaleFactor,
     prc                               PRC,
     rrc                               RRC
}

DGPS-InformationList ::=          SEQUENCE (SIZE (1..maxN-SAT)) OF
                                       DGPS-Information

DiffCorrectionStatus ::=          ENUMERATED {
                                       udre-1-0, udre-0-75, udre-0-5, udre-0-3,
                                       udre-0-2, udre-0-1, noData, invalidData }

-- **TODO**, not defined yet
DL-CCTrCH-Info ::=                SEQUENCE {
}

DL-CCTrCH-SIR ::=                 SEQUENCE {
     ccTrCH-TimeslotList               CCTrCH-TimeslotList
}

DL-CCTrCH-SIR-List ::=            SEQUENCE (SIZE(1..maxCCTrCHcount)) OF
                                       DL-CCTrCH-SIR
```

```
-- Actual value = IE value * 0.02
DL-PhysicalChannelBER ::=        INTEGER (0..255)

-- **TODO**, not defined yet
DL-TimeslotInfo ::=              SEQUENCE {
}

-- **TODO**, not defined yet
DL-TimeslotISCP ::=              SEQUENCE {
}

DL-TimeslotISCP-List ::=         SEQUENCE (SIZE(1..maxTStoMeasureCount)) OF
                                      DL-TimeslotISCP

-- Actual value = IE value * 0.02
DL-TransportChannelBLER ::=      INTEGER (0..255)

DopplerUncertainty ::=           ENUMERATED {
                                      hz12-5, hz25, hz50, hz100, hz200 }

EnvironmentCharacterization ::=  ENUMERATED {
                                      possibleHeavyMultipathNLOS,
                                      lightMultipathLOS,
                                      notDefined }

Event1a ::=                      SEQUENCE {
     triggeringCondition              TriggeringCondition,
     reportingRange                   ReportingRange,
     forbiddenAffectCellList          ForbiddenAffectCellList,
     w                                W,
     hysteresis                       Hysteresis                          OPTIONAL,
     reportDeactivationThreshold      ReportDeactivationThreshold
}

Event1b ::=                      SEQUENCE {
     triggeringCondition              TriggeringCondition,
     reportingRange                   ReportingRange,
     forbiddenAffectCellList          ForbiddenAffectCellList,
     w                                W,
     hysteresis                       Hysteresis                          OPTIONAL
}

Event1c ::=                      SEQUENCE {
     hysteresis                       Hysteresis                          OPTIONAL,
     replacementActivationThreshold   ReplacementActivationThreshold
}

Event2a ::=                      SEQUENCE {
     usedFreqThreshold                Threshold,
     usedFreqW                        W,
     hysteresis                       HysteresisInterFreq,
     timeToTrigger                    TimeToTrigger,
     reportingAmount                  ReportingAmount,
     reportingInterval                ReportingInterval,
     nonUsedFreqParameterList         NonUsedFreqParameterList         OPTIONAL
}

Event2b ::=                      SEQUENCE {
     usedFreqThreshold                Threshold,
     usedFreqW                        W,
     hysteresis                       HysteresisInterFreq,
     timeToTrigger                    TimeToTrigger,
     reportingAmount                  ReportingAmount,
     reportingInterval                ReportingInterval,
     nonUsedFreqParameterList         NonUsedFreqParameterList         OPTIONAL
}

Event2c ::=                      SEQUENCE {
     hysteresis                       HysteresisInterFreq,
```

```
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval,
    nonUsedFreqParameterList        NonUsedFreqParameterList        OPTIONAL
}

Event2d ::=                         SEQUENCE {
    usedFreqThreshold               Threshold,
    usedFreqW                       W,
    hysteresis                      HysteresisInterFreq,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

Event2e ::=                         SEQUENCE {
    hysteresis                      HysteresisInterFreq,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval,
    nonUsedFreqParameterList        NonUsedFreqParameterList        OPTIONAL
}

Event2f ::=                         SEQUENCE {
    usedFreqThreshold               Threshold,
    usedFreqW                       W,
    hysteresis                      HysteresisInterFreq,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

Event3a ::=                         SEQUENCE {
    thresholdOwnSystem              Threshold,
    w                               W,
    thresholdOtherSystem            Threshold,
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

Event3b ::=                         SEQUENCE {
    thresholdOtherSystem            Threshold,
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

Event3c ::=                         SEQUENCE {
    thresholdOtherSystem            Threshold,
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

Event3d ::=                         SEQUENCE {
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

EventIDInterFreq ::=                ENUMERATED {
                                        e2a, e2b, e2c, e2d, e2e, e2f }

EventIDInterSystem ::=              ENUMERATED {
```

```
                                        e3a, e3b, e3c, e3d }

EventIDIntraFreq ::=                    ENUMERATED {
                                        e1a, e1b, e1c, e1d, e1e,
                                        e1f, e1g, e1h, e1i, e1j }

EventIDTrafficVolume ::=                ENUMERATED {
                                        e4a, e4b }

EventResults ::=                        CHOICE {
    intraFreqEventResults                   IntraFreqEventResults,
    interFreqEventResults                   InterFreqEventResults,
    interSystemEventResults                 InterSystemEventResults,
    trafficVolumeEventResults               TrafficVolumeEventResults,
    qualityEventResults                     QualityEventResults,
    ue-InternalEventResults                 UE-InternalEventResults,
    lcs-MeasurementEventResults             LCS-MeasurementEventResults
}

ExtraDopplerInfo ::=                    SEQUENCE {
    doppler1stOrder                         INTEGER (-42..21),
    dopplerUncertainty                      DopplerUncertainty
}

FACH-MeasurementOccasionInfo ::= SEQUENCE {
    k-UTRA                                  DRX-CycleLengthCoefficient,
    otherRAT-InSysInfoList                  OtherRAT-InSysInfoList
}

FilterCoefficient ::=                   ENUMERATED {
                                        fc1, fc2, fc3, fc4, fc6, fc8,
                                        fc12, fc16, fc24, fc32, fc64,
                                        fc128, fc256, fc512, fc1024,
                                        spare1 }

FineSFN-SFN ::=                         ENUMERATED {
                                        fs0, fs0-25, fs0-5, fs0-75 }

ForbiddenAffectCell ::=                 SEQUENCE {
    modeSpecificInfo                        CHOICE {
        fdd                                     SEQUENCE {
            primaryCPICH-Info                       PrimaryCPICH-Info
        },
        tdd                                     SEQUENCE {
            primaryCCPCH-Info                       PrimaryCCPCH-Info
        }
    }
}

ForbiddenAffectCellList ::=             SEQUENCE (SIZE(1..maxCellsForbidden)) OF
                                        ForbiddenAffectCell

FreqQualityEstimateQuantity-FDD ::= ENUMERATED {
                                        cpich-Ec-N0,
                                        cpich-RSCP }

FreqQualityEstimateQuantity-TDD ::= ENUMERATED {
                                        primaryCCPCH-RSCP }

-- **TODO**, not defined yet
Frequency ::=                           SEQUENCE {
}

GPS-MeasurementParam ::=                SEQUENCE {
    satelliteID                             INTEGER (0..63),
    c-N0                                    INTEGER (0..63),
    doppler                                 INTEGER (-32768..32768),
    wholeGPS-Chips                          INTEGER (0..1023),
    fractionalGPS-Chips                     INTEGER (0..1023),
```

```
    multipathIndicator              MultipathIndicator,
    pseudorangeRMS-Error            INTEGER (0..63)
}

GPS-MeasurementParamList ::=    SEQUENCE (SIZE (1..maxN-SAT)) OF
                                    GPS-MeasurementParam

GPS-TOW-1msec ::=               INTEGER (0..604700000)

GPS-TOW-Assist ::=              SEQUENCE {
    satID                           INTEGER (0..63),
    tlm-Message                     BIT STRING (SIZE (14)),
    antiSpoof                       BOOLEAN,
    alert                           BOOLEAN,
    tlm-Reserved                    BIT STRING (SIZE (2))
}

GPS-TOW-AssistList ::=          SEQUENCE (SIZE (1..maxN-SAT)) OF
                                    GPS-TOW-Assist

GPS-TOW-HighResolution ::=      INTEGER (0..999)

GSM-CarrierRSSI ::=             BIT STRING (SIZE (6))

-- **TODO**, not defined yet
GSM-OutputPower ::=             SEQUENCE {
}

HCS-CellReselectInformation ::= SEQUENCE {
    penaltyTime                     PenaltyTime
}

HCS-NeighbouringCellInformation ::= SEQUENCE {
    hcs-PRIO                        HCS-PRIO                        OPTIONAL,
    q-HCS                           Q-HCS                           OPTIONAL,
    hcs-CellReselectInformation     HCS-CellReselectInformation     OPTIONAL
}

HCS-PRIO ::=                    INTEGER (0..7)

-- Actual value = IE value * 0.5
Hysteresis ::=                  INTEGER (0..15)

-- Actual value = IE value * 0.5
HysteresisInterFreq ::=         INTEGER (0..29)

InterFreqCell ::=               SEQUENCE {
    frequencyInfo                   FrequencyInfo,
    nonFreqRelatedEventResults      CellMeasurementEventResults
}

InterFreqCellID ::=             INTEGER (0..maxInterCells)

InterFreqCellInfoList ::=       SEQUENCE {
    removedInterFreqCellList        RemovedInterFreqCellList        OPTIONAL,
    newInterFreqCellList            NewInterFreqCellList            OPTIONAL
}

InterFreqCellInfoSI-List ::=    SEQUENCE {
    removedInterFreqCellList        RemovedInterFreqCellList        OPTIONAL,
    newInterFreqCellList            NewInterFreqCellSI-List         OPTIONAL
}

InterFreqCellList ::=           SEQUENCE (SIZE (1..maxFreqCount)) OF
                                    InterFreqCell

InterFreqCellMeasuredResultsList ::= SEQUENCE (SIZE (1..maxInterCells)) OF
                                    CellMeasuredResults
```

```
InterFreqEvent ::=              CHOICE {
     event2a                         Event2a,
     event2b                         Event2b,
     event2c                         Event2c,
     event2d                         Event2d,
     event2e                         Event2e,
     event2f                         Event2f
}

InterFreqEventList ::=          SEQUENCE (SIZE(1..maxEventCount)) OF
                                     InterFreqEvent

InterFreqEventResults ::=       SEQUENCE {
     eventID                         EventIDInterFreq,
     interFreqCellList               InterFreqCellList
}

InterFreqMeasQuantity ::=       SEQUENCE {
     reportingCriteria               CHOICE {
          intraFreqReportingCriteria      SEQUENCE {
               intraFreqMeasQuantity           IntraFreqMeasQuantity,
          },
          interFreqReportingCriteria      SEQUENCE {
               filterCoefficient               FilterCoefficient,
               modeSpecificInfo                CHOICE {
                    fdd                                SEQUENCE {
                         freqQualityEstimateQuantity-FDD
                                                    FreqQualityEstimateQuantity-FDD
                    },
                    tdd                                SEQUENCE {
                         freqQualityEstimateQuantity-TDD
                                                    FreqQualityEstimateQuantity-TDD
                    }
               }
          }
     }
}

InterFreqMeasuredResults ::=    SEQUENCE {
     frequencyInfo                   FrequencyInfo                   OPTIONAL,
     utra-CarrierRSSI                UTRA-CarrierRSSI                OPTIONAL,
     interFreqCellMeasuredResultsList InterFreqCellMeasuredResultsList OPTIONAL
}

InterFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxNumFreq)) OF
                                     InterFreqMeasuredResults

InterFreqMeasurementSysInfo ::= SEQUENCE {
     interFreqMeasurementID          MeasurementIdentityNumber       OPTIONAL,
     interFreqCellInfoSI-List        InterFreqCellInfoSI-List        OPTIONAL,
     interFreqMeasQuantity           InterFreqMeasQuantity           OPTIONAL
}

InterFreqReportCriteria ::=     CHOICE {
     intraFreqReportingCriteria      IntraFreqReportingCriteria,
     interFreqReportingCriteria      InterFreqReportingCriteria,
     periodicalReportingCriteria     PeriodicalReportingCriteria,
     noReporting                     NULL
}

InterFreqReportingCriteria ::=  SEQUENCE {
     interFreqEventList              InterFreqEventList          OPTIONAL
}

InterFreqReportingQuantity ::=  SEQUENCE {
     utra-Carrier-RSSI               BOOLEAN,
     frequencyQualityEstimate        BOOLEAN,
     nonFreqRelatedQuantities        CellReportingQuantities
}
```

```
InterFreqSetUpdate ::=          SEQUENCE {
    ue-AutonomousUpdateMode         UE-AutonomousUpdateMode
}

InterFrequencyMeasurement ::=   SEQUENCE {
    interFreqCellInfoList           InterFreqCellInfoList,
    interFreqMeasQuantity           InterFreqMeasQuantity           OPTIONAL,
    interFreqReportingQuantity      InterFreqReportingQuantity      OPTIONAL,
    reportingCellStatus             ReportingCellStatus             OPTIONAL,
    measurementValidity             MeasurementValidity             OPTIONAL,
    interFreqSetUpdate              InterFreqSetUpdate              OPTIONAL,
    reportCriteria                  InterFreqReportCriteria
}

InterSystemCellID ::=           INTEGER (0..maxInterSysCells)

InterSystemCellInfoList ::=     SEQUENCE {
    removedInterSystemCellList      RemovedInterSystemCellList,
    newInterSystemCellList          NewInterSystemCellList
}

InterSystemEvent ::=            CHOICE {
    event3a                         Event3a,
    event3b                         Event3b,
    event3c                         Event3c,
    event3d                         Event3d
}

InterSystemEventList ::=        SEQUENCE (SIZE(1..maxEventCount)) OF
                                    InterSystemEvent

InterSystemEventResults ::=     SEQUENCE {
    eventID                         EventIDInterSystem,
    cellToReportList                CellToReportList
}

InterSystemInfo ::=             ENUMERATED {
                                    gsm, spare1 }

InterSystemMeasQuantity ::=     SEQUENCE {
    measQuantityUTRAN-QualityEstimate IntraFreqMeasQuantity,
    systemSpecificInfo              CHOICE {
        gsm                             SEQUENCE {
            measurementQuantity             MeasurementQuantityGSM,
            filterCoefficient               FilterCoefficient,
            bsic-VerificationRequired       BOOLEAN
        },
        is-2000                         SEQUENCE {
            tadd-EcIo                       INTEGER (0..63),
            tcomp-EcIo                      INTEGER (0..15),
            softSlope                       INTEGER (0..63)         OPTIONAL,
            addIntercept                    INTEGER (0..63)         OPTIONAL
        }
    }
}

InterSystemMeasuredResults ::=  CHOICE {
    gsm                             SEQUENCE {
        frequency                       Frequency,
        gsm-CarrierRSSI                 GSM-CarrierRSSI             OPTIONAL,
        pathloss                        Pathloss                    OPTIONAL,
        bsic                            BSIC                        OPTIONAL,
        observedTimeDifferenceToGSM     ObservedTimeDifferenceToGSM OPTIONAL
    },
    other                           NULL
}

InterSystemMeasuredResultsList ::= SEQUENCE (SIZE (1..maxInterSys)) OF
```

InterSystemMeasuredResults

```
InterSystemMeasurement ::=      SEQUENCE {
    interSystemCellInfoList          InterSystemCellInfoList          OPTIONAL,
    interSystemMeasQuantity          InterSystemMeasQuantity          OPTIONAL,
    interSystemReportingQuantity     InterSystemReportingQuantity     OPTIONAL,
    reportingCellStatus              ReportingCellStatus              OPTIONAL,
    reportCriteria                   InterSystemReportCriteria
}

InterSystemMeasurementSysInfo ::=SEQUENCE {
    interSystemMeasurementID         MeasurementIdentityNumber        OPTIONAL,
    interSystemCellInfoList          InterSystemCellInfoList          OPTIONAL,
    interSystemMeasQuantity          InterSystemMeasQuantity          OPTIONAL
}

InterSystemReportCriteria ::=    CHOICE {
    interSystemReportingCriteria     InterSystemReportingCriteria,
    periodicalReportingCriteria      PeriodicalReportingCriteria,
    noReporting                      NULL
}

InterSystemReportingCriteria ::= SEQUENCE {
    interSystemEventList             InterSystemEventList             OPTIONAL
}

InterSystemReportingQuantity ::= SEQUENCE {
    utran-EstimatedQuality           BOOLEAN,
    systemSpecificInfo               CHOICE {
        gsm                              SEQUENCE {
            pathloss                         BOOLEAN,
            observedTimeDifferenceGSM        BOOLEAN,
            gsm-Carrier-RSSI                 BOOLEAN,
            bsic                             BOOLEAN
        },
        spare1                           SEQUENCE {}
    }
}

IntraFreqCellID ::=              INTEGER (0..maxIntraCells)

IntraFreqCellInfoList ::=        SEQUENCE {
    removedIntraFreqCellList         RemovedIntraFreqCellList         OPTIONAL,
    newIntraFreqCellList             NewIntraFreqCellList             OPTIONAL
}

IntraFreqCellInfoSI ::=          SEQUENCE {
    cellInfo                         CellInfoSI
}

IntraFreqCellInfoSI-List ::=     SEQUENCE {
    removedIntraFreqCellList         RemovedIntraFreqCellList         OPTIONAL,
    newIntraFreqCellList             NewIntraFreqCellSI-List          OPTIONAL
}

IntraFreqEvent ::=               CHOICE {
    e1a                              Event1a,
    e1b                              Event1b,
    e1c                              Event1c,
    e1d                              Hysteresis,
    e1e                              TriggeringCondition,
    e1f                              TriggeringCondition,
    e1g                              Hysteresis,
    e1h                              Hysteresis,
    e1i                              Hysteresis,
    e1j                              Hysteresis
}

IntraFreqEventCriteria ::=       SEQUENCE {
```

```
     event                              IntraFreqEvent,
     timeToTrigger                      TimeToTrigger,
     reportingAmount                    ReportingAmount,
     reportingInterval                  ReportingInterval
}

IntraFreqEventCriteriaList ::=   SEQUENCE (SIZE(1..maxEventCount)) OF
                                   IntraFreqEventCriteria

IntraFreqEventResults ::=        SEQUENCE {
     eventID                            EventIDIntraFreq,
     cellMeasurementEventResults        CellMeasurementEventResults
}

IntraFreqMeasQuantity ::=        SEQUENCE {
     filterCoefficient                  FilterCoefficient,
     modeSpecificInfo                   CHOICE {
          fdd                                SEQUENCE {
               intraFreqMeasQuantity-FDD          IntraFreqMeasQuantity-FDD
          },
          tdd                                SEQUENCE {
               intraFreqMeasQuantity-TDD          IntraFreqMeasQuantity-TDD
          }
     }
}

IntraFreqMeasQuantity-FDD ::=    ENUMERATED {
                                   cpich-Ec-NO,
                                   cpich-RSCP,
                                   cpich-SIR,
                                   pathloss,
                                   utra-CarrierRSSI }

IntraFreqMeasQuantity-TDD ::=    ENUMERATED {
                                   primaryCCPCH-RSCP,
                                   pathloss,
                                   timeslotISCP,
                                   utra-CarrierRSSI }

IntraFreqMeasuredResults ::=     SEQUENCE {
     cellMeasuredResults                CellMeasuredResults
}

IntraFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxIntraCells)) OF
                                   IntraFreqMeasuredResults

IntraFreqMeasurementSysInfo ::=  SEQUENCE {
     intraFreqMeasurementID             MeasurementIdentityNumber        OPTIONAL,
     intraFreqCellInfoSI-List           IntraFreqCellInfoSI-List         OPTIONAL,
     intraFreqMeasQuantity              IntraFreqMeasQuantity            OPTIONAL,
     intraFreqReportingQuantityForRACH
                                        IntraFreqReportingQuantityForRACH
                                                                         OPTIONAL,
     maxReportedCellsOnRACH             MaxReportedCellsOnRACH           OPTIONAL,
     reportingInfoForCellDCH            ReportingInfoForCellDCH          OPTIONAL
}

IntraFreqReportCriteria ::=      CHOICE {
     intraFreqReportingCriteria         IntraFreqReportingCriteria,
     periodicalReportingCriteria        PeriodicalReportingCriteria,
     noReporting                        NULL
}

IntraFreqReportingCriteria ::=   SEQUENCE {
     eventCriteriaList                  IntraFreqEventCriteriaList
}

IntraFreqReportingQuantity ::=   SEQUENCE {
     activeSetReportingQuantities       CellReportingQuantities,
```

```
    monitoredSetReportingQuantities  CellReportingQuantities,
    unlistedSetReportingQuantities   CellReportingQuantities          OPTIONAL
}

IntraFreqReportingQuantityForRACH ::= SEQUENCE {
    sfn-SFN-ObsTimeDifference        SFN-SFN-ObsTimeDifference,
    modeSpecificInfo                 CHOICE {
        fdd                              SEQUENCE {
            intraFreqRepQuantityRACH-FDD     IntraFreqRepQuantityRACH-FDD
        },
        tdd                              SEQUENCE {
            intraFreqRepQuantityRACH-TDD     IntraFreqRepQuantityRACH-TDD
        }
    }
}

IntraFreqRepQuantityRACH-FDD ::= ENUMERATED {
                                     cpich-EcN0, cpich-RSCP,
                                     cpich-SIR, pathloss,
                                     noReport }

IntraFreqRepQuantityRACH-TDD ::= ENUMERATED {
                                     timeslotISCP,
                                     primaryCCPCH-RSCP,
                                     noReport }

IntraFrequencyMeasurement ::=    SEQUENCE {
    intraFreqCellInfoList            IntraFreqCellInfoList            OPTIONAL,
    intraFreqMeasQuantity            IntraFreqMeasQuantity            OPTIONAL,
    intraFreqReportingQuantity       IntraFreqReportingQuantity       OPTIONAL,
    reportingCellStatus              ReportingCellStatus              OPTIONAL,
    measurementValidity              MeasurementValidity              OPTIONAL,
    reportCriteria                   IntraFreqReportCriteria
}

IODD ::=                         INTEGER (0..255)

IODE ::=                         INTEGER (0..255)

IP-Length ::=                    ENUMERATED {
                                     ipl5, ipl10 }

IP-Spacing ::=                   ENUMERATED {
                                     e5, e7, e10, e15, e20,
                                     e30, e40, e50 }

IS-2000SpecificMeasInfo ::=      ENUMERATED {
                                     frequency, timeslot, colourcode,
                                     outputpower, pn-Offset }

K-InterRAT ::=                   INTEGER (0..12)

LCS-Accuracy ::=                 BIT STRING (SIZE (7))

LCS-CipherParameters ::=         SEQUENCE {
    cipheringKeyFlag                 BIT STRING (SIZE (1)),
    cipheringSerialNumber            INTEGER (0..65535)
}

LCS-Error ::=                    SEQUENCE {
    errorReason                      LCS-ErrorCause,
    additionalAssistanceData         AdditionalAssistanceData
    -- The IE above is defined in GSM 09.31, the actual definition
    -- will have to be checked
}

LCS-ErrorCause ::=               ENUMERATED {
                                     notEnoughOTDOA-Cells,
                                     notEnoughGPS-Satellites,
```

```
                                    assistanceDataMissing,
                                    methodNotSupported,
                                    undefinedError,
                                    requestDeniedByUser,
                                    notProcessedAndTimeout }

LCS-EventID ::=                     ENUMERATED {
                                    e7a, e7b, e7c }

LCS-EventParam ::=                  SEQUENCE {
     eventID                        LCS-EventID,
     reportingAmount                ReportingAmount,
     reportFirstFix                 BOOLEAN,
     measurementInterval            LCS-MeasurementInterval,
     eventSpecificInfo              LCS-EventSpecificInfo
}

LCS-EventParamList ::=              SEQUENCE (SIZE (1..maxEventCount)) OF
                                    LCS-EventParam

LCS-EventSpecificInfo ::=           CHOICE {
     e7a                            ThresholdPositionChange,
     e7b                            ThresholdSFN-SFN-Change,
     e7c                            ThresholdSFN-GPS-TOW
}

LCS-GPS-AcquisitionAssistance ::=SEQUENCE {
     referenceTime                  CHOICE {
          utran-ReferenceTime            UTRAN-ReferenceTime,
          gps-ReferenceTimeOnly          INTEGER (0..604700000)
     },
     satelliteInformationList       AcquisitionSatInfoList
}

LCS-GPS-Almanac ::=                 SEQUENCE {
     almanacSatInfoList             AlmanacSatInfoList
}

LCS-GPS-AssistanceSIB ::=           SEQUENCE {
     lcs-CipherParameters           LCS-CipherParameters            OPTIONAL,
     referenceGPS-TOW               ReferenceGPS-TOW,
     status                         DiffCorrectionStatus,
     btsClockDrift                  BTS-ClockDrift                  OPTIONAL,
     timeOffset                     LCS-TimeOffset                  OPTIONAL,
     iodd                           IODD                            OPTIONAL,
     dgps-InformationList           DGPS-InformationList            OPTIONAL
}

LCS-GPS-AssistanceData ::=          SEQUENCE {
     lcs-GPS-ReferenceTime          LCS-GPS-ReferenceTime           OPTIONAL,
     lcs-GPS-ReferenceLocation      LCS-GPS-ReferenceLocation       OPTIONAL,
     lcs-GPS-DGPS-Corrections       LCS-GPS-DGPS-Corrections        OPTIONAL,
     lcs-GPS-NavigationModel        LCS-GPS-NavigationModel         OPTIONAL,
     lcs-GPS-IonosphericModel       LCS-GPS-IonosphericModel        OPTIONAL,
     lcs-GPS-UTC-Model              LCS-GPS-UTC-Model               OPTIONAL,
     lcs-GPS-Almanac                LCS-GPS-Almanac                 OPTIONAL,
     lcs-GPS-AcquisitionAssistance  LCS-GPS-AcquisitionAssistance   OPTIONAL,
     lcs-GPS-Real-timeIntegrity     LCS-GPS-Real-timeIntegrity      OPTIONAL
}

LCS-GPS-DGPS-Corrections ::=        SEQUENCE {
     gps-TOW                        INTEGER (0..604799),
     statusHealth                   DiffCorrectionStatus,
     dgps-CorrectionSatInfoList     DGPS-CorrectionSatInfoList
}

LCS-GPS-IonosphericModel ::=        SEQUENCE {
     alfa0                          BIT STRING (SIZE (8)),
     alfa1                          BIT STRING (SIZE (8)),
```

```
    alfa2                           BIT STRING (SIZE (8)),
    alfa3                           BIT STRING (SIZE (8)),
    beta0                           BIT STRING (SIZE (8)),
    beta1                           BIT STRING (SIZE (8)),
    beta2                           BIT STRING (SIZE (8)),
    beta3                           BIT STRING (SIZE (8))
}

LCS-GPS-Measurement ::=         SEQUENCE {
    referenceSFN                    ReferenceSFN                    OPTIONAL,
    gps-TOW-1msec                   GPS-TOW-1msec,
    gps-TOW-HighResolution          GPS-TOW-HighResolution          OPTIONAL,
    gps-MeasurementParamList        GPS-MeasurementParamList
}

LCS-GPS-NavigationModel ::=     SEQUENCE {
    n-SAT                           INTEGER (1..16),
    navigationModelSatInfoList      NavigationModelSatInfoList
}

-- **TODO**, definition in 23.032
LCS-GPS-ReferenceLocation ::=   SEQUENCE {
}

LCS-GPS-Real-timeIntegrity ::=  SEQUENCE {
    badSatList                      BadSatList
}

LCS-GPS-ReferenceTime ::=       SEQUENCE {
    gps-Week                        INTEGER (0..1023),
    gps-TOW                         INTEGER (0..604700000000),
    sfn                             INTEGER (0..4095),
    gps-TOW-AssistList              GPS-TOW-AssistList              OPTIONAL
}

LCS-GPS-UTC-Model ::=           SEQUENCE {
    a0                              BIT STRING (SIZE (32)),
    a1                              BIT STRING (SIZE (24)),
    delta-t-LS                      BIT STRING (SIZE (8)),
    t-ot                            BIT STRING (SIZE (8)),
    wn-t                            BIT STRING (SIZE (8)),
    wn-lsf                          BIT STRING (SIZE (8)),
    dn                              BIT STRING (SIZE (8)),
    delta-t-LSF                     BIT STRING (SIZE (8))
}

LCS-IPDL-Parameters ::=         SEQUENCE {
    ip-Spacing                      IP-Spacing,
    ip-Length                       IP-Length,
    ip-Offset                       INTEGER (0..9),
    seed                            INTEGER (0..63),
    burstModeParameters             BurstModeParameters
}

LCS-MeasuredResults ::=         SEQUENCE {
    lcs-MultipleSets                LCS-MultipleSets                OPTIONAL,
    lcs-ReferenceCellIdentity       PrimaryCPICH-Info               OPTIONAL,
    lcs-OTDOA-Measurement           LCS-OTDOA-Measurement           OPTIONAL,
    lcs-Position                    LCS-Position                    OPTIONAL,
    lcs-GPS-Measurement             LCS-GPS-Measurement             OPTIONAL,
    lcs-Error                       LCS-Error                       OPTIONAL
}

LCS-Measurement ::=             SEQUENCE {
    lcs-ReportingQuantity           LCS-ReportingQuantity,
    reportCriteria                  LCS-ReportCriteria,
    lcs-OTDOA-AssistanceData        LCS-OTDOA-AssistanceData        OPTIONAL,
    lcs-GPS-AssistanceData          LCS-GPS-AssistanceData          OPTIONAL
}
```

```
LCS-MeasurementEventResults ::=  SEQUENCE {
     event7a                          LCS-Position,
     event7b                          LCS-OTDOA-Measurement,
     event7c                          LCS-GPS-Measurement
}

LCS-MeasurementInterval ::=      ENUMERATED {
                                      e5, e15, e60, e300,
                                      e900, e1800, e3600, e7200 }

LCS-MethodType ::=               ENUMERATED {
                                      ue-Assisted,
                                      ue-Based,
                                      ue-BasedPreferred,
                                      ue-AssistedPreferred }

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

LCS-OTDOA-AssistanceData ::=     SEQUENCE {
     lcs-OTDOA-ReferenceCell          LCS-OTDOA-ReferenceCell          OPTIONAL,
     lcs-OTDOA-MeasurementAssistDataList
                                      LCS-OTDOA-MeasurementAssistDataList
                                                                       OPTIONAL,
     lcs-IPDL-Parameters              LCS-IPDL-Parameters              OPTIONAL
}

LCS-OTDOA-AssistanceSIB ::=      SEQUENCE {
     lcs-CipherParameters             LCS-CipherParameters             OPTIONAL,
     searchWindowSize                 OTDOA-SearchWindowSize,
     referenceCellPosition            ReferenceCellPosition,
     lcs-IPDL-Parameters              LCS-IPDL-Parameters              OPTIONAL,
     cellToMeasureInfoList            CellToMeasureInfoList
}

LCS-OTDOA-Measurement ::=        SEQUENCE {
     sfn                              INTEGER (0..4095),
     -- Actual value = IE value * 0.25 + 876
     ue-Rx-Tx-TimeDifference          INTEGER (0..1184),
     qualityType                      QualityType,
     qualityChoice                    CHOICE {
          std-10                           ReferenceQuality10,
          std-50                           ReferenceQuality50,
          cpich-EcN0                       CPICH-Ec-N0-OTDOA,
          defaultQuality                   ReferenceQuality
     },
     neighborList                     NeighborList                     OPTIONAL
}

LCS-OTDOA-MeasurementAssistData ::= SEQUENCE {
     primaryCPICH-Info                PrimaryCPICH-Info,
     frequencyInfo                    FrequencyInfo                    OPTIONAL,
     sfn-SFN-ObsTimeDifference        SFN-SFN-ObsTimeDifference1,
     fineSFN-SFN                      FineSFN-SFN                      OPTIONAL,
     searchWindowSize                 OTDOA-SearchWindowSize,
     relativeNorth                    INTEGER (-20000..20000)          OPTIONAL,
     relativeEast                     INTEGER (-20000..20000)          OPTIONAL,
     relativeAltitude                 INTEGER (-4000..4000)            OPTIONAL
}

LCS-OTDOA-MeasurementAssistDataList ::= SEQUENCE (SIZE (1..15)) OF
                                      LCS-OTDOA-MeasurementAssistData

LCS-OTDOA-ReferenceCell ::=      SEQUENCE {
     primaryCPICH-Info                PrimaryCPICH-Info,
```

```
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    cellPosition                    ReferenceCellPosition           OPTIONAL
}

LCS-Position ::=                    SEQUENCE {
    referenceSFN                        ReferenceSFN,
    gps-TOW                             INTEGER (0..604700000000),
    positionEstimate                    PositionEstimate
}

LCS-ReportCriteria ::=              CHOICE {
    lcs-ReportingCriteria               LCS-ReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

LCS-ReportingCriteria ::=           SEQUENCE {
    eventParameterList                  LCS-EventParamList              OPTIONAL
}

LCS-ReportingQuantity ::=           SEQUENCE {
    methodType                          LCS-MethodType,
    positioningMethod                   PositioningMethod,
    responseTime                        LCS-ResponseTime,
    accuracy                            LCS-Accuracy                    OPTIONAL,
    gps-TimingOfCellWanted              BOOLEAN,
    multipleSets                        BOOLEAN,
    environmentCharacterization         EnvironmentCharacterization     OPTIONAL
}

LCS-ResponseTime ::=                ENUMERATED {
                                        s1, s2, s4, s8, s16,
                                        s32, s64, s128 }

LCS-TimeOffset ::=                  INTEGER (0..4095)

MaxNumberOfReportingCells ::=       ENUMERATED {
                                        mandatoryCellsOnly,
                                        mandatoryCellsPlus1,
                                        mandatoryCellsPlus2,
                                        mandatoryCellsPlus3,
                                        mandatoryCellsPlus4,
                                        mandatoryCellsPlus5,
                                        mandatoryCellsPlus6 }

MaxReportedCellsOnRACH ::=          ENUMERATED {
                                        noReport,
                                        currentCell,
                                        currentAnd-1-BestNeighbour,
                                        currentAnd-2-BestNeighbour,
                                        currentAnd-3-BestNeighbour,
                                        currentAnd-4-BestNeighbour,
                                        currentAnd-5-BestNeighbour,
                                        currentAnd-6-BestNeighbour }

MeasuredResults ::=                 CHOICE {
    intraFreqMeasuredResultsList        IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList        InterFreqMeasuredResultsList,
    interSystemMeasuredResultsList      InterSystemMeasuredResultsList,
    trafficVolumeMeasuredResultsList    TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults              QualityMeasuredResults,
    ue-InternalMeasuredResults          UE-InternalMeasuredResults,
    lcs-MeasuredResults                 LCS-MeasuredResults
}

MeasuredResultsList ::=             SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                        MeasuredResults

MeasuredResultsOnRACH ::=           SEQUENCE {
```

```
     currentCell                         SEQUENCE {
          modeSpecificInfo                    CHOICE {
               fdd                                 SEQUENCE {
                    measurementQuantity                 CHOICE {
                         cpich-Ec-N0                         CPICH-Ec-N0,
                         cpich-RSCP                          CPICH-RSCP,
                         cpich-SIR                           CPICH-SIR,
                         pathloss                            Pathloss
                    }
               },
               tdd                                 SEQUENCE {
                    timeslotISCP                        TimeslotISCP,
                    primaryCCPCH-RSCP                   PrimaryCCPCH-RSCP
               }
          }
     },
     monitoredCells                      MonitoredCellRACH-List          OPTIONAL
}

MeasurementCommand ::=           CHOICE {
     setup                               MeasurementType,
     modify                              SEQUENCE {
          measurementType                     MeasurementType            OPTIONAL
     },
     release                             NULL
}

MeasurementControlSysInfo ::=    SEQUENCE {
     intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo      OPTIONAL,
     interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo      OPTIONAL,
     interSystemMeasurementSysInfo    InterSystemMeasurementSysInfo    OPTIONAL,
     trafficVolumeMeasSysInfo         TrafficVolumeMeasSysInfo         OPTIONAL,
     ue-InternalMeasurementSysInfo    UE-InternalMeasurementSysInfo    OPTIONAL
}

-- **TODO**, not defined yet
MeasurementIdentityNumber ::=    SEQUENCE {
}

MeasurementQuantityGSM ::=       ENUMERATED {
                                      gsm-CarrierRSSI,
                                      pathloss }

MeasurementReportingMode ::=     SEQUENCE {
     measurementReportTransferMode    TransferMode,
     periodicalOrEventTrigger         PeriodicalOrEventTrigger
}

MeasurementType ::=              CHOICE {
     intraFrequencyMeasurement        IntraFrequencyMeasurement,
     interFrequencyMeasurement        InterFrequencyMeasurement,
     interSystemMeasurement           InterSystemMeasurement,
     lcs-Measurement                  LCS-Measurement,
     trafficVolumeMeasurement         TrafficVolumeMeasurement,
     qualityMeasurement               QualityMeasurement,
     ue-InternalMeasurement           UE-InternalMeasurement
}

MeasurementValidity ::=          SEQUENCE {
     resume-Release                   Resume-Release
}

MonitoredCellRACH-List ::=       SEQUENCE (SIZE(1..7)) OF
                                      MonitoredCellRACH-Result

MonitoredCellRACH-Result ::=     SEQUENCE {
     sfn-SFN-ObsTimeDifference        SFN-SFN-ObsTimeDifference        OPTIONAL,
     modeSpecificInfo                 CHOICE {
          fdd                              SEQUENCE {
```

```
               primaryCPICH-Info                PrimaryCPICH-Info,
               measurementQuantity              CHOICE {
                    cpich-Ec-N0                      CPICH-Ec-N0,
                    cpich-RSCP                       CPICH-RSCP,
                    cpich-SIR                        CPICH-SIR,
                    pathloss                         Pathloss
               }                                                        OPTIONAL
          },
          tdd                                SEQUENCE {
               primaryCCPCH-Info                PrimaryCCPCH-Info,
               primaryCCPCH-RSCP                PrimaryCCPCH-RSCP       OPTIONAL
          }
     }
}

MonitoredSetCellReport ::=       ENUMERATED {
                                      excludeAll,
                                      other }

MultipathIndicator ::=           ENUMERATED {
                                      nm,
                                      low,
                                      medium,
                                      high }

NavigationModelSatInfo ::=       SEQUENCE {
     satID                            INTEGER (0..63),
     satelliteStatus                  SatelliteStatus,
     compression                      CHOICE {
          uncompressed                     UncompressedNavModel,
          compressed                       CompressedNavModel
     }
}

NavigationModelSatInfoList ::=   SEQUENCE (SIZE (1..maxN-SAT)) OF
                                      NavigationModelSatInfo

Neighbor ::=                     SEQUENCE {
     neighborIdentity                 PrimaryCPICH-Info               OPTIONAL,
     neignborQuantity                 NeighborQuantity,
     sfn-SFN-ObsTimeDifference2       SFN-SFN-ObsTimeDifference2
}

NeighborList ::=                 SEQUENCE (SIZE (1..15)) OF
                                      Neighbor

-- **TODO**, to be defined fully
NeighborQuantity ::=             SEQUENCE {
}

NewInterFreqCell ::=             SEQUENCE {
     interFreqCellID                  InterFreqCellID                 OPTIONAL,
     frequencyInfo                    FrequencyInfo                   OPTIONAL,
     cellInfo                         CellInfo
}

NewInterFreqCellList ::=         SEQUENCE (SIZE (1..maxInterCells)) OF
                                      NewInterFreqCell

NewInterFreqCellSI ::=           SEQUENCE {
     interFreqCellID                  InterFreqCellID                 OPTIONAL,
     frequencyInfo                    FrequencyInfo                   OPTIONAL,
     cellInfo                         CellInfoSI
}

NewInterFreqCellSI-List ::=      SEQUENCE (SIZE (1..maxInterCells)) OF
                                      NewInterFreqCellSI

NewInterSystemCell ::=           SEQUENCE {
```

```
     technologySpecificInfo           CHOICE {
          gsm                              SEQUENCE {
               q-Offset                         Q-Offset                OPTIONAL,
               hcs-NeighbouringCellInformation  HCS-NeighbouringCellInformation
                                                                        OPTIONAL,
               q-Min                            Q-Min,
               maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power,
               bsic                             BSIC,
               bcch-ARFCN                       BCCH-ARFCN,
               gsm-OutputPower                  GSM-OutputPower         OPTIONAL
          },
          is-2000                          SEQUENCE {
               is-2000SpecificMeasInfo          IS-2000SpecificMeasInfo
          }
     }
}


NewInterSystemCellList ::=       SEQUENCE (SIZE (1..maxInterSysCells)) OF
                                      NewInterSystemCell

NewIntraFreqCell ::=             SEQUENCE {
     intraFreqCellID                  IntraFreqCellID                 OPTIONAL,
     cellInfo                         CellInfo
}

NewIntraFreqCellList ::=         SEQUENCE (SIZE (1..maxIntraCells)) OF
                                      NewIntraFreqCell

NewIntraFreqCellSI ::=           SEQUENCE {
     intraFreqCellID                  IntraFreqCellID                 OPTIONAL,
     cellInfo                         CellInfoSI
}

NewIntraFreqCellSI-List ::=      SEQUENCE (SIZE (1..maxIntraCells)) OF
                                      NewIntraFreqCell

NonUsedFreqParameter ::=         SEQUENCE {
     nonUsedFreqThreshold             Threshold,
     nonUsedFreqW                     W
}

NonUsedFreqParameterList ::=     SEQUENCE (SIZE (1..maxNonUsedFrequency)) OF
                                      NonUsedFreqParameter

ObservedTimeDifferenceToGSM ::=  INTEGER (0..4095)

OtherRAT-InSysInfo ::=           SEQUENCE {
     rat-Type                         RAT-Type,
     k-InterRAT                       K-InterRAT
}

OtherRAT-InSysInfoList ::=       SEQUENCE (SIZE (1..maxInterRAT)) OF
                                      OtherRAT-InSysInfo

OTDOA-SearchWindowSize ::=       ENUMERATED {
                                      c10, c20, c30, c40, c50,
                                      c60, c70, moreThan70 }

Pathloss ::=                     INTEGER (46..158)

PenaltyTime ::=                  CHOICE {
     notUsed                          NULL,
     pt10                             TemporaryOffset,
     pt20                             TemporaryOffset,
     pt30                             TemporaryOffset,
     pt40                             TemporaryOffset,
     pt50                             TemporaryOffset,
     pt60                             TemporaryOffset
```

```
}

PendingTimeAfterTrigger ::=      ENUMERATED {
                                      ptat0-25, ptat0-5, ptat1,
                                      ptat2, ptat4, ptat8, ptat16 }

PeriodicalOrEventTrigger ::=     ENUMERATED {
                                      periodical,
                                      eventTrigger }

PeriodicalReportingCriteria ::=  SEQUENCE {
     reportingAmount                  ReportingAmount                 OPTIONAL,
     reportingInterval                ReportingIntervalLong           OPTIONAL
}

-- **TODO**, contents to be defined, source 23.032
PositionEstimate ::=             CHOICE {
     ellipsoidPoint                   SEQUENCE {},
     ellipsoidPointUncertCircle       SEQUENCE {},
     ellipsoidPointUncertEllipse      SEQUENCE {},
     ellipsoidPointAltitude           SEQUENCE {},
     ellipsoidPointAltitudeEllipse    SEQUENCE {}
}

PositioningMethod ::=            ENUMERATED {
                                      otdoa,
                                      gps,
                                      otdoaOrGPS }

PRC ::=                          INTEGER (-32767..32767)

-- **TODO**, not defined yet
PrimaryCCPCH-RSCP ::=            SEQUENCE {
}

Q-Accept-s-n ::=                 INTEGER (0..63)

Q-HCS ::=                        INTEGER (0..99)

Q-Offset ::=                     INTEGER (-50..50)

-- Actual value = IE value * 0.5
Q-OffsetS-N ::=                  INTEGER (-40..40)

-- **TODO**, not defined yet
Q-Min    ::=                     SEQUENCE {
}

Qmin-FDD ::=                     INTEGER (-20..0)

-- Actual value = IE value * 2 - 115
Qmin-TDD ::=                     INTEGER (0..45)

-- **TODO**, not defined yet
QualityEventResults ::=          SEQUENCE {
}

-- **TODO**, not defined yet
QualityMeasQuantity ::=          SEQUENCE {
}

QualityMeasuredResults ::=       SEQUENCE {
     blerMeasurementResultsList       BLER-MeasurementResultsList     OPTIONAL,
     dl-PhysicalChannelBER            DL-PhysicalChannelBER           OPTIONAL,
     sir                              SIR                             OPTIONAL
}

QualityMeasurement ::=           SEQUENCE {
     qualityMeasurementObject         QualityMeasurementObject        OPTIONAL,
```

```
    qualityMeasQuantity             QualityMeasQuantity             OPTIONAL,
    qualityReportingQuantity        QualityReportingQuantity        OPTIONAL,
    reportCriteria                  QualityReportCriteria
}

-- **TODO**, not defined yet
QualityMeasurementObject ::=    SEQUENCE {
}

QualityReportCriteria ::=       CHOICE {
    qualityReportingCriteria        QualityReportingCriteria,
    periodicalReportingCriteria     PeriodicalReportingCriteria,
    noReporting                     NULL
}

-- **TODO**, not defined yet
QualityReportingCriteria ::=    SEQUENCE {
}

QualityReportingQuantity ::=    SEQUENCE {
    dl-TransChBLER                  BOOLEAN,
    bler-TransChIdList              BLER-TransChIdList              OPTIONAL,
    sir                             BOOLEAN
}

QualityType ::=                 ENUMERATED {
                                    std-10, std-50, cpich-Ec-N0 }

RAT-Type ::=                    ENUMERATED {
                                    gsm, is2000, spare1, spare2,
                                    spare3, spare4, spare5, spare6,
                                    spare7, spare8, spare9, spare10,
                                    spare11, spare12, spare13, spare14 }

-- **TODO**, definition to be checked from 23.032
ReferenceCellPosition ::=       SEQUENCE {
}

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

ReferenceGPS-TOW ::=            INTEGER (0..604700000000)

ReferenceQuality ::=            ENUMERATED {
                                    m0-19, m20-39, m40-79,
                                    m80-159, m160-319, m320-639,
                                    m640-1319, m1320Plus }

-- Actual value = IE value * 10
ReferenceQuality10 ::=          INTEGER (1..32)

-- Actual value = IE value * 50
ReferenceQuality50 ::=          INTEGER (1..32)

ReferenceSFN ::=                INTEGER (0..4095)

-- 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)
}

RemovedInterFreqCell ::=        SEQUENCE {
```

```
    interFreqCellID                 InterFreqCellID
}

RemovedInterFreqCellList ::=    SEQUENCE (SIZE (1..maxInterCells)) OF
                                    RemovedInterFreqCell

RemovedInterSystemCell ::=      SEQUENCE {
    interSystemCellID               InterSystemCellID
}

RemovedInterSystemCellList ::=  SEQUENCE (SIZE (1..maxInterSysCells)) OF
                                    RemovedInterSystemCell

RemovedIntraFreqCell ::=        SEQUENCE {
    intraFreqCellID                 IntraFreqCellID
}

RemovedIntraFreqCellList ::=    SEQUENCE (SIZE (1..maxIntraCells)) OF
                                    RemovedIntraFreqCell

ReplacementActivationThreshold ::= ENUMERATED {
                                    notApplicable, t1, t2,
                                    t3, t4, t5, t6, t7 }

ReportDeactivationThreshold ::= ENUMERATED {
                                    notApplicable, t1, t2,
                                    t3, t4, t5, t6, t7 }

ReportingAmount ::=             ENUMERATED {
                                    ra1, ra2, ra4, ra8, ra16, ra32,
                                    ra64, ra-Infinity }

ReportingCellStatus ::=         SEQUENCE {
    maxNumberOfReportingCells       MaxNumberOfReportingCells,
    measurement                     CHOICE {
        intraFreq                       ReportingCellStatusIntraFreq,
        otherMeasurement                NULL
    }
}

ReportingCellStatusIntraFreq ::= SEQUENCE {
    activeSetCellReport             ActiveSetCellReport,
    monitoredSetCellReport          MonitoredSetCellReport
}

ReportingInfoForCellDCH ::=     SEQUENCE {
    intraFreqReportingQuantity      IntraFreqReportingQuantity,
    reportCriteria                  CellDCH-ReportCriteria
}

ReportingInterval ::=           ENUMERATED {
                                    noPeriodicalreporting, ri0-25,
                                    ri0-5, ri1, ri2, ri4, ri8, ri16 }

ReportingIntervalLong ::=       ENUMERATED {
                                    ril0, ril0-25, ril0-5, ril1,
                                    ril2, ril3, ril4, ril6, ril8,
                                    ril12, ril16, ril20, ril24,
                                    ril28, ril32, ril64 }

-- Actual value = IE value * 0.5
ReportingRange ::=              INTEGER (0..29)

Resume-Release ::=              CHOICE {
    resume                          UE-State,
    release                         NULL
}

RL-AdditionInfo ::=             SEQUENCE {
```

```
     primaryCPICH-Info              PrimaryCPICH-Info
}

RL-AdditionInfoList ::=         SEQUENCE (SIZE(1..maxAddRLcount)) OF
                                     RL-AdditionInfo

RL-InformationLists ::=         SEQUENCE {
     rl-AdditionInfoList             RL-AdditionInfoList             OPTIONAL,
     rl-RemovalInfoList              RL-RemovalInfoList              OPTIONAL
}

RL-RemovalInfo ::=              SEQUENCE {
     primaryCPICH-Info               PrimaryCPICH-Info
}

RL-RemovalInfoList ::=          SEQUENCE (SIZE(1..maxDelRLcount)) OF
                                     RL-RemovalInfo

RLC-BuffersPayload ::=          ENUMERATED {
                                     pl0, pl4, pl8, pl16, pl32, pl64, pl128,
                                     pl256, pl512, pl1024, pl2k, pl4k,
                                     pl8k, pl16k, pl32k, pl64k, pl128k,
                                     pl256k, pl512k, pl1024k }

RRC ::=                         INTEGER (-127..127)

-- **TODO**, not defined yet
RSCP ::=                        SEQUENCE {
}

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

SatID ::=                       INTEGER (0..31)

ScaleFactor ::=                 ENUMERATED {
                                     prc0-02-rrc0-002,
                                     prc0-32-rrc0-032 }

SFN-SFN-ObsTimeDifference ::=   CHOICE {
     type1                           SFN-SFN-ObsTimeDifference1,
     -- Actual value for type2 = IE value * 0.25
     type2                           SFN-SFN-ObsTimeDifference2
}

SFN-SFN-ObsTimeDifference1 ::=  INTEGER (0..9830399)

SFN-SFN-ObsTimeDifference2 ::=  INTEGER (-5119..5120)

SFN-SFN-OTD-Type ::=            ENUMERATED {
                                     noReport,
                                     type1,
                                     type2 }

SignallingOption ::=            CHOICE {
     alternative1                    SEQUENCE {
          q-OffsetS-N                     Q-OffsetS-N                OPTIONAL
     },
     alternative2               NULL
}

SIR ::=                         INTEGER (-10..20)

TemporaryOffset ::=             ENUMERATED {
                                     to10, to20, to30, to40, to50,
                                     to60, to70, infinite }
```

```
-- **TODO**, not defined yet
Threshold ::=                   SEQUENCE {
}

ThresholdPositionChange ::=     ENUMERATED {
                                    pc10, pc20, pc30, pc40, pc50,
                                    pc100, pc200, pc300, pc500,
                                    pc1000, pc2000, pc5000, pc10000,
                                    pc20000, pc50000, pc100000 }

ThresholdSFN-GPS-TOW ::=        ENUMERATED {
                                    ms1, ms2, ms3, ms5, ms10,
                                    ms20, ms50, ms100 }

ThresholdSFN-SFN-Change ::=     ENUMERATED {
                                    c0-25, c0-5, c1, c2, c3, c4, c5,
                                    c10, c20, c50, c100, c200, c500,
                                    c1000, c2000, c5000 }

-- **TODO**, not defined yet
TimeslotISCP ::=                SEQUENCE {
}

TimeslotListWithISCP ::=        SEQUENCE (SIZE (1..14)) OF
                                    TimeslotWithISCP

TimeslotWithISCP ::=            SEQUENCE {
    timeslot                        Timeslot,
    timeslotISCP                    TimeslotISCP
}

TimeToTrigger ::=               ENUMERATED {
                                    ttt0, ttt10, ttt20, ttt40, ttt60,
                                    ttt80, ttt100, ttt120, ttt160,
                                    ttt200, ttt240, tt320, ttt640,
                                    ttt1280, ttt2560, ttt5000 }

TrafficVolumeEventParam ::=     SEQUENCE {
    eventID                         TrafficVolumeEventType,
    reportingThreshold              TrafficVolumeThreshold
}

TrafficVolumeEventResults ::=   SEQUENCE {
    transportChannelCausingEvent    TransportChannelIdentity,
    trafficVolumeEventIdentity      EventIDTrafficVolume
}

TrafficVolumeEventType ::=      ENUMERATED {
                                    e4a,
                                    e4b }

TrafficVolumeMeasObject ::=     SEQUENCE {
    targetTransportChannelID        TransportChannelIdentity
}

TrafficVolumeMeasObjectList ::= SEQUENCE (SIZE (1..maxTrCHcount)) OF
                                    TrafficVolumeMeasObject

TrafficVolumeMeasQuantity ::=   ENUMERATED {
                                    rlc-BufferPayload,
                                    averageRLC-BufferPayload,
                                    varianceOfRLC-BufferPayload }

TrafficVolumeMeasSysInfo ::=    SEQUENCE {
    trafficVolumeMeasurementID      MeasurementIdentityNumber       OPTIONAL,
    trafficVolumeMeasObjectList     TrafficVolumeMeasObjectList     OPTIONAL,
    trafficVolumeMeasQuantity       TrafficVolumeMeasQuantity       OPTIONAL
}
```

```
TrafficVolumeMeasuredResults ::= SEQUENCE {
     rb-Identity                    RB-Identity,
     rlc-BuffersPayload             RLC-BuffersPayload              OPTIONAL,
     averageRLC-BufferPayload       AverageRLC-BufferPayload        OPTIONAL,
     varianceOfRLC-BufferPayload    VarianceOfRLC-BufferPayload     OPTIONAL
}

TrafficVolumeMeasuredResultsList ::= SEQUENCE (SIZE (1..maxTraf)) OF
                                     TrafficVolumeMeasuredResults

TrafficVolumeMeasurement ::=     SEQUENCE {
     TrafficVolumeMeasurementObjectList
                                     TrafficVolumeMeasurementObjectList
                                                                     OPTIONAL,
     trafficVolumeMeasQuantity       TrafficVolumeMeasQuantity       OPTIONAL,
     trafficVolumeReportingQuantity  TrafficVolumeReportingQuantity  OPTIONAL,
     measurementValidity             MeasurementValidity             OPTIONAL,
     reportCriteria                  TrafficVolumeReportCriteria
}

TrafficVolumeMeasurementObject ::= SEQUENCE {
     targetTransportChannelID        TransportChannelIdentity
}

TrafficVolumeMeasurementObjectList ::= SEQUENCE (SIZE (1..maxTrCHcount)) OF
                                     TrafficVolumeMeasurementObject

TrafficVolumeReportCriteria ::=  CHOICE {
     trafficVolumeReportingCriteria  TrafficVolumeReportingCriteria,
     periodicalReportingCriteria     PeriodicalReportingCriteria,
     noReporting                     NULL
}

TrafficVolumeReportingCriteria ::= SEQUENCE {
     transChCriteriaList             TransChCriteriaList             OPTIONAL,
     timeToTrigger                   TimeToTrigger                   OPTIONAL,
     pendingTimeAfterTrigger         PendingTimeAfterTrigger         OPTIONAL,
     tx-InterruptionAfterTrigger     TX-InterruptionAfterTrigger     OPTIONAL,
     reportingAmount                 ReportingAmount                 OPTIONAL,
     reportingInterval               ReportingInterval               OPTIONAL
}

TrafficVolumeReportingQuantity ::= SEQUENCE {
     rlc-RB-BufferPayload            BOOLEAN,
     rlc-RB-BufferPayloadAverage     BOOLEAN,
     rlc-RB-BufferPayloadVariance    BOOLEAN
}

TrafficVolumeThreshold ::=       ENUMERATED {
                                     th8, th16, th32, th64, th128,
                                     th256, th512, th1024, th1536,
                                     th2048, th3072, th4096, th6144,
                                     th8192 }

TransChCriteria ::=              SEQUENCE {
     transportChannelID              TransportChannelIdentity,
     eventSpecificParameters         SEQUENCE (SIZE (1..2)) OF
                                          TrafficVolumeEventParam    OPTIONAL
}

TransChCriteriaList ::=          SEQUENCE (SIZE(1..maxTrCHcount)) OF
                                     TransChCriteria

TransferMode ::=                 ENUMERATED {
                                     acknowledgedModeRLC,
                                     unacknowledgedModeRLC }

TransmittedPowerThreshold ::=    INTEGER (-50..33)
```

```
TriggeringCondition ::=          ENUMERATED {
                                      activeSetCellsOnly,
                                      monitoredCellsOnly,
                                      activeSetAndMonitoredCells }

TX-InterruptionAfterTrigger ::=  ENUMERATED {
                                      txiat0-25, txiat0-5, txiat1,
                                      txiat2, txiat4, txiat8, txiat16 }

UDRE ::=                         ENUMERATED {
                                      lessThan1,
                                      between1-and-4,
                                      between4-and-8,
                                      over8 }

UE-6AB-Event ::=                 SEQUENCE {
     timeToTrigger                    TimeToTrigger,
     transmittedPowerThreshold        TransmittedPowerThreshold
}

UE-6FG-Event ::=                 SEQUENCE {
     timeToTrigger                    TimeToTrigger,
     ue-RX-TX-TimeDifferenceThreshold UE-RX-TX-TimeDifferenceThreshold
}

UE-AutonomousUpdateMode ::=      CHOICE {
     on                               NULL,
     onWithNoReporting                NULL,
     off                              RL-InformationLists
}


UE-InternalEventParam ::=        CHOICE {
     event6a                          UE-6AB-Event,
     event6b                          UE-6AB-Event,
     event6c                          TimeToTrigger,
     event6d                          TimeToTrigger,
     event6e                          TimeToTrigger,
     event6f                          UE-6FG-Event,
     event6g                          UE-6FG-Event
}

UE-InternalEventParamList ::=    SEQUENCE (SIZE (1..maxEventCount)) OF
                                      UE-InternalEventParam

UE-InternalEventResults ::=      CHOICE {
     event6a                          NULL,
     event6b                          NULL,
     event6c                          NULL,
     event6d                          NULL,
     event6e                          NULL,
     event6f                          PrimaryCPICH-Info,
     event6g                          PrimaryCPICH-Info
}

UE-InternalMeasQuantity ::=      SEQUENCE {
     measurementQuantity              UE-MeasurementQuantity,
     filterCoefficient                FilterCoefficient
}

UE-InternalMeasuredResults ::=   SEQUENCE {
     modeSpecificInfo                 CHOICE {
          fdd                              SEQUENCE {
               ue-TransmittedPowerFDD           UE-TransmittedPowerFDD  OPTIONAL,
               ue-RX-TX-ReportEntryList         UE-RX-TX-ReportEntryList
                                                                        OPTIONAL
          },
          tdd                              SEQUENCE {
```

```
            ue-TransmittedPowerTDD-List      UE-TransmittedPowerTDD-List
                                                                    OPTIONAL
        }
    }
}

UE-InternalMeasurement ::=       SEQUENCE {
    ue-InternalMeasQuantity          UE-InternalMeasQuantity          OPTIONAL,
    ue-InternalReportingQuantity     UE-InternalReportingQuantity     OPTIONAL,
    reportCriteria                   UE-InternalReportCriteria
}

UE-InternalMeasurementSysInfo ::= SEQUENCE {
    ue-InternalMeasurementID         MeasurementIdentityNumber        OPTIONAL,
    ue-InternalMeasQuantity          UE-InternalMeasQuantity
}

UE-InternalReportCriteria ::=    CHOICE {
    ue-InternalReportingCriteria     UE-InternalReportingCriteria,
    periodicalReportingCriteria      PeriodicalReportingCriteria,
    noReporting                      NULL
}

UE-InternalReportingCriteria ::= SEQUENCE {
    ue-InternalEventParamList        UE-InternalEventParamList        OPTIONAL
}

UE-InternalReportingQuantity ::= SEQUENCE {
    ue-TransmittedPower              BOOLEAN,
    ue-RX-TX-TimeDifferece           BOOLEAN,
    ue-Position                      BOOLEAN
}

UE-MeasurementQuantity ::=       ENUMERATED {
                                     ue-TransmittedPower,
                                     utra-Carrier-RSSI,
                                     ue-RX-TX-TimeDifference }

UE-RX-TX-ReportEntry ::=         SEQUENCE {
    primaryCPICH-Info                PrimaryCPICH-Info,
    ue-RX-TX-TimeDifference          UE-RX-TX-TimeDifference
}

UE-RX-TX-ReportEntryList ::=     SEQUENCE (SIZE (1..maxUsedRLcount)) OF
                                     UE-RX-TX-ReportEntry

UE-RX-TX-TimeDifference ::=      INTEGER (876..1172)

UE-RX-TX-TimeDifferenceThreshold ::= INTEGER (769..1280)

UE-State ::=                     ENUMERATED {
                                     cell-DCH, all-But-Cell-DCH, all-States }

UE-TransmittedPowerFDD ::=       INTEGER (-50..33)

-- **TODO**, not defined yet
UE-TransmittedPowerTDD ::=       SEQUENCE {
}

UE-TransmittedPowerTDD-List ::=  SEQUENCE (SIZE (1..maxUsedUplTScount)) OF
                                     UE-TransmittedPowerTDD

UncompressedNavModel ::=         SEQUENCE {
    iode                             BIT STRING (SIZE (8)),
    t-oe                             BIT STRING (SIZE (16)),
    c-rc                             BIT STRING (SIZE (16)),
    c-rs                             BIT STRING (SIZE (16)),
    c-ic                             BIT STRING (SIZE (16)),
    c-is                             BIT STRING (SIZE (16)),
```

```
    c-uc                                BIT STRING (SIZE (16)),
    c-us                                BIT STRING (SIZE (16)),
    e                                   BIT STRING (SIZE (32)),
    m0                                  BIT STRING (SIZE (32)),
    a-Sqrt                              BIT STRING (SIZE (32)),
    delta-n                             BIT STRING (SIZE (16)),
    omega0                              BIT STRING (SIZE (32)),
    omegaDot                            BIT STRING (SIZE (24)),
    i0                                  BIT STRING (SIZE (32)),
    iDot                                BIT STRING (SIZE (14)),
    omega                               BIT STRING (SIZE (32)),
    t-oc                                BIT STRING (SIZE (16)),
    af0                                 BIT STRING (SIZE (22)),
    af1                                 BIT STRING (SIZE (16)),
    af2                                 BIT STRING (SIZE (8))
}

UTRA-CarrierRSSI ::=            INTEGER (-95..-30)

UTRAN-ReferenceTime ::=         SEQUENCE {
    gps-TOW                         INTEGER (0..604700000000),
    sfn                             INTEGER (0..4095)
}

VarianceOfRLC-BufferPayload ::=  ENUMERATED {
                                    plv0, plv4, plv8, plv16, plv32, plv64,
                                    plv128, plv256, plv512, plv1024,
                                    plv2k, plv4k, plv8k, plv16k }

-- Actual value = IE value * 0.1
W ::=                           INTEGER (0..20)

END
```

11.3.8 Other information elements

```
Other-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    CN-DomainSysInfoList,
    NAS-SystemInformationGSM-MAP,
    PLMN-Type
FROM CoreNetwork-IEs

    CellAccessRestriction,
    CellIdentity,
    CellSelectReselectInfo,
    URA-IdentityList
FROM UTRANMobility-IEs

    CapabilityUpdateRequirement,
    CPCH-Parameters,
    DRAC-SysInfoList,
    ProtocolErrorCause,
    UE-ConnTimersAndConstants,
    UE-IdleTimersAndConstants
FROM UserEquipment-IEs

    PreDefRadioConfigurationList
FROM RadioBearer-IEs

    PreDefTransChConfiguration
FROM TransportChannel-IEs

    AICH-PowerOffset,
    ConstantValue,
    CPCH-PersistenceLevelsList,
```

```
     CPCH-SetInfoList,
     DynamicPersistenceLevelList,
     FrequencyInfo,
     IndividualTS-InterferenceList,
     MaxAllowedUL-TX-Power,
     MidambleConfiguration,
     PDSCH-SysInfoList,
     PICH-PowerOffset,
     PRACH-SystemInformationList,
     PreDefPhyChConfiguration,
     PrimaryCCPCH-InfoSI,
     PrimaryCCPCH-TX-Power,
     PUSCH-SysInfoList,
     SCCPCH-SystemInformationList,
     UL-Interference
FROM PhysicalChannel-IEs

     FACH-MeasurementOccasionInfo,
     LCS-GPS-AssistanceSIB,
     LCS-OTDOA-AssistanceSIB,
     MeasurementControlSysInfo
FROM Measurement-IEs

     ANSI-41-GlobalServiceRedirectInfo,
     ANSI-41-PrivateNeighborListInfo,
     ANSI-41-RAND-Information,
     ANSI-41-UserZoneID-Information
FROM ANSI-41-IEs

     maxDataLength,
     maxInterSysMessages,
     maxNoOfErrors,
     maxSysInfoBlockCount,
     maxSysInfoBlockFACHcount
FROM Constant-definitions;

BCC ::=                          INTEGER (0..7)

BCCH-ModificationInfo ::=        SEQUENCE {
     mib-ValueTag                     MIB-ValueTag,
     bcch-ModificationTime            BCCH-ModificationTime           OPTIONAL
}

-- Actual value = IE value * 2
BCCH-ModificationTime ::=        INTEGER (0..2047)

BSIC ::=                         SEQUENCE {
     ncc                              NCC,
     bcc                              BCC
}

CBS-DRX-Level1Information ::=    SEQUENCE {
     ctch-AllocationPeriod            INTEGER (1..256),
     cbs-FrameOffset                  INTEGER (0..255)
}

CDMA2000-Message ::=             SEQUENCE {
     msg-Type                         BIT STRING (SIZE (8)),
     payload                          BIT STRING (SIZE (1..512))
}

CDMA2000-MessageList ::=         SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                      CDMA2000-Message

CellValueTag ::=                 INTEGER (1..4)

GSM-MessageList ::=              SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                      BIT STRING (SIZE (1..512))
```

```
InterSystemHO-Failure ::=          SEQUENCE {
     interSystemHO-FailureCause         InterSystemHO-FailureCause       OPTIONAL,
     interSystemMessage                 InterSystemMessage               OPTIONAL
}

InterSystemHO-FailureCause ::=     CHOICE {
     configurationUnacceptable          NULL,
     physicalChannelFailure             NULL,
     protocolError                      ProtocolErrorInformation,
     unspecified                        NULL,
     spare                              NULL
}

InterSystemMessage ::=             SEQUENCE {
     systemType                         SystemType,
     systemSpecificMessage              CHOICE {
          gsm                                SEQUENCE {
               gsm-MessageList                    GSM-MessageList
          },
          cdma2000                           SEQUENCE {
               cdma2000-MessageList               CDMA2000-MessageList
          }
     }
}

MasterInformationBlock ::=         SEQUENCE {
          mib-ValueTag               MIB-ValueTag,
          plmn-Type                  PLMN-Type,
          -- TABULAR: The PLMN identity and ANSI-41 core network information
          -- are included in PLMN-Type.
          modeSpecificInfo           CHOICE {
               fdd                        NULL,
               tdd                        SEQUENCE {
                    sfn-prime                  SFN-Prime
               }
          },
          sib-ReferenceList          SIB-ReferenceList,
     -- Extension mechanism
          non-Release99-Information  SEQUENCE {}                      OPTIONAL
}

MIB-ValueTag ::=                   INTEGER (1..8)

NCC ::=                            INTEGER (0..7)

PLMN-ValueTag ::=                  INTEGER (1..256)

ProtocolErrorInformation ::=       SEQUENCE {
     diagnosticsType                    CHOICE {
          type1                              SEQUENCE {
               protocolErrorCause                 ProtocolErrorCause
          },
          spare                              NULL
     }
}

ProtocolErrorInformationList ::= SEQUENCE (SIZE (1..maxNoOfErrors)) OF
                                   ProtocolErrorInformation

SchedulingInformation ::=          SEQUENCE {
     sib-Type                           SIB-TypeAndTag,
     scheduling                         SEQUENCE {
          segCount                           SegCount                 DEFAULT 1,
          sib-Pos                            CHOICE {
               -- The element name indicates the repetition period and the value
               -- (multiplied by two) indicates the position of the first
               -- segment.
               rep4                               INTEGER (0..1),
               rep8                               INTEGER (0..3),
```

```
                rep16                           INTEGER (0..7),
                rep32                           INTEGER (0..15),
                rep64                           INTEGER (0..31),
                rep128                          INTEGER (0..63),
                rep256                          INTEGER (0..127),
                rep512                          INTEGER (0..255),
                rep1024                         INTEGER (0..511),
                rep2048                         INTEGER (0..1023)
            },
            sib-PosOffsetInfo               SibOFF-List                 OPTIONAL
        }                                                               OPTIONAL
}

SegCount ::=                        INTEGER (1..16)

SegmentIndex ::=                    INTEGER (0..15)

-- Actual value = 2 * IE value
SFN-Prime ::=                       INTEGER (0..2047)

SIB-Content ::=                     CHOICE {
        masterInformationBlock          MasterInformationBlock,
        sysInfoType1                    SysInfoType1,
        sysInfoType2                    SysInfoType2,
        sysInfoType3                    SysInfoType3,
        sysInfoType4                    SysInfoType4,
        sysInfoType5                    SysInfoType5,
        sysInfoType6                    SysInfoType6,
        sysInfoType7                    SysInfoType7,
        sysInfoType8                    SysInfoType8,
        sysInfoType9                    SysInfoType9,
        sysInfoType10                   SysInfoType10,
        sysInfoType11                   SysInfoType11,
        sysInfoType12                   SysInfoType12,
        sysInfoType13                   SysInfoType13,
        sysInfoType13-1                 SysInfoType13-1,
        sysInfoType13-2                 SysInfoType13-2,
        sysInfoType13-3                 SysInfoType13-3,
        sysInfoType13-4                 SysInfoType13-4,
        sysInfoType14                   SysInfoType14,
        sysInfoType15                   SysInfoType15,
        sysInfoType16                   SysInfoType16,
        spare                           SEQUENCE {}
}

SIB-Data ::=                        BIT STRING (SIZE (1..maxDataLength))

SIB-Reference ::=                   SEQUENCE {
        schedulingInformation           SchedulingInformation
}

SIB-ReferenceList ::=               SEQUENCE (SIZE (1..maxSysInfoBlockCount)) OF
                                        SIB-Reference

SIB-ReferenceListFACH ::=           SEQUENCE (SIZE (1..maxSysInfoBlockFACHcount))
                                        OF SIB-Reference

SIB-Type ::=                        ENUMERATED {
                                        masterInformationBlock,
                                        systemInformationBlockType1,
                                        systemInformationBlockType2,
                                        systemInformationBlockType3,
                                        systemInformationBlockType4,
                                        systemInformationBlockType5,
                                        systemInformationBlockType6,
                                        systemInformationBlockType7,
                                        systemInformationBlockType8,
                                        systemInformationBlockType9,
                                        systemInformationBlockType10,
```

```
                                    systemInformationBlockType11,
                                    systemInformationBlockType12,
                                    systemInformationBlockType13,
                                    systemInformationBlockType13-1,
                                    systemInformationBlockType13-2,
                                    systemInformationBlockType13-3,
                                    systemInformationBlockType13-4,
                                    systemInformationBlockType14,
                                    systemInformationBlockType15,
                                    systemInformationBlockType16,
                                    spare1, spare2, spare3 }

SIB-TypeAndTag ::=                  CHOICE {
     sysInfoType1                        PLMN-ValueTag,
     sysInfoType2                        PLMN-ValueTag,
     sysInfoType3                        CellValueTag,
     sysInfoType4                        CellValueTag,
     sysInfoType5                        CellValueTag,
     sysInfoType6                        CellValueTag,
     sysInfoType7                        NULL,
     sysInfoType8                        NULL,
     sysInfoType9                        NULL,
     sysInfoType10                       NULL,
     sysInfoType11                       CellValueTag,
     sysInfoType12                       CellValueTag,
     sysInfoType13                       CellValueTag,
     sysInfoType13-1                     CellValueTag,
     sysInfoType13-2                     CellValueTag,
     sysInfoType13-3                     CellValueTag,
     sysInfoType13-4                     CellValueTag,
     sysInfoType14                       NULL,
     sysInfoType15                       NULL,
     sysInfoType16                       NULL
}

SibOFF ::=                          ENUMERATED {
                                    so2, so4, so6, so8, so10,
                                    so12, so14, so16, so18,
                                    so20, so22, so24, so26,
                                    so28, so30, so32 }

SibOFF-List ::=                     SEQUENCE (SIZE(1..15)) OF
                                    SibOFF

SysInfoType1 ::=                    SEQUENCE {
     -- Core network IEs
          cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP,
          cn-DomainSysInfoList       CN-DomainSysInfoList,
     -- User equipment IEs
          ue-IdleTimersAndConstants  UE-IdleTimersAndConstants,
     -- Extension mechanism
          non-Release99-Information  SEQUENCE {}                    OPTIONAL
}

SysInfoType2 ::=                    SEQUENCE {
     -- UTRAN mobility IEs
          ura-IdentityList           URA-IdentityList,
     -- User equipment IEs
          ue-ConnTimersAndConstants  UE-ConnTimersAndConstants,
     -- Extension mechanism
          non-Release99-Information  SEQUENCE {}                    OPTIONAL
}

SysInfoType3 ::=                    SEQUENCE {
     -- Other IEs
          sib-ReferenceList          SIB-ReferenceList              OPTIONAL,
     -- UTRAN mobility IEs
          cellIdentity               CellIdentity,
          cellSelectReselectInfo     CellSelectReselectInfo,
```

```
          cellAccessRestriction       CellAccessRestriction,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                        OPTIONAL
}

SysInfoType4 ::=                 SEQUENCE {
     -- Other IEs
          sib-ReferenceList           SIB-ReferenceList                 OPTIONAL,
     -- UTRAN mobility IEs
          cellIdentity                CellIdentity,
          cellSelectReselectInfo      CellSelectReselectInfo,
          cellAccessRestriction       CellAccessRestriction,
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                        OPTIONAL
}

SysInfoType5 ::=                 SEQUENCE {
     -- Other IEs
          sib-ReferenceList           SIB-ReferenceList                 OPTIONAL,
     -- Physical channel IEs
          frequencyInfo               FrequencyInfo                     OPTIONAL,
          maxAllowedUL-TX-Power       MaxAllowedUL-TX-Power             OPTIONAL,
          modeSpecificInfo            CHOICE {
               fdd                         NULL,
               tdd                         SEQUENCE {
                    midambleConfiguration       MidambleConfiguration   OPTIONAL
               }
          },
          primaryCCPCH-Info           PrimaryCCPCH-InfoSI               OPTIONAL,
          prach-SystemInformationList PRACH-SystemInformationList,
          sCCPCH-SystemInformationList SCCPCH-SystemInformationList,
          cbs-DRX-Level1Information   CBS-DRX-Level1Information        OPTIONAL,
          -- Conditional on any of the CTCH indicator IEs in
          -- sCCPCH-SystemInformationList
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                        OPTIONAL
}

SysInfoType6 ::=                 SEQUENCE {
     -- Other IEs
          sib-ReferenceList           SIB-ReferenceList                 OPTIONAL,
     -- Physical channel IEs
          frequencyInfo               FrequencyInfo                     OPTIONAL,
          maxAllowedUL-TX-Power       MaxAllowedUL-TX-Power             OPTIONAL,
          primaryCCPCH-Info           PrimaryCCPCH-InfoSI               OPTIONAL,
          modeSpecificInfo            CHOICE {
               fdd                         SEQUENCE {
                    pich-PowerOffset            PICH-PowerOffset,
                    aich-PowerOffset            AICH-PowerOffset
               },
               tdd                         SEQUENCE {
                    pusch-SysInfo               PUSCH-SysInfoList       OPTIONAL,
                    pdsch-SysInfo               PDSCH-SysInfoList       OPTIONAL
               }
          },
          prach-SystemInformationList PRACH-SystemInformationList,
          sCCPCH-SystemInformationList SCCPCH-SystemInformationList,
          cbs-DRX-Level1Information   CBS-DRX-Level1Information        OPTIONAL,
          -- Conditional on any of the CTCH indicator IEs in
          -- sCCPCH-SystemInformationList
     -- Extension mechanism
          non-Release99-Information   SEQUENCE {}                        OPTIONAL
}

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,
    -- Extension mechanism
        non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

SysInfoType8 ::=                 SEQUENCE {
    -- User equipment IEs
        cpch-Parameters              CPCH-Parameters,
    -- Physical channel IEs
        cpch-SetInfoList             CPCH-SetInfoList,
    -- Extension mechanism
        non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

SysInfoType9 ::=                 SEQUENCE {
    -- Physical channel IEs
        cpch-PersistenceLevelsList   CPCH-PersistenceLevelsList,
    -- Extension mechanism
        non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

SysInfoType10 ::=                SEQUENCE {
    -- User equipment IEs
        drac-SysInfoList             DRAC-SysInfoList,
    -- Extension mechanism
        non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

SysInfoType11 ::=                SEQUENCE {
    -- Other IEs
        sib-ReferenceList            SIB-ReferenceList                OPTIONAL,
    -- Measurement IEs
        fach-MeasurementOccasionInfo FACH-MeasurementOccasionInfo     OPTIONAL,
        measurementControlSysInfo    MeasurementControlSysInfo,
    -- Extension mechanism
        non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

SysInfoType12 ::=                SEQUENCE {
    -- Other IEs
        sib-ReferenceList            SIB-ReferenceList                OPTIONAL,
    -- Measurement IEs
        fach-MeasurementOccasionInfo FACH-MeasurementOccasionInfo     OPTIONAL,
        measurementControlSysInfo    MeasurementControlSysInfo,
    -- Extension mechanism
        non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

SysInfoType13 ::=                SEQUENCE {
    -- Other IEs
        sib-ReferenceList            SIB-ReferenceList                OPTIONAL,
    -- Core network IEs
        cn-DomainSysInfoList         CN-DomainSysInfoList,
    -- User equipment IEs
        ue-IdleTimersAndConstants    UE-IdleTimersAndConstants        OPTIONAL,
        capabilityUpdateRequirement  CapabilityUpdateRequirement      OPTIONAL,
    -- Extension mechanism
        non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

SysInfoType13-1 ::=              SEQUENCE {
    -- ANSI-41 IEs
        ansi-41-RAND-Information     ANSI-41-RAND-Information,
    -- Extension mechanism
        non-Release99-Information    SEQUENCE {}                      OPTIONAL
```

```
}

SysInfoType13-2 ::=             SEQUENCE {
     -- ANSI-41 IEs
          ansi-41-UserZoneID-Information
                                        ANSI-41-UserZoneID-Information,
     -- Extension mechanism
          non-Release99-Information     SEQUENCE {}                     OPTIONAL
}

SysInfoType13-3 ::=             SEQUENCE {
     -- ANSI-41 IEs
          ansi-41-PrivateNeighborListInfo
                                        ANSI-41-PrivateNeighborListInfo,
     -- Extension mechanism
          non-Release99-Information     SEQUENCE {}                     OPTIONAL
}

SysInfoType13-4 ::=             SEQUENCE {
     -- ANSI-41 IEs
          ansi-41-GlobalServiceRedirectInfo
                                        ANSI-41-GlobalServiceRedirectInfo,
     -- Extension mechanism
          non-Release99-Information     SEQUENCE {}                     OPTIONAL
}

SysInfoType14 ::=               SEQUENCE {
     -- Other IEs
          sib-ReferenceList             SIB-ReferenceList               OPTIONAL,
     -- Physical channel IEs
          primaryCCPCH-TX-Power         PrimaryCCPCH-TX-Power           OPTIONAL,
          individualTS-InterferenceList
                                        IndividualTS-InterferenceList,
          rach-ConstantValue            ConstantValue                   OPTIONAL,
          dpch-ConstantValue            ConstantValue                   OPTIONAL,
          usch-ConstantValue            ConstantValue                   OPTIONAL,
     -- Extension mechanism
          non-Release99-Information     SEQUENCE {}                     OPTIONAL
}

SysInfoType15 ::=               SEQUENCE {
     -- Other IEs
          sib-ReferenceList             SIB-ReferenceList               OPTIONAL,
     -- Measurement IEs
          lcs-GPS-Assistance            LCS-GPS-AssistanceSIB           OPTIONAL,
          lcs-OTDOA-Assistance          LCS-OTDOA-AssistanceSIB         OPTIONAL,
     -- Extension mechanism
          non-Release99-Information     SEQUENCE {}                     OPTIONAL
}

SysInfoType16 ::=               SEQUENCE {
     -- Other IEs
          sib-ReferenceList             SIB-ReferenceList               OPTIONAL,
     -- Radio bearer IEs
          preDefinedRadioConfigurations
                                        PreDefRadioConfigurationList,
     -- Transport channel IEs
          preDefTransChConfiguration    PreDefTransChConfiguration,
     -- Physical channel IEs
          preDefPhyChConfiguration      PreDefPhyChConfiguration,
     -- Extension mechanism
          non-Release99-Information     SEQUENCE {}                     OPTIONAL
}

SystemType ::=                  ENUMERATED {
                                     gsm, cdma2000,
                                     spare1, spare2, spare3, spare4,
                                     spare5, spare6, spare7, spare8,
                                     spare9, spare10, spare11,
```

```
                                    spare12, spare13, spare14 }

END
```

11.3.9 ANSI-41 information elements

```
ANSI-41-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

     ansi41MaxLength
FROM Constant-definitions;

ANSI-41-GlobalServiceRedirectInfo ::= BIT STRING (SIZE (1..ansi41MaxLength))

ANSI-41-PrivateNeighborListInfo ::= BIT STRING (SIZE (1..ansi41MaxLength))

ANSI-41-RAND-Information ::=     BIT STRING (SIZE (1..ansi41MaxLength))

ANSI-41-UserZoneID-Information ::= BIT STRING (SIZE (1..ansi41MaxLength))

Min-P-REV ::=                    BIT STRING (SIZE (8))

NAS-SystemInformationANSI-41 ::= BIT STRING (SIZE (1..ansi41MaxLength))

NID ::=                          BIT STRING (SIZE (16))

P-REV ::=                        BIT STRING (SIZE (8))

SID ::=                          BIT STRING (SIZE (15))

END
```

11.4 Constant definitions

```
Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- **TODO**
algorithmCount              INTEGER  ::= 8

-- **TODO**
ansi41MaxLength             INTEGER  ::= 64

-- **TODO**
maxAddTFC-Count             INTEGER  ::= 8

-- **TODO**
maxAdditionalMeas           INTEGER  ::= 8

-- **TODO**
maxAddRLcount               INTEGER  ::= 8

-- **TODO**
maxAlgoTypeCount            INTEGER  ::= 8

-- **TODO**
maxAP-SigNum                INTEGER  ::= 8

-- **TODO**
maxAP-SubCH                 INTEGER  ::= 8

-- **TODO**
maxBLER                     INTEGER  ::= 8

-- **TODO**
```

```
maxCCTrCH-Count             INTEGER  ::= 8

-- **TODO**
maxCCTrCHcount              INTEGER  ::= 8

-- **TODO**
maxCellCount                INTEGER  ::= 8

-- **TODO**
maxCellsForbidden           INTEGER  ::= 8

-- **TODO**
maxChanCount                INTEGER  ::= 8

-- **TODO**
maxCNdomains                INTEGER  ::= 8

-- **TODO**
maxCodeCount                INTEGER  ::= 8

-- **TODO**
maxCodeNum                  INTEGER  ::= 8

-- **TODO**
maxCodeNumComp-1            INTEGER  ::= 8

maxCombineSet               INTEGER  ::= 8

-- **TODO**
maxCPCH-SetCount            INTEGER  ::= 8

-- **TODO**
maxCPCHsetcount             INTEGER  ::= 8

-- **TODO**
maxCTFC                     INTEGER  ::= 8

-- **TODO**
maxCTFC-DCH                 INTEGER  ::= 8

-- **TODO**
maxCTFC-DSCH                INTEGER  ::= 8

-- **TODO**
maxDataLength               INTEGER  ::= 8

-- **TODO**
maxDelRLcount               INTEGER  ::= 8

-- **TODO**
maxDelTFC-Count             INTEGER  ::= 8

-- **TODO**
maxDelTrCHcount             INTEGER  ::= 8

-- **TODO**
maxDL-CCTrCHcount           INTEGER  ::= 8

-- **TODO**
maxDPDCHcount               INTEGER  ::= 8

-- **TODO**
maxDRAC-Classes             INTEGER  ::= 8

-- **TODO**
maxDRACReconAddTrCHcount    INTEGER  ::= 8

-- **TODO**
maxEventCount               INTEGER  ::= 8
```

```
-- **TODO**
maxFACH-Count                INTEGER  ::= 8

-- **TODO**
maxFACHcount                 INTEGER  ::= 8

-- **TODO**
maxFlowID                    INTEGER  ::= 8

-- **TODO**
maxFreqCount                 INTEGER  ::= 8

-- **TODO**
maxFrequencyBandsCount       INTEGER  ::= 8

-- **TODO**
maxInterCells                INTEGER  ::= 8

-- **TODO**
maxInterRAT                  INTEGER  ::= 8

-- **TODO**
maxInterSys                  INTEGER  ::= 8

-- **TODO**
maxInterSysCells             INTEGER  ::= 8

-- **TODO**
maxInterSysMessages          INTEGER  ::= 8

-- **TODO**
maxIntervals                 INTEGER  ::= 8

-- **TODO**
maxIntraCells                INTEGER  ::= 8

-- **TODO**
maxMeasurementTypeCount      INTEGER  ::= 8

-- **TODO**
maxMidambleShift-1           INTEGER  ::= 8

-- **TODO**
maxMuxOptionsCount           INTEGER  ::= 8

-- **TODO**
maxN-BadSAT                  INTEGER  ::= 8

-- **TODO**
maxN-SAT                     INTEGER  ::= 8

-- **TODO**
maxNoCells                   INTEGER  ::= 8

-- **TODO**
maxNoCNdomains               INTEGER  ::= 8

-- **TODO**
maxNoCodeGroups              INTEGER  ::= 8

-- **TODO**
maxNonUsedFrequency          INTEGER  ::= 8

-- **TODO**
maxNoOfErrors                INTEGER  ::= 8

-- **TODO**
maxNoSystemCapability        INTEGER  ::= 8
```

```
-- **TODO**
maxNoTFCI-Groups            INTEGER  ::= 8

-- **TODO**
maxNumFreq                  INTEGER  ::= 8

-- **TODO**
maxOtherRBcount             INTEGER  ::= 8

-- **TODO**
maxPCPCHs                   INTEGER  ::= 8

-- **TODO**
maxPDSCHcount               INTEGER  ::= 8

-- **TODO**
maxPRACHcount               INTEGER  ::= 8

-- **TODO**
maxPredefConfigCount        INTEGER  ::= 8

-- **TODO**
maxPUSCHcount               INTEGER  ::= 8

-- **TODO**
maxRABcount                 INTEGER  ::= 8

maxRAT                      INTEGER  ::= 4

-- **TODO**
maxRAT-Count                INTEGER  ::= 8

-- **TODO**
maxRB-WithPDCPcount         INTEGER  ::= 8

-- **TODO**
maxRBcount                  INTEGER  ::= 8

-- **TODO**
maxReconAddTrCHcount        INTEGER  ::= 8

-- **TODO**
maxReconRBcount             INTEGER  ::= 8

-- **TODO**
maxReconRBs                 INTEGER  ::= 8

-- **TODO**
maxRelRBcount               INTEGER  ::= 8

-- **TODO**
maxReplaceCount             INTEGER  ::= 8

-- **TODO**
maxRLcount                  INTEGER  ::= 8

maxRM                       INTEGER  ::= 256

-- **TODO**
maxRstTrCH-Count            INTEGER  ::= 8

-- **TODO**
maxSCCPCHcount              INTEGER  ::= 8

-- **TODO**
maxSetupRBcount             INTEGER  ::= 8

-- **TODO**
```

```
maxSF-Num                    INTEGER  ::= 8

-- **TODO**
maxSigNum                    INTEGER  ::= 8

-- **TODO**
maxSRBcount                  INTEGER  ::= 8

-- **TODO**
maxSubChNum                  INTEGER  ::= 8

-- **TODO**
maxSysInfoBlockCount         INTEGER  ::= 8

-- **TODO**
maxSysInfoBlockFACHcount     INTEGER  ::= 8

-- **TODO**
maxTF-Count                  INTEGER  ::= 8

-- **TODO**
maxTF-Value                  INTEGER  ::= 8

-- **TODO**
maxTFC-Count                 INTEGER  ::= 8

-- **TODO**
maxTFC-Value                 INTEGER  ::= 8

-- **TODO**
maxTFC-Value-1               INTEGER  ::= 8

-- **TODO**
maxTFCI-1-Combs              INTEGER  ::= 8

-- **TODO**
maxTFCI-2-Combs              INTEGER  ::= 8

-- **TODO**
maxTFCI-Value                INTEGER  ::= 8

-- **TODO**
maxTFcount                   INTEGER  ::= 8

-- **TODO**
maxTFs                       INTEGER  ::= 8

-- **TODO**
maxTimeslotCount             INTEGER  ::= 8

-- **TODO**
maxTraf                      INTEGER  ::= 8

-- **TODO**
maxTrCH                      INTEGER  ::= 8

-- **TODO**
maxTrChCount                 INTEGER  ::= 8

-- **TODO**
maxTrCHcount                 INTEGER  ::= 8

-- **TODO**
maxTrChValue                 INTEGER  ::= 8

-- **TODO**
maxTScount                   INTEGER  ::= 14

-- **TODO**
```

```
maxTSperCCTrCHcount          INTEGER  ::= 8

-- **TODO**
maxTStoMeasureCount          INTEGER  ::= 8

-- **TODO**
maxUL-CCTrCHcount            INTEGER  ::= 8

-- **TODO**
maxURAcount                  INTEGER  ::= 8

-- **TODO**
maxUsedUplTScount            INTEGER  ::= 8

-- **TODO**
maxUsedRLcount               INTEGER  ::= 8

-- **TODO**
pageCount                    INTEGER  ::= 8

END
```

12 Message transfer syntax

Transfer syntax for RRC PDUs is derived from their abstract syntax definitions by use of Packed Encoding Rules, unaligned (X.691). If special encoding is used, it is indicated in the ~~ASN.1~~ECN module defined for each ASN.1 module ~~description~~. How ~~it~~ special encoding is used is defined in TR 25.921, clause 11.2.

12.1 ECN link module for RRC

```
RRC-ECN-Link-Module LINK-DEFINITIONS ::=
BEGIN
     Class-definitions ENCODED BY perUnaligned WITH Class-definitions-ECN-Module
     PDU-definitions ENCODED BY perUnaligned WITH PDU-definitions-ECN-Module
     CoreNetwork-IEs ENCODED BY perUnaligned WITH CoreNetwork-IEs-ECN-Module
     UTRANMobility-IEs ENCODED BY perUnaligned WITH UTRANMobility-IEs-ECN-Module
     UserEquipment-IEs ENCODED BY perUnaligned WITH UserEquipment-IEs-ECN-Module
     RadioBearer-IEs ENCODED BY perUnaligned WITH RadioBearer-IEs-ECN-Module
     TransportChannel-IEs ENCODED BY perUnaligned WITH TrasportChannel-IEs-ECN-
Module
     PhysicalChannel-IEs ENCODED BY perUnaligned WITH PhysicalChannel-IEs-ECN-
Module
     Measurement-IEs ENCODED BY perUnaligned WITH Measurement-IEs-ECN-Module
     Other-IEs ENCODED BY perUnaligned WITH Other-IEs-ECN-Module
     ANSI-41-IEs ENCODED BY perUnaligned WITH ANSI-41-IEs-ECN-Module
END
```

12.2 ECN modules for RRC

```
Class-definitions-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
END

PDU-definitions-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
END

Corenetwork-IEs-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
END

UTRANMobility-IEs-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
END

UserEquipment-IEs-ECN-Module ENCODING-DEFINITIONS ::=
```

```
BEGIN
END

RadioBearer-IEs-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
END

TransportChannel-IEs-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
END

PhysicalChannel-IEs-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
END

Measurement-IEs-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
END

Other-IEs-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
END

ANSI-41-IEs-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
END
```