TSG-RAN Meeting #13 Beijing, China, 18 - 21 September 2001

Title: Agreed CRs (Release '99 and Rel-4 category A) to TS 25.331 (1)

Source: TSG-RAN WG2

Agenda item: 8.2.3

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio
R2-012043	agreed	25.331	0869	3	R99	UL Transport Channel Type Correction	F	3.7.0	3.8.0
R2-012044	agreed	25.331	0870		Rel-4	UL Transport Channel Type Correction	A	4.1.0	4.2.0
R2-011995	agreed	25.331	0907	1	R99	Guidelines concerning conditions, spares, defaults and correction of inconsistencies	F	3.7.0	3.8.0
R2-012074	agreed	25.331	0908		Rel-4	Guidelines concerning conditions, spares, defaults and correction of inconsistencies	A	4.1.0	4.2.0
R2-012045	agreed	25.331	0909	1	R99	Correction to TDD DL DPCH Common Timeslot Info	F	3.7.0	3.8.0
R2-012046	agreed	25.331	0910		Rel-4	Correction to TDD DL DPCH Common Timeslot Info	A	4.1.0	4.2.0
R2-012047	agreed	25.331	0911	1	R99	TDD System Information Update in Cell_DCH	F	3.7.0	3.8.0
R2-012048	agreed	25.331	0912		Rel-4	TDD System Information Update in Cell_DCH	A	4.1.0	4.2.0
R2-012049	agreed	25.331	0913	1	R99	Editorial Corrections	F	3.7.0	3.8.0
R2-012050	agreed	25.331	0914		Rel-4	Editorial Corrections	A	4.1.0	4.2.0
R2-012051	agreed	25.331	0915	1	R99	UL DPCH Power Control Info in TDD	F	3.7.0	3.8.0
R2-012052	agreed	25.331	0916		Rel-4	UL DPCH Power Control Info in TDD	А	4.1.0	4.2.0
R2-012053	agreed	25.331	0917	1	R99	CN-originated paging in CELL_PCH and URA_PCH state	F	3.7.0	3.8.0
R2-012054	agreed	25.331	0918		Rel-4	CN-originated paging in CELL_PCH and URA_PCH state	A	4.1.0	4.2.0
R2-012055	agreed	25.331	0919	1	R99	Corrections to UE variable handling	F	3.7.0	3.8.0
R2-012056	agreed	25.331	0920		Rel-4	Corrections to UE variable handling	А	4.1.0	4.2.0
R2-012057	agreed	25.331	0921	1	R99	Inter-frequency measurements	F	3.7.0	3.8.0
R2-012177	agreed	25.331	0922		Rel-4	Inter-frequency measurements	A	4.1.0	4.2.0
R2-012059	agreed	25.331	0923	1	R99	Inter-RAT measurements	F	3.7.0	3.8.0
R2-012178	agreed	25.331	0924		Rel-4	Inter-RAT measurements	A	4.1.0	4.2.0

R2-012043

	CHANGE REQUEST									
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For HELP on using this form, see bottom of this page or look at the pop-up text over the # symbols.										
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network										
Title:	ដ UL T	ransport Channel Ty	pe Correcti	on						
Source:	ж <mark>TSG-</mark> F	RAN WG2								
Work item code	e: ೫ TEI					Date: ೫	28 Aug 2	2001		
Category:	₩ F Use <u>or</u> F A B C D Detaile be four	e of the following cate (correction) (corresponds to a corr (addition of feature), (functional modification (editorial modification d explanations of the a od in 3GPP <u>TR 21.900</u>	gories: rection in an on of feature)) above catego	<i>earlier rel</i> pries can	Re L	elease: % Use <u>one</u> of t 2 R96 R97 R98 R99 REL-4 REL-5	R99 the following (GSM Phase (Release 1: (Release 1: (Release 1: (Release 4) (Release 5)	g rele se 2) 996) 997) 998) 999))	ases:	
Reason for cha	nge: #	Traffic Volume Meas JL transport channe n the UL. CPCH mu TVM IEs to clearly in	urements (I. The table st also be a ndicate that	TVM) ma es and As idded to TVM ma	ay alway SN1 cur Uplink 1 y be co	ys be confi rrently list Transport (nfigured fo	igured for only RACH Channel T or CPCH.	the d I as a ype ii	efault a defualt n the	
Summary of cha	ange: #	RACH is changed to TVM IEs.	RACHorCl	PCH in U	plink Tr	ransport C	hannel Ty	pe wi	thin	
Consequences not approved:	if ¤	RRC will not be able Traffic Volume Meas	to efficient surements f	y manag or CPCH	e UE uj	plink resou	urce alloca	tions	without	
Clauses affecte	ed: ¥	10.3.7.69, 10.3.7.70	<mark>, 10.3.7.72,</mark>	11.3						
Other specs affected:	¥ X	Other core specifi Test specification O&M Specification	cations s ns	ж <mark>25.</mark>	331v4.1	.0, CR 87	0			
Other comment	ts:									

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

10.3.7.69 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
Uplink transport channel type	MP		Enumerated(USCH is TDD only_
causing the event			DCH,RACH <u>o</u>	CPCH is FDD only
			<u>rCPCH</u> ,USC	RACHorCPCH is the currently
			H)	configured default in the uplink
UL Transport Channel identity	CV-UL-		Transport	
	DCH/USC		channel	
	Н		identity	
			10.3.5.18	
Traffic volume event identity	MP		Traffic	
			volume	
			event	
			identity	
			10.3.7.66	

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

10.3.7.70 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 ></maxtrch 		
>Uplink transport channel type	MP		Enumerated(DCH,RACHo r <u>CPCH</u> ,USC H)	USCH is TDD only_ CPCH is FDD only_ RACHorCPCH is the currently_ configured default in the uplink
>UL Target Transport Channel ID	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	

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

10.3.7.72 Traffic volume measurement reporting criteria

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

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

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

3

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters sent for each transport channel	OP	1 to <maxtrch ></maxtrch 		
>Uplink transport channel type	OP		Enumerated(DCH,RACH <u>o</u> r <u>CPCH</u> ,USC H)	USCH is TDD only_ CPCH is FDD only_ RACHorCPCH is the currently_ configured default in the uplink
>UL Transport Channel ID	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	
>Parameters required for each Event	OP	1 to <maxmeas perEvent></maxmeas 		
>>Traffic volume event identity	MP		Traffic volume event identity 10.3.7.66	
>>Reporting Threshold	MP		Enumerated(8,16,32,64,1 28,256,512,1 024,2K,3K,4 K,6K,8K,12K ,16K,24K,32 K,48K,64K,9 6K,128K,192 K,256K,384 K,512K,768 K)	Threshold in bytes And N Kbytes = N*1024 bytes
>>Time to trigger	OP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms
>>Pending time after trigger	OP		Integer(250, 500, 1000, 2000, 4000, 8000, 16000)	Indicates the period of time during which it is forbidden to send any new measurement reports with the same Traffic volume event identity even if the triggering condition is fulfilled. Time in milliseconds
>>Tx interruption after trigger	OP		Integer (250, 500, 1000, 2000, 4000, 8000, 16000)	Time in milliseconds. Indicates how long the UE shall block DTCH transmissions on the RACH after a measurement report is triggered.

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

11.3 Information element definitions

UL-TrCH-Identity ::= CHOICE{ dch TransportChannelIdentity, -- Default transport channel in the UL is either RACH or CPCH, but not both. rachorcpch usch NULL, TransportChannelIdentity }

R2-012044

CHANGE REQUEST									
^ж 25.	331	CR 870	ж	ev r1	ж C	urrent vers	^{ion:} 4.1.0	Ħ	
For HELP on using this form, see bottom of this page or look at the pop-up text over the # symbols.									
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network									
Title: ដ	UL Tran	sport Channel T	ype Correc	tion					
Source: #	TSG-RAI	NWG2							
Work item code: ೫	TEI					Date: Ж	28 Aug 200	1	
Category: # Reason for change	A Use <u>one</u> c F (cc A (cc B (au C (fu D (eu Detailed e be found i	of the following cate prection) presponds to a co ddition of feature), unctional modification ditorial modification xplanations of the n 3GPP <u>TR 21.900</u>	egories: rrection in a ion of feature n) above categ <u>)</u> . surements	n earlier r e) gories car (TVM) n	R elease) nay alwa	Release: % Use <u>one</u> of 2 R96 R97 R98 R99 REL-4 REL-5	REL-4 the following re (GSM Phase 2 (Release 1996) (Release 1997) (Release 1999) (Release 4) (Release 5) igured for the	leases:)))) default	
	UL in t TV	transport channe he UL. CPCH mi M IEs to clearly i	el. The tab ust also be ndicate tha	added to	ASN1 cu DUplink ay be co	urrently list Transport onfigured fo	only RACH as Channel Type or CPCH.	a defualt in the	
Summary of chang	ge: 策 RA TV	CH is changed to M IEs.		CPCH in	Uplink T	ransport C	hannel Type y	within	
Consequences if not approved:	¥ RR Tra	C will not be able ffic Volume Mea	e to efficier surements	ntly mana for CPC	ige UE ι H.	uplink reso	urce allocation	s without	
Clauses affected:	<mark>፝ </mark>	<mark>3.7.69, 10.3.7.70</mark>) <mark>, 10.3.7.7</mark> 2	2, 11.3					
Other specs affected:	¥ (Other core specif Test specificatior O&M Specificatio	fications ns ons	ж 25	5.331 v3.	.7.0, CR 86	69		
Other comments:	ж								

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Contains the event result for a traffic volume measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Uplink transport channel type	MP		Enumerated(USCH is TDD only
causing the event			r <u>CPCH</u> ,USC	RACHorCPCH is the currently
			H)	configured default in the uplink
UL Transport Channel identity	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	
Traffic volume event identity	MP		Traffic volume event identity 10.3.7.66	

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

10.3.7.70 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 ></maxtrch 		
>Uplink transport channel type	MP		Enumerated(DCH,RACHo r <u>CPCH</u> ,USC H)	USCH is TDD only <u>CPCH is FDD only</u> <u>RACHorCPCH is the currently</u> <u>configured default in the uplink</u>
>UL Target Transport Channel ID	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	

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

10.3.7.72 Traffic volume measurement reporting criteria

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

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

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

4

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Parameters sent for each transport channel	OP	1 to <maxtrch ></maxtrch 		
>Uplink transport channel type	OP		Enumerated(DCH,RACH <u>o</u> r <u>CPCH</u> ,USC H)	USCH is TDD only <u>CPCH is FDD only</u> <u>RACHorCPCH is the currently</u> <u>configured default in the uplink</u>
>UL Transport Channel ID	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	
>Parameters required for each Event	OP	1 to <maxmeas perEvent></maxmeas 		
>>Traffic volume event identity	MP		Traffic volume event identity 10.3.7.66	
>>Reporting Threshold	MP		Enumerated(8,16,32,64,1 28,256,512,1 024,2K,3K,4 K,6K,8K,12K ,16K,24K,32 K,48K,64K,9 6K,128K,192 K,256K,384 K,512K,768 K)	Threshold in bytes And N Kbytes = N*1024 bytes
>>Time to trigger	OP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms
>>Pending time after trigger	OP		Integer(250, 500, 1000, 2000, 4000, 8000, 16000)	Indicates the period of time during which it is forbidden to send any new measurement reports with the same Traffic volume event identity even if the triggering condition is fulfilled. Time in milliseconds
>>Tx interruption after trigger	OP		Integer (250, 500, 1000, 2000, 4000, 8000, 16000)	Time in milliseconds. Indicates how long the UE shall block DTCH transmissions on the RACH after a measurement report is triggered.

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

11.3 Information element definitions

UL-TrCH-Identity ::= CHOICE{ dch TransportChannelIdentity, -- Default transport channel in the UL is either RACH or CPCH, but not both. rach<u>orcpch</u> NULL, usch TransportChannelIdentity }

CHANGE REQUEST									
¥	25.	331	CR <mark>907r1</mark>	ж	ev	ж	Current vers	^{ion:} 3.7.(<mark>)</mark> ж
For <u>HELP</u> on l	using t	his for	m, see bottom o	of this pag	ie or loc	k at the	e pop-up text	over the # s	ymbols.
Proposed change	affect	s: #	(U)SIM	ME/UE	X Ra	adio Ac	cess Networl	Core I	Network
Title: ¥	<mark>Gui</mark>	deline	s concerning co	nditions,	spares,	default	s and correct	ion of incons	istencies
Source: #	S TSO	<mark>3-RAN</mark>	IWG2						
Work item code: #	S TEI						Date: ೫	22-08-2001	1
Category: #	B F Use of Detai be fo	<u>one</u> of t F (corr A (corr B (adc C (fund D (edit led exp und in	the following cate rection) responds to a col lition of feature), ctional modification torial modification olanations of the a 3GPP <u>TR 21.900</u>	gories: rection in a on of featur) above cate	an earlier e) gories ca	release	Release: ¥ Use <u>one</u> of 2 9) R96 R97 R98 R99 REL-4 REL-5	R99 the following r (GSM Phase . (Release 199 (Release 199 (Release 199 (Release 199 (Release 4) (Release 5)	eleases: 2) 6) 7) 8) 9)
Reason for change: # The conditions need to be clarified to reduce ambigiuty The guidelines for how to use conditional information elements, spares and defaults are not clear enough. Furthemore, guidelines are missing concerning how to handle inconsistencies when straightforward corrections are not feasible Summary of change: # This CR proposes changes in the following areas:									
		Cond • () • T • () 2	litional IEs General error ha The table in 10. D a change in 2 Conditional expr 25.921 updated	andling for I explainir 5.921 in a resssions in a comp	condition og abbre compa clarified panion C	onal IEs eviation nion CF for nur CR.	s is clarified s used in the २ nerous IEs, in	"Need" colui n line with gu	mn aligned idelines in
		Spar T U Guid are n 1 1	<u>e values</u> The general erro updated in line v <u>elines for handl</u> ot feasible The handling of has been clarifie	or handling vith guidel ing incons IEs removed in the A	g and th lines in 3 sistencie ved from SN.1 se	e proto 25.921 es wher the As ection	col extensior updated in a <u>straightforw</u> SN.1 by rena	a description companion (<u>ard ASN.1 co</u> ming it into "c	have been CR <u>prrections</u> dummy"
Consequences if not approved:	ж	Isolar • T in Incor incor probl	ted impact The CR clarifies mplementations insistent use of consistencies may ems	possible that have conditions cause an	ambigui assum , spare y nbiguitie	ties. Th ed the values, es. This	bere is no imp behaviour pro defaults and may again re	pact for oposed in thi correction of esult in inter-	s CR operability

Clauses affected: % 9.1, 10.1, 10.1.1.1.1, 10.2.7, 10.2.8, 10.2.17, 10.2.26, 10.2.37, 10.2.42, 10.2.48,

	10.2.48.8.1, 10.2.48.8.8, 10.2.48.8.9, 10.2.48.8.18.3, 10.2.53, 10.2.60, 10.2.61, 10.3.2.1, 10.3.2.3, 10.3.2.5, 10.3.3.5, 10.3.3.7, 10.3.3.14, 10.3.3.19, 10.3.3.21, 10.3.3.21a, 10.3.3.24, 10.3.3.25, 10.3.3.40, 10.3.3.42, 10.3.4.2, 10.3.4.21, 10.3.5.1, 10.3.5.11, 10.3.5.23, 10.3.6.13, 10.3.6.18, 10.3.6.21, 10.3.6.33, 10.3.6.34, 10.3.6.41, 10.3.6.46, 10.3.6.66, 10.3.6.88, 10.3.6.90, 10.3.6.91, 10.3.6.92, 10.3.6.93, 10.3.7.10, 10.3.7.12, 10.3.7.19, 10.3.7.22, 10.3.7.30, 10.3.7.39, 10.3.7.59, 10.3.7.69, 10.3.7.70, 10.3.7.71, 10.3.7.72, 10.3.7.78, 10.3.7.80, 10.3.7.91, 10.3.7.93, 10.3.7.94, 10.3.7.100, 10.3.7.106, 10.3.7.109, 10.3.7.111, 10.3.8.5, 10.3.8.6, 11.0
Other specs affected:	% Other core specifications % 25.331 v4.1.0, CR 908 Test specifications 0&M Specifications
Other comments:	¥

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9 Handling of unknown, unforeseen and erroneous protocol data

9.1 General

This subclause specifies procedures for the handling of unknown, unforeseen, and erroneous protocol data by the receiving entity. These procedures are called "error handling procedures", but in addition to provide recovery mechanisms for error situations they define a compatibility mechanism for future extensions of the protocol.

The error handling procedures specified in this subclause shall apply to all RRC messages. When there is a specific handling for messages received on different logical channels this is specified.

For system information received on the BCCH, the error handling procedures are applied on the BCCH message SYSTEM INFORMATION, the re-assembled system information segments as well as the system information blocks (including the master information block and the scheduling blocks), with specific error handling as specified below.

When the UE receives an RRC message, it shall set the variable PROTOCOL_ERROR_REJECT to FALSE and then perform the checks in the order as defined below.

The procedures specified in clause 8 are applied only for the messages passing the checks as defined below, except when procedure specific handling is used to recover from the error.

The error cases specified in the following includes the handling upon reception of spares values. This behaviour also applies in case the actual value of the IE results from mapping the originally sent IE value. This handling also applies for spares that result after mapping of the original information element value. Moreover, in certain error cases, as specified in the following, default values apply. In this case, the default values specified within the ASN.1, the tabular and the procedure specifications apply.

9.5 Conditional information element error

If the UE receives an RRC message on the DCCH, BCCH, PCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent to the UE in an RRC information container via a radio access technology other than UTRAN, for which the specified conditions for absence of a conditional IE are met and that IE is present, the UE shall:

- ignore the IE;
- treat the rest of the message as if the IE was not present.

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent to the UE via a radio access technology other than UTRAN, for which the specified conditions for presence of a conditional IE are met and that IE is absent, the UE shall:

- set the variable PROTOCOL_ERROR_REJECT to TRUE;
- set the IE "Protocol error cause" in the variable PROTOCOL_ERROR_INFORMATION to "Conditional information element error";
- perform procedure specific error handling according to clause 8.

If the UE receives a system information block on the BCCH for which the specified conditions for presence of a conditional IE are met and that IE is absent, the UE shall:

- ignore the system information block.

If the UE receives an RRC message on the BCCH or PCCH for which the specified conditions for presence of a conditional IE are met and that IE is absent, the UE shall:

- ignore the message.

9.6 Unknown or unforeseen information element value, conditional information element

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent to the UE in an RRC information container via a radio access technology other than UTRAN, for which the specified conditions for presence of a conditional IE are met, that IE is present, and that IE has a value, including choice, reserved for future extension (spare) or when the encoded IE does not result in any valid abstract syntax value [49] for this IE, the UE shall:

- if a default value of the IE is defined:
 - treat the rest of the message using the default value of the IE;
- if no default value of the IE is defined:
 - set the variable PROTOCOL_ERROR_REJECT to TRUE;
 - set the IE "Protocol error cause" in the variable PROTOCOL_ERROR_INFORMATION to "Information element value not comprehended";
 - perform procedure specific error handling according to clause 8.

If the UE receives a system information block on the BCCH for which the specified conditions for presence of a conditional IE are met, that IE is present, and that IE has a value, including choice, reserved for future extension (spare) or when the encoded IE does not result in any valid abstract syntax value for this IE, the UE shall:

- if a default value of the IE is defined:
 - treat the rest of the system information block using the default value of the IE;
- if no default value of the IE is defined:

- ignore the system information block.

If the UE receives an RRC message on the BCCH or PCCH for which the specified conditions for presence of a conditional IE are met, that IE is present, and that IE has a value, including choice, reserved for future extension (spare) or when the encoded IE does not result in any valid abstract syntax value for this IE, the UE shall:

- if a default value of the IE is defined:
 - treat the rest of the message using the default value of the IE;
- if no default value of the IE is defined:
 - ignore the message.

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.

Functional definitions of the information elements are then described in subclause 10.3.

Information elements are marked as either MP - Mandatory present, MD - Mandatory with default value, OP - Optional, CV - Conditional on value or CH - Conditional on history (see Table 10.1 with information extracted from [14]).

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

Abbreviation	Meaning
MP	Mandatory present
	A value for that information is always needed, and no
	information is provided about a particular default value. If
	ever the transfer syntax allows absence (e.g., due to
	extension), then absence leads to an error diagnosis.
MD	Mandatory with default value
	A value for that information is always needed, and a
	particular default value is mentioned (in the 'Semantical
	information' column). This opens the possibility for the
	transfer syntax to use absence or a special pattern to
	Conditional on value.
CV	Conditional on value
	value of some other IE or IEs, and/or on the message flow
	(e.g. channel SAP) The need is specified by means of a
	condition, which result may be that the information is
	mandatory present, mandatory with default value, not
	needed or optional.
	If one of the results of the condition is that the information
	is mandatory present, the transfer syntax must allow for
	the presence of the information. If in this case the
	information is absent an error is diagnosed.
	If one of the results of the condition is that the information
	is mandatory with default value, and a particular default
	value is mentioned (in the Semantical Information
	column), the transfer syntax may use absence of a special
	If one of the results of the condition is that the information
	is not needed, the transfer syntax must allow encoding the
	absence. If in this case the information is present, it will be
	ignored. In specific cases however, an error may be
	diagnosed instead. If one of the results of the condition is
	that the information is optional, the transfer syntax must
	allow for the presence of the information. In this case,
	neither absence nor presence of the information leads to
	an error diagnosis.
	A value for that information is needed (presence needed)
	or unacceptable (absence needed) when some conditions
	content of the message
	If conditions for presence needed are specified, the
	transfer syntax must allow for the presence of the
	information. If the transfer syntax allows absence, absence
	when the conditions for presence are met leads to an error
	diagnosis.
	If conditions for absence needed are specified, the transfer
	syntax must allow to encode the absence. If the
	Information is present and the conditions for absence are
	met, an effor is diagnosed. When poither conditions for presence or channes are met
	the information is treated as optional, as described for
СН	Conditional on history
	The need for a value for that information depends on
	information obtained in the past (e.g., from messages
	received in the past from the other peerarty). The need is
	specified by means of a condition, which result may be that
	the information is mandatory present, mandatory with
	default value, not needed or optional.
	The handling of the conditions is the same as described for
	$\underline{\nabla V}$.
	A value for that mormation is needed (presence needed)
	are met that must be evaluated on the basis of information
	obtained in the past (e.g., from messages received in the

Abbreviation	Meaning
	past from the other party). If conditions for presence needed are specified, the transfer syntax must allow for the presence of the information. If the transfer syntax allows absence, absence when the conditions for presence are met leads to an error diagnosis. If conditions for absence needed are specified, the transfer syntax must allow to encode the absence. If the information is present and the conditions for absence are met, an error is diagnosed. When neither conditions for presence or absence are met, the information is treated as optional, as described for 'OP'.
OP	Optional The presence or absence is significant and modifies the behaviour of the receiver. However whether the information is present or not does not lead to an error diagnosis.

10.1.1 Protocol extensions

RRC messages may be extended in future versions of this protocol, either by adding values for choices, enumerated and size constrained types or by adding information elements. An important aspect concerns the behaviour of a 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 9.

NOTE 1: 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.

Two kinds of protocol extensions are distinguished: non-critical and critical extensions. In general, a receiver shall process a message including not comprehended non-critical extensions as if the extensions were absent. However, a receiver shall entirely reject a message including not comprehended critical extensions (there is no partial rejection) and notify the sender, as specified in clause 9.

The general mechanism for adding critical extensions is by defining a new version of the message, which is indicated at the beginning of the message.

The UE shall always comprehend the complete transfer syntax specified for the protocol version it supports; if the UE comprehends the transfer syntax defined within protocol version A for message 1, it shall also comprehend the transfer syntax defined within protocol version A for message 2.

The following table shows for which messages only non-critical extensions may be added while for others both critical and non-critical extensions may be added.

NOTE 2: Critical extensions can only be added to certain downlink messages.

Extensions	Message				
Critical and non-critical	ACTIVE SET UPDATE 10.2.1				
extensions	ASSISTANCE DATA DELIVERY 10.2.4				
	CELL CHANGE ORDER FROM UTRAN 10.2.5				
	CELL UPDATE CONFIRM 10.2.8				
	COUNTER CHECK 10.2.9				
	DOWNLINK DIRECT TRANSFER 10.2.11				
	HANDOVER TO UTRAN COMMAND 10.2.12				
	HANDOVER FROM UTRAN COMMAND 10.2.15				
	MEASUREMENT CONTROL 10.2.17				
	PHYSICAL CHANNEL RECONFIGURATION 10.2.22				
	PHYSICAL SHARED CHANNEL ALLOCATION 10.2.25				
	RADIO BEARER RECONFIGURATION 10.2.27				
	RADIO BEARER RELEASE 10.2.30				
	RADIO DEARER SETUP 10.2.33				
	RRG CONNECTION REJECT 10.2.30				
	SIGNALLING CONNECTION RELEASE 10.2.46				
	TRANSPORT CHANNEL RECONFIGURATION 10.2.50				
	TRANSPORT FORMAT COMBINATION CONTROL 10.2.53				
	LIE CAPABILITY ENOURY 10.2.55				
	LIE CAPABILITY INFORMATION CONFIRM 10.2.57				
	UPLINK PHYSICAL CHANNEL CONTROL 10.2.59				
	URA UPDATE CONFIRM 10.2.61				
	UTRAN MOBILITY INFORMATION 10.2.62				
Non-critical extensions	ACTIVE SET UPDATE COMPLETE 10.2.2				
only	ACTIVE SET UPDATE FAILURE 10.2.3				
	CELL CHANGE ORDER FROM UTRAN FAILURE 10.2.6				
	CELL UPDATE 10.2.7				
	COUNTER CHECK RESPONSE 10.2.10				
	HANDOVER TO UTRAN COMPLETE 10.2.13				
	INITIAL DIRECT TRANSFER 10.2.14				
	HANDOVER FROM UTRAN FAILURE 10.2.16				
	MEASUREMENT CONTROL FAILURE 10.2.18				
	MEASUREMENT REPORT 10.2.19				
	PAGING TYPE 1 10.2.20				
	PAGING TYPE 2 10.2.21				
	PHYSICAL CHANNEL RECONFIGURATION COMPLETE 10.2.23				
	PHYSICAL CHANNEL RECONFIGURATION FAILURE 10.2.24				
	PUSCH CAPACITY REQUEST 10.2.26				
	RADIO DEARER RECONFIGURATION FAILURE 10.2.29				
	RADIO BEARER RELEASE COMPLETE 10.2.31 PADIO BEARER DELEASE EAULURE 10.2.32				
	RADIO BEARER SETUP COMPLETE 10.2.32				
	RADIO BEARER SETUP FAILURE 10.2.35				
	RRC CONNECTION RELEASE COMPLETE 10.2.38				
	RRC CONNECTION REQUEST 10.2.39				
	RRC CONNECTION SETUP COMPLETE 10.2.41				
	RRC STATUS 10.2.42				
	SECURITY MODE COMPLETE 10.2.44				
	SECURITY MODE FAILURE 10.2.45				
	SIGNALLING CONNECTION RELEASE REQUEST10.2.47				
	Master Information Block 10.2.48.8.1				
	System Information Block type 1 to				
	System Information Block type 17 10.2.48.8.2 to 10.2.48.8.19				
	SYSTEM INFORMATION CHANGE INDICATION 10.2.49				
	TRANSPORT CHANNEL RECONFIGURATION COMPLETE 10.2.51				
	TRANSPORT CHANNEL RECONFIGURATION FAILURE 10.2.52				
No extensions					
IND EVICII SIOLIS					

Extensions	Message				
	First Segment 10.2.48.1				
	Subsequent or last Segment 10.2.48.3				
	Complete SIB 10.2.48.5				
	SIB content 10.2.48.8.1				

NOTE: For the SYSTEM INFORMATION message protocol extensions are only possible at the level of system information blocks.

10.1.1.1 Non-critical extensions

10.1.1.1.1 Extension of an information element with additional values or choices

In future versions of this protocol, non-critical values may be added to choices, enumerated and size constrained types.

For choices, enumerated and size constrained types it is possible to indicate how many non-critical spare values need to be reserved for future extension. The number of spare values is specified within the ASN.1 type definitions; In this case, the tabular format only should indicates that at least onethe number of spare values that is needed. Within the ASN.1 spare values should only be used to increase the encoded size of an IE. This means that the ASN.1 should only include spares if the number of spare values that is needed exceeds the number of undefined values code points that exist after encoding of the information elementwithin the transfer syntax of the information element.

This kind of extension is allowed only for items with need set to OP or MD, and the receiver shall interpret the reception of a spare as absence of the IE and as reception of the default value respectively.

For downlink messages, spare values may be defined for non-critical information elements for which the need is specified to be MD or OP (or CV case leading to MD or OP). In this case, a receiver not comprehending the received a spare value shall consider the information element to have the default value or consider it to be absent respectively.

For uplink messages spare<mark>s</mark> values may be defined for all information elements, including those for which the need is specified to be MP (or CV case leading to MP).

In all cases at most one spare should be defined for choices. In this case, iI-information elements applicable to the spare choices reserved for future releases of the protocol shall be added to the end of the message.

10.1.1.1.2 Extension of a message with additional information elements

In future versions of this protocol, non-critical information elements may be added to RRC messages. These additional information elements shall be appended at the end of the message; the transfer syntax specified in this revision of the standard facilitates this. A receiver conformant to this revision of the standard shall accept such extension, and proceed as if it was not included.

10.1.1.2 Critical extensions

10.1.1.2.1 Extension of an information element with additional values or choices

In versions of this protocol, choices, enumerated and size constrained types may be extended with critical values. For extension with critical values the general critical extension mechanism is used, i.e. for this no spare values are reserved since backward compatibility is not required.

10.1.1.2.2 Extension of a message with additional information elements

In future versions of this protocol, RRC messages may be extended with new information elements. Since messages including critical extensions are rejected by receivers not comprehending them, these messages may be modified completely, e.g. IEs may be inserted at any place and IEs may be removed or redefined.

10.2 Radio Resource Control messages

10.2.1 ACTIVE SET UPDATE

NOTE: Only for FDD.

This message is used by UTRAN to add, replace or delete radio links in the active set of the UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN \rightarrow UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
0 71			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Integrity protection mode info	OP		Integrity	
			protection	
			mode info	
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now".
			time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
CN information elements				
CN Information info	OP		CN	
			Information	
			info 10.3.1.3	
RB information elements				
Downlink counter	OP			
synchronisation info				
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
		RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information	
			10.3.4.22	
Phy CH information elements				
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum	Default value is the existing
			allowed UL	"maximum UL TX power.
			TX power	
			10.3.6.39	
Downlink radio resources				
Radio link addition information	OP	1 to		Radio link addition information
		<maxrl-< td=""><td></td><td>required for each RL to add</td></maxrl-<>		required for each RL to add
		1>		
>Radio link addition information	MP		Radio link	
			addition	
			information	
			10.3.6.68	
Radio link removal information	OP	1 to		Radio link removal information
		<maxrl></maxrl>		required for each RL to
				remove
>Radio link removal information	MP		Radio link	
			removal	
			information	
			10.3.6.69	
TX Diversity Mode	MD		TX Diversity	Default value is the existing TX
			Mode	diversity mode.
			10.3.6.86	
SSDT information	OP		SSDT	
			information	
	1	1	10.3.6.77	

10.2.2 ACTIVE SET UPDATE COMPLETE

NOTE: For FDD only.

This message is sent by UE when active set update has been completed.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Uplink integrity protection	OP		Integrity	
activation info			protection	
			activation	
			info	
			10.3.3.17	
RB Information elements				
Radio bearer uplink ciphering	OP		RB	
activation time info			activation	
			time info	
			10.3.4.13	
Uplink counter synchronisation	OP			
info				
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
		RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information	
			10.3.4.22	
>START list	MP	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains.</td></maxcndo<>		domains.
		mains>		
>>CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
>>START	MP		START	START value to be used in
		1	10.3.3.38	this CN domain.

10.2.3 ACTIVE SET UPDATE FAILURE

NOTE: Only for FDD.

This message is sent by UE if the update of the active set has failed, e.g. because the radio link is not a part of the active set.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.4 ASSISTANCE DATA DELIVERY

This message is sent by UTRAN to convey UE positioning assistance data to the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Measurement Information elements				
UE positioning OTDOA assistance data	OP		UE positioning OTDOA assistance data 10.3.7.103	
UE positioning GPS assistance data	OP		UE positioning GPS assistance data 10.3.7.90	

10.2.5 CELL CHANGE ORDER FROM UTRAN

This message is used to order a cell change from UTRA to another radio access technology, e.g., GSM.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN \rightarrow UE

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
		1	10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
RB Information elements				
RAB information list	OP	1 to		For each RAB to be handed
		<maxrabs< td=""><td></td><td>over</td></maxrabs<>		over
		etup>		
>RAB info	MP		RAB info	
			10.3.4.8	
Other information elements				
Target cell description	MP			
>CHOICE Radio Access	MP			At least one spare choice,
Technology				Criticality: Reject, is needed.
>>GSM				
>>>BSIC	MP		BSIC	
			10.3.8.2	
>>>Band Indicator	MP		Enumerated	Indicates how to interpret the
			(DCS 1800	BCCH ARFCN
			band used,	
			PCS 1900	
			band used)	
>>>BCCH ARFCN	MP		Integer	[45]
			(01023)	
>>>NC mode	OP		Bitstring(3)	[43]
>>IS-2000				

10.2.6 CELL CHANGE ORDER FROM UTRAN FAILURE

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

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

10.2.7 CELL UPDATE

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

RLC-SAP: TM

Logical channel: CCCH

Direction: UE→UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
U-RNTI	MP		U-RNTI	
			10.3.3.47	
RRC transaction identifier	CV-Failure		RRC	
			identifier	
			10 3 3 36	
Integrity check info	СН		Integrity	
integrity check into			check info	
			10.3.3.16	
START list	MP	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains.</td></maxcndo<>		domains.
		mains>		
>CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
>START	MP		START	START value to be used in
			10.3.3.38	this CN domain.
AM_RLC error indication(RB2 or	MP		Boolean	IRUE Indicates AM_RLC
RB3)				unrecoverable error [16]
AM_RLC error indication(RB>3)	MP		Boolean	TRUE indicates AM_RLC
			Declouit	unrecoverable error [16]
				occurred on RB>3 in the UE
Cell update cause	MP		Cell update	
			cause	
			10.3.3.3	
Failure cause	OP		Failure	
			cause and	
			error	
			Information	
PR timor indicator	MD		10.3.3.14 DB timor	
	IVII		indicator	
			10.3.3.28	
Measurement information				
elements				
Measured results on RACH	OP		Measured	
			results on	
			RACH	
			10.3.7.45	

Condition	Explanation
Failure	This IE is mandatory present if the IE "Failure cause"
	is present <u>and not needed</u> . Ootherwise it is absent.

10.2.8 CELL UPDATE CONFIRM

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

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		Message	
Message Type			Type	
UE Information Elements			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
U-RNTI	CV-CCCH		U-RNTI	
			10.3.3.47	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Integrity protection mode info	OP		Integrity	
			protection	
Ciphoring mode info			10.3.3.19 Ciphoring	
Cipitering mode into	OF		mode info	
			10335	
Activation time	MD		Activation	Default value is "now"
	MB		time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
	•••		10.3.3.47	
New C-RNTI	OP		C-RNTI	
	_		10.3.3.8	
RRC State Indicator	MP		RRC State	
			Indicator	
			10.3.3.10	
UTRAN DRX cycle length	MD		UTRAN DRX	Default value is the existing
coefficient			cycle length	DRX cycle length coefficient
			coefficient	
			10.3.3.49	
RLC re-establish indicator (RB2	MP		RLC re-	
and RB3)			establish	
			indicator	
DLC re establish indicator (DD4			10.3.3.35 DLC re	
RLC re-establish indicator (RB4	MP		RLC re-	
and upwards)			indicator	
			10 3 3 35	
CN Information Elements			10.0.0.00	
CN Information info	OP		CN	
	01		Information	
			info 10.3.1.3	
UTRAN Information Elements				
URA identity	OP		URA identity	
			10.3.2.6	
RB information elements				
RB information to release list	OP	1 to		
		<maxrb></maxrb>		
>RB information to release	MP		RB	
			information	
			to release	
DD information to reconfigure list	00	4.4-	10.3.4.19	
RB Information to reconfigure list	UP			
>RB information to reconfigure	MP	<iiidxind></iiidxind>	RB	
	1711		information	
			to	
			reconfigure	
			10.3.4.18	
RB information to be affected list	OP	1 to		
		<maxrb></maxrb>		
>RB information to be affected	MP		RB	
			information	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			to be	
			affected 10.3.4.17	
Downlink counter	OP			
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball RABs></maxrball 		having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements Uplink transport channels				
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted UL TrCH information	MP	>	Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	MP			
>FDD				
	OF		10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to		
		<max1rch< td=""><td></td><td></td></max1rch<>		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
		\ \		

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

Condition	Explanation
СССН	This IE is mandatory <u>present</u> when CCCH is used and ciphering is not required. <u>And not needed</u> Ootherwise it is absent.

10.2.9 COUNTER CHECK

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN \rightarrow UE

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

10.2.10 COUNTER CHECK RESPONSE

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

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

10.2.11 DOWNLINK DIRECT TRANSFER

This message is sent by UTRAN to transfer higher layer messages.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN -> UE

Information Element/Group	Need	Multi	Type and	Semantics description
Message Type	MP		Message	
UE information elements			Туре	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
CN information elements				
CN Domain Identity	MP		Core Network Domain Identity 10.3.1.1	
NAS message	MP		NAS message 10.3.1.8	

10.2.12 HANDOVER TO UTRAN COMMAND

This message is sent to the UE via other system to make a handover to UTRAN.

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

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

Direction: UTRAN \rightarrow UE

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		reference	
New U-RNTI	MP		U-RNTI Short	
			10.3.3.48	
Ciphering algorithm	OP		Ciphering	
			algorithm	
CHOICE aposition mode	MD		10.3.3.4	
CHOICE specification mode	MP			
RB information elements				
>>Signalling RB information to setup list	MP	1 to <maxsrbs etup></maxsrbs 		For each signalling radio bearer established
>>>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24	
>>RAB information to setup list	OP	1 to <maxrabs etup></maxrabs 		For each RAB established
>>>RAB information for setup	MP		RAB information for setup 10.3.4.10	
Uplink transport channels	MD		· · · · · · ·	
>>UL Transport channel information common for all transport channels	MP		UL Transport channel information common for all transport channels 10.3.5.24	
>>Added or Reconfigured TrCH information	MP	1 to <maxtrch ></maxtrch 		
>>>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d 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 10.3.5.6	
>>Added or Reconfigured TrCH information	MP	1 to <maxtrch ></maxtrch 		
>>>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
Solution Section Secti	MP		Unlink	
	1111		DPCH info 10.3.6.88	
>>CHOICE mode >>>FDD	MP			
>>>>CPCH SET Info	OP		CPCH SET Info 10.3.6.13	

name reference Downlink ratio resources Description >>>>Downlink PDSCH information OP Downlink PDSCH information (no data) >>>>Downlink information common for all radio links MP Downlink information common for all radio links (no data) >>>Downlink information per radio link MP 1 to .common for all radio link Downlink information for each radio link >>Downlink information for each radio link MP 1 to .common for all radio link Downlink information for each radio link >>Preconfiguration >>>Default configuration mode MP Downlink information for each radio link Indicates whether the FDD or TDD version of the default configuration identity >>>Default configuration mode MP Default configuration identity Indicates whether the FDD or TDD version of the default configuration identity >>>>Default configuration for all radio links MP Default configuration identity One RAB is established >>>>>>>>>>>>>>>>>>>>>>>>>>>>	Information Element/Group	Need	Multi	Type and	Semantics description
Downlink radio resources >>>>>Downlink PDSCH information OP Downlink PDSCH information Op Downlink PDSCH information (no data) >>>TDD >>Downlink information common for all radio links MP 1 to (no data) >>>Downlink information radio link MP 1 to (no data) >>>Downlink information per radio link MP 1 to (no data) >>>Downlink information for each radio link MP Downlink information for each radio link Indicates whether the FDD or TDD version of the dataut configuration >>>>Default configuration MP Enumerated (FDD, TDD) Indicates whether the FDD or TDD version of the dataut configuration identity >>>>Default configuration MP Default configuration identity Default configuration shall be used >>>>Default configuration identity MP Default configuration island configuration One RAB is established >>>>Default configuration identity MP Downlink information common for all radio links Seed downlink information for each radio links >>>Downlink information common for all radio links MP I to emaxRL> Seed downlink information for each radio link >>>Downlink information for each radio link <	name			reference	
>>>>Downlink PDSCH information OP Downlink PDSCH information Downlink information >>>>TDD (no data) (no data) >>>Downlink information common for all radio links MP Downlink information common for all radio links (no data) >>>Downlink information per radio link MP 1 to smarkL> Downlink information for each radio link >>Downlink information for each radio link MP 1 to smarkL> Downlink information for each radio link >>Preconfiguration MP Downlink information for each radio link Indicates whether the FDD or TDD version of the default configuration identity >>>Default configuration identity MP Enumerated (FD0, TDD) Indicates whether the FDD or TDD version of the default configuration identity >>>>Default configuration identity MP Default configuration identity One RAB is established >>>>>>>>>>>>>>>Default configuration identity MP Uplink DPCH info Post 10.3.6.25 One RAB is established >>>Downlink information common for all radio links MP I to smarkL> Send downlink information for each radio link >>>Downlink information for each radio link MP I to smarkL> Send downlink information for each radio link	Downlink radio resources				
information PDSCH information 10.3.6.30 (no data) >>>TDD (no data) >>>Downlink information common for all radio links MP 1 to all radio links >>Downlink information per radio link MP 1 to each radio link >>>Downlink information for each radio link MP Downlink information for each radio link >>Preconfiguration MP Downlink information for each radio link >>>Default configuration MP Predefined configuration identity >>>>Default configuration MP Enumerated (FDD, TDD) >>>>Default configuration identity MP Default configuration identity >>>>Default configuration identity MP Default configuration identity >>>>Default configuration identity MP Default configuration identity >>>>Default configuration identity MP Default configuration identity >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	>>>>Downlink PDSCH	OP		Downlink	
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>>RAB info OP RAB info One RAB is established >>Uplink DPCH info MP Uplink DPCH info OP >>Downlink radio resources Interpret info DPCH info >>Downlink information common for all radio links MP Downlink information common for all radio links Downlink information common for all radio links >>Downlink information per radio link MP 1 to <maxrl> Send downlink information for each radio link to be set-up. In TDD MaxRL is 1. >>>Downlink information for each radio link MP 1 to <maxrl> Send downlink information for each radio link to be set-up. In TDD MaxRL is 1. >>>Downlink information for each radio link MP 1 to <maxrl> In TDD MaxRL is 1. >>>Downlink information for each radio link MP In to <maxrl> In to MaxRL is 1. >>>Downlink information for each radio link MP In to <maxrl> In to MaxRL is 1. >>>Downlink information for each radio link MP In to 3.6.28 In to 3.6.28 >>>TDD In to 3.6.59 In to 3.6.59 In to 3.6.59 Frequency info MP Frequency In 3.6.59</maxrl></maxrl></maxrl></maxrl></maxrl>					
Provide into Or Post Post 10.3.4.9 Ore for the is established >>Uplink DPCH info MP Uplink Post 10.3.6.89 Uplink Post 10.3.6.89 Downlink radio resources MP Downlink information common for all radio links Downlink information common for all radio links >>Downlink information per radio link MP 1 to <maxrl> Send downlink information for each radio link to be set-up. In TDD MaxRL is 1. >>>Downlink information for each radio link MP Downlink information for each radio link Downlink information for each radio link >>>Downlink information for each radio link MP Downlink information for each radio link Send downlink information for each radio link >>>Downlink information for each radio link MP Downlink information for each radio link Post 10.3.6.28 >>>CHOICE mode MP (no data) >>>>FIDD MP Primary CCPCH Tx Power 10.3.6.59 >>>TDD MP Primary CCPCH Tx Power >>>Prequency info MP Frequency</maxrl>	>>RAB info	OP		RAB info	One RAB is established
10.3.4.9 >>Uplink DPCH info MP Uplink DPCH info Post 10.3.6.89 Downlink radio resources >>Downlink information common for all radio links or all radio links >>Downlink information per radio link >>Downlink information per radio link >>Downlink information per radio link >>>Downlink information for each radio link >>>Downlink information for each radio link >>>Downlink information for each radio link >>>Downlink information for each radio link >>>Downlink information for each radio link >>>TDD >>>>Primary CCPCH Tx Power MP Prequency info MP Prequency		01		Post	One ICAD is established
>>Uplink DPCH info MP Uplink DPCH info Post 10.3.6.89 Downlink radio resources 00wnlink information common for all radio links MP >>Downlink information common for all radio links MP Downlink information common for all radio links Post 10.3.6.25 >>Downlink information per radio link MP 1 to <maxrl> Send downlink information for each radio link to be set-up. In TDD MaxRL is 1. >>>Downlink information for each radio link MP Downlink information for each radio link Post 10.3.6.28 In to each radio link >>>CHOICE mode MP In to common for each radio link In to common for each radio link post 10.3.6.28 >>CHOICE mode MP In to common for each radio link post 10.3.6.28 >>>FDD In to common for each radio link post 10.3.6.59 In to common for each radio link >>>Primary CCPCH Tx Power MP In to common for each radio link >>>Primary CCPCH Tx Power MP In to common for each radio link >>>Primary CCPCH Tx Power In to common for each radio link Frequency info MP Frequency</maxrl>				10.3.4.9	
Downlink radio resourcesDPCH info Post 10.3.6.89>>Downlink information common for all radio linksMPDownlink information common for all radio links Post 10.3.6.25>>Downlink information per radio linkMP1 to <maxrl>>>Downlink information for each radio linkMP1 to <maxrl>>>Downlink information for each radio linkMP1 to <maxrl>>>Downlink information for each radio linkMPDownlink information for each radio link>>Downlink information for each radio linkMPDownlink information for each radio link>>CHOICE modeMPImage: second secon</maxrl></maxrl></maxrl>	>>Uplink DPCH info	MP		Uplink	
Downlink radio resourcesPost 10.3.6.89>>Downlink information common for all radio linksMPDownlink information common for all radio links Post 10.3.6.25>>Downlink information per radio linkMP1 to <maxrl>Send downlink information for each radio link to be set-up. In TDD MaxRL is 1.>>>Downlink information for each radio linkMP1 to <maxrl>Send downlink information for each radio link to be set-up. In TDD MaxRL is 1.>>>Downlink information for each radio linkMPDownlink information for each radio link Post 10.3.6.28>>CHOICE modeMPImage: CCPCH Tx Power Primary CCPCH Tx Power 10.3.6.59>>>Primary CCPCH Tx PowerMPPrimary CCPCH Tx Power Power 10.3.6.59Frequency infoMPFrequency</maxrl></maxrl>				DPCH info	
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>>Downlink information common for all radio links MP Downlink information common for all radio links Post 10.3.6.25 >>Downlink information per radio link MP 1 to <maxrl> Send downlink information for each radio link to be set-up. In TDD MaxRL is 1. >>>Downlink information for each radio link MP Downlink information for each radio link Downlink information for each radio link >>>Downlink information for each radio link MP Downlink information for each radio link >>>Downlink information for each radio link MP Downlink information for each radio link >>>CHOICE mode MP (no data) >>>FDD (no data) >>>>Primary CCPCH Tx Power MP Primary CCPCH Tx Power MP Frequency info MP</maxrl>	Downlink radio resources				
for all radio linksinformation common for all radio links Post 10.3.6.25>>Downlink information per radio linkMP1 to <maxrl>Send downlink information for each radio link to be set-up. In TDD MaxRL is 1.>>>Downlink information for each radio linkMPDownlink information for each radio linkDownlink information for each radio link>>Downlink information for each radio linkMPDownlink information for each radio link Post 10.3.6.28>>CHOICE modeMP(no data)>>>FDD(no data)>>>FDD(no data)>>>Primary CCPCH Tx PowerMPFrequency infoMPFrequency infoMP</maxrl>	>>Downlink information common	MP		Downlink	
common for all radio links Post 10.3.6.25>>Downlink information per radio linkMP1 to <maxrl>Send downlink information for each radio link to be set-up. In TDD MaxRL is 1.>>>Downlink information for each radio linkMPDownlink information for each radio link Post 10.3.6.28Downlink information for each radio link Post 10.3.6.28>>CHOICE modeMPImage: CPCH Tx Power Power 10.3.6.59Image: CPCH Tx Power Power 10.3.6.59Frequency infoMPFrequency</maxrl>	for all radio links			information	
all radio links Post 10.3.6.25>>Downlink information per radio linkMP1 to <maxrl>Send downlink information for each radio link to be set-up. In TDD MaxRL is 1.>>>Downlink information for each radio linkMPDownlink information for each radio link Post 10.3.6.28Send downlink information for each radio link post 10.3.6.28>>CHOICE modeMP(no data)>>FDD(no data)>>>TDDPrimary CCPCH Tx Power 10.3.6.59Frequency infoMPFrequency</maxrl>				common for	
Post 10.3.6.25>>Downlink information per radio linkMP1 to <maxrl>Send downlink information for each radio link to be set-up. In TDD MaxRL is 1.>>>Downlink information for each radio linkMPDownlink information for each radio link Post 10.3.6.28>>CHOICE modeMP(no data)>>>FDD(no data)>>>FDD(no data)>>>FDD10.3.6.59Frequency infoMPFrequency</maxrl>				all radio links	
>>Downlink information per radio linkMP1 to <maxrl>Send downlink information for each radio link to be set-up. In TDD MaxRL is 1.>>>Downlink information for each radio linkMPDownlink information for each radio link Post 10.3.6.28Downlink information for each radio link>>CHOICE modeMP(no data)>>>FDD(no data)>>>FDD(no data)>>>Primary CCPCH Tx PowerMPFrequency infoMPFrequency infoMP</maxrl>				Post	
>>Downlink information per radio link MP 1 to Send downlink information for each radio link to be set-up. In TDD MaxRL is 1. >>>Downlink information for each radio link MP Downlink information for each radio link In TDD MaxRL is 1. >>>Downlink MP Downlink information for each radio link Post 10.3.6.28 >>CHOICE mode MP In the set of the s				10.3.6.25	
radio link <maxrl>each radio link to be set-up. In TDD MaxRL is 1.>>>Downlink information for each radio linkMPDownlink information for each radio link Post 10.3.6.28>>CHOICE modeMP(no data)>>>FDD(no data)>>>TDDPrimary CCPCH Tx Power 10.3.6.59Frequency infoMPFrequency</maxrl>	>>Downlink information per	MP	1 to		Send downlink information for
>>>Downlink information for each radio link MP Downlink information for each radio link Post 10.3.6.28 >>CHOICE mode MP >>>FDD (no data) >>>TDD (no data) >>>Primary CCPCH Tx Power MP Primary CCPCH Tx Power MP Frequency info MP	radio link		<maxrl></maxrl>		each radio link to be set-up.
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	>>>Downlink information for	MD		Downlink	
Cach radio link for each radio link Post 10.3.6.28 >>>FDD >>>FDD (no data) >>>TDD Primary CCPCH Tx Power 10.3.6.59 Frequency info MP	each radio link			information	
In radio link radio link Post 10.3.6.28 >>>FDD (no data) >>>TDD Image: state stat				for each	
Image: Second				radio link	
Image: Solution of the second system 10.3.6.28 >>>FDD (no data) >>>TDD (no data) >>>Primary CCPCH Tx Power MP Primary CCPCH Tx Power 10.3.6.59 10.3.6.59 Frequency info MP				Post	
>>CHOICE mode MP >>>FDD (no data) >>>TDD Primary >>>Primary CCPCH Tx Power MP Primary CCPCH Tx Power 10.3.6.59 Frequency info MP				10.3.6.28	
>>>FDD (no data) >>>TDD Primary >>>Primary CCPCH Tx Power MP Primary CCPCH Tx Power 10.3.6.59 Frequency info MP	>>CHOICE mode	MP			
>>>TDD Primary >>>Primary CCPCH Tx Power MP Primary CCPCH Tx Power 10.3.6.59 Frequency info MP Frequency	>>>FDD				(no data)
>>>>Primary CCPCH Tx Power MP Primary CCPCH Tx Power 10.3.6.59 Frequency info MP Frequency	>>>TDD				
Frequency info MP CCPCH Tx Power 10.3.6.59 Frequency Frequency	>>>>Primary CCPCH Tx Power	MP		Primary	
Power 10.3.6.59 Frequency info MP Frequency	-			CCPCH Tx	
Image: Frequency info MP Frequency				Power	
Frequency info MP Frequency				10.3.6.59	
	Frequency info	MP		Frequency	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			10.3.6.36	
Maximum allowed UL TX power	MP		Maximum allowed UL TX power 10.3.6.39	

10.2.13 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 \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE Information elements				
START list	СН	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains. The IE is mandatory</td></maxcndo<>		domains. The IE is mandatory
		mains>		if it has not been transferred
				prior to the handover.
>CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
>START	MP		START	
			10.3.3.38	
RB Information elements				
COUNT-C activation time	OP		Activation	Used for radio bearers
			time	mapped on RLC-TM.
			10.3.3.1	

10.2.14 INITIAL DIRECT TRANSFER

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE -> UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
CN information elements				
CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
Intra Domain NAS Node	MP		Intra Domain	
Selector			NAS Node	
			Selector	
			10.3.1.6	
NAS message	MP		NAS	
			message	
			10.3.1.8	
Measurement information				
elements				
Measured results on RACH	OP		Measured	
			results on	
			RACH	
			10.3.7.45	

10.2.15 HANDOVER FROM UTRAN COMMAND

This message is used for handover from UMTS to another system e.g. GSM. One or several messages from the other system can be included in the Inter-RAT message information element in this message. These messages are structured and coded according to that systems specification.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
RB information elements				
RAB information list	OP	1 to <maxrabs etup></maxrabs 		For each RAB to be handed over. In this version, the maximum size of the list of 1 shall be applied for all system types.
>RAB info	MP		RAB info 10.3.4.8	
Other information elements				
CHOICE System type	MP			This IE indicates which specification to apply, to decode the transported messages
>GSM			-	
>>Frequency band	MP		Enumerated (GSM/DCS 1800 band used), GSM/PCS 1900 band used)	
>>GSM message				
>>>Single GSM message	MP		Bitstring (no explicit size constraint)	Formatted and coded according to GSM specifications The first bit of the bitstring contains the first bit of the GSM message.
>>>GSM message List	MP	1.to. <maxl nterSysMe ssages></maxl 	Bitstring (1512)	Formatted and coded according to GSM specifications. The first bit of the bitstring contains the first bit of the GSM message.
>cdma2000		4.1-		
>>cdma2000MessageList	MP	1.to. <maxl nterSysMe ssages></maxl 		
>>>MSG_TYPE(s)	MP		Bitstring (8)	Formatted and coded according to cdma2000 specifications. The MSG_TYPE bits are numbered b0 to b7, where b0 is the least significant bit.
>>>cdma2000Messagepayload(s)	MP		Bitstring (1512)	Formatted and coded according to cdma2000 specifications. The first bit of the bitstring contains the first bit of the cdma2000 message.
10.2.16 HANDOVER FROM UTRAN FAILURE

This message is sent on the RRC connection used before the Inter-RAT Handover was executed. The message indicates that the UE has failed to seize the new channel in the other system.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Other information elements				
Inter-RAT handover failure	OP		Inter-RAT handover failure 10.3.8.6	
CHOICE System type	MP			This IE indicates which specification to apply to decode the transported messages
>GSM				
>GSM message List	MP	1.to. <maxl nterSysMe ssages></maxl 	Bitstring (1512)	Formatted and coded according to GSM specifications. The first bit of the bitstring contains the first bit of the GSM message.
>cdma2000				
>>cdma2000MessageList	MP	1.to. <maxl nterSysMe ssages></maxl 		
>>>MSG_TYPE(s)	MP		Bitstring (8)	Formatted and coded according to cdma2000 specifications. The MSG_TYPE bits are numbered b0 to b7, where b0 is the least significant bit.
>>>cdma2000Messagepayload(s)	MP		Bitstring (1512)	Formatted and coded according to cdma2000 specifications. The first bit of the bitstring contains the first bit of the cdma2000 message.

10.2.17 MEASUREMENT CONTROL

This message is sent by UTRAN to setup, modify or release a measurement in the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Measurement Information elements				
Measurement Identity	MP		Measurement Identity 10.3.7.48	
Measurement Command	MP		Measurement Command 10.3.7.46	
Measurement Reporting Mode	OP		Measurement Reporting Mode 10.3.7.49	
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-RAT measurement			Inter-RAT measurement 10.3.7.27	
>UE positioning measurement			UE positioning measurement 10.3.7.100	
>Traffic Volume measurement			Traffic Volume measurement 10.3.7.68	
>Quality measurement			Quality measurement 10.3.7.56	
>UE internal measurement			UE internal measurement 10.3.7.77	
Physical channel information elements				
DPCH compressed mode status info	OP		DPCH compressed mode status info 10.3.6.34	

-
-
-
-

Condition	Explanation
Command	The IE is mandatory <u>present</u> 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

10.2.18 MEASUREMENT CONTROL FAILURE

This message is sent by UE, if it cannot initiate a measurement as instructed by UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.19 MEASUREMENT REPORT

This message is used by UE to transfer measurement results to the UTRAN.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Measurement Information				
Elements				
Measurement identity	MP		Measuremen	
			t identity	
			10.3.7.48	
Measured Results	OP		Measured	
			Results	
			10.3.7.44	
Measured Results on RACH	OP		Measured	
			Results on	
			RACH	
			10.3.7.45	
Additional Measured results	OP	1 to		
		<maxadditi< td=""><td></td><td></td></maxadditi<>		
		onalMeas>		
>Measured Results	MP		Measured	
			Results	
			10.3.7.44	
Event results	OP		Event results	
			10.3.7.7	

10.2.20 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 \rightarrow UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information elements				
Paging record list	OP	1 to <maxpage 1></maxpage 		
>Paging record	MP		Paging record 10.3.3.23	
Other information elements				
BCCH modification info	OP		BCCH modification info 10.3.8.1	

If the encoded message does not fill a transport block, the RRC layer shall add padding according to subclause 12.1.

10.2.21 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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Paging cause	MP		Paging	
			cause	
			10.3.3.22	
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	

10.2.22 PHYSICAL CHANNEL RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
UE Information Elements			туре	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Integrity protection mode info	OP		Integrity	
			protection	
			mode info	
Cinhaving made info			10.3.3.19 Cinhoring	
Cipnering mode into	OP		Cipnering mode info	
			10335	
Activation time	MD		Activation	Default value is "now"
	MID		time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
RRC State Indicator	MP		RRC State	
			Indicator	
			10.3.3.10	
UTRAN DRX cycle length	MD		UTRAN DRX	Default value is the existing
coefficient			cycle length	value of UTRAN DRX cycle
			coefficient	length coefficient
CN Information Flomonts			10.3.3.49	
CN Information info			CN	
CN Information info	UF		Information	
			info 10.3.1.3	
UTRAN mobility information				
elements				
URA identity	OP		URA identity	
			10.3.2.6	
RB information elements				
Downlink counter	OP			
synchronisation info				
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
				having PDCP in the case of
>> PR with PDCP information	MD	RABS>	DB with	IOSSIESS SRINS relocation
>>RB with FDCF Information				
			information	
			10.3.4.22	
PhyCH information elements	1			
Frequency info	MD		Frequency	Default value is the existing
			info	value of frequency information
			10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum	Default value is the existing
			allowed UL	value of the maximum allowed
			102620	UL IX power
CHOICE abaptal requirement			10.3.6.39	
			Linlink	
			DPCH info	
			10.3.6.88	
>CPCH SET Info	1		CPCH SET	
			Info	
			10.3.6.13	
>CPCH set ID	1		CPCH set ID	

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

10.2.23 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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Uplink integrity protection	OP		Integrity	
activation info			protection	
			activation	
			info	
			10.3.3.17	
CHOICE mode	MP			
>FDD				(no data)
>TDD				
>>Uplink Timing Advance	OP		Uplink	
			Timing	
			Advance	
			10.3.6.95	
RB Information elements				
COUNT-C activation time	OP		Activation	Used for radio bearers
			time	mapped on RLC-TM.
De die beenen weliete ein benien			10.3.3.1	
Radio bearer uplink cipnering	OP		RB	
activation time info			activation	
Liplink counter synchronisation	OP		10.3.4.13	
info	OF			
>RB with PDCP information list	OP	1 to		
		<pre>/mayRBall</pre>		
		RABss		
>>RB with PDCP information	MP	10.002	RB with	
			PDCP	
			information	
			10.3.4.22	
>START list	MP	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains.</td></maxcndo<>		domains.
		mains>		
>>CN domain identity	MP	-	CN domain	
			identity	
			10.3.1.1	
>>START	MP		START	START value to be used in
			10.3.3.38	this CN domain.

10.2.24 PHYSICAL CHANNEL RECONFIGURATION FAILURE

This message is sent by UE if the configuration given by UTRAN is unacceptable or if the UE failed to assign, replace or release a set of physical channel(s).

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message type	MP		Message	
			type	
UE information elements				
RRC transaction identifier	OP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.25 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: UM on SHCCH, UM on DCCH

Logical channel: SHCCH or DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			type	
C-RNTI	OP		C-RNTI	
			10.3.3.8	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Uplink timing advance Control	MD		Uplink	Default value is the existing
			Timing	value for uplink timing advance
			Advance	
			Control	
			10.3.6.96	
PUSCH capacity allocation info	OP		PUSCH	
			Capacity	
			Allocation	
			info	
			10.3.6.64	
PDSCH capacity allocation info	OP		PDSCH	
			Capacity	
			Allocation	
			info	
			10.3.6.42	
Confirm request	MD		Enumerated(Default value is No Confirm
			No Confirm,	
			Confirm	
			PDSCH,	
			Confirm	
			PUSCH)	
Traffic volume report request	OP		Integer (0	Indicates the number of
			255)	frames between start of the
				allocation period and sending
				measurement report. The
				value should be less than the
				value for Allocation Duration.
ISCP Timeslot list	OP	1 to maxTS		
>Timeslot number	MP		Timeslot	Timeslot numbers, for which
			number	the UE shall report the timeslot
			10.3.6.84	ISCP in PUSCH CAPACITY
				REQUEST message.

10.2.26 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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
C-RNTI	OP		C-RNTI	
			10.3.3.8	
RRC transaction identifier	CV-ProtErr		RRC	
			transaction	
			identifier	
			10.3.3.36	
Traffic Volume	OP		Traffic	
			Volume,	
			measured	
			results list	
	0.5		10.3.7.67	
l imesiot list	OP	1 to		
. Timeslet number	MD	maxis	Timeslet	
> Timeslot number	IVIP		Timesiot	
Timoslot ISCP	MD		Timoclot	
>TIMESIOU ISCF			ISCP info	
			10 3 7 65	
Primary CCPCH RSCP	OP		Primary	
	0.		CCPCH	
			RSCP info	
			10.3.7.54	
CHOICE Allocation confirmation	OP			
>PDSCH Confirmation			Integer(1Hi	
			PDSCHIdent	
			ities)	
>PUSCH Confirmation			Integer(1Hi	
			PUSCHIdent	
			ities)	
Protocol error indicator	MD		Protocol	Default value is FALSE
			error	
			Indicator	
Drotocol orner information			10.3.3.27	
Protocol error information	GV-ProtErr		Protocol	
			information	
			103812	
		1	10.3.0.12	

|

Condition	Explanation
ProtErr	This IE is mandatory <u>present if</u> the IE "Protocol error indicator" has the value "TRUE". Otherwise it is not needed.

10.2.27 RADIO BEARER RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		reference	
Message Type	MP		Message Type	
UE Information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			Check Info	
Integrity protection mode info			10.3.3.10	
integrity protection mode into	UP		nretaction	
			mode info	
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
	01		mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
	_		10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
RRC State Indicator	MP		RRC State	
			Indicator	
			10.3.3.10	
UTRAN DRX cycle length	MD		UTRAN DRX	Default value is the existing
coefficient			cycle length	value of UTRAN DRX cycle
			coefficient	length coefficient
Chlinformation alomanta			10.3.3.49	
CN Information elements				
CN Information Info	OP		UN	
			info 10 3 1 3	
UTRAN mobility information			1110 10.3.1.3	
elements				
URA identity	OP		URA identity	
	0.		10.3.2.6	
RB information elements				
RAB information to reconfigure	OP	1 to <		
list		maxRABse		
		tup >		
>RAB information to reconfigure	MP		RAB	
			information	
			to	
			reconfigure	
			10.3.4.11	
RB information to reconfigure list	MP	1to		Although this IE is not always
		<maxkb></maxkb>		with ASN 1
SRB information to reconfigure	MP		RB	
	1711		information	
			to	
			reconfigure	
			10.3.4.18	
RB information to be affected list	OP	1 to		
		<maxrb></maxrb>		
>RB information to be affected	MP		RB	
			information	
			to be	
			affected	
			10.3.4.17	-
IrCH Information Elements				
Uplink transport channels	0.5			
UL Transport channel	OP		UL I ransport	

Information Element/Group	Need	Multi	Type and reference	Semantics description
information common for all			channel	
transport channels			information	
			common for	
			channels	
			10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch ></maxtrch 		
>Deleted UL TrCH information	MP		Deleted UL	
			TrCH	
			10.3.5.5	
Added or Reconfigured TrCH	OP	1 to		
information list		<max1rch< td=""><td></td><td></td></max1rch<>		
>Added or Reconfigured UL	MP		Added or	
I rCH information				
			information	
			10.3.5.2	
CHOICE mode	OP		-	
>>CPCH set ID	OP		CPCH set ID	
	05		10.3.5.3	
>>Added or Reconfigured IrCH	OP	1 to ∠maxTrCH		
		>		
>>>DRAC static information	MP		DRAC static	
			information	
>TDD			10.3.3.7	(no data)
Downlink transport channels				
DL Transport channel	OP		DL Transport	
Information common for all			channel	
			common for	
			all transport	
			channels	
	00		10.3.5.6	
Deleted IrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
		>		
>Deleted DL TrCH information	MP		Deleted DL	
			information	
			10.3.5.4	
Added or Reconfigured TrCH	OP	1 to		
information list		<max1rch< td=""><td></td><td></td></max1rch<>		
>Added or Reconfigured DL	MP	-	Added or	
TrCH information			Reconfigure	
			d DL TrCH	
			10351	
PhyCH information elements				
Frequency info	MD		Frequency	Default value is the existing
			INTO 10 3 6 36	value of frequency information
Uplink radio resources			10.0.0.00	
Maximum allowed UL TX power	MD		Maximum	Default value is the existing
			allowed UL	maximum UL TX power
			10.3.6.39	
CHOICE channel requirement	OP			

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode	MP			
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	MP	1 to <maxrl></maxrl>		Although this IE is not always required, need is MP to align with ASN.1
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

10.2.28 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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
0 71			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check into	СН		Integrity	
			10 3 3 16	
Unlink integrity protection	OP		Integrity	
activation info	01		protection	
			activation	
			info	
			10.3.3.17	
CHOICE mode	MP			
>FDD				(no data)
>IDD			Linink	
>>Oplink Timing Advance	UP		Timing	
			Advance	
			10.3.6.95	
RB Information elements				
COUNT-C activation time	OP		Activation	Used for radio bearers
			time	mapped on RLC-TM.
			10.3.3.1	
Radio bearer uplink ciphering	OP		RB	
activation time into			time info	
			103413	
Uplink counter synchronisation	OP			
info				
>RB with PDCP information list	OP	1 to		
		<maxrball< td=""><td></td><td></td></maxrball<>		
		RABs>		
>>RB with PDCP information	MP			
			information	
			10.3.4.22	
>START list	MP	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains.</td></maxcndo<>		domains.
		mains>		
>>CN domain identity	MP		CN domain	
			Identity	
~~ CTADT	MD		10.3.1.1 97407	START value to be used in
2201ART	IVIE		10.3.3.38	this CN domain.

10.2.29 RADIO BEARER RECONFIGURATION FAILURE

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

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

10.2.30 RADIO BEARER RELEASE

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

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description
Message Type	MP		Message	
message Type			Type	
UE Information Elements			21	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
Integrity protection mode info	OP		Integrity	
integrity protection mode into	01		protection	
			mode info	
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RINTI	OP		10 3 3 <i>1</i> 7	
New C-RNTI	OP		C-RNTI	
	01		10.3.3.8	
RRC State Indicator	MP		RRC State	
			Indicator	
			10.3.3.10	
UTRAN DRX cycle length	MD		UTRAN DRX	Default value is the existing
coefficient			cycle length	value of UTRAN DRX cycle
			coefficient	length coefficient
CN Information Flomanta			10.3.3.49	
CN Information Liements	OP		CN	
CN Information info	OF		Information	
			info 10.3.1.3	
Signalling Connection release	OP		CN domain	
indication	01		identity	
indiodion			10.3.1.1	
UTRAN mobility information				
elements				
URA identity	OP		URA identity	
			10.3.2.6	
RB Information Elements				
RAB information to reconfigure	OP	1 to <		
list				
>RAB information to reconfigure	MP		RAB	
			information	
			to	
			reconfigure	
			10.3.4.11	
RB information to release list	MP	1 to		
>RB information to release	MP		RB	
			information	
			to release	
			10.3.4.19	
RB information to be affected list	OP	1 to		
>PR information to be offected	MD	<maxrb></maxrb>	DD	
			information	
			to be	
			affected	
			10.3.4.17	
Downlink counter	OP			
synchronisation info			1	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>RB with PDCP information list	OP	1 to <maxrball RABs></maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels			LU Transmort	
information common for all transport channels	UP		channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted UL TrCH information	MP	>	Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch ></maxtrch 		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	OP			
>FDD >>CPCH set ID	OP		CPCH set ID	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch< td=""><td>10.3.5.3</td><td></td></maxtrch<>	10.3.5.3	
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch ></maxtrch 		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch ></maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	

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

10.2.31 RADIO BEARER RELEASE COMPLETE

This message is sent from the UE when radio bearer release has been completed.

RLC-SAP: AM

Logical channel: DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
LIE information alements			Туре	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		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			
>FDD				(no data)
>TDD >>Uplink Timing Advance	OP		Uplink Timing Advance 10.3.6.95	This information element shall be present in case of handover procedure if timing advance is enabled. Calculated timing advance value for the new cell after handover in a synchronous TDD network
RB Information elements				
COUNT-C activation time	OP		Activation time 10.3.3.1	Used for radio bearers mapped on RLC-TM.
Radio bearer uplink ciphering activation time info	OP		RB activation time info 10.3.4.13	
Uplink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs></maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
>START list	MP	1 to <maxcndo mains></maxcndo 		START [40] values for all CN domains.
>>CN domain identity	MP		CN domain identity 10.3.1.1	
>>START	MP		START 10.3.3.38	START value to be used in this CN domain.

10.2.32 RADIO BEARER RELEASE FAILURE

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

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

10.2.33 RADIO BEARER SETUP

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

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description
name	MD		reference	
Message Type	MP		Message Type	
UE Information Elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
Integrity protection mode info			10.3.3.10	
integrity protection mode into	OP		nregniy	
			mode info	
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
	-		mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
RRC State Indicator	MP		RRC State	
			103310	
LITRAN DRX cycle length	MD			Default value is the existing
	ND		cycle length	value of LITRAN DRX cycle
coencient			coefficient	length coefficient
			10.3.3.49	
CN Information Elements				
CN Information info	OP		CN	
			Information	
			info 10.3.1.3	
UTRAN mobility information				
elements				
URA identity	OP		URA identity	
DB Information Flomenta			10.3.2.6	
Signalling RB information to		1 to		For each signalling radio
Signalling RB Information to	OP	T IU		bearer established
Setup list		etuns		bearer established
Signalling RB information to	MP		Signalling	
setup			RB	
			information	
			to setup	
			10.3.4.24	
RAB information to setup list	OP	1 to		For each RAB established
		<maxrabs< td=""><td></td><td></td></maxrabs<>		
		etup>	DAD	
>RAB information for setup	MP		RAB	
			for sotup	
			10 3 / 10	
RB information to be affected list	OP	1 to	10.0.4.10	
		<maxrb></maxrb>		
>RB information to be affected	MP		RB	
			information	
			to be	
			affected	
	L		10.3.4.17	
Downlink counter	OP			
synchronisation info	00	4.1-		
>RB with PDCP information list	UP	<pre>1 to <maxrball< pre=""></maxrball<></pre>		having PDCP in the case of

Information Element/Group name	Need	Multi	Type and reference	Semantics description
		RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information	
			10.3.4.22	
TrCH Information Elements				
Uplink transport channels				
or transport channel	OP		OL Transport	
transport channels			information	
			common for	
			all transport	
			channels	
			10.3.5.24	
Deleted IrCH information list	OP	1 to		
>Deleted UL TrCH information	MP	-	Deleted UI	
			TrCH	
			information	
			10.3.5.5	
Added or Reconfigured TrCH	OP	1 to		
information list		<max1rch< td=""><td></td><td></td></max1rch<>		
>Added or Reconfigured III	MP	>	Added or	
TrCH information	1011		Reconfigure	
			d UL TrCH	
			information	
			10.3.5.2	
CHOICE mode	OP			
>FDD				
	UF		10.3.5.3	
>>Added or Reconfigured TrCH	OP	1 to		
information for DRAC list		<maxtrch< td=""><td></td><td></td></maxtrch<>		
>>> DBAC static information	MD	>	DRAC static	
>>>DRAC Static Information			information	
			10.3.5.7	
>TDD				(no data)
Downlink transport channels				
DL Transport channel	OP		DL Transport	
information common for all			channel	
transport channels			information	
			all transport	
			channels10.	
			3.5.6	
Deleted TrCH information list	OP	1 to		
		<maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted DL TrCH information	MP	>		
			TrCH	
			information	
			10.3.5.4	
Added or Reconfigured TrCH	OP	1 to		
information list		<maxtrch< td=""><td></td><td></td></maxtrch<>		
>Added or Reconfigured DI	MP	>	Added or	
TrCH information			Reconfigure	
			d DL TrCH	
			information	
			10.3.5.1	
Frequency info	MD		Frequency	Default value is the existing
		1	пециенсу	Delaur value is the existing

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

10.2.34 RADIO BEARER SETUP COMPLETE

This message is sent by UE to confirm the establishment of the radio bearer.

RLC-SAP: AM

Logical channel: DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
LIE information elements			Туре	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Uplink integrity protection activation info	OP		Integrity protection activation info 10.3.3.17	
CHOICE mode	OP			
>FDD				(no data)
>TDD >>Uplink Timing Advance	OP		Uplink Timing Advance 10.3.6.95	This information element shall be present in case of handover procedure if timing advance is enabled. Calculated timing advance value for the new cell after handover in a
START	OP		START 10.3.3.38	synchronous TDD network This information element is not needed for transparent mode RBs
RB Information elements			-	
COUNT-C activation time	OP		Activation time 10.3.3.1	Used for radio bearers mapped on RLC-TM.
Radio bearer uplink ciphering activation time info	OP		RB activation time info 10.3.4.13	
Uplink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxrball RABs></maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
>START list	MP	1 to <maxcndo mains></maxcndo 		START [40] values for all CN domains.
>>CN domain identity	MP		CN domain identity 10.3.1.1	
>>START	MP		START 10.3.3.38	START value to be used in this CN domain.

10.2.35 RADIO BEARER SETUP FAILURE

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

RLC-SAP: AM

Logical channel: DCCH

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

10.2.36 RRC CONNECTION REJECT

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

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN \rightarrow UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Initial UE identity	MP		Initial UE identity 10.3.3.15	
Rejection cause	MP		Rejection cause 10.3.3.31	
Wait time	MP		Wait time 10.3.3.50	
Redirection info	OP		Redirection info 10.3.3.29	

10.2.37 RRC CONNECTION RELEASE

This message is sent by UTRAN to release the RRC connection. The message also releases the signalling connection and all radio bearers between the UE and UTRAN.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
U-RNTI	CV-CCCH		U-RNTI	
			10.3.3.47	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CV-DCCH		Integrity	Integrity check info is included
			check info	if integrity protection is applied
			10.3.3.16	
N308	CH-		Integer(18)	
	Cell_DCH			
Release cause	MP		Release	
			cause	
			10.3.3.32	
Other information elements				
Rplmn information	OP		Rplmn	
			information	
			10.3.8.15	

Condition	Explanation
СССН	This IE is only sentmandatory present when CCCH is
	used and not needed otherwise.
DCCH	This IE is only sentmandatory present when DCCH is
	used and not needed otherwise.
Cell_DCH	This IE is mandatory present when UE is in
	CELL_DCH state and not needed otherwise.

10.2.38 RRC CONNECTION RELEASE COMPLETE

This message is sent by UE to confirm that the RRC connection has been released.

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Error indication	OP		Failure cause and error information 10.3.3.14	

10.2.39 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 \rightarrow UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
Initial UE identity	MP		Initial UE identity 10.3.3.15	
Establishment cause	MP		Establishme nt cause 10.3.3.11	
Protocol error indicator	MD		Protocol error indicator 10.3.3.27	Default value is FALSE
Measurement information elements				
Measured results on RACH	OP		Measured results on RACH 10.3.7.45	

If the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.1.

10.2.40 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		Mossage	
Message Type	IVII		Type	
UF Information Flements			Турс	
Initial UE identity	MP		Initial UF	
initial OE Idonaty			identity	
			10.3.3.15	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RNTI	MP		U-RNTI	
	00		10.3.3.47	
New C-RNTI	OP		C-RN11	
DDC State Indicator	MD		10.3.3.8 DDC State	
	IVIE		Indicator	
			10.3.3.10	
UTRAN DRX cycle length	MP		UTRAN DRX	
coefficient			cycle length	
			coefficient	
			10.3.3.49	
Capability update requirement	MD		Capability	Default value is defined in
			update	subclause 10.3.3.2
			requirement	
			10.3.3.2	
RB Information Elements				
Signalling RB information to	MP	3 to 4		Information for signalling radio
setup list				bearers, in the order RB1 up to
	MD		0:	KB4.
>Signalling RB information to	MP		Signalling	
setup			information	
			to setup	
			10.3.4.24	
TrCH Information Elements				
Uplink transport channels				
UL Transport channel	OP		UL Transport	
information common for all			channel	
transport channels			information	
			common for	
			all transport	
			channels	
	MD	4.1-	10.3.5.24	
Added of Reconfigured TrCH	MP			Although this IE is not required
momation ist				indicator" is set to
		-		"CELL FACH" need is MP to
				align with ASN.1
>Added or Reconfigured UL	MP		Added or	
TrCH information			Reconfigure	
			d UL TrČH	
			information	
			10.3.5.2	
Downlink transport channels				
DL Transport channel	OP		DL Transport	
information common for all			channel	
transport channels			information	
			common for	
			channels	
			10.3.5.6	
Added or Reconfigured TrCH	MP	1 to	10.0.0.0	Although this IF is not required
information list		<maxtrch< td=""><td></td><td>when the IE "RRC state</td></maxtrch<>		when the IE "RRC state

Information Element/Group name	Need	Multi	Type and reference	Semantics description
		>		indicator" is set to "CELL_FACH", need is MP to align with ASN.1
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

10.2.41 RRC CONNECTION SETUP COMPLETE

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

RLC-SAP: AM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE Information Elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
START list	MP	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains.</td></maxcndo<>		domains.
		mains>		
>CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
>START	MP		START	START value to be used in
			10.3.3.38	this CN domain.
UE radio access capability	OP		UE radio	
			access	
			capability	
			10.3.3.42	
UE radio access capability	OP		UE radio	
extension			access	
			capability	
			extension	
			10.3.3.42a	
Other information elements				
UE system specific capability	OP	1 to		
		<maxinter< td=""><td></td><td></td></maxinter<>		
		SysMessa		
		ges>		
>Inter-RAT UE radio access	MP		Inter-RAT	
capability			UE radio	
			access	
			capability	
			10.3.8.7	

10.2.42 RRC STATUS

This message is sent to indicate a protocol error.

RLC-SAP: AM

Logical channel: DCCH

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

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

10.2.43 SECURITY MODE COMMAND

This message is sent by UTRAN to start or reconfigure ciphering and/or integrity protection parameters.

RLC-SAP: AM

1

Logical channel: DCCH

Direction: UTRAN to UE

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	MP		Integrity	
			check info	
			10.3.3.16	
Security capability	MP		Security	
			capability	
			10.3.3.37	
Ciphering mode info	OP		Ciphering	Only present if ciphering shall
			mode info	be controlled
			10.3.3.5	
Integrity protection mode info	OP		Integrity	Only present if integrity
			protection	protection shall be controlled
			mode info	
			10.3.3.19	
CN Information elements				
CN domain identity	MP		CN domain	Indicates which cipher and
			identity	integrity protection keys are
			10.3.1.1	applicable
Other information elements				
UE system specific security	СН	1 to		This IE is included if the IE
capability		<maxinter< td=""><td></td><td>"Inter-RAT UE radio access</td></maxinter<>		"Inter-RAT UE radio access
		SysMessa		capability" was included in
		ges>		RRC CONNECTION SETUP
		5		COMPLETE message
>Inter-RAT UE security	MP		Inter-RAT	<u> </u>
capability			UE securitv	
			capability	
			10.3.8.8a	

10.2.44 SECURITY MODE COMPLETE

This message is sent by UE to confirm the reconfiguration of ciphering and/or integrity protection.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	MP		Integrity	
			check info	
			10.3.3.16	
Uplink integrity protection	OP		Integrity	
activation info			protection	
			activation	
			info	
			10.3.3.17	
RB Information elements				
Radio bearer uplink ciphering	OP		RB	
activation time info			activation	
			time info	
			10.3.4.13	

10.2.45 SECURITY MODE FAILURE

This message 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/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.46 SIGNALLING CONNECTION RELEASE

This message is used to notify the UE that its ongoing signalling connection to a CN domain has been released.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	Integrity check info is included
			check info	if integrity protection is applied
			10.3.3.16	
CN information elements				
CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	

10.2.47 SIGNALLING CONNECTION RELEASE REQUEST

This message is used by the UE to request for the release of an existing signalling connection.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group	Need	Multi	IE type and	Semantics description
name			reference	
Message Type	MP		Message	
			type	
UE Information Elements				
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
CN information elements				
CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	

1

10.2.48 SYSTEM INFORMATION

Information Element/Group	Need	Multi	Type and	Semantics description
Mossage type			Mossago	The message type is
Message type	<u>channel1</u>		type	mandatory on the FACH, and
SENIprime	CV-		Integer(0, 40	SEN-SENDrime (for first 10ms
Згирише	channel <u>2</u>		94 by step of 2)	frame of 20ms TTI), SEN=SENprime+1 (for last
			_,	10ms frame of 20ms TTI)
CHOICE Segment combination	MP			
>Combination 1	_			(no data)
>Combination 2			First	
>>First Segment	MP		Segment	
			10.2.48.1	
>Combination 3				
>>Subsequent Segment	MP		Subsequent Segment,	
Combination 4	-		10.2.48.3	
>>Last segment	MP		Last	
			segment	
			(short),10.2.	
Combination 5	_		48.5	
>>Last segment	MP		Last	
			Segment	
			(short)10.2.4	
>>First Segment	MP		8.5 First	
			Segment	
			(short),	
· Combination 6			10.2.48.2	
>>l ast Segment	MP		Last	
			Segment	
			(short),	
> Complete list	MD	1 to	10.2.48.5	Noto 1
>>Complete list	IVIE	maxSIBper		Note 1
		Msg		
>>>Complete	MP		Complete	
			SIB (short) 10.2	
			48.7	
>Combination 7				
>>Last Segment	MP		Last	
			(short)	
			10.2.48.5	
>>Complete list	MP	1<		Note 1
		maxSIBper Msg>		
>>>Complete	MP	wisg-	Complete	
			SIB	
			(short),10.2.	
>>First Seament	MP		First	
			Segment	
			(short),	
Combination 8			10.2.48.2	
>>Complete list	MP	1 to	-	Note 1
		maxSIBper		
		Msa		
>>>Complete	MP		Complete SIB (short),10.2. 48.7	
------------------------------------	----	-------------------	-------------------------------------------	--------
>Combination 9				
>>Complete list	MP	1MaxSIB perMsg		Note 1
>>>Complete	MP		Complete SIB (short),10.2. 48.7	
>>First Segment	MP		First Segment (short), 10.2.48.2	
>Combination 10				
>>>Complete SIB of size 215 to 226	MP		Complete SIB,10.2.48. 6	
>Combination 11				
>>Last segment of size 215 to 222	MP		Last segment,10. 2.48.4	

Condition	Explanation
<u>channel1</u>	The IE is mandatory present if the message is sent on
	the FACH and not needed otherwise.
channel <u>2</u>	This IE is mandatory present if the channel is BCH,
	otherwise it is absentnot needed.

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

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

10.2.48.1 First Segment

This segment type is used to transfer the first segment of a segmented system information block. The IE is used when the first segment fills the entire transport block (Combination 2).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
SIB type	MP		SIB Type,	
			10.3.8.21	
SEG_COUNT	MP		SEG	
			COUNT,	
			10.3.8.17	
SIB data fixed	MP		SIB data	
			fixed,	
			10.3.8.19	

10.2.48.2 First Segment (short)

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

Information Element/Group	Need	Multi	Type and	Semantics description
Other information elements			Telefence	
	MD			
SIB type	MP		SIB Type,	
			10.3.8.21	
SEG_COUNT	MP		SEG	
			COUNT,	
			10.3.8.17	
SIB data variable	MP		SIB data	
			variable,	
			10.3.8.20	

10.2.48.3 Subsequent Segment

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
SIB type	MP		SIB Type, 10.3.8.21	
Segment index	MP		Segment Index, 10.3.8.18	
SIB data fixed	MP		SIB data fixed, 10.3.8.19	

10.2.48.4 Last Segment

This segment type is used to transfer the last segment of a segmented system information block. The IE is used when the last segment has a length, excluding length denominator, from 215 through 222 (Combination 11).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
SIB type	MP		SIB Type, 10.3.8.21	
Segment index	MP		Segment Index, 10.3.8.18	
SIB data fixed	MP		SIB data fixed, 10.3.8.19	In case the SIB data is less than 222 bits, padding shall be used. The same padding bits shall be used as defined in clause 12.1

10.2.48.5 Last Segment (short)

This segment type is used to transfer the last segment of a segmented system information block. The IE is used when the last segment has a length, excluding length denominator, of upto 214 bits (Combination 4, 5, 6 and 7).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
SIB type	MP		SIB Type, 10.3.8.21	
Segment index	MP		Segment Index, 10.3.8.18	
SIB data variable	MP		SIB data variable, 10.3.8.20	

10.2.48.6 Complete SIB

This segment type is used to transfer a non-segmented system information block. The IE is used when the complete SIB has a length, excluding length denominator, from 215 through 226 (Combination 10).

Information Element/Group	Need	Multi	Type and reference	Semantics description
Other information elements			Telefende	
Other information elements				
SIB type	MP		SIB Type,	
			10.3.8.21	
SIB data fixed	MP		Bit string (226)	In case the SIB data is less than 226 bits, padding shall be used. The same padding bits shall be used as defined in clause 12.1

10.2.48.7 Complete SIB (short)

This segment type is used to transfer a non-segmented system information block. The IE is used when the complete SIB has a length, excluding length denominator, of upto 214 bits (Combination 6, 7, 8 and 9).

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Other information elements				
SIB type	MP		SIB Type,	
			10.3.8.21	
SIB data variable	MP		SIB data	
			variable,	
			10.3.8.20	

10.2.48.8 System Information Blocks

The IE "SIB data" within the IEs, "First Segment", "Subsequent or last Segment" and "Complete SIB" contains either complete system information block or a segment of a system information block. The actual system information blocks are defined in the following clauses.

10.2.48.8.1 Master Information Block

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
MIB Value tag	MP		MIB Value	
CN information elements			tag 10.0.0.0	
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	
References to other system information blocks and scheduling blocks	MP		References to other system information blocks and scheduling blocks 10.3.8.14	

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

10.2.48.8.2 Scheduling Block 1

1

Information Element/Group name	Need	Multi	Type and reference	Semantics description
References to other system information blocks	MP		References to other system information blocks 10.3.8.13	

10.2.48.8.3 Scheduling Block 2

Information Element/Group name	Need	Multi	Type and reference	Semantics description
References to other system	MP		References	
information blocks			to other	
			system	
			information	
			blocks	
			10.3.8.13	

10.2.48.8.4 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 and in connected mode.

Information Element/Group name	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 <maxcndo mains></maxcndo 		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	MD		UE Timers and constants in idle mode 10.3.3.44	Default value means that for all timers and constants - For parameters with need MD, the defaults specified in 10.3.3.44 apply and - For parameters with need OP, the parameters are absent
UE Timers and constants in connected mode	MD		UE Timers and constants in connected mode 10.3.3.43	Default value means that for all timers and constants - For parameters with need MD, the defaults specified in 10.3.3.43 apply and - For parameters with need OP, the parameters are absent

10.2.48.8.5 System Information Block type 2

The system information block type 2 contains the URA identity.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
UTRAN mobility information elements				
URA identity list	MP	1 <maxur A></maxur 		
>URA identity	MP		URA identity 10.3.2.6	

10.2.48.8.6 System Information Block type 3

The system information block type 3 contains parameters for cell selection and re-selection.

Information Element/Group	Need	Multi	Type and	Semantics description
SIB4 Indicator	MP		Boolean	TRUE indicates that SIB4 is broadcast in the cell.
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 for SIB3/4 10.3.2.3	
Cell Access Restriction	MP		Cell Access Restriction 10.3.2.1	

10.2.48.8.7 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.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
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 for SIB3/4 10.3.2.3	
Cell Access Restriction	MP		Cell Access Restriction 10.3.2.1	

10.2.48.8.8 System Information Block type 5

The system information block type 5 contains parameters for the configuration of the common physical channels in the cell.

Information Element/Group	Need	Multi	Type and	Semantics description
SIB6 Indicator	MP		Boolean	TRUE indicates that SIB6 is
			Doologin	broadcast in the cell.
PhyCH information elements				
PICH Power offset	MP		PICH Power	
			offset	
			10.3.6.50	
CHOICE mode	MP			
>FDD				
>>AICH Power offset	MP		AICH Power	This AICH Power offset also
			offset	indicates the power offset for
			10.3.6.3	AP-AICH and for CD/CA-ICH.
>TDD				
>>PUSCH system information	OP		PUSCH	
			system	
			information	
			10.3.6.66	
>>PDSCH system information	OP		PDSCH	
			system	
			information	
			10.3.6.46	
>>IDD open loop power control	MP		IDD open	
			loop power	
			control	
	0.5		10.3.6.79	
Primary CCPCH Into	OP		Primary	Note 1
	MD		10.3.0.37	
PRACH system information list	IVIP		PRACH	
			information	
			list 10 3 6 55	
Secondary CCPCH system	MD		Secondary	
information	IVII		CCPCH	
Information			system	
			information	
			10.3.6.72	
CBS DRX Level 1 information	CV-CTCH		CBS DRX	
	2. 2. 0.		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
СТСН	The IE is mandatory <u>present</u> if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed in the message

10.2.48.8.9 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.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PhyCH information elements				
PICH Power offset	MP		PICH Power offset 10.3.6.50	
CHOICE mode	MP			
>FDD				
>>AICH Power offset	MP		AICH Power offset 10.3.6.3	This AICH Power offset also indicates the power offset for AP-AICH and for CD/CA-ICH.
>TDD				
>>PUSCH system information	OP		PUSCH system information 10.3.6.66	
>>PDSCH system information	OP		PDSCH system information 10.3.6.46	
>>TDD open loop power control	MP		TDD open loop power control 10.3.6.79	
Primary CCPCH info	OP		Primary CCPCH info 10.3.6.57	Note 1
PRACH system information list	OP		PRACH system information list 10.3.6.55	
Secondary CCPCH system information	OP		Secondary CCPCH system information 10.3.6.72	
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
СТСН	The IE is mandatory <u>present</u> if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed

10.2.48.8.10 System Information Block type 7

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	-
CHOICE mode	MP			
>FDD				
>>UL interference	MP		UL interference 10.3.6.87	
>TDD				(no data)
PhyCH information elements				
PRACHs listed in system information block type 5	MP	1 to <maxpr ACH></maxpr 		The order of the PRACHs is the same as in system information block type 5.
>Dynamic persistence level	MP		Dynamic persistence level 10.3.6.35	
PRACHs listed in system information block type 6	OP	1 to <maxpra CH></maxpra 		The order of the PRACHs is the same as in system information block type 6.
>Dynamic persistence level	MP		Dynamic persistence level 10.3.6.35	
Expiration Time Factor	MD		Expiration Time Factor 10.3.3.12	Default is 1.

10.2.48.8.11 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/Group name	Need	Multi	Type and reference	Semantics description
UE information				
CPCH parameters	MP		CPCH	
			parameters	
			10.3.3.7	
PhyCH information elements				
CPCH set info list	MP	1 to		
		<maxcpc< td=""><td></td><td></td></maxcpc<>		
		Hsets>		
>CPCH set info	MP		CPCH set	
			info	
			10.3.6.13	
CSICH Power offset	MP		CSICH	
			Power offset	
			10.3.6.15	

10.2.48.8.12 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/Group	Need	Multi	Type and	Semantics description
name			reference	
PhyCH information elements				
CPCH set persistence levels list	MP	1 to <maxcpc Hsets></maxcpc 		
>CPCH set persistence levels	MP		CPCH persistence levels 10.3.6.12	

10.2.48.8.13 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/Group name	Need	Multi	Type and reference	Semantics description
UE information				
DRAC system information	MP		DRAC system information 10.3.3.9	DRAC information is sent for each class of terminal

10.2.48.8.14 System Information Block type 11

The system information block type 11 contains measurement control information to be used in the cell.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB12 Indicator	MP		Boolean	TRUE indicates that SIB12 is broadcast in the cell.
Measurement information elements				
FACH measurement occasion info	OP		FACH measuremen t occasion info 10.3.7.8	
Measurement control system information	MP		Measuremen t control system information 10.3.7.47	

10.2.48.8.15 System Information Block type 12

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Measurement information elements				
FACH measurement occasion info	OP		FACH measuremen t occasion info 10.3.7.8	
Measurement control system information	MP		Measuremen t control system information 10.3.7.47	

10.2.48.8.16 System Information Block type 13

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
CN Information Elements				
CN Domain system information list	MP	1 to <maxcndo mains></maxcndo 		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	OP		UE timers and constants in idle mode 10.3.3.44	
Capability update requirement	MD		Capability update requirement 10.3.3.2	Default value is defined in subclause 10.3.3.2

10.2.48.8.16.1 System Information Block type 13.1

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
ANSI-41 information elements				
ANSI-41 RAND information	MP		ANSI-41	
			RAND	
			information	
			10.3.9.6	

10.2.48.8.16.2 System Information Block type 13.2

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

Information Element/Group	Need	Multi	Type and	Semantics description
ANSI-41 information elements			Telefelice	
ANOI-41 Information elements				
ANSI-41 User Zone	MP		ANSI-41	
Identification information			User Zone	
			Identification	
			information	
			10.3.9.7	

10.2.48.8.16.3 System Information Block type 13.3

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ANSI-41 information elements				
ANSI-41 Private Neighbour List	MP		ANSI-41	
information			Private	
			Neighbour	
			List	
			information	
			10.3.9.5	

10.2.48.8.16.4 System Information Block type 13.4

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

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

10.2.48.8.17 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.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
PhyCH information elements				
Individual Timeslot interference	MP	1 to		
list		<maxts></maxts>		
>Individual Timeslot interference	MP		Individual	
			Timeslot	
			interference	
			10.3.6.38	
Expiration Time Factor	MD		Expiration	Default is 1.
			Time Factor	
			10.3.3.12	

10.2.48.8.18 System Information Block type 15

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

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS Data ciphering info	OP		UE positioning Cipher info 10.3.7.86	If this IE is present then the SIB types 15.1, 15.2 & 15.3 are ciphered in accordance with the Data Assistance Ciphering Algorithm specified in [18]
Reference position	MP		Ellipsoid point with altitude and uncertainty ellipsoid 10.3.8.4c	approximate position where the UE is located
GPS Reference Time	MP		UE positioning GPS reference time 10.3.7.96	
Satellite information	OP	1 to <maxsat></maxsat>		This IE is present whenever bad (failed/failing) satellites are detected by UTRAN [18].
>BadSatID	MP		Enumerated(063)	

10.2.48.8.18.1 System Information Block type 15.1

The system information block type 15.1 contains information useful for UE positioning DGPS Corrections. The DGPS Corrections message contents are based on a Type-1 message of DGPS specified in [13].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
DGPS corrections	MP		UE positioning GPS DGPS corrections 10.3.7.91	

10.2.48.8.18.2 System Information Block type 15.2

The system information block type 15.2 contains information useful for GPS Navigation Model. These IE fields are based on information extracted from the subframes 1 to 3 of the GPS navigation message [12].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Transmission TOW	MP		Integer (0604799)	The approximate GPS time-of- week when the message is broadcast. in seconds
SatID	MP		Enumerated(063)	Satellite ID
GPS Ephemeris and Clock Correction Parameters	MP		UE positioning GPS Ephemeris and Clock Correction parameters 10.3.7.90a	

10.2.48.8.18.3 System Information Block type 15.3

The system information block type 15.3 contains information useful for ionospheric delay, UTC offset, and Almanac. These IEs contain information extracted from the subframes 4 and 5 of the GPS navigation message, [12].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Transmission TOW	MP		Integer (0604799)	The approximate GPS time-of- week when the message is broadcast. in seconds
GPS Almanac and Satellite Health	OP		UE positioning GPS almanac 10.3.7.89	
GPS ionospheric model	OP		UE positioning GPS ionospheric model 10.3.7.92	
GPS UTC model	OP		UE positioning GPS UTC model 10.3.7.97	
SatMask	CV- Almanac		Bitstring(13 2)	indicates the satellites that contain the pages being broadcast in this data set
LSB TOW	CV- Almanac		Bit string(8)	

[Condition	Explanation
	Almanac	This IE is <u>mandatory</u> present if the IE "GPS Almanac and Satellite Health" is present

10.2.48.8.18.4 System Information Block type 15.4

The system information block type 15.4 contains information useful for OTDOA based UE Positioning method.

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
OTDOA Data ciphering info	OP		UE	If this IE is present then the IE
_			positioning	"OTDOA Assistance Data" is
			Ciphering	ciphered in accordance with the
			info	Data Assistance Ciphering
			10.3.7.86	Algorithm specified in [18]
OTDOA assistance data	MP		UE	
			positioning	
			OTDOA	
			assistance	
			data	
			10.3.7.103	

10.2.48.8.19 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.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
RB information elements				
Predefined RB configuration	MP		Predefined RB configuration 10.3.4.7	
TrCH Information Elements				
Predefined TrCH configuration	MP		Predefined TrCH configuration 10.3.5.9	
PhyCH Information Elements				
Predefined PhyCH configuration	MP		Predefined PhyCH configuration 10.3.6.56	

10.2.48.8.20 System Information Block type 17

NOTE: Only for TDD.

The system information block type 17 contains fast changing parameters for the configuration of the shared physical channels to be used in connected mode.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
PhyCH information elements				
PUSCH system information	OP		PUSCH	
			system	
			information	
			10.3.6.66	
PDSCH system information	OP		PDSCH	
-			system	
			information	
			10.3.6.46	

10.2.48.8.21 System Information Block type 18

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

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

10.2.49 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 \rightarrow UE

Information Element/Group name	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 12.1.

10.2.50 TRANSPORT CHANNEL RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN \rightarrow UE

Message Type MP Message Type UE Information Elements RRC transaction identifier MP RRC RRC transaction identifier Integrity check info CH Integrity check info Integrity protection mode info OP Integrity protection mode info Ciphering mode info OP Ciphering mode info Activation time MD Activation time 10.3.3.10 New U-RNTI OP URNI 10.3.3.47 New C-RNTI OP CRNTI 10.3.3.47 New C-RNTI OP CRNTI 10.3.3.47 New C-RNTI OP CRNTI 10.3.3.47 UTRAN DRX cycle length coefficient MD UTRAN DRX cycle length coefficient CN Information info OP OP UTRAN mobility information elements OP Information info 10.3.1.3 URA identity OP URA identity 10.3.2.42 VITRAN mobility information info OP Information info 10.3.1.3 URA identity OP It to synchronisation info OP It to synchronisation info OP SRB with PDCP information information common for all transport channels OP UL Transport channels OP UL Transport channels OP UL Transport channels OP UL Transport channels <th>Information Element/Group</th> <th>Need</th> <th>Multi</th> <th>Type and reference</th> <th>Semantics description</th>	Information Element/Group	Need	Multi	Type and reference	Semantics description
Incodege Type Image: Type UE information Elements P RRC RRC transaction identifier MP RRC Integrity check info CH Integrity check info Integrity protection mode info OP Integrity check info Ciphering mode info OP Integrity protection mode info Ciphering mode info OP Ciphering mode info New U-RNTI OP OP New C-RNTI OP U-RNTI New C-RNTI OP C-PNTI New C-RNTI OP OP UTRAN DRX cycle length cells MD UTRAN DRX cycle length cells CN Information info OP OP OP UTRAN DRX cycle length cells OP OP OP VIRAN DRX cycle length cells OP OP OP CN Information info OP OP OP Information info VRA identity OP OP OR Naiving PDCP information info SR with PDCP information isti OP 1 to emaxRBail This IE is needed for each RB having PDCP in the case of losaleas SRNS relocation <	Message Type	MP		Message	
UE information Elements MP RRC RRC transaction identifier MP RRC Integrity check info CH Integrity check info Integrity protection mode info OP Integrity check info Ciphering mode info OP Ciphering mode info Ciphering mode info OP Ciphering mode info New U-RNTI OP Ciphering info New C-RNTI OP CRNTI New C-RNTI OP CRNTI UTRAN DRX cycle length coefficient MD UTRAN DRX cycle length coefficient CN Information file OP CN Information info URAN DRX cycle length coefficient OP CN Information info UTRAN DRX cycle length coefficient OP CN Information info URA Identity OP CN Information info URA Identity OP Information info Information info VP Information info OP Information info VRA Identity OP Information info Information info VP Information info OP Information info <				Туре	
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Integrity check info CH Integrity check info Integrity protection mode info OP Integrity check info Integrity protection mode info OP Ciphering mode info Ciphering mode info OP Ciphering mode info Ciphering mode info OP Ciphering mode info Activation time MD Activation time 10.3.3.1 New U-RNTI OP U-RNTI OP C-RNTI OP URAN DRX cycle length coefficient OP RRC State Indicator UTRAN DRX cycle length coefficient OP CN Information info OP CN Information info OP CN Information info URA Mobility information elements OP CN Information info URA Identity OP CN Information info OP SRB with PDCP information information rinfo OP This IE is needed for each RB having PDCP in the case of lossless SRNS relocation >>RB with PDCP information information common for all transport channels OP UL Transport channels UL Transport channels OP UL Transport channels OP UL Transport channels OP UL Transport channels OP UL Transport channels OP 1 to «maxTRCH Itansport channels	RRC transaction identifier	MP		RRC	
Integrity check infoCHIntegrity check info 10.3.3.16Integrity protection mode infoOPIntegrity protection mode infoCiphering mode infoOPCiphering mode info 10.3.3.19Ciphering mode infoOPCiphering mode info 10.3.3.19Ciphering mode infoOPCiphering mode info 10.3.3.19Ciphering mode infoOPCiphering mode info 10.3.3.11Activation timeMDActivation time 10.3.3.1New U-RNTIOPU-RNTI 10.3.3.47New C-RNTIOPC-RNTI 10.3.3.8New C-RNTIOPC-RNTI 10.3.3.47UTRAN DRX cycle length coefficientMDCN Information lementsOPCN Information infoOPURAN mobility information elementsOPURA dentityOPVRA dentityOPS-RB with PDCP informationOPInformation ElementsOPS-RB with PDCP informationOPV-RA with PDCP informationOPInformation infoOPS-RB with PDCP informationOPUL Transport channel informationOPUL Transport channel informationOPUL Transport channelsOPUL Transport channelsOPUL Transport channelsOPUL Transport channelsOPUL Transport channelsOPInformation listOPInformationOPInformationOPInformationOP				transaction	
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Integrity check fillo CH Integrity check info Integrity protection mode info OP Integrity protection mode info Ciphering mode info OP Ciphering mode info Activation time MD Activation time 10.3.3.19 Default value is "now" New U-RNTI OP CRNTI 10.3.3.67 Default value is "now" New U-RNTI OP C-RNTI 10.3.3.81 Default value is "now" New C-RNTI OP C-RNTI 10.3.3.81 Default value is "now" UTRAN DRX cycle length coefficient MD UTRAN DRX cycle length coefficient Default value is the existing value of UTRAN DRX cycle length coefficient CN Information Elements OP Information info 10.3.1.3 Default value is the existing value of UTRAN DRX cycle length coefficient URA Identity OP Information info 10.3.1.3 Default value is the existing value of UTRAN DRX cycle length coefficient URA Identity OP Information info 10.3.2.6 Information info 10.3.2.6 Downlink counter synchronisation info OP Information cmarkBall RABs> This IE is needed for each RB having PDCP in the case of lossiess SRNS relocation >>RB with PDCP information information common for all transport channels OP UL Transport c	late with a check infe			10.3.3.30	
Integrity protection mode infoOPIntegrity protection mode infoCiphering mode infoOPCiphering mode infoNew U-RNTIOPU-RNTI 10.3.3.47New C-RNTIOPC.RNTI 10.3.3.6RRC State IndicatorMPRRC State IndicatorUTRAN DRX cycle length coefficientMDUTRAN DRX cycle length coefficientCN Information ElementsOPCN Information info 10.3.1.3URA identityOPI to <maxrball </maxrball cRABs>VRA identityOPI to <maxrball </maxrball crease of lossless SRNS relocation*RB with PDCP information information listOPI to <maxrball </maxrball crease of lossless SRNS relocation*RB with PDCP information information for UL Transport channelsOPI to <maxrball </maxrball channels information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information inf	птедпту спеск іпіо	Сн		integrity	
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Information Element/Group name	Need	Multi	Type and reference	Semantics description
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>FDD	•			
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PhyCH information elements Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
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Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
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>FDD >>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	(no data)
Downlink information per radio	OP	1 to		Send downlink information for
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

10.2.51 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 \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		Mossago	
Message Type	IVIE		Type	
UF information elements			туре	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Uplink integrity protection	OP		Integrity	
activation info			protection	
			activation	
			103317	
CHOICE mode	OP		10.0.0.17	
>FDD				(no data)
>TDD				
>>Uplink Timing Advance	OP		Uplink	
			Timing	
			Advance	
			10.3.6.95	
RB Information elements				
COUNT-C activation time	OP		Activation	Used for radio bearers
				mapped on RLC-TM.
Radio bearer unlink cinhering	OP		10.3.3.1 PB	
activation time info			activation	
			time info	
			10.3.4.13	
Uplink counter synchronisation	OP			
info				
>RB with PDCP information list	OP	1 to		
>> RB with PDCP information	MD	RADS>	PB with	
			PDCP	
			information	
			10.3.4.22	
>START list	MP	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains.</td></maxcndo<>		domains.
		mains>		
>>CN domain identity	MP		CN domain	
	MP		10.3.1.1 START	START value to be used in
			10.3.3.38	this CN domain
	1	I	10.0.0.00	

10.2.52 TRANSPORT CHANNEL RECONFIGURATION FAILURE

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.53 TRANSPORT FORMAT COMBINATION CONTROL

This message is sent by UTRAN to control the uplink transport format combination within the allowed transport format combination set.

RLC-SAP: TM, AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group	Need	Multi	Type and	Semantics description
	CV/ notTM		Magaza	
Message Type	CV-110(11VI		Turne	
LIE information alements			туре	
DE Information elements	CV/ notTM		DDC	
RRC transaction identifier	CV-NOLTM		KKC transaction	
			identifier	
Integrity check info	CV/ notTM		10.3.3.30	
птедпту спеск пто	CV-NOLTM		integrity	
TrCU information alementa			10.3.3.10	
CUOICE mode	MD			
	MP			(no doto)
>FDD				(no data)
>IDD			-	
>>TFCS Id	OP		Transport	
			Format	
			Combination	
			Set Identity	
	MD		10.3.5.21	
DPCH/POSCH TECS in uplink	MP		Transport	
			Format	
			Combination	
			SUDSET	
	01		10.3.5.22	
Activation time for TFC subset			Activation	Default value is "now"
	not i MMD			
750.0			10.3.3.1	
IFC Control duration	CV-		IFC Control	
	not I Mopt		duration	
	1	1	10.3.6.80	

Condition	Explanation
NotTM	The message type is not included needed when
	transmitting the message on the transparent mode
	signalling DCCH and mandatory present otherwise
NotTMopt	The information element is not included <u>needed</u> when transmitting the message on the transparent mode
	signalling DCCH and is optional otherwise.
NotTMMD	The information element is not included <u>needed</u> when transmitting the message on the transparent mode signalling DCCH and is Mandatory with default otherwise.

If transparent mode signalling is used and the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.1.

10.2.54 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

1

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.55 UE CAPABILITY ENQUIRY

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN \rightarrow UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		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	

10.2.56 UE CAPABILITY INFORMATION

This message is sent by UE to convey UE specific capability information to the UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		Massage	
Message Type	IVIP		Message	
			туре	
UE information elements				
RRC transaction identifier	OP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	Integrity check info is included
			check info	if integrity protection is applied
			10.3.3.16	
UE radio access capability	OP		UE radio	
			access	
			capability	
			10.3.3.42	
UE radio access capability	OP		UE radio	
extension			access	
			capability	
			extension	
			10.3.3.42a	
Other information elements				
UE system specific capability	OP	1 to		
		<maxinter< td=""><td></td><td></td></maxinter<>		
		SysMessa		
		ges>		
>Inter-RAT UE radio access	MP	-	Inter-RAT	
capability			UE radio	
			access	
			capability10.	
			3.8.7	

10.2.57 UE CAPABILITY INFORMATION CONFIRM

This message is sent by UTRAN to confirm that UE capability information has been received.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN \rightarrow UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	Integrity check info is included
			check info	if integrity protection is applied
			10.3.3.16	

10.2.58 UPLINK DIRECT TRANSFER

This message is used to transfer NAS messages for an existing signalling connection.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE ->UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
Integrity check info	СН		Integrity check info 10.3.3.16	Integrity check info is included if integrity protection is applied
CN information elements				
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 10.3.7.45	

10.2.59 UPLINK PHYSICAL CHANNEL CONTROL

NOTE: Only for 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/Group	Need	Multi	Type and Reference	Semantics description
Message Type	MP		Message	
meesage .)pe			Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	OP		Integrity check info 10.3.3.16	
PhyCH information elements				
CCTrCH power control info	OP		CCTrCH power control info 10.3.6.8	Power control information for one CCTrCH
Alpha	OP		Alpha 10.3.6.5	
Special Burst Scheduling	OP		Special Burst Scheduling 10.3.6.75a	UL Special Burst generation period in radio frames
Timing Advance Control	OP		UL Timing Advance Control 10.3.6.96	
PRACH Constant Value	OP		Constant value 10.3.6.11	Operator controlled PRACH Margin
PUSCH Constant Value	OP		Constant value 10.3.6.11	Operator controlled PUSCH Margin

10.2.60 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/Group	Need	Multi	Type and	Semantics description
Message Type	MP		Message	
			Туре	
UE information elements				
U-RNTI	MP		U-RNTI	
			10.3.3.47	
RRC transaction identifier	CV-		RRC	
	ProtErr		transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
URA update cause	MP		URA update	
			cause	
			10.3.3.46	
Protocol error indicator	MD		Protocol	Default value is FALSE
			error	
			indicator	
			10.3.3.27	
Other information elements				
Protocol error information	CV-ProtErr		Protocol	
			error	
			information	
			10.3.8.12	

Condition	Explanation
ProtErr	The IE is mandatory present lif the IE "Protocol error indicator" has the value "TRUE" and not needed otherwise

10.2.61 URA UPDATE CONFIRM

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

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN \rightarrow UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE information elements				
U-RNTI	CV-CCCH		U-RNTI	
			10.3.3.47	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	Integrity check into is included
			check info	if integrity protection is applied
			10.3.3.16	
Integrity protection mode into	OP		Integrity	
			protection	
Ciphoring mode info	OP		Ciphoring	
Cipitering mode into	OF		mode info	
			10335	
New H-RNTI	OP		II-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
RRC State Indicator	MP		RRC State	
			Indicator	
			10.3.3.10	
UTRAN DRX cycle length	MD		UTRAN DRX	Default value is the existing
coefficient			cycle length	value of UTRAN DRX cycle
			coefficient	length coefficient
			10.3.3.49	
CN Information Elements				
CN Information info	OP		CN	
			Information	
LITRAN mobility information			Info 10.3.1.3	
elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements				
Downlink counter	OP			
synchronisation info				
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
		RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			10.3.4.22	

Condition	Explanation
СССН	This IE is only sentmandatory present when CCCH is
	used and not needed otherwise

10.2.62 UTRAN MOBILITY INFORMATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
LIE Information Elements			Туре	
			Into gritu	
ппедпту спеск ппо	СП		integrity	
PPC transaction identifier	MD		10.3.3.10 PPC	
KKC transaction identilier	IVIE		transaction	
			identifier	
			10 3 3 36	
Integrity protection mode info	OP		Integrity	
integrity protection mode into	01		nrotection	
			mode info	
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
	•		mode info	
			10.3.3.5	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
UE Timers and constants in	OP		UE Timers	
connected mode			and	
			constants in	
			connected	
			mode	
			10.3.3.43	
CN Information Elements				
CN Information info	OP		CN	
			Information	
			10.3.1.3a	
UTRAN Information Elements			LIDA identity	
URA Identity	OP		10.3.2.6	
RB Information elements				
Downlink counter	OP			
synchronisation info				
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
		RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information	
			10.3.4.22	

10.2.63 UTRAN MOBILITY INFORMATION CONFIRM

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
Integrity abook info			10.3.3.30	
Integrity check into	CIT		check info	
			10.3.3.16	
Uplink integrity protection	OP		Integrity	
activation info			protection	
			activation	
			info	
			10.3.3.17	
COUNT C optivation time			Activation	Llood for radio boarara
COUNT-C activation time	UF		time	manned on RI C-TM. Only
			10331	applicable if the UE is moving
				to CELL DCH state due to this
				procedure
Radio bearer uplink ciphering	OP		RB	
activation time info			activation	
			time info	
			10.3.4.13	
info	OP			
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
>> PR with PDCP information	MD	RABS>	DR with	lossiess SRINS relocation
>>RB with FDCF Information	IVIE		PDCP	
			information	
			10.3.4.22	
>START list	MP	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains.</td></maxcndo<>		domains.
		mains>		
>>CN domain identity	MP		CN domain	
			Identity	
	MD		10.3.1.1 START	START value to be used in
			10.3.3.38	this CN domain.

10.2.64 UTRAN MOBILITY INFORMATION FAILURE

This message is sent to indicate a failure to act on a received UTRAN MOBILITY INFORMATION message.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

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)	

10.3.1.2 CN Domain System Information

Information Element/Group	Need	Multi	Type and	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, 10.3.9.4	
CN domain specific DRX cycle length coefficient	MP		CN domain specific DRX cycle length coefficient, 10.3.3.6	

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 <maxcndo mains></maxcndo 		
>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	

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

10.3.1.3a CN Information info full

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 <maxcndo mains></maxcndo 		
>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	
>CN domain specific DRX cycle length coefficient	MP		CN domain specific DRX cycle length coefficient, 10.3.3.6	

10.3.1.4 IMEI

This IE contains an International Mobile Equipment Identity. Setting specified in [11].

Information Element/Group name	Need	Multi	Type and reference	Semantics description
IMEI	MP	15		The first element contains the first IMEI digit, the second element the second IMEI digit and so on.
>IMEI digit	MP		INTEGER(0. .15)	

10.3.1.5 IMSI (GSM-MAP)

This IE contains an International Mobile Subscriber Identity, used towards a GSM-MAP type of PLMN. Setting specified in [11].

Information Element/Group name	Need	Multi	Type and reference	Semantics description
IMSI	MP	6 to 15		The first element contains the first IMSI digit, the second element the second IMSI digit and so on.
>IMSI digit	MP		INTEGER(0. .9)	

10.3.1.6 Intra Domain NAS Node Selector

This IE carries information to be used to route the establishment of a signalling connection to a CN node within a CN domain.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE version	MP			
>R99				
>>CHOICE CN type	MP			
>>GSM-MAP				
>>>CHOICE Pouting basis	MD			
	IVIE			TMCI allocated in the ourrent
				LA or PTMSI allocated in the current current RA
>>>>Routing parameter	MP		Bitstring (10)	The TMSI/ PTMSI consists of 4 octets (32bits). The bits are numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bitstring consists of bits b14 through b23 of the TMSI/ PTMSI where bit b14 is the least significant.
>>>>(P)TMSI of same PLMN, different (RA)LA				TMSI allocated in another LA of this PLMN or PTMSI allocated in another RA this
>>>>Routing parameter	MP		Bitstring (10)	PLMN The TMSI/ PTMSI consists of
			g(,	4 octets (32bits). The bits are numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bitstring consists of bits b14 through b23 of the TMSI/ PTMSI where bit b14 is the least significant.
>>>>(P)TMSI of different PLMN				TMSI or a PTMSI allocated in another PLMN
>>>>>Routing parameter	MP		Bitstring (10)	The TMSI/ PTMSI consists of 4 octets (32bits). The bits are numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bitstring consists of bits b14 through b23 of the TMSI/ PTMSI where bit b14 is the least significant.
paging)				
>>>>Routing parameter	MP		Bitstring (10)	The "Routing parameter" bitstring consists of DecimalToBinary [(IMSI div 10) mod 1000]. The bits of the result are numbered from b0 to b9, with bit b0 being the least significant.
>>>>>IMSI(cause UE initiated event)				NAS identity is IMSI
>>>>Routing parameter	MP		Bitstring (10)	The "Routing parameter" bitstring consists of DecimalToBinary [(IMSI div 10) mod 1000]. The bits of the result are numbered from b0 to b9, with bit b0 being the least significant.
>>>>> M⊢	1	1		NAS parameter is IMEL

>>>>Routing parameter	MP	Bitstring (10)	The "Routing parameter" bitstring consists of DecimalToBinary [(IMEI div 10) mod 1000]. The bits of the result are numbered from b0 to b9, with bit b0 being the least significant.
>>>>Spare 1		Bitstring (10)	This choice shall not be used in this version
>>>>Spare 2		Bitstring (10)	This choice shall not be used in this version
>>>>Entered parameter	MP	Boolean	Entered parameter shall be set to TRUE if the most significant byte of the current LAI/RAI is different compared to the most significant byte of the LAI/RAI stored on the SIM; Entered parameter shall be set to FALSE otherwise
>>>ANSI-41		Bitstring (14)	All bits shall be set to 0
>Later		Bitstring(15)	This bitstring shall not be sent by mobiles that are compliant to this version of the protocol.

10.3.1.7 Location Area Identification

Identifies uniquely a location area for a GSM-MAP type of PLMN. Setting specified in [5].

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)	The LAC bits are numbered b0-b15, where b0 is the least significant bit.

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 (14095)	The first octet contains octet 1 [17] of the NAS message, the second octet contains octet 2 of the NAS message and so on.

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(18)	The first octet contains octet 1 [17] of the NAS system information element, the second octet contains octet 2 of the NAS system information element and so on.

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 [11].

Information Element/Group name	Need	Multi	Type and reference	Semantics description
MCC	MP	3		The first element contains the first MCC digit, the second element the second MCC digit and so on.
>MCC digit	MP		INTEGER(09)	
MNC	MP	2 to 3		The first element contains the first MNC digit, the second element the second MNC digit and so on.
>MNC digit	MP		INTEGER(09)	

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	Need	Multi	Type and	Semantics description
name			reference	
PLMN Type	MP		Enumerated	
			(GSM-MAP,	
			ÀNSI-41,	
			GSM-MAP	
			and ANSI-41)	

10.3.1.13 P-TMSI (GSM-MAP)

This IE contains a 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 [11]. The P-TMSI bits are numbered b0- b31, where b0 is the least significant bit.

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 [5]. The bits are numbered b1-b8, where b1 is the least significant bit.
>RAB identity (ANSI-41)			Bit string (8)	The bits are numbered b1-b8, where b1 is the least significant bit.

CHOICE NAS binding info type	Condition under which the given <i>RAB identity</i> <i>type</i> 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 [11]. The Routing Area Code bits are numbered b0 to b7, where b0 is the least significant bit.

10.3.1.16 Routing Area Identification

Identifies uniquely a routing area for a GSM-MAP type of PLMN. Setting specified in [11].

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 TMSI (GSM-MAP)

This IE contains a 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 [11]. The TMSI bits are numbered b0- b31, where b0 is the least significant bit.

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)	
Intra-frequency cell re-selection indicator	CV-Barred		Enumerated(not allowed, allowed)	
Tbarred	CV-Barred		Integer (10,20,40,80 ,160,320,640 ,1280)	[4]
Cell Reserved for operator use	MP		Enumerated(reserved, not reserved)	
Cell Reservation Extension	MP		Enumerated(reserved, not reserved)	
Access Class Barred list	MD	maxAC		Default is no access class barred is applied. 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)	

Condition	Explanation
Barred	Presence The IE is mandatory present 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)	

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Mapping Info	OP		Mapping info 10.3.2.5	
Cell_selection_and_reselection_ quality_measure	MP		Enumerated (CPICH Ec/N0, CPICH RSCP)	Choice of measurement (CPICH Ec/N0 or CPICH RSCP) to use as quality measure Q for FDD cells.
CHOICE mode >FDD	MP			
>>Sintrasearch	OP		Integer (- 3220 by step of 2)	[4] [dB]
>>Sintersearch	OP		Integer (- 3220 by step of 2)	[4] [dB]
>>SsearchHCS	OP		Integer (- 10591 by step of 2)	[4] [dB]
>>RAT List	OP	1 to <maxother RAT></maxother 		
>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	
>>>S _{search,RAT}	MP		Integer (- 3220 by step of 2)	In case the value 20 is received the UE shall consider this IE as if it was absent according to [4] [dB]
>>>S _{HCS,RAT}	OP		Integer (- 10591 by step of 2)	[4] [dB]
>>>Slimit,SearchRAT	OP		Integer (- 3220 by step of 2)	[4] [dB]
>>Qqualmin	MP		Integer (- 240)	Ec/N0, [dB]
>>Qrxlevmin	MP		Integer (- 11525 by step of 2)	RSCP, [dBm]
>TDD	OP		Integer (-	[4]
	01		10591 by step of 2)	[4] [dB]
>>Sintersearch	OP		Integer (- 10591 by step of 2)	[4] [dB]
>>SsearchHCS	OP		Integer (- 10591 by step of 2)	[4] [dB]
>>RAT List	OP	1 to <maxother RAT></maxother 		
>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	
>>>S _{search,RAT}	MP		Integer (- 10591 by step of 2)	In case the value 91 is received the UE shall consider this IE as if it was absent according to [4] [dB]
>>>SHCS,RAT	OP		Integer (-	[4]

		10591 by	[dB]
		step of 2)	
>>>Slimit,SearchRAT	MP	Integer (-	[4]
		10591 by	[dB]
		step of 2)	
>>Qrxlevmin	MP	Integer (-	RSCP, [dBm]
		11525 by	
		step of 2)	
Qhyst1 _s	MP	Integer	[4]
-		(040 by	[dB]
		step of 2)	
Qhyst2 _s	CV-FDD-	Integer	Default value is Qhyst1s
-	Quality-	(040 by	[4]
	Measure	step of 2)	[dB]
Treselection _s	MP	Integer	[s]
		(031)	
HCS Serving cell Information	OP	HCS Serving	
_		cell	
		information	
		10.3.7.12	
Maximum allowed UL TX power	MP	Maximum	[dBm]
		allowed UL	UE_TXPWR_MAX_RACH in
		TX power	[4].
		10.3.6.39	

I	

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

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Qoffset1 _{s,n}	MD		Integer(- 5050)	Default value is 0. [dB]
Qoffset2 _{s,n}	CV-FDD- Quality- Measure		Integer(- 5050)	Default value is 0. [dB]
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	[dBm] UE_TXPWR_MAX_RACH in [4]. Default is the Maximum allowed UL TX power for the serving cell
HCS neighbouring cell information	OP		HCS Neighbourin g cell information 10.3.7.11	
CHOICE mode	MP			
>FDD				
>>Qqualmin	MD		Integer (- 240)	Ec/N0, [dB] Default value is Qqualmin for the serving cell
>>Qrxlevmin	MD		Integer (- 11525 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell
>TDD				
>>Qrxlevmin	MD		Integer (- 11525 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell
>GSM				
>>Qrxlevmin	MD		Integer (- 11525 by step of 2)	RXLEV, [dBm] Default value is Qrxlevmin for the serving cell

Condition	Explanation
FDD-Quality-Measure	This IE is mandatory and has a default value for Intra/Inter Frequency Cells if the IE "Cell_selection_and_reselection_quality_measure" has the value CPICH Ec/No. Otherwise the IE is Optional

10.3.2.5 Mapping Info

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Mapping List	MP	1 to <maxrat></maxrat>		
>RAT	MP		Enumerated (UTRA FDD, UTRA TDD, GSM, cdma2000)	
>Mapping Function Parameter List	MP	1 to <maxmeas Intervals></maxmeas 		
>>Function type	MP		Enumerated (linear, function type 2, function type 3, function type 4)	Type of the function within the interval.
>>Map_parameter_1	MD		Integer (099)	Parameter describing the mapping function between the quality measurement and the representing quality value, see [4]. Default value is zero for the first interval or otherwise the value of Map_parameter_2 of the interval before.
>>Map_parameter_2	MP		Integer (099)	Parameter describing the mapping function between the quality measurement and the representing quality value, see [4].
>>Upper_limit	CV-MaxInt		Integer (1MaxMeas)	Upper limit of interval for which the Map_parameter_1 and Map_parameter_2 are valid. MaxMeas = 25 if RAT = UTRA FDD / CPICH Ec/N0, MaxMeas = 91 if RAT = UTRA TDD or if RAT = UTRA FDD/ CPICH RSCP, MaxMeas = 63 if RAT = GSM.

	Condition	Explanation
MaxInt		This IEinformation is only sentmandatory present if
		Mapping Function Parameter List has not reached
		maxMeasIntervals and is not needed otherwise.

10.3.2.6 URA identity

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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 frame number/time at which the operation/changes caused by the related message shall take effect. Values between 0 and 255 indicate the absolute value of CFN (Connection Frame Number) of that frame number/time.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Activation time	MP		Integer(0 255)	CFN [10]

10.3.3.2 Capability Update Requirement

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
UE radio access FDD capability	MP		Boolean	TRUE indicates update
update requirement				required
UE radio access TDD capability	MP		Boolean	TRUE indicates update
update requirement				required
System specific capability update requirement list	OP	1 to <maxsyste mCapabilit y></maxsyste 		In this version, a maximum size of 4 for the list shall be applied and any items after the 4^{th} item in the list shall be ignored.
>System specific capability	MP		Enumerated	
update requirement			(GSM)	

Default value is:

"UE radio capability FDD update requirement" = false

"UE radio capability TDD update requirement" = false

"System specific capability update requirement" not present.

10.3.3.3 Cell update cause

Indicates the cause for cell update.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell update cause	MP		Enumerated (cell reselection, periodical cell update, uplink data transmission , paging response, re-entered service area, radio link failure, RLC unrecoverabl e error)	At least one spare value needed.

10.3.3.4 Ciphering Algorithm

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Ciphering algorithm	MP		Enumerated	
			(UEA0,	
			UEA1)	

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	
Ciphering activation time for DPCH	OP		Activation time 10.3.3.1	Used for radio bearers mapped on RLC-TM. Only applicable if the UE is already in CELL_DCH state
Radio bearer downlink ciphering activation time info	OP		RB activation time info, 10.3.4.13	Used for radio bearers mapped on RLC-AM or RLC- UM

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

10.3.3.6 CN domain specific DRX cycle length coefficient

A coefficient in the formula to count the paging occasions to be used by a specific UE (specified in [4]).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CN domain specific DRX cycle length coefficient	MP		Integer(69)	Refers to 'k' in the formula as specified in [4], Discontinuous reception

10.3.3.7 CPCH Parameters

NOTE: Only for FDD.

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

Information Element/Group	Need	Multi	Type and	Semantics description
Initial Priority Delay	OP	1 to	Telefence	Initial delays for ASC priority.
	0.	maxASC		
>NS_IP	MP		Integer (028)	Number of slots for initial fixed delay for each ASC priority
Backoff control parameters	MP			
>N_ap_retrans_max	MP		Integer (164)	Max number of AP transmissions without AP- AICH response, a PHY parameter.
>N_access_fails	MP		Integer (164)	Max number of preamble ramping cycles when NAK response received, a MAC parameter.
>NF_bo_no aich	MP		Integer (031)	Number of frames for UE backoff after N ap_retrans_max unsuccessful AP access attempts, a MAC parameter.
>NS_bo_busy	MP		Integer (063)	Number of slots for UE fixed backoff after access attempt to busy CPCH, a MAC parameter.
>NF_bo_all_busy	MP		Integer (031)	Max number of frames for UE backoff after access attempt to last busy CPCH, a MAC parameter. UE randomly selects backoff value from range (0NF_bo_all_busy)
>NF_bo_ mismatch	MP		Integer (0127)	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 (0NF_bo_mismatch)
>Т_СРСН	MP		Enumerate d (0, 1)	CPCH channel timing used to determine Tau, a PHY parameter
Power Control Algorithm	MP		Enumerate d (algorithm 1, algorithm 2)	Specifies algorithm to be used by UE to interpret TPC commands
TPC step size	CV-algo		Integer (1,	In dB
DL DPCCH BER	MP		2) Integer (063)	The BER quality value shall be set in the range $0 \le DPCCH BER \le 1$ in the unit BER_dB where:
				BER_dB_0: DPCCH BER = 0
				BER_dB_1: -∞ < Log10(DPCCH BER) < -4.03
				BER_dB_2: -4.03 ≤ Log10(DPCCH BER) < -3.965
				BER_dB_3: -3.965 ≤ Log10(DPCCH BER) < -3.9
				 BER_dB_61: -0.195 ≤ Log10(DPCCH BER) < -0.13
				BER dB 62:-0.13 ≤

	Log10(DPCCH BER) < -0.065
	BER_dB_63: -0.065 ≤ Log10(DPCCH BER) ≤ 0

Condition	Explanation
algo	The IE is mandatory <u>present</u> if "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is not needed

10.3.3.8 C-RNTI

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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)	

10.3.3.9 DRAC system information

Information element	Need	Multi	Type and reference	Semantics description
DRAC system information	MP	1 to <maxdra Cclasses></maxdra 		DRAC information is sent for each class of terminal
>Transmission probability	MP		Transmissio n probability 10.3.3.39	
>Maximum bit rate	MP		Maximum bit rate 10.3.3.20	

10.3.3.10 RRC State Indicator

Indicates to a UE the RRC state to be entered.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
RRC State indicator	MP		Enumerated(CE	
			LL_DCH,	
			CELL_FACH,	
			CELL_PCH,	
			URA_PCH)	

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 Conversational Call, Originating Streaming Call, Originating Interactive Call, Originating Background Call, Originating Subscribed traffic Call, Terminating Conversational Call, Terminating Streaming Call, Terminating Interactive Call, Terminating Interactive Call, Terminating Background Call, Emergency Call, Inter-RAT cell re-selection, Inter-RAT cell re-selection, Inter-RAT cell change order, Registration, Detach, Originating High Priority Signalling, Originating Low Priority Signalling, Terminating High Priority Signalling, Terminating Low Priority Signalling,	At least one spare value needed.

10.3.3.12 Expiration Time Factor

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Expiration Time Factor	MP		Enumerated(
			2times,	
			4times,	
			8times,	
			16times,	
			32times,	
			64times,	
			128times,	
			256times)	

10.3.3.13 Failure cause

Cause for failure to perform the requested procedure.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Failure cause	MP		Enumerated (configuration unsupported, physical channel failure, incompatible simultaneous reconfiguration, protocol error, compressed mode runtime error, cell update occurred, invalid configuration, configuration incomplete, unsupported measurement)	At least one spare value needed.

10.3.3.14 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		Failure cause 10.3.3.13	
Protocol error information	CV-ProtErr		Protocol error information 10.3.8.12	
Deleted TGPSI	CV- CompMod eErr		TGPSI 10.3.6.82	

Condition	Explanation
ProtErr	PresenceThe IE is mandatory present if the IE
	"Failure cause" has the value "Protocol error";
	otherwise the element is not needed in the message.
CompModeErr	Presence The IE is mandatory present if the IE
	"Failure cause" has the value " Compressed mode
	runtime error"; otherwise the element is not needed in
	the message

10.3.3.15 Initial UE identity

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reterence	
CHOICE UE id type	MP		_	
>IMSI (GSM-MAP)			IMSI (GSM-	
			MAP)	
			10.3.1.5	
>TMSI and LAI (GSM-MAP)				
>>TMSI (GSM-MAP)	MP		TMSI (GSM-	
			MAP)	
			10.3.1.17	
>>LAI (GSM-MAP)	MP		Location	
			Area	
			Identification	
			10.3.1.7	
>P-TMSI and RAI (GSM-MAP)				
>>P-TMSI (GSM-MAP)	MP		P-TMSI	
			(GSM-MAP)	
			10.3.1.13	
>>RAI (GSM-MAP)	MP		Routing Area	
			Identification	
			10.3.1.16	
>IMFI			IMEI	
			10.3.1.4	
>ESN (DS-41)			bitstring	TIA/EIA/IS-2000-4
			(SIZE (32))	
>IMSI (DS-41)			octetstring	TIA/EIA/IS-2000-4
			(SIZE (57))	
>IMSI and ESN (DS-41)				TIA/EIA/IS-2000-4
>>IMSI (DS-41)	MP		octetstring	TIA/EIA/IS-2000-4
			(SIZE (57))	
>>ESN (DS-41)	MP		bitstring	TIA/EIA/IS-2000-4
			(SIZE (32))	
>TMSI (DS-41)			octetstring	TIA/EIA/IS-2000-4
- \ - /			(SIZE	
			(212))	

10.3.3.16 Integrity check info

The Integrity check info contains the RRC message sequence number needed in the calculation of XMAC-I [40] 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 [40]. The Message Authentication Code bits are numbered b0-b31, where b0 is the least significant bit. The 27 MSB of the IE shall be set to zero and the 5 LSB of the IE shall be set to the used signalling radio bearer identity when the encoded RRC message is used as the MESSAGE parameter in the integrity protection algorithm.
RRC Message sequence number	MP		Integer (015)	The local RRC hyper frame number (RRC HFN) is concatenated with the RRC message sequence number to form the input parameter COUNT-I for the integrity protection algorithm. The IE value shall be set to zero when the encoded RRC message is used as the MESSAGE parameter in 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.

		reference	Semantics description
MP	4 to 5		The RRC sequence number when a new integrity protection configuration shall be applied, for CCCH (=RB0) and signalling radio bearers in the order RB0, RB1, RB2, RB3, RB4. The value for RB1 shall be ignored if this IE was included in a RRC message sent on RB1. The value for RB2 shall be ignored if this IE was included in a RRC message sent on RB2.
MP		Integer (0	
1	MР	MP	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 (UIA1)	

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)	
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 [40]

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

10.3.3.20 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	Need	Multi	Type and	Semantics description
name			reference	
Maximum bit rate	MP		integer(0512	=kbit/s
			by step of 16)	

10.3.3.21 Measurement capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Need for downlink compressed mode				
FDD measurements	MP		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on FDD
TDD measurements	CV- tdd_sup		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on TDD
GSM 900	CV- Gsm900_s upM		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on GSM 900
DCS 1800	CV- Gsm1800_ sup		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on DCS 1800
GSM 1900	CV- Gsm1900_ sup		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on GSM 1900
Multi-carrier measurement	CV- mc_sup		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on multi-carrier
Need for uplink compressed mode				
FDD measurements	MP		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on FDD
TDD measurements	CV- tdd_sup		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on TDD
GSM 900	CV- Gsm900_s up		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on GSM 900
DCS 1800	CV- Gsm1800_ sup		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on DCS 1800
GSM 1900	CV- Gsm1900_ sup		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on GSM 1900
Multi-carrier measurement	CV- mc_sup		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on multi-carrier

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Condition	Explanation
tdd_sup	Presence The IE is mandatory present if IE Multi-
	mode capability has the value "TDD" or "FDD/TDD".
	Otherwise this field is not needed in the message.
Gsm900_sup	Presence is needed The IE is mandatory present if the
	IE "Inter-RAT UE radio access capability" indicates
	support for GSM900 and not needed otherwise.
	Absence is needed if the IE "Inter-RAT UE radio
	access capability" indicates no support for GSM900.
Gsm1800_sup	Presence is needed The IE is mandatory present if the
	IE "Inter-RAT UE radio access capability" indicates
	support for GSM1800- <u>And not needed otherwise</u>
	Absence is needed if the IE "Inter-RAT UE radio
	access capability" indicates no support for GSM1800.
Gsm1900_sup	Presence is needed The IE is mandatory present if the
	IE "Inter-RAT UE radio access capability" indicates
	support for GSM1900 and not needed otherwise.
	Absence is needed if the IE "Inter-RAT UE radio
	access capability" indicates no support for GSM1900.
mc_sup	PresenceThe IE is mandatory present if IE Support of
	multi-carrier has the value TRUE. Otherwise this field
	is not needed in the message.

10.3.3.21a Measurement capability extension

This IE may be used to replace the measurement capability information provided within IE "Measurement capability".

Information Element/Group	Need	Multi	Type and	Semantics description
	MD	1 to	reierence	
FDD measurements	MP	<pre>1 to <maxfreq bandsfdd<="" pre=""></maxfreq></pre>		
>FDD Frequency band	MD	>	Enumerated(FDD2100, FDD1900)	The default value is the same as indicated in the IE "Frequency band" included in the IE " UE radio access capability extension". At least one spare value is needed
>Need for DL compressed mode	MP		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on the FDD frequency band indicated by the IE "FDD Frequency band"
>Need for UL compressed mode	MP		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on the FDD frequency band indicated by the IE "FDD Frequency band"
TDD measurements	CV- tdd_sup	1 to <maxfreq BandsTDD ></maxfreq 		
>TDD Frequency band	MP		Enumerated(a, b, c)	
>Need for DL compressed mode	MP		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on TDD frequency band indicated by the IE "TDD Frequency band"
>Need for UL compressed mode	MP		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on TDD frequency band indicated by the IE "TDD Frequency band"
GSM measurements	CV- gsm_sup	1 to <maxfreq BandsGS M></maxfreq 		
>GSM Frequency band	MP		Enumerated(GSM450, GSM480, GSM850, GSM900P, GSM900E, GSM1800, GSM1900)	as defined in [45] at least one spare value
>Need for DL compressed mode	MP		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on GSM frequency band indicated by the IE "GSM Frequency band"
>Need for UL compressed mode	MP		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on GSM frequency band indicated by the IE "GSM Frequency band"

Multi-carrier measurement	CV- mc_sup		
>Need for DL compressed mode	MP	Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on multi-carrier
>Need for UL compressed mode	MP	Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on multi-carrier

Condition	Explanation
tdd_sup	Presence The IE is mandatory present if IE Multi-
	mode capability has the value "TDD" or "FDD/TDD".
	Otherwise this field is not needed in the message.
gsm_sup	Presence The IE is mandatory present if IE Support of
	GSM has the value TRUE. Otherwise this field is not
	needed in the message.
mc_sup	Presence <u>The IE</u> is mandatory present if IE Support of
	multi-carrier has the value TRUE. Otherwise this field
	is not needed in the message.

10.3.3.22 Paging cause

Cause for a CN originated page.

1

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Paging cause	MP		Enumerated(Terminating Conversational Call, Terminating Streaming Call, Terminating Interactive Call, Terminating Background Call, Terminating High Priority Signalling, Terminating Low Priority Signalling, Terminating – cause unknown)	

10.3.3.23 Paging record

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Used paging identity	MP			
>CN identity				
>>Paging cause	MP		Paging	
			cause	
			10.3.3.22	
>>CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
>>CHOICE UE Identity	MP			
>>>IMSI (GSM-MAP)			IMSI	
			(GSM-	
			MAP)	
			10.3.1.5	
>>>TMSI (GSM-MAP)			TMSI	
			(GSM-	
			MAP)	
			10.3.1.17	
>>>P-TMSI (GSM-MAP)			P-TMSI	
			(GSM-	
			MAP)	
			10.3.1.13	
>>>IMSI (DS-41)			TIA/EIA/IS-	
			2000-4	
>>>1MSI (DS-41)			TIA/EIA/IS-	
			2000-4	
	MD			
>>U-RINTI	IVIP		U-RN11	
. CN originated page to			10.3.3.47	
connected mode UE	OP			
>>>Paging cause	MP		Paging	
			cause	
			10.3.3.22	
>>>CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
>>>Paging record type identifier	MP		Paging	
			record type	
			identifier	
			10.3.1.10	

Condition	Explanation
CHOICE Used paging identity	Condition under which the given used paging
	<i>identity</i> is chosen
CN identity	For CN originating pages (for idle mode UEs)
UTRAN identity	For UTRAN originating pages (for connected mode
	UEs)

10.3.3.24 PDCP capability

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Support for lossless SRNS	MP		Boolean	TRUE means supported
relocation				
Support for RFC2507	MP		Boolean	TRUE means supported
Max HC context space	CV-hc_sup		Integer(512,	
			1024, 2048,	
			4096, 8192)	

Condition	Explanation
hc_sup	Presence The IE is mandatory present if IE Support
	for RFC 2507 = TRUE. Otherwise this field is not
	needed in the message

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10.3.3.25 Physical channel capability

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
Downlink physical channel				
capability information				
EDD downlink physical channel	CH-			
capability	fdd rea su			
	p			
>Max no DPCH/PDSCH codes	MP		Integer	Maximum number of
			(18)	DPCH/PDSCH codes to be
				simultaneously received
>Max no physical channel bits	MP		Integer	Maximum number of physical
received			(600, 1200,	channel bits received in any
			2400, 3600,	10 ms interval (DPCH,
			4800, 7200,	PDSCH, S-CCPCH)
			9600, 14400,	
			19200,	
			20000,	
			48000	
			57600.	
			67200,	
			76800)	
>Support for SF 512	MP		Boolean	TRUE means supported
>Support of PDSCH	MP		Boolean	TRUE means supported
>Simultaneous reception of	MP		Boolean	TRUE means supported
SCCPCH and DPCH				
>Simultaneous reception of	CV-		Boolean	TRUE means supported
SCCPCH, DPCH and PDSCH	If_sim_rec			
	_pascn			
Max no of S CCDCH PI	_sup		Integer(1)	Maximum number of
>Wax no of S-CCPCH RL	if sim rec		integer(1)	simultaneous S-CCPCH radio
	"_3""_"ec			links
TDD downlink physical channel	CH-			
capability	tdd_req_su			
	р			
>Maximum number of timeslots	MP		Integer	
per frame			(114)	
>Maximum number of physical	MP		Integer	
	MP		(1224)	
			16)	
>Support of PDSCH	MP		Boolean	TRUE means supported
>Maximum number of physical	MP		Integer	
channels per timeslot			(116)	
Uplink physical channel				
capability information				
EDD uplink physical channel				
capability	fdd rog su			
capability	nuu_rey_su			
>Maximum number of DPDCH	MP		Integer (600.	
bits transmitted per 10 ms			1200, 2400,	
			4800. 9600,	
			19200.	
			28800,	
			38400,	
			48000,	
- Support of DODOLL	MD		5/600) Reelect	
>Support of PCPCH			Boolean	IRUE means supported
capability	tdd rea su			
capability	D			
>Maximum Number of timeslots	, MP		Integer	1

per frame		(114)	
>Maximum number of physical	MP	Integer	
channels per timeslot		(1, 2)	
>Minimum SF	MP	Integer	
		(1, 2, 4, 8,	
		16)	
>Support of PUSCH	MP	Boolean	TRUE means supported

	Condition	Explanation
	if_sim_rec_pdsch_sup	Presence <u>The IE</u> is mandatory <u>present</u> if IE
		True and IE Support of PDSCH – True Otherwise this
		field is not needed in the message.
	if_sim_rec	Presence The IE is mandatory present if IE capability
		Simultaneous reception of SCCPCH and DPCH =
		True. Otherwise this field is not needed in the
		message.
	tdd_req_sup	Presence <u>The IE</u> is mandatory present if IE Multi-
		mode capability has the value "IDD" or "FDD/IDD"
		and a TDD capability update has been requested in a
		in the message. Otherwise this field is not needed
1	fdd reg sup	In the message. Presence The IE is mandatory present if IE Multi
I		mode capability has the value "FDD" or "FDD/TDD"
		and a FDD capability update has been requested in a
		previous message. Otherwise this field is not needed
		in the message.

10.3.3.26 Protocol error cause

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Protocol error cause	MP		Enumerated (ASN.1 violation or encoding error, Message type non- existent or not implemented, Message not compatible with receiver state, Information element value not comprehended, Conditional information element error, Message extension not comprehended)	At least one spare value needed.

10.3.3.27 Protocol error indicator

This IE indicates whether a message was transmitted due to a protocol 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.

10.3.3.28 RB timer indicator

This IE is used to indicate to UTRAN if the timers T314 or T315 has expired in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T314 expired	MP		Boolean	TRUE means that the timer has expired or the stored value is zero. FALSE means that the timer has not expired.
T315 expired	MP		Boolean	TRUE means that the timer has expired or the stored value is zero. FALSE means that the timer has not expired.

10.3.3.29 Redirection info

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

Information Element/Group	Need	Multi	Type and	Semantics description
CHOICE Redirection Information	MP			
>Frequency info			Frequency info 10.3.6.36	
>Inter-RAT info			Inter-RAT info 10.3.7.25	

10.3.3.30 Re-establishment timer

This information element indicates which timer to associate with RAB.

Ir	nformation Element/Group name	Need	Multi	Type and reference	Semantics description
Re-	-establishment timer	MP		Enumerate	
				d(useT314,	
				useT315)	

10.3.3.31 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(con	
			gestion,	
			unspecified)	

10.3.3.32 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, user inactivity), directed signalling connection re- establishment)	

10.3.3.33 RF capability FDD

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
UE power class	MP		Enumerated(14)	as defined in [21]
Tx/Rx frequency separation	MP		Enumerated(190, 174.8- 205.2, 134.8-245.2)	In MHz as defined in [21]. NOTE: Not applicable if UE is not operating in frequency band a (as defined in [21]).

10.3.3.33a RF capability FDD extension

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
UE power class extension	MP		Enumerated(14)	as defined in [21]. Al least one spare value is needed
Tx/Rx frequency separation	MP		Enumerated(190, 174.8- 205.2, 134.8-245.2)	In MHz as defined in [21]. NOTE: Not applicable if UE is not operating in frequency band a (as defined in [21]).

10.3.3.33b RF capability TDD

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
UE power class	MP		Enumerated (14)	as defined in [22]
Radio frequency bands	MP		Enumerated(a, b, c, a+b, a+c, b+c, a+b+c)	as defined in [22]
Chip rate capability	MP		Enumerated(3.84Mcps,1. 28Mcps)	as defined in [22]

10.3.3.34 RLC capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Total RLC AM buffer size	MP		Integer (2,10,50,100 ,150,500,100 0)	Total receiving and transmitting RLC AM buffer capability in kBytes
Maximum RLC AM Window Size	MP		Integer(2047 ,4095)	Maximum supported RLC TX and RX window in UE
Maximum number of AM entities	MP		Integer (3,4,5,6,8,16 ,30)	

10.3.3.35 RLC re-establish 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-establish indicator	MP		Boolean	TRUE means re-establish required FALSE means re-establish not required

10.3.3.36 RRC transaction identifier

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RRC transaction identifier	MP		Integer (03)	

10.3.3.37 Security capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Ciphering algorithm capability	MP			
>UEA0	MP		Boolean	The value TRUE means that an unciphered connection after the Security mode control procedure is accepted by the UE.
>UEA1	MP		Boolean	The value TRUE means that UEA1, Kasumi, is supported
>Spare	MP	14	Boolean	Shall be set to FALSE by UEs complying with this version of the protocol.
Integrity protection algorithm capability	MP			
>UIA1	MP		Boolean	The value TRUE means that UIA1, Kasumi, is supported
>Spare	MP	15	Boolean	Shall be set to FALSE by UEs complying with this version of the protocol.

NOTE: The UE shall support at least one UEAx other than UEA0 and one UIAx.

10.3.3.38 START

There is a START value per CN domain. The START is used to initialise the 20 MSBs of all hyper frame numbers (MAC-d HFN, RLC UM HFN, RLC AM HFN, RRC HFN) for a CN domain.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
START	MP		Bit string (20)	The START [40] bits are numbered b0-b19, where b0 is the least significant bit.

10.3.3.39 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)	probability

10.3.3.40 Transport channel capability

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
Downlink transport channel				
elements				
Max no of bits received	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 162840)	Maximum sum of number of bits of all transport blocks received at an arbitrary time instant
Max convolutionally coded bits received	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920,	Maximum sum of number of bits of all convolutionally coded transport blocks received at an arbitrary time instant
Max turbo coded bits received	CV- turbo_dec_ sup		163840) Integer(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 at an arbitrary time instant
Maximum number of	MP		Integer(4, 8,	
simultaneous transport channels			16, 32)	
Maximum number of	MP		Integer (18)	
Max no of received transport blocks	MP		Integer(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
Maximum number of TFC in the TFCS	MP		Integer(16, 32, 48, 64, 96, 128, 256, 512, 1024)	
Maximum number of TF	MP		Integer(32, 64, 128, 256, 512, 1024)	
Support for turbo decoding Uplink transport channel capability information elements	MP		Boolean	TRUE means supported
Max no of bits transmitted	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all transport blocks transmitted at an arbitrary time instant
Max convolutionally coded bits transmitted	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480,	Maximum sum of number of bits of all convolutionally coded transport blocks transmitted at an arbitrary time instant

		40960, 81920, 163840)	
Max turbo coded bits transmitted	CV- turbo_enc_ sup	Integer(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 at an arbitrary time instant
Maximum number of simultaneous transport channels	MP	Integer(2, 4, 8, 16, 32)	
Maximum number of simultaneous CCTrCH of DCH type	CH- tdd_req_su p	Integer (18)	
Max no of transmitted transport blocks	MP	Integer(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
Maximum number of TFC in the TFCS	MP	Integer(4, 8, 16, 32, 48, 64, 96, 128, 256, 512, 1024)	
Maximum number of TF	MP	Integer(32, 64, 128, 256, 512, 1024)	
Support for turbo encoding	MP	Boolean	TRUE means supported

Condition	Explanation
turbo_dec_sup	Presence The IE is mandatory present if IE Support of
	turbo decoding = True. Otherwise this field is not
	needed in the message.
turbo_enc_sup	Presence The IE is mandatory present if IE Support of
	turbo encoding = True. Otherwise this field is not
	needed in the message.
tdd_req_sup	Presence The IE is mandatory present if IE Multi-
	mode capability has the value "TDD" or "FDD/TDD"
	and a TDD capability update has been requested in a
	previous message. Otherwise this field is not needed
	in the message.

10.3.3.41 UE multi-mode/multi-RAT capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Multi-RAT capability				
Support of GSM	MP		Boolean	
Support of multi-carrier	MP		Boolean	
Multi-mode capability	MP		Enumerated	
			(TDD, FDD,	
			FDD/TDD)	

10.3.3.42 UE radio access capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ICS version	MP		Enumerated(R99)	Indicates the release version of [42]-2 (Implementation Conformance Statement (ICS) proforma specification) that is applicable for the UE.
PDCP capability	MP		PDCP capability 10.3.3.24	
RLC capability	MP		RLC capability 10.3.3.34	
Transport channel capability	MP		Transport channel capability 10.3.3.40	
RF capability FDD	OP		RF capability FDD 10.3.3.33	
RF Capability TDD	OP		RF capability TDD 10.3.3.33b	
Physical channel capability	MP		Physical channel capability 10.3.3.25	
UE multi-mode/multi-RAT capability	MP		UE multi- mode/multi- RAT capability 10.3.3.41	
Security capability	MP		Security capability 10.3.3.37	
UE positioning capability	MP		UE positioning capability 10.3.3.45	
Measurement capability	CH- fdd_req_su p		Measuremen t capability 10.3.3.21	

Condition	Explanation
fdd_req_sup	Presence The IE is mandatory present if IE Multi-
	mode capability has the value "FDD" or "FDD/TDD"
	and a FDD capability update has been requested in a
	previous message. Otherwise this field is not needed
	in the message.

10.3.3.42a UE radio access capability extension

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Frequency band specific capability list	MP	1 to < maxFreqba ndsFDD>		
>Frequency band	MP		Enumerated(FDD2100, FDD1900)	At least one spare value is needed
>RF capability FDD extension	MD		RF capability FDD extension 10.3.3.33a	the default values are the same values as in the immediately preceding IE "RF capability FDD extension"; the first occurrence is MP
>Measurement capability extension	MP		Measuremen t capability extension 10.3.3.21a	

10.3.3.43 UE Timers and Constants in connected mode

This information element specifies timer- and constants values used by the UE in connected mode.

Information Element/Group	Need	Multi	Type and	Semantics description
T301	MD		Integer(10	Value in milliseconds. Default
1001	ine .		0.200	value is 2000. This IF should
			2000 by	not be used by the UE in this
			step of	release of the protocol.
			200, 3000.	
			4000.	
			6000,	
			8000)	
N301	MD		Integer(0	Default value is 2. This IE
			7)	should not be used by the UE
				in this release of the protocol.
T302	MD		Integer(10	Value in milliseconds. Default
			0, 200	value is 4000.
			2000 by	
			step of	
			200, 3000,	
			4000,	
			6000,	
N202	MD		8000)	Default value is 2
N302	NID		7)	Delauit value is 3.
T304	MD		Integer(10	Value in milliseconds. Default
			0, 200,	value is 2000. At least one
			400, 1000,	spare value is needed. Note 1.
			2000)	
N304	MD		Integer(0	Default value is 2. Note 1.
			7)	
T305	MD		Integer(5,	Value in minutes. Default
			10, 30, 60,	value is 30.
			120, 360,	Infinity means no update
			720,	
T207	MD		Infinity)	Value in eccande Default
1307	ND		Integer(5,	value in seconds. Default
			10, 15, 20, 30, 40, 50	value is 50.
T308	MD		30, 40, 30	Value in milliseconds, Default
1508	IVID		80 160	value is 160 Note 1
			320)	
T309	MD		Integer(1	Value in seconds. Default
			8)	value is 5. Note 1.
T310	MD		Integer(40	Value in milliseconds. Default
			320 by	value is 160. Note 1.
			step of 40)	
N310	MD		Integer(0	Default value is 4. Note 1.
			7)	
T311	MD		Integer(25	Value in milliseconds. Default
			02000	value is 2000. Note 1.
			by step of	
T040	MD		250)	Value in accorde Default
1312	MD		(0.,15)	value in seconds. Default
N312	MD		Integer (1.	Default value is 1.
			50, 100.	
			200, 400,	
			600, 800,	
			1000)	
T313	MD		Integer	Value in seconds. Default
N313	MD		(013)	Default value is 20 Note 1
U1010				Delauit value 15 20. NOLE 1.
			2, 4, 10,	
			100 200)	
T314	MD		Integer(0	Value in seconds Default
			2.4.6.8	value is 12 Note 1
			12, 16, 20)	
T315	MD		Integer	Value in seconds. Default

		(0,10, 30, 60, 180, 600, 1200, 1800)	value is 180. Note 1.
N315	MD	Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1. Note 1.
T316	MD	Integer(0, 10, 20, 30, 40, 50, infinity)	Value in seconds. Default value is 30.
T317	MD	Integer (0,10, 30, 60, 180, 600, 1200, 1800)	Value in seconds Default value is 180.

NOTE 1: If the value of SIB1 changes, the UE shall re-read SIB1 and use the new value of the parameter, if modified.

10.3.3.44 UE Timers and Constants in idle mode

This information element specifies timer- and constant values used by the UE in idle mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T300	MP		Integer(10 0, 200 2000 by step of 200, 3000, 4000, 6000, 8000)	Value in milliseconds. Default value is 1000.
N300	MP		Integer(0 7)	Default value is 3.
T312	MP		Integer(0 15)	Value in seconds. Default value is 1.
N312	MP		Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1.

10.3.3.45 UE positioning capability

Information Element/Group	Need	Multi	Type and	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 [7]. 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

10.3.3.46 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(cha nge of URA, periodic URA update, re- entered service area)	At least one spare value needed.

10.3.3.47 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)	

10.3.3.48 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		bit string(10)	

10.3.3.49 UTRAN DRX cycle length coefficient

A coefficient in the formula to count the paging occasions to be used by a specific UE (specified in [4]).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
DRX cycle length coefficient	MP		Integer(39)	Refers to 'k' in the formula as specified in [4], Discontinuous reception

10.3.3.50 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

10.3.4.0 Default configuration identity

This information element identifies a default radio parameter configuration.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Default configuration identity	MP		Integer (09)	The corresponding default configurations are specified in 13.7

10.3.4.1 Downlink RLC STATUS info

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Timer_Status_Prohibit	OP		Integer(105	Minimum time in ms between
			50 by step of	STATUS reports
			10,	
			5501000 by	
			step of 50)	
Timer_EPC	OP		Integer(50,	Time in ms
			60, 70, 80,	
			90, 100, 120,	
			140, 160,	
			180, 200,	
			300, 400,	
			500, 700,	
			900)	
Missing PDU Indicator	MP		Boolean	Value true indicates that UE
				should send a STATUS report
				for each missing PDU that is
				detected
Timer_STATUS_periodic	OP		Integer(100,	Time in milliseconds
			200, 300,	
			400, 500,	
			750, 1000,	
			2000)	

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- LosslessCr iteria		Boolean	TRUE means support
Max PDCP SN window size	CV- Lossless		Enumerated(sn255, sn65535)	Maximum PDCP sequence number window size. The handling of sequence number when the Max PDCP SN window size is 255 is specified in [23].
PDCP PDU header	MD		Enumerated (present, absent)	Whether a PDCP PDU header is existent or not. Default value is "present"
Header compression information	OP	1 to <maxpdc PAlgoType ></maxpdc 		
>CHOICE algorithm type	MP			
>>RFC2507				Header compression according to IETF standard RFC2507
>>>F_MAX_PERIOD	MD		Integer (165535)	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 (1255)	Compressed headers may not be sent more than F_MAX_TIME seconds after sending last full header. Default value is 5.
>>>MAX_HEADER	MD		Integer (6065535)	The largest header size in octets that may be compressed. Default value is 168.
>>>TCP_SPACE	MD		Integer (3255)	Maximum CID value for TCP connections. Default value is 15.
>>>NON_TCP_SPACE	MD		Integer (365535)	Maximum CID value for non- TCP connections. Default value is 15.
>>>EXPECT_REORDERING	MD		Enumerated (reordering not expected, reordering expected)	Whether the algorithm shall reorder PDCP SDUs or not. Default value is "reordering not expected".

Condition	Explanation
LosslessCriteria	This IE is mandatory present only if the IE "RLC
	mode" is "Acknowledged" and the IE "In-sequence
	delivery " is "True" and not needed otherwise.
Lossless	This IE shall be is mandatory present if the IE
	"Support for lossless SRNS relocation" Is TRUE,
	otherwise it shall be absentis not needed.

10.3.4.3 PDCP SN info

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Receive PDCP sequence number	MP		Integer(065 535)	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	Need	Multi	Type and	Semantics description
Timer_poll_prohibit	OP		Integer(105 50 by step of 10, 6001000 by step of 50)	Minimum time between polls in ms
Timer_poll	OP		Integer(105 50 by step of 10, 6001000 by step of 50)	Time in ms.
Poll_PDU	OP		Integer(1,2,4 ,8,16,32,64,1 28)	Number of PDUs, interval between pollings
Poll_SDU	OP		Integer(1,4,1 6,64)	Number of SDUs, interval between pollings
Last transmission PDU poll	MP		Boolean	TRUE indicates that poll is made at last PDU in transmission buffer
Last retransmission PDU poll	MP		Boolean	TRUE indicates that poll is made at last PDU in retransmission buffer
Poll_Window	OP		Integer(50,6 0,70,80,85,9 0,95,99)	Percentage of transmission window, threshold for polling
Timer_poll_periodic	OP		Integer(100, 200, 300, 400, 500, 750, 1000, 2000)	Time in milliseconds Timer for periodic polling.

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		Integer (015)	

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	Need	Multi	Type and	Semantics description
name			Reference	
Predefined configuration value	MP		Integer(015	
tag)	
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
UE information elements				
Re-establishment timer	MP		Re- establishme nt timer 10.3.3.30	Only one RAB supported
Signalling radio bearer information				
Signalling RB information to setup List	MP	1 to <maxsrbs etup></maxsrbs 		For each signalling radio bearer
>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24	
RB information				Only one RAB supported
RB information to setup list	MP	1 to <maxrbpe rRAB></maxrbpe 		
>RB information to setup	MP		RB information to setup 10.3.4.20	

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	
NAS Synchronization Indicator	OP		NAS	
			Synchronizat	
			ion indicator	
			10.3.4.12	
Re-establishment timer	MP		Re-	
			establishme	
			nt timer	
			10.3.3.30	

10.3.4.9 RAB info Post

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	
NAS Synchronization Indicator	OP		NAS	
			Synchronizat	
			ion indicator	
			10.3.4.12	

10.3.4.10 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 <maxrbpe rRAB></maxrbpe 		
>RB information to setup	MP		RB information to setup 10.3.4.20	

10.3.4.11 RAB information to reconfigure

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	
NAS synchronization indicator	MP		NAS Synchronizat ion info 10.3.4.12	

10.3.4.12 NAS Synchronization indicator

A container for non-access stratum information to be transferred transparently through UTRAN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
NAS Synchronization indicator	MP		Bitstring(4)	The bits are numbered b1-b4, where b1 is the least significant bit.

10.3.4.13 RB activation time info

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

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

10.3.4.14 RB COUNT-C MSB information

The MSB of the COUNT-C values of the radio bearer.

Information Element/Group	Needed	Multi	Type and	Semantics description
	MD			
RB Identity	IVIP		RB Identity	
			10.3.4.16	
COUNT-C-MSB-uplink	MP		Integer (0	25 MSBs from COUNT-C
			2^25-1)	associated to this RB
COUNT-C-MSB-downlink	MP		Integer (0	25 MSBs from COUNT-C
			2^25-1)	associated to this RB

10.3.4.15 RB COUNT-C information

The COUNT-C values of the radio bearer.

Information Element/Group name	Needed	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.16	
COUNT-C-uplink	MP		Integer (0 2^32-1)	
COUNT-C-downlink	MP		Integer (0 2^32-1)	

10.3.4.16 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(132)	Values 1-4 shall only be used for signalling radio bearers. The IE value minus one shall be used as BEARER in the ciphering algorithm.

10.3.4.17 RB information to be affected

Information Element/Group	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity	
			10.3.4.16	
RB mapping info	MP		RB mapping	
			info	
			10.3.4.21	

10.3.4.18 RB information to reconfigure

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
RB identity	MP		RB identity	
			10.3.4.16	
PDCP info	OP		PDCP info	
			10.3.4.2	
PDCP SN info	OP		PDCP SN	PDCP sequence number info
			info	from the network. Present only
			10.3.4.3	in case of lossless SRNS
				relocation.
RLC info	OP		RLC info	
			10.3.4.23	
RB mapping info	OP		RB mapping	
-			info	
			10.3.4.21	
RB stop/continue	OP		Enumerated(
			stop,	
			continue)	

10.3.4.19 RB information to release

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

10.3.4.20 RB information to setup

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.16	
PDCP info	OP		PDCP info 10.3.4.2	
CHOICE RLC info type	MP			
>RLC info			RLC info 10.3.4.23	
>Same as RB			RB identity 10.3.4.16	Identity of RB with exactly the same RLC info IE values
RB mapping info	MP		RB mapping info 10.3.4.21	

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

10.3.4.21 RB mapping info

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Information for each multiplexing	MP	1 to		
option		<maxrbm< td=""><td></td><td></td></maxrbm<>		
		uxOptions>		
>RLC logical channel mapping indicator	CV-UL- RLCLogica IChannels		Boolean	TRUE indicates that the first logical channel shall be used for data PDUs and the second logical channel shall be used for control PDUs. FALSE indicates that control and data PDUs can be sent on either of the two logical channels. This parameter is not used in this release and shall be set to
				TRUE.
>Number of uplink RLC logical	CV-UL-	1 to		1 or 2 logical channels per
channels	RLC info	MaxLoCHp erRLC		RLC entity or radio bearer RLC [16]
>>Uplink transport channel type	MP		Enumerated(DCH,RACH, CPCH,USC H)	CPCH is FDD only USCH is TDD only
>>ULTransport channel identity	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	This is the ID of a DCH or USCH (TDD only) that this RB could be mapped onto.
>>Logical channel identity	OP		Integer(115)	This parameter is used to distinguish logical channels multiplexed by MAC on a transport channel.
>>CHOICE RLC size list	MP			The RLC sizes that are allowed for this logical channel For radio bearers mapped to RACH, "Explicit list" is the only valid choice. The UE shall regard all other choices as undefined IE values and handle these as specified in clause 9.
>>>All			Null	All RLC sizes listed in the Transport Format Set.
>>>Configured			Null	The RLC sizes configured for this logical channel in the <i>Transport Format Set.</i> 10.3.5.23 if present in this message or in the previously stored configuration otherwise
>>>Explicit List		1 to		Lists the RLC sizes that are valid for the logical channel
>>>>RLC size index	MP		Integer(1m axTF)	The integer number is a reference to the <i>RLC size</i> which arrived at that position in the <i>Transport Format Set</i> 10.3.5.23
>>MAC logical channel priority	MP		Integer(18)	This is priority between a user's different RBs (or logical channels). [15]
>Downlink RLC logical channel info	CV-DL- RLC info			
>>Number of downlink RLC logical channels	MD	1 to MaxLoCHp erRLC		1 or 2 logical channels per RLC entity or radio bearer RLC [16] Default value is that parameter values for DL are exactly the same as for corresponding UL

I

			logical channel. In case two multiplexing options are specified for the UL, the first options shall be used as default for the DL. As regards to the IE "Channel type", rule is specified in 8.6.4.8.
>>>Downlink transport channel type	MP	Enumerated(DCH,FACH, DSCH,DCH+ DSCH)	
>>>DL DCH Transport channel identity	CV-DL- DCH	Transport channel identity 10.3.5.18	
>>>DL DSCH Transport channel identity	CV-DL- DSCH	Transport channel identity 10.3.5.18	
>>>Logical channel identity	OP	Integer(115)	16 is reserved

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

10.3.4.22 RB with PDCP information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.16	
PDCP SN info	MP		PDCP SN info 10.3.4.3	PDCP sequence number info from the sender of the message for lossless SRNS relocation.

10.3.4.23 RLC info

Information Element/Group	Need	Multi	Type and	Semantics description
CHOICE Unlink RLC mode	OP		Telefelice	Indicates if Acknowledged
				Unacknowledged or Transparent mode RLC shall be used
>AM RLC				
>>Transmission RLC discard	MP		Transmission RLC discard 10.3.4.25	
>>Transmission window size	MP		Integer(1,8,16,3 2,64,128,256,51 2,768,1024,153 6,2047,2560,30 72,3584,4095)	Maximum number of RLC PUs sent without getting them acknowledged. This parameter is needed if acknowledged mode is used. UE shall also assume that the UTRAN receiver window is equal to this value.
>>Timer_RST	MP		Integer(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	Elapsed time in milliseconds. It is used to trigger the retransmission of RESET PDU.
>>Max_RST	MP		Integer(1, 4, 6, 8, 12 16, 24, 32)	The maximum number of retransmission of RESET PDU
>>Polling info	OP		Polling info 10.3.4.4	
>UM RLC				
>>Transmission RLC discard	OP		Transmission RLC discard 10.3.4.25	
>IM RLC			Transmission	
>> transmission RLC discard	OP		RLC discard 10.3.4.25	
>>Segmentation indication	MP		Boolean	TRUE indicates that segmentation is performed.
CHOICE Downlink RLC mode	OP			Indicates if Acknowledged, Unacknowledged or Transparent mode RLC shall be used
>AM RLC				
>>In-sequence delivery	MP		Boolean	TRUE indicates that RLC shall preserve the order of higher layer PDUs when these are delivered. FALSE indicates that receiving RLC entity could allow SDUs to be delivered to the higher layer in different order than submitted to RLC sublayer at the transmitting side.
>>Receiving window size	MP		Integer(1,8,16,3 2,64,128,256,51 2,768,1024,153 6,2047,2560,30 72,3584,4095)	Maximum number of RLC PUs allowed to be received. This parameter is needed if acknowledged mode is used. UE shall also assume that the UTRAN transmitter window is equal to this value
>>Downlink RLC status Info	MP		Downlink RLC status info 10.3.4.1	
>UM RLC				(No data)
>TM RLC				

>>Segmentation indication	MP	Boolean	IRUE indicates that
			segmentation is performed.

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

10.3.4.24 Signalling RB information to setup

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MD		RB identity 10.3.4.16	Default value is specified in subclause 8.6.4.1
CHOICE RLC info type	MP			
>RLC info			RLC info	
			10.3.4.23	
>Same as RB			RB identity	Identity of RB with exactly the
			10.3.4.16	same RLC info IE values
RB mapping info	MP		RB mapping	
-			info	
			10.3.4.21	

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

10.3.4.25 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", "Discard after Max_DAT retransmissions" or "No_discard". For unacknowledged mode and transparent 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		Integer(50,6 0, 70, 80, 90, 100, 120, 140, 160, 180, 200, 300, 400, 500, 700, 900)	Elapsed time in milliseconds. It is used to trigger the retransmission of a STATUS PDU containing an MRW SUFI field
>>Timer_discard	MP		Integer(100, 250, 500, 750, 1000, 1250, 1500, 1750, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 7500)	Elapsed time in milliseconds before a SDU is discarded.
>>MaxMRW	MP		Integer(1, 4, 6, 8, 12 16, 24, 32)	It is the maximum value for the number of retransmissions of a MRW command
>Timer based no explicit				
>>Timer_discard	MP		Integer(10,2 0,30,40,50,6 0,70,80,90,1 00)	Elapsed time in milliseconds before a SDU is discarded.
	MD		Integer(1, 2	Number of retransmissions of
	IVIE		3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40)	a PDU before a SDU is discarded.
>>Timer_MRW	MP		Integer(50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200, 300, 400, 500, 700, 900)	Elapsed time in milliseconds. It is used to trigger the retransmission of a STATUS PDU containing an MRW SUFI field
>>MaxMRW	MP		Integer(1, 4, 6, 8, 12 16, 24, 32)	It is the maximum value for the number of retransmissions of a MRW command
>No discard				
>>Max_DAT	MP		Integer(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30,	Number of retransmissions of a PDU before the RLC entity is reset.

	35, 40)	

CHOICE SDU Discard Mode	Condition under which the given <i>SDU Discard</i> <i>Mode</i> 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
Downlink transport channel type	MP		Enumerated(DCH,DSCH)	
DL Transport channel identity	MP		Transport channel identity 10.3.5.18	
CHOICE DL parameters				
>Explicit				
>>TFS	MP		Transport Format Set 10.3.5.23	
>SameAsUL				
>>Uplink transport channel type	MP		Enumerated(DCH,USCH)	USCH is TDD only
>>UL TrCH identity	MP		Transport channel identity 10.3.5.18	Same TFS applies as specified for indicated UL TrCH
DCH quality target	OP		Quality target 10.3.5.10	
Transparent mode signalling info	CV- MessageT ype		Transparent mode signalling info 10.3.5.17	This IE is not used in RB RELEASE message nor RB RECONFIGURATION message

Condition	Explanation
MessageType	This IE is absent-not needed in Radio Bearer Release
	message and Radio Bearer Reconfiguration
	message. Otherwise it is OPTIONAL optional.

10.3.5.2 Added or Reconfigured UL TrCH information

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

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

10.3.5.3 CPCH set ID

NOTE: Only for FDD.

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

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

10.3.5.4 Deleted DL TrCH information

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

10.3.5.5 Deleted UL TrCH information

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

10.3.5.6 DL Transport channel information common for all transport channels

Information Element/Group	Need	Multi	Type and	Semantics description
SCCPCH TFCS	OP		Transport Format Combination Set 10.3.5.20	This IE should be absent within IE "Predefined RB configuration"
CHOICE mode	MP			Although this IE is not always required, need is MP to align with ASN.1
>FDD				
>>CHOICE DL parameters	OP			
>>>Explicit				
>>>>DL DCH TFCS	MP		Transport Format Combination Set 10.3.5.20	Although this IE is not always required, need is MP to align with ASN.1
>>>SameAsUL				(no data)
>TDD				
>>Individual DL CCTrCH information	OP	1 to <maxcctr CH></maxcctr 		
>>>DL TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Identifies a special CCTrCH for shared or dedicated channels.
>>>CHOICE DL parameters	MP			
>>>>Independent				
>>>>DL TFCS	MP		Transport format combination set 10.3.5.20	
>>>SameAsUL				
>>>>UL DCH TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Same TFCS applies as specified for the indicated UL DCH TFCS identity except for information applicable for UL only

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

10.3.5.7 DRAC Static Information

NOTE: Only for FDD.

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Transmission Time Validity	MP		Integer(1256)	number of frames
Time duration before retry	MP		Integer(1256)	number of frames
DRAC Class Identity	MP		Integer(1	Indicates the class of
			maxDRACclass	DRAC parameters to use
			es)	in SIB10 message

10.3.5.8 Power Offset Information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Gain Factors	MP			
>Signalled Gain Factors				
>>CHOICE mode				
>>>FDD				
>>>>Gain Factor β_c	MP		Integer (0 15)	For UL DPCCH or control part of PRACH or PCPCH
>>>TDD				(no data)
>>Gain Factor β_d	MP		Integer (015)	For UL DPDCH or data part of PRACH or PCPCH in FDD and all uplink channels in TDD
>>Reference TFC ID	OP		Integer (03)	If this TFC is a reference TFC, indicates the reference ID.
>Computed Gain Factors				
>>Reference TFC ID	MP		Integer (0 3)	Indicates the reference TFC Id of the TFC to be used to calculate the gain factors for this TFC. In case of using computed gain factors, at least one signalled gain factor is necessary for reference.
CHOICE mode	MP			
>FDD				
>>Power offset P p-m	OP		Integer(- 510)	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) Needed only for PRACH
>TDD				(no data)

CHOICE Gain Factors	Condition under which the way to signal the Gain Factors is chosen
Signalled Gain Factors	The values for gain factors β_c (only in FDD mode) and β_d are signalled directly for a TFC.
Computed Gain Factors	The gain factors β_c (only in FDD mode) and β_d are computed for a TFC, based on the signalled settings for the associated reference TFC.

10.3.5.9 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	MP		UL Transport channel information common for all transport channels 10.3.5.24	
Added or Reconfigured TrCH information				
Added or Reconfigured UL TrCH information	MP	1 to <maxtrch preconf></maxtrch 		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
DL Transport channel information common for all transport channels	MP		DL Transport channel information common for all transport channels 10.3.5.6	
Downlink transport channels				
Added or Reconfigured DL TrCH information	MP	1 to <maxtrch preconf></maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	

10.3.5.10 Quality Target

Information Element/Group name	Need	Multi	Type and reference	Semantics description
BLER Quality value	MP		Real(-6.3 0 by step of 0.1)	Signalled value is Log10(Transport channel BLER quality target)

10.3.5.11 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, dynamic)	In ms. The value dynamic is only used in TDD mode
Type of channel coding	MP		Enumerated(No coding, Convolutiona I, Turbo)	
Coding Rate	CV-Coding		Enumerated(1/2, 1/3)	
Rate matching attribute	MP		Integer(1hi RM)	
CRC size	MP		Integer(0, 8, 12, 16, 24)	in bits

Condition	Explanation
Coding	This IE is only mandatory present if IE "Type of channel coding" is "Convolutional" and not needed
	<u>otherwise</u>

10.3.5.12 TFCI Field 2 Information

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

Information Element/Group	Need	Multi	IE type and	Semantics description
name			reference	
CHOICE Signalling method	MP			
>TFCI range				
>>TFCI(field 2) range	MP	1 to <maxpds CH- TFCIgroup S></maxpds 		
>>>Max TFCI(field2) value	MP		Integer(110 23)	This is the Maximum value in the range of TFCI(field2) values for which the specified CTFC(field2) applies
>>>TFCS Information for DSCH (TFCI range method)	MP		TFCS Information for DSCH (TFCI range method) 10.3.5.14	
>Explicit				
>>TFCS explicit configuration	MP		TFCS explicit configuration 10.3.5.13	

10.3.5.13 TFCS Explicit Configuration

Information Element/Group	Need	Multi	IE type and	Semantics description
CHOICE TECS representation	MP		101010100	
>Complete reconfiguration				
>>TFCS complete	MP		TECS	
reconfiguration information			Reconfigurat	
······································			ion/Addition	
			information	
			10.3.5.15	
>Addition				
>>TFCS addition information	MP		TFCS	
			Reconfigurat	
			ion/Addition	
			information	
			10.3.5.15	
>Removal				
>>TFCS removal information	MP		TFCS	
			Removal	
			Information	
			10.3.5.16	
>Replace				
>>TFCS removal information	MP		TFCS	
			Removal	
			Information	
			10.3.5.16	
>>TFCS addition information	MP		TECS	
			Reconfigurat	
			ion/Addition	
			Information	
			10.3.5.15	

10.3.5.14 TFCS Information for DSCH (TFCI range method)

Information Element/Group	Need	Multi	IE type and	Semantics description
	MD		Telefence	
	IVIP			
>2 DIL CIFC				
>>2bit CTFC	MP		Integer(03)	
>4 bit CTFC				
>>4bit CTFC	MP		Integer(015	
>6 bit CTFC				
>>6 bit CTFC	MP		Integer(063	
>8 bit CTFC				
>>8 bit CTFC	MP		Integer(025 5)	
>12 bit CTFC				
>>12 bit CTFC	MP		Integer(040 95)	
>16 bit CTFC				
>>16 bit CTFC	MP		Integer(065 535)	
>24 bit CTFC				
>>24 bit CTFC	MP		Integer(016 777215)	

10.3.5.15 TFCS Reconfiguration/Addition Information

Information Element/Group	Need	Multi	IE type and	Semantics description
	MD		Telefence	
2 bit CTEC			-	
>>CTFC information	MP	1 to		
		<maxtfc></maxtfc>		
>>>2bit CTFC	MP		Integer(03)	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.
>4 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>4bit CTFC	MP		Integer(015	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.
>6 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>6 bit CTFC	MP		Integer(063	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.
>8 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>8 bit CTFC	MP		Integer(025 5)	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.
>12 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>12 bit CTFC	MP		Integer(040 95)	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.
>16 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>16 bit CTFC	MP		Integer(065 535)	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.
>24 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>24 bit CTFC	MP		Integer(016 777215)	
>>>Power offset Information	OP		Power Offset Information	Needed only for uplink physical channels.

10.3.5.16 TFCS Removal Information

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
Removal TFCI information	MP	1 to <maxtfc></maxtfc>		
>TFCI	MP		Transport Format Combination (TFC) 10.3.5.19	In TDD 0 is a reserved value

10.3.5.17 Transparent mode signalling info

Information Element	Need	Multi	Type and reference	Semantics description
Type of message	MP		Enumerated (TRANSPORT FORMAT COMBINATION CONTROL)	Indicates which type of message sent on the transparent mode signalling DCCH
CHOICE Transparent signalling mode	MP			
>Mode 1				(no data)
>Mode 2				
>>Controlled transport channels list	MP	1 to <maxtrc H></maxtrc 		The transport channels that are effected by the rate control commands sent on this transparent mode DCCH
>>>UL Controlled transport channels	MP		Transport channel identity, 10.3.5.18	transport channel type = DCH

10.3.5.18 Transport channel identity

This information element is used to distinguish transport channels. Transport channels of different type (RACH, CPCH, USCH, FACH/PCH, DSCH or DCH) have separate series of identities. This also holds for uplink and downlink transport channel identities (i.e. for DCH). Depending on in which context a transport channel identity *n* that is sent, it will have different meaning

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transport channel identity	MP		Integer(132)	

10.3.5.19 Transport Format Combination (TFC)

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transport format combination	MP		Integer (0 1023)	

10.3.5.20 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 TDD, different coded composite transport channels have independent transport format combination sets and thus independent TFCI values.

For FDD, Where the UE is assigned access to one or more DSCH transport channels, a TFCI(field2) is used to signal the transport format combination for the DSCH. The following two cases exist:

- Case 1:

Using one TFCI-word on the physical layer. A logical split determines the available number of transport format combinations for DCH and DSCH.

- Case 2:

Using split TFCI on the physical layer. Two TFCI-words, each having a static length of five bits, are used.

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
CHOICE TFCI signalling	MP			'Normal' : meaning no split in the TFCI field (either 'Logical' or 'Hard') 'Split' : meaning there is a split in the TFCI field (either 'Logical' or 'Hard'). This value is only valid for FDD downlink when using DSCH.
>Normal				
>>TFCI Field 1 Information	MP		TFCS explicit Configuratio n 10.3.5.13	
>Split				
>>Split type	OP		Enumerated ('Hard', 'Logical')	'Hard' : meaning that TFCI (field 1) and TFCI (field 2) are each 5 bits long and each field is block coded separately. 'Logical' : meaning that on the physical layer TFCI (field 1) and TFCI (field 2) are concatenated, field 1 taking the most significant bits and field 2 taking the least significant bits). The whole is then encoded with a single block code.
>>Length of TFCI(field2)	OP		Integer (110)	This IE indicates the length measured in number of bits of TFCI(field2)
>>TFCI Field 1 Information	OP		TFCS explicit Configuratio n 10.3.5.13	
>>TFCI Field 2 Information	OP		TFCI field 2 information 10.3.5.12	

CHOICE TFCI signalling	Condition under which <i>TFCI signalling type</i> is chosen
Normal	It is chosen when no split in the TFCI field.
Split	It is chosen when split in the TFCI field. This value is only valid for FDD downlink when using DSCH.

10.3.5.21 Transport Format Combination Set Identity

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCS ID	MD		Integer (18)	Indicates the identity of every TFCS within a UE. Default value is 1.
Shared Channel Indicator	MP		Boolean	TRUE indicates the use of shared channels. Default is false.

10.3.5.22 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			Transport	
format combination index			format	
			combination	
			10.3.5.19	
>Allowed transport format		1 to		
combination list		<maxtfc></maxtfc>		
>>Allowed transport format	MP		Transport	
combination			format	
			combination	
			10.3.5.19	
>Non-allowed transport format		1 to		
combination list	145	<max1fc></max1fc>	– ,	
>>Non-allowed transport format	MP		Transport	
combination			iomial	
			10 3 5 10	
>Restricted TrCH information		1 to	10.3.3.13	
		<maxtrch< td=""><td></td><td></td></maxtrch<>		
		>		
>>Uplink transport channel type	MP	-	Enumerated(USCH is TDD only
			DCH, USCH)	
>>Restricted UL TrCH identity	MP		Transport	
,			channel	
			identity	
			10.3.5.18	
>>Allowed TFIs	OP	1 to		
		<maxtf></maxtf>		
>>>Allowed TFI	MP		Integer(031	
)	
>Full transport format				(No data)
combination set				

10.3.5.23 Transport Format Set

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		reference	
 >Dedicated transport channels 	MP			The transport channel that is
				configured with this TFS is of type DCH
>>Dynamic Transport Format Information	MP	1 to <maxtf></maxtf>		
>>>RLC Size	MP		Integer(049	Unit is bits
			92)	
>>>Number of TBs and TTI List	MP	1 to <maxtf></maxtf>		Present for every valid number of TB's (and TTI) for this RLC Size.
>>>>Transmission Time Interval	CV- dynamicTT I		Integer(10,2 0,40,80)	Unit is ms.
>>>>Number of Transport blocks	MP		Integer(051 2)	
>>>CHOICE Logical Channel	MP			The logical channels that are
List				allowed to use this RLC Size
>>>>ALL			Null	All logical channels mapped to this transport channel.
>>>>Configured			Null	The logical channels
				configured to use this RLC
				size in the <i>RB mapping into</i> .
				10.3.4.21 If present in this
				stored configuration otherwise
>>>>Explicit List		1 to 15		Lists the logical channels that
				are allowed to use this RLC size.
>>>>RB Identity	MP		RB identity	
>>>>LogicalChannel	CH-UL- RLCLogica		10.3.4.16 Integer(01)	Indicates the relevant UL logical channel for this RB. "0"
	IChannels			corresponds to the first, T corresponds to the second UL logical channel configured for this RB in the IE "RB mapping
>>Semi-static Transport Format	MP		Semi-static	
Information			Transport Format Information	
			10.3.5.11	
>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 <maxtf></maxtf>		Note
>>>RLC Size	MP		Integer(049 92)	Unit is bits
>>>Number of TBs and TTI List	MP	1 to <maxtf></maxtf>		Present for every valid number of TB's (and TTI) for this RLC Size.
>>>>Number of Transport blocks	MP		Integer(051 2)	
>>>>CHOICE mode	MP			
>>>>FDD				(no data)
>>>>TDD				
>>>>>Transmission Time	CV-		Integer(10,2	Unit is ms.
Interval	dynamicTT		0,40,80)	

I

Information Element/Group	Need	Multi	Type and	Semantics description
name	-		reference	
	1			
>>>CHOICE Logical Channel List	MP			The logical channels that are allowed to use this RLC Size. For radio bearers mapped to RACH, the UE shall regard "Explicit list" as an undefined IE value and handle these as specified in clause 9.
>>>>ALL			Null	All logical channels mapped to this transport channel.
>>>Configured			Null	The logical channels configured to use this RLC size in the <i>RB mapping info</i> . 10.3.4.21 if present in this message or in the previously stored configuration otherwise
>>>Explicit List		1 to 15		Lists the logical channels that are allowed to use this RLC size.
>>>>RB Identity	MP		RB identity 10.3.4.16	
>>>>LogicalChannel	CV-UL- RLCLogica IChannels		Integer(01)	Indicates the relevant UL logical channel for this RB. "0" corresponds to the first, "1" corresponds to the second UL logical channel configured for this RB in the IE "RB mapping info".
>>Semi-static Transport Format Information	MP		Semi-static Transport Format Information 10.3.5.11	

Condition	Explanation
dynamicTTI	This IE is included mandatory present if dynamic TTI usage is indicated in IE Transmission Time Interval in Semi-static Transport Format Information. Otherwise it is not needed.
UL-RLCLogicalChannels	If "Number of uplink RLC logical channels" in IE "RB mapping info" in this message is 2 or the IE "RB mapping info" is not present in this message and 2 UL logical channels are configured for this RB, then this IE is <u>mandatory</u> present. Otherwise this IE is not needed.

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 [34].

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Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
PRACH TFCS	OP		Transport	This IE should not be included
			format	in this version of the protocol.
			combination	
			set 10.3.5.20	
CHOICE mode	OP			
>FDD				
>>TFC subset	MD		Transport	Default value is the complete
			Format	existing set of transport format
			Combination	combinations
			Subset	
			10.3.5.22	
>>UL DCH TFCS	MP		Transport	
			formation	
			combination	
			set 10.3.5.20	
	0.0			
>>Individual OL CC IrCH	OP	1 to		
Information				
	MD		Transport	Identifies a special CCTrCU
>>>UL TFCS Identity	IVIP		format	for abared or dedicated
			ioiiiai	
			set identity	channels.
			10 3 5 21	
	MP		Transport	
>>>0E 11 00	IVII		format	
			combination	
			set 10.3.5.20	
>>>TFC subset	MD		Transport	Default value is the complete
			Format	existing set of transport format
			Combination	combinations
			Subset	
			10.3.5.22	

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

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	MP	maxASCm ap		
>AC-to-ASC mapping	MP		Integer(07)	Mapping of Access Classes to Access Service Classes (see subclause 8.5.13.)

10.3.6.2 AICH Info

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Channelisation code	MP		Integer(025 5)	SF is fixed and equal to 256
STTD indicator	MP		STTD Indicator 10.3.6.78	
AICH transmission timing	MP		Enumerated (0, 1)	See parameter AICH_Transmission_Timing in [26]

10.3.6.3 AICH Power offset

NOTE: Only for FDD.

This parameter is used to indicate the power level of AICH, AP-AICH and CD/CA-ICH channels. This is the power per transmitted Acquisition Indicator, AP Acquisition Indicator or CD/CA Indicator minus power of the Primary CPICH.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
AICH Power offset	MP		Integer(- 22+5)	Offset in 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	Need	Multi	Type and	Semantics description
name			reference	
Allocation Activation Time	MP		Integer	Start the allocation period at
			(0255)	the given CFN.
Allocation Duration	MP		Integer	Total number of frames for the
			(1256)	allocation period.

10.3.6.5 Alpha

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Alpha Value	MP		Enumerated(0, 1/8, 2/8, 3/8, 4/8, 5/8, 6/8, 7/8, 1)	

10.3.6.6 ASC setting

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>FDD				
>>Available signature Start Index	MP		Integer(015)	
>>Available signature End Index	MP		Integer(015)	
>>Assigned Sub-Channel Number	MP		Bitstring(4)	This IE defines the subchannel assignment as specified in 8.6.6.29. The bits are numbered b0 to b3, where b0 is the least significant bit.
>TDD				
>>Available Channelisation codes indices	MD		Bitstring(8)	Each bit indicates availability of a channelisation code index, where the channelisation code indices are numbered "channelisation code index 0" to "channelisation code index 0" to "channelisation code index 7". The value 1 of a bit indicates that the channelisation code index is available for the ASC this IE is associated to. The value 0 of a bit indicates that the channelisation code index is not available for the ASC this IE is associated to. Default is that all channelisation codes defined in PRACH Info are available.
>>CHOICE subchannel size	MP			
>>>Size1		1		
>>>Available Subchannels	MP		null	Indicates that all Subchannels are available.
>>>Size2				
>>>Available Subchannels	MD		Bitstring (2)	NOTE 1
>>>Size4				
>>>Available Subchannels	MD		Bitstring (4)	NOTE 1
	MD		Ditatria a (C)	NOTE 4
>>>>Available Subchannels	MD		Bitstring (8)	NULE 1

NOTE 1: Each bit indicates availability of a subchannel, where the subchannels are numbered subchannel 0, subchannel 1 etc. The value 1 of a bit indicates that the subchannel is available for the ASC this IE is associated with. The value 0 of a bit indicates that the subchannel is not available for the ASC this IE is associated with. Default value of the IE is that all subchannels within the size are available for the ASC this IE is this IE is associated with.

10.3.6.7 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

10.3.6.8 CCTrCH power control info

Parameters used by UE to set the SIR target value for uplink open loop power control in TDD.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
TFCS Identity	OP		Transport Format Combination Set Identity 10.3.5.21	TFCS Identity of this CCTrCH. Default value is 1.
Uplink DPCH power control info	MP		Uplink DPCH power control info 10.3.6.91	

10.3.6.8a Cell and Channel Identity info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Burst type	MP		Enumerated (Type1, Type2)	Identifies the channel in combination with the Midamble shift and slot number
Midamble Shift	MP		Integer (015)	
Time Slot	OP		Timeslot number 10.3.6.84	This IE is present only if no IPDL scheme is configured in the reference cell. Otherwise the slot is defined by the IPDL configuration.
Cell parameters ID	MP		Cell parameters ID 10.3.6.9	Identifies the cell

10.3.6.9 Cell parameters Id

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Cell parameter Id	MP		Integer(012	

10.3.6.10 Common timeslot info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
2 nd interleaving mode	MD		Enumerated(Frame, Timeslot)	Frame timeslot related interleaving. Default value is "Frame"
TFCI coding	MD		Integer(4,8,1 6,32)	Describes the way the TFCI bits are coded in bits. Defaults is no TFCI bit: 4 means 1 TFCI bit is coded with 4 bits. 8 means 2 TFCI bits are coded with 8 bits. 16 means 3 – 5 TFCI bits are coded with 16 bits. 32 means 6 – 10 TFCI bits coded with 32 bits.
Puncturing limit	MP		Real(0.401. 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

10.3.6.11 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. In TDD constant values are used for open loop power control of PRACH, USCH and UL DPCH as defined in subclause 8.5.7.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Constant value	MP		Integer (- 3510)	

10.3.6.12 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	Need	Multi	Type and	Semantics description
name			reference	
CPCH set ID	MP		Integer (1	Identifier for CPCH set info.
			<maxcpchs< td=""><td></td></maxcpchs<>	
			ets>)	
Dynamic persistence level	MP	1 to		
		<maxtf-< td=""><td></td><td></td></maxtf-<>		
		CPCH>		
>Dynamic persistence level	MP		Dynamic	Persistence level for transport
			persistence	format.
			level	
			10.3.6.35	

10.3.6.13 CPCH set info

NOTE: Only for FDD.

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

Information Element/Group	Need	Multi	Type and reference	Semantics description
CPCH set ID	MP		CPCH set ID 10.3.5.3	Indicates the ID number for a particular CPCH set allocated to a cell.
TFS	MP		Transport Format Set 10.3.5.23	Transport Format Set Information allocated to this CPCH set.
TFCS	MP		Transport Format Combination Set 10.3.5.20	Transport Format Set Information allocated to this CPCH set
AP preamble scrambling code	MP		Integer (079)	Preamble scrambling code for AP in UL
AP-AICH channelisation code	MP		Integer(025 5)	Channelisation code for AP- AICH in DL
CD preamble scrambling code CD/CA-ICH channelisation code	MP MP		Integer (079) Integer	Preamble scrambling code for CD in UL Channelisation code for
Available CD access slot subchannel	CV- CDSigPres ent	1 to <maxpcp CH- CDsubCh></maxpcp 	(0255)	CD/CA-ICH in DL Lists the set of subchannels to be used for CD access preambles. Note: if not present, all subchannels are to be used without access delays
>CD access slot subchannel	MP		Integer (011)	dolayo.
Available CD signatures	OP	1 to <maxpcp CH-CDsig></maxpcp 		Signatures for CD preamble in UL. Note: if not present, all signatures are available for use.
>CD signatures	MP		Integer (015)	
DeltaPp-m UL DPCCH Slot Format	MP MP		Integer (- 1010) Enumerated (0,1,2)	In dB. Power offset between the transmitted CD preamble and UL DPCCH of the power control preamble or message part (added to the preamble power to calculate the power of the UL DPCCH) Slot format for UL DPCCH in power control preamble and in
N_start_message	MP		Integer (18)	message part Number of Frames for start of
N_EOT	MP		Integer(07)	Actual number of appended EOT indicators is T_EOT = N_TTI * ceil(N_EOT/N_TTI), where N_TTI is the number of frames per TTI and "ceil" refers to rounding up to nearest integer.
Channel Assignment Active	OP		Boolean	When present, indicates that Node B send a CA message and VCAM mapping rule (14.11) shall be used.
CPCH status indication mode	MP		CPCH status indication mode 10.3.6.14	
PCPCH Channel Info.	MP	1 to <maxpcp CHs></maxpcp 		
>UL scrambling code	MP		Integer (079)	For PCPCH message part

>DL channelisation code	MP		Integer	For DL DPCCH for PCPCH
			(0511)	message part
>DL scrambling code	MD		Secondary	Default is the same scrambling
			Code	CPICH.
			10.3.6.74	
>PCP length	MP		Enumerated	Indicates length of power
			(0, 8)	control preamble, Oslots (no
				preamble used) or 8 slots
>UCSM Info	CV-NCAA		•	
>>Minimum Spreading Factor	мР		Integer	The UE may use this PCPCH
			(4,0,10,32,0	to or greater than the indicated
			4,120,230)	minimum Spreading Factor
				The Spreading Factor for initial
				access is the minimum
				Spreading Factor.
>>NF_max	MP		Integer	Maximum number of frames
			(164)	for PCPCH message part
>>Channel request parameters	MP			Required in UE channel
	MP	1 to		AP preamble signature codes
	1011	<maxpcp< td=""><td></td><td>for selection of this PCPCH</td></maxpcp<>		for selection of this PCPCH
		CH-APsia>		channel.
>>>>AP signature	MP	Ŭ	Integer	
-			(015)	
>>>Available AP access slot	OP	1 to		Lists the set of subchannels to
subchannel		<maxpcp< td=""><td></td><td>be used for AP access</td></maxpcp<>		be used for AP access
				the above AB signature(a)
		AFSUDCI/>		Note: if not present all
				subchannels are to be used
				without access delays.
>>>>AP access slot subchannel	MP		Integer	
			(011)	
VCAM into	CV-CAA	4.4-		
SAVailable Minimum Spreading	MP			
Factor		CH-SE>		
>>Minimum Spreading Factor	MP		Enumerated	
			(4,8,16,32,6	
			4,128,256)	
>>NF_max	MP		Integer	Maximum number of frames
			(164)	for PCPCH message part
>>Maximum available number of	MP		Integer	Maximum available number of
РСРСП			(104)	Spreading Eactor
>>Available AP signatures	MP	1 to		Signatures for AP preamble in
		<maxpcp< td=""><td></td><td>UL.</td></maxpcp<>		UL.
		CH-APsig>		
>>>AP signature		Ĭ	Integer	
			(015)	
>>Available AP sub-channel	OP	1 to		AP sub-channels for the given
		<maxpcp< td=""><td></td><td>AP signature in UL. Note: if not</td></maxpcp<>		AP signature in UL. Note: if not
				present, all subchannels are to
				delavs.
>>>AP sub-channel	MP		Integer	
			(011)	

Condition	Explanation
CDSigPresent	This IE may be included is optional if IE "Available CD
	signatures" is present and not needed otherwise.
NCAA	This IE is included mandatory present if IE "Channel
	Assignment Active" is not present and not needed
	<u>otherwise</u>
CAA	This IE is included mandatory present if IE ""Channel
	Assignment Active" is present. and not needed
	<u>otherwise</u>

10.3.6.14 CPCH Status Indication mode

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CPCH Status Indication mode	MP		Enumerated (PA mode, PAMSF mode)	Defines the status information type broadcast on the CPCH Status Indication Channel (CSICH)

CPCH Status Indication mode defines the structure of the CSICH information that is broadcast by Node B on the CSICH channel. CSICH 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). [26] defines the structure of the CSICH information for both CSICH modes.

10.3.6.15 CSICH Power offset

NOTE: Only for FDD.

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

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

10.3.6.16 Default DPCH Offset Value

Indicates the default offset value within interleaving size at a resolution of 512chip (1/5 slot) in FDD and a resolution of one frame in TDD 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	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode				
>FDD				
>>Default DPCH Offset Value (DOFF)	MP		Integer (0306688 by step of 512)	Number of chips=. 0 to 599 time 512 chips, see [10].
>TDD				
>>Default DPCH Offset Value (DOFF)	MP		Integer(07)	Number of frames; See [10]

10.3.6.17 Downlink channelisation codes

NOTE: Only for TDD

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE codes representation	MP			
>Consecutive codes				
>>First channelisation code	MP		Enumerated ((16/1)(16/16))	The codes from First channelisation code to Last channelisation code shall be used in that order by the physical layer in this timeslot. If a TFCI exists in this timeslot, it is mapped in the First channelisation code.
>>Last channelisation code	MP		Enumerated ((16/1)(16/16))	If this is the same as First channelisation code, only one code is used by the physical layer.
>Bitmap				
>>Channelisation codes bitmap	MP		Bitstring(16)	Each bit indicates the availability of a channelisation code for SF16, where the channelisation codes are numbered as channelisation code 1 (SF16) to channelisation code 16 (SF16). (For SF 16, a 1 in the bitmap means that the corresponding code is used, a 0 means that the corresponding code is not used.) If all bits are set to zero, SF 1 shall be used.

|

10.3.6.18 Downlink DPCH info common for all RL

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timing Indication	MP		Enumerated(Initialise, Maintain)	Note 1
CFN-targetSFN frame offset	CV-TimInd		Integer(025 5)	In frame
Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.23	
CHOICE mode	MP			
>FDD				
>>Power offset P _{Pilot-DPDCH}	MP		Integer(024)	Power offset equals P _{Pilot} - P _{DPDCH} , range 06 dB, in steps of 0.25 dB
>>Downlink rate matching restriction information	OP		Downlink rate matching restriction information 10.3.6.31	If this IE is set to "absent", no Transport CH is restricted in TFI.
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	
>>Fixed or Flexible Position	MP		Enumerated (Fixed, Flexible)	
>>TFCI existence	MP		Boolean	TRUE indicates that TFCI exists
>>CHOICE SF	MP			
>>>SF = 256				
>>>>Number of bits for Pilot bits	MP		Integer (2,4,8)	In bits
>>>SF = 128				
>>>>Number of bits for Pilot bits	MP		Integer(4,8)	In bits
>>>Otherwise				(no data). In ASN.1 choice "Otherwise" is not explicitly available as all values are available, it is implied by the use of any value other than 128 or 256.
>TDD				
>>Common timeslot info	MD		Common Timeslot Info 10.3.6.10	Default is the current Common timeslot info

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

Condition	Explanation
TimInd	This IE is OPTIONAL optional if the IE "Timing
	Indication" is set to "Initialise". Otherwise it is
	absentnot needed.

NOTE 1: Within the HANDOVER TO UTRAN COMMAND message, only value "initialise" is applicable.

10.3.6.19 Downlink DPCH info common for all RL Post

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.23	

10.3.6.20 Downlink DPCH info common for all RL Pre

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode	MP			
>FDD				
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	Defined in CHOICE SF512- Andpilot with "number of its for pilot bits" in ASN.1
>>Fixed or Flexible Position	MP		Enumerated (Fixed, Flexible)	
>>TFCI existence	MP		Boolean	TRUE indicates that TFCI exists
>>CHOICE SF	MP			
>>>SF = 256				
>>>>Number of bits for Pilot bits	MP		Integer (2,4,8)	In bits
>>>SF = 128				
>>>>Number of bits for Pilot bits	MP		Integer(4,8)	In bits
>>>Otherwise				(no data)
>TDD				
>>Common timeslot info	MP		Common Timeslot Info 10.3.6.10	

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

10.3.6.21 Downlink DPCH info for each RL

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		Telefelice	
>>Primary CPICH usage for channel estimation	MP		Primary CPICH usage for channel estimation 10.3.6.62	
>>DPCH frame offset	MP		Integer(0381 44 by step of 256)	Offset (in number of chips) between the beginning of the P-CCPCH frame and the beginning of the DPCH frame This is called $\tau_{DPCH,n}$ in [26]
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.73	
>>DL channelisation code	MP	1 to <maxdpc H-DLchan></maxdpc 		For the purpose of physical channel mapping [27] the DPCHs are numbered, starting from DPCH number 1, according to the order that they are contained in this IE.
>>>Secondary scrambling code	MD		Secondary scrambling code 10.3.6.74	Default is the same scrambling code as for the Primary CPICH
>>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	Defined in CHOICE SF512- AndCodenumber with "code number" in ASN.1
>>>Code number	MP		Integer(0Spre ading factor - 1)	
>>>Scrambling code change	CH- <i>SF/</i> 2		Enumerated (code change, no code change)	Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.
>>TPC combination index	MP		TPC combination index 10.3.6.85	
>>SSDT Cell Identity >>Closed loop timing	OP CH-		SSDT Cell Identity 10.3.6.76 Integer(1, 2)	It is present if current TX
adjustment mode	TxDiversity Mode			Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2". Value in slots
>>DL CCTrCh List	MP	1 <maxcc TrCH></maxcc 		
>>>TFCS ID	MD		Integer(18)	Identity of this CCTrCh. Default value is 1
>>>Time info	MP		Time Info 10.3.6.83	
>>>Downlink DPCH timeslots and codes	MD		Downlink Timeslots and Codes 10.3.6.32	Default is to use the old timeslots and codes.
>>>UL CCTrCH TPC List	MD	0 <maxcc TrCH></maxcc 		UL CCTrCH identities for TPC commands associated with this DL CCTrCH. Default is previous list or all defined UL CCTrCHs

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>>UL TPC TFCS Identity	MP		Transport Format Combination Set Identity 10.3.5.21	

Condition	Explanation		
SF/2	The information element is mandatory present if the		
	UE has an active compressed mode pattern		
	sequence, which is using compressed mode method		
	"SF/2". Otherwise the IE is not needed.		
TxDiversity Mode	This IE is mandatory present if current TX Diversity		
	Mode in UE is "closed loop mode 1" or "closed loop		
	mode 2". Otherwise the IE is not needed.		

10.3.6.22 Downlink DPCH info for each RL Post

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode	MP			
>FDD				
>>Primary CPICH usage for	MP		Primary	
channel estimation			CPICH usage	
			for channel	
			estimation	
			10.3.6.62	
>>Secondary scrambling code	MD		Secondary	Default is the same
			scrambling	scrambling code as for the
			code 10.3.6.74	Primary CPICH
>>CHOICE Spreading factor	MP		Integer(4, 8,	Defined in CHOICE SF512-
			16, 32, 64,	AndCodenumber with "code
			128, 256, 512)	number" in ASN.1
>>Code number	MP		Integer(0	
			Spreading	
			factor - 1)	
>>Scrambling code change	CH-SF/2		Enumerated	Indicates whether the
			(code change,	alternative scrambling code
			no code	is used for compressed
			change)	mode method 'SF/2'.
>>>TPC combination index	MP		TPC	
			combination	
			index	
			10.3.6.85	
>TDD				
>>Downlink DPCH timeslots and	MP		Downlink	
codes			Timeslots and	
			Codes	
			10.3.6.32	
10.3.6.23 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 [29].
>TDD				
>>TPC Step Size	OP		Integer (1, 2, 3)	In dB

10.3.6.24 Downlink information common for all radio links

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Downlink DPCH info common	OP		Downlink	
for all RL			DPCH info	
			common for	
			all RL	
			10.3.6.18	
CHOICE mode	MP			
>FDD				
>>DPCH compressed mode info	MD		DPCH	Default value is the existing
			compressed	value of DPCH compressed
			mode info	mode information
			10.3.6.33	
>>TX Diversity Mode	MD		TX Diversity	Default value is the existing
			Mode	value of TX Diversity mode
			10.3.6.86	
>>SSDT information	OP		SSDT	
			information	
			10.3.6.77	
>TDD				(no data)
Default DPCH Offset Value	OP		Default	
			DPCH Offset	
			Value,	
			10.3.6.16	

10.3.6.25 Downlink information common for all radio links Post

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink DPCH info common for all RL	MP		Downlink DPCH info common for all RL Post 10.3.6.19	

10.3.6.26 Downlink information common for all radio links Pre

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink DPCH info common for all RL	MP		Downlink DPCH info common for all RL Pre 10.3.6.20	

10.3.6.27 Downlink information for each radio link

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Choice mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>PDSCH with SHO DCH Info	OP		PDSCH with SHO DCH Info 10.3.6.47	
>>PDSCH code mapping	OP		PDSCH code mapping 10.3.6.43	
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57	
Downlink DPCH info for each RL	OP		Downlink DPCH info for each RL 10.3.6.21	
SCCPCH Information for FACH	OP		SCCPCH Information for FACH 10.3.6.70	

10.3.6.28 Downlink information for each radio link Post

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

10.3.6.29 Void

10.3.6.30 Downlink PDSCH information

NOTE: Only for FDD.

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

10.3.6.31 Downlink rate matching restriction information

This IE indicates which TrCH is restricted in TFI.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Restricted TrCH information	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
		>		
>Downlink transport channel	MP		Enumerated(
type			DCH,DSCH)	
>Restricted DL TrCH identity	MP		Transport channel identity 10.3.5.18	
>Allowed TFIs	MP	1 to <maxtf></maxtf>		
>>Allowed TFI	MP		Integer(031)	

10.3.6.32 Downlink Timeslots and Codes

NOTE: Only for TDD

Information Element/Group	Need	Multi	Type and	Semantics description
First Individual timoslat info	MD		Individual	Individual timoclat info for the
First multidual timesiot into	IVIE		timeslot info	first timeslot used by the
			10 3 6 37	nhysical layer
First timeslot channelisation	MD		Downlink	These codes shall be used
codes	IVII		channelisation	by the physical layer in the
codes			codes	timeslot given in First
			10 3 6 17	Individual timeslot info
CHOICE more timeslots	MP		10.5.0.17	marriadar amesiot inio.
>No more timeslots				(no data)
>Consecutive timeslots			-	
>>Number of additional timeslots	MP		Integer(1max TS-1)	The timeslots used by the physical layer shall be timeslots: N mod maxTS (N+1) mod maxTS (N+k) mod maxTS in that order, where N is the timeslot number in the First individual timeslot info and k the Number of additional timeslots
				The additional timeslots shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) as the first timeslot.
>Timeslot list				
>>Additional timeslot list	MP	1 to <maxts- 1></maxts- 		The first instance of this parameter corresponds to the timeslot that shall be used second by the physical layer, the second to the timeslot that shall be used third and so on.
>>>CHOICE parameters	MP			
>>>>Same as last				
>>>>Timeslot number	MP		Timeslot Number 10.3.6.84	The physical layer shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) for this timeslot as for the last one.
>>>New parameters				
>>>>>Individual timeslot info	MP		Individual timeslot info 10.3.6.37	
>>>>Channelisation codes	MP		Downlink channelisation codes	

10.3.6.33 DPCH compressed mode info

NOTE: Only for FDD.

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

Information Element/Group	Need	Multi	Type and reference	Semantics description
Transmission gap pattern sequence	MP	1 to <maxtgp S></maxtgp 		
>TGPSI	MP		TGPSI	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			10.3.6.82	
>TGPS Status Flag	MP		Enumerated(active, inactive)	This flag indicates the current status of the Transmission Gap Pattern Sequence, whether it shall be activated or deactivated.
>TGCFN	CV-Active		Integer (0255)	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence.
>Transmission gap pattern sequence configuration parameters	OP			
>>TGMP	MP		Enumerated(TDD measuremen t, FDD measuremen t, GSM carrier RSSI measuremen t, GSM Initial BSIC identification, GSM BSIC re- confirmation, Multi-carrier measuremen t)	Transmission Gap pattern sequence Measurement Purpose.
>>TGPRC	MP		Integer (1511, Infinity)	The number of transmission gap patterns within the Transmission Gap Pattern Sequence.
>>TGSN	MP		Integer (014)	Transmission Gap Starting Slot Number The slot number of the first transmission gap slot within the TGCFN.

Information Element/Group	Need	Multi	Type and	Semantics description
	MD			The length of the first
>>IGLI	IVIP		integer(114	The length of the linst
)	transmission dap within the
				expressed in number of slots
>>TGI 2	MD		Integer	The length of the second
2210L2	MB		(1 14)	Transmission Gap within the
			()	transmission gap pattern. If
				omitted, then TGL2=TGL1.
>>TGD	MP		Integer(152	Transmission gap distance
			69,	indicates the number of slots
			undefined)	between starting slots of two
				consecutive transmission gaps
				within a transmission gap
				pattern. If there is only one
				transmission gap in the
				transmission gap pattern, this
				parameter shall be set to zero.
	MD		Integer	The duration of transmission
>>IGPLI	MP		$(1 \ 1 \ 4 \ 4)$	ap pattern 1
	MD			The duration of transmission
>>101 L2	NID		$(1 \ 144)$	ap pattern 2 If omitted then
			(1	TGPI 2=TGPI 1
>>RPP	MP		Enumerated	Recovery Period Power
			(mode 0,	control mode during the frame
			mode 1).	after the transmission gap
				within the compressed frame.
				Indicates whether normal PC
				mode or compressed PC
				mode is applied
>>ITP	MP		Enumerated	Initial Transmit Power is the
			(mode 0,	uplink power control method to
			mode 1).	be used to compute the initial
				transmit power after the
>>CHOICE ////DL mode	MP			compressed mode gap.
				Compressed mode used in DI
				only
>>>>Downlink compressed	MP		Enumerated	Method for generating
mode method			(puncturina.	downlink compressed mode
			SF/2, higher	gap
			layer	
			scheduling)	
>>>UL only				Compressed mode used in UL
			· · ·	only
>>>Uplink compressed mode	MP		Enumerated	Method for generating uplink
method			(SF/2, higher	compressed mode gap
			layer	
>>>III and DI			scheduling)	Compressed mode used in LII
				and DI
>>>>Downlink compressed	MP		Enumerated	Method for generating
mode method			(puncturing.	downlink compressed mode
			SF/2, higher	gap
			layer	
			scheduling)	
>>>>Uplink compressed mode	MP		Enumerated	Method for generating uplink
method			(SF/2, higher	compressed mode gap
			layer	
			scheduling)	
>>Downlink frame type	MP		Enumerated	
			(A, B)	
>>DeltaSIR1	MP		Real(03 by	Delta in DL SIR target value to
			step or 0.1)	frame containing the start of
				the first transmission gap in

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				the transmission gap pattern (without including the effect of the bit-rate increase)
>>DeltaSIRafter1	MP		Real(03 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the first transmission gap in the transmission gap pattern.
>>DeltaSIR2	OP		Real(03 by step of 0.1)	Delta in DL SIR target value to be set in the UE during the frame containing the start of the second transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase) When omitted, DeltaSIR2 = DeltaSIR1.
>>DeltaSIRafter2	OP		Real(03 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the second transmission gap in the transmission gap pattern. When omitted, DeltaSIRafter2 = DeltaSIRafter1.
>>N Identify abort	CV-Initial BSIC		Integer(112 8)	Indicates the maximum number of repeats of patterns that the UE shall use to attempt to decode the unknown BSIC of the GSM cell in the initial BSIC identification procedure
>>T Reconfirm abort	CV-Re- confirm BSIC		Real(0.510. 0 by step of 0.5)	Indicates the maximum time allowed for the re-confirmation of the BSIC of one GSM cell in the BSIC re-confirmation procedure. The time is given in steps of 0.5 seconds.

Condition	Explanation
Active	This information element is only sentmandatory present when the value of the "TGPS Status Flag" IE is "Active" <u>and not needed otherwise</u> .
Initial BSIC	This information element is only sentmandatory present when the value of the IE "TGMP" is set to "GSM Initial BSIC identification" <u>and not needed</u> otherwise.
Re-confirm BSIC	This information element is only sentmandatory present when the value of the IE ""TGMP"" is set to ""GSM BSIC re-confirmation"" and not needed otherwise.

10.3.6.34 DPCH Compressed Mode Status Info

This information element indicates status information of the compressed mode used by the UE in order to perform inter-frequency and inter-RAT measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPS reconfiguration CFN	MP		Integer (0255)	Connection Frame Number of the frame where already active Transmission Gap Pattern Sequences shall be deactivated
Transmission gap pattern sequence	MP	1 to <maxtgp S></maxtgp 		
>TGPSI	MP		TGPSI 10.3.6.82	Transmission Gap Pattern Sequence Identifier
>TGPS Status Flag	MP		Enumerated(active, inactive)	This flag indicates the current status of the Transmission Gap Pattern Sequence, whether it shall be active or inactive.
>TGCFN	CV-Active		Integer (0255)	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence.

Condition	Explanation
Active	This information element is only sentmandatory present when the value of the "TGPS Status Flag" IE is "Active" and not needed otherwise.

10.3.6.35 Dynamic persistence level

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Dynamic persistence level	MP		Integer(18)	Level shall be mapped to a dynamic persistence value in the range 0 1.

10.3.6.36 Frequency info

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode	MP			
>FDD				
>>UARFCN uplink (Nu)	OP		Integer(0 16383)	[21] If IE not present, default duplex distance of 190 MHz shall be used.
>>UARFCN downlink (Nd)	MP		Integer(0 16383)	[21]
>TDD				
>>UARFCN (Nt)	MP		Integer(0 16383)	[22]

10.3.6.37 Individual timeslot info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timeslot number	MP		Timeslot number 10.3.6.84	Timeslot within a frame
TFCI existence	MP		Boolean	TRUE indicates that the TFCI exists. It shall be coded in the first physical channel of this timeslot.
Midamble Shift and burst type	MP		Midamble shift and burst type 10.3.6.41	

10.3.6.38 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		Timeslot	
			number	
			10.3.6.84	
UL Timeslot Interference	MP		UL	
			Interference	
			10.3.6.87	

10.3.6.39 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(- 5033)	In dBm

10.3.6.40 Void

10.3.6.41 Midamble shift and burst type

NOTE: Only for TDD.

This information element indicates burst type and midamble allocation. Three different midamble allocation schemes exist:

- Default midamble: the midamble shift is selected by layer 1 depending on the associated channelisation code (DL and UL)
- Common midamble: the midamble shift is chosen by layer 1 depending on the number of channelisation codes (possible in DL only)
- UE specific midamble: a UE specific midamble is explicitly assigned (DL and UL).

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		reference	
Type 1				
>>Midamble Allocation Mode	MP		Enumerated (Default midamble, Common midamble, UE specific midamble)	
>Midamble configuration burst type 1 and 3	MP		Integer(4, 8, 16)	As defined in [30]
>>Midamble Shift	CV-UE		Integer(015	
>Type 2				
>>Midamble Allocation Mode	MP		Enumerated (Default midamble, Common midamble, UE specific midamble)	
>Midamble configuration burst type 2	MP		Integer(3, 6)	As defined in [30]
>>Midamble Shift	CV-UE		Integer(05)	
>Type 3				
>>Midamble Allocation Mode	MP		Enumerated (Default midamble, UE specific midamble)	
>>Midamble configuration burst type 1 and 3	MP		Integer(4, 8, 16)	As defined in [30]
>>Midamble Shift	CV-UE		Integer (015)	NOTE: Burst Type 3 is only used in uplink.

Condition	Explanation
UE	This information element is only sentmandatory present when the value of the "Midamble Allocation Mode" IE is "UE-specific midamble" <u>and not needed</u> otherwise.

10.3.6.42 PDSCH Capacity Allocation info

NOTE: Only for TDD.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
PDSCH allocation period info	MP		Allocation	
			Period Info	
			10.3.6.4	
TFCS ID	MD		Integer(18)	Default is 1.
CHOICE Configuration	MP			
>Old configuration				
>>PDSCH Identity	MP		Integer(1Hi	
			PDSCHIdent	
			ities)	
>New configuration				
>>PDSCH Info	MP		PDSCH Info	
			10.3.6.44	
>>PDSCH Identity	OP		Integer(1Hi	
			PDSCHIdent	
			ities)	
>>PDSCH power control info	OP		PDSCH	
			power	
			control info	
			10.3.6.45	

10.3.6.43 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). The following signalling methods are specified:

- 'code range': the mapping is described in terms of a number of groups, each group associated with a given spreading factor;
- TFCI range': the mapping is described in terms of a number of groups, each group corresponding to a given PDSCH channelisation code;
- Explicit': the mapping between TFCI(field 2) value and PDSCH channelisation code is spelt out explicitly for each value of TFCI (field2);
- Removal': replace individual entries in the TFCI(field 2) to PDSCH code mapping table with new PDSCH code values.

Information Element/Group	Need	Multi	Type and	Semantics description
			Coorden	Corombling and as which
DL Scrambling Code	MD		Secondary scrambling code 10.3.6.74	Scrambling code on which PDSCH is transmitted. Default is the same scrambling code as for the Primary CPICH
Choice signalling method	MP			
<pre>>code range >>PDSCH code mapping</pre>	MP	1 to < maxPDSC H- TFClgroup s >		
>>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256)	
>>>multi-code info	MP		Integer(116	
>>>Code number (for PDSCH code) start >>>Code number (for PDSCH code) stop	MP MP		/ Integer(0Sp reading factor-1) Integer(0Sp reading	
			factor-1)	
>TFCI range				
>>DSCH mapping	MP	1 to < maxPDSC H- TFClgroup s >		
>>>Max TFCI(field2) value	MP		Integer(110 23)	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		Integer(4, 8, 16, 32, 64, 128, 256)	
>>>Code number (for PDSCH code)	MP		Integer(0Sp reading factor-1)	
>>>multi-code info	MP		Integer(116	
>Explicit				
>>PDSCH code info	MP	1 to < maxTFCI- 2-Combs >		The first instance of the parameter <i>PDSCH code</i> corresponds to TFCI (field2) = 0, the second to TFCI(field 2) = 1and so on.
>>>Spreading factor (for PDSCH code)	MP		Integer(4, 8, 16, 32, 64, 128, 256)	
>>>Code number (for PDSCH code)	MP		Integer(0Sp reading factor-1)	
>>>multi-code info	MP		Integer(116	
>Replace >>Replaced PDSCH code	MP	1 to < maxTFCI- 2-Combs >)	This choice is made if the PDSCH code(s) associated with a given value of TFCI(field 2) is to be replaced. 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	Value of TFCI(field 2) for

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			(01023)	which PDSCH code mapping will be changed
>>>Spreading factor (for PDSCH code)	MP		Integer(4, 8, 16, 32, 64, 128, 256)	
>>>Code number (for PDSCH code)	MP		Integer(0Sp reading factor-1)	
>>>multi-code info	MP		Integer(116)	

10.3.6.44 PDSCH info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCS ID	MD		Integer(18)	TFCS to be used. Default value is 1.
Common timeslot info	OP		Common timeslot info 10.3.6.10	
PDSCH timeslots and codes	OP		Downlink Timeslots and Codes 10.3.6.32	Default is to use the old timeslots and codes.

10.3.6.45 PDSCH Power Control info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TPC Step Size	OP		Integer (1, 2, 3)	In dB
UL CCTrCH TPC List	OP	1 <maxcc TrCH></maxcc 		UL CCTrCH identities for TPC commands associated with this DL CCTrCH
>UL TPC TFCS Identity	MP		Transport Format Combination Set Identity 10.3.5.21	

10.3.6.46 PDSCH system information

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PDSCH information	MP	1 to <maxpds CH></maxpds 		
>PDSCH Identity	MP		Integer(1Hi PDSCHIdent ities)	
>PDSCH info	MP		PDSCH info 10.3.6.44	
>SFN Time Info	CH- Block17		SFN Time Info 10.3.6.75	
>DSCH TFS	OP		Transport format set 10.3.5.23	
>DSCH TFCS	OP		Transport Format Combination Set 10.3.5.20	

Condition	Explanation
Block17	This IE is absent not needed in System Information
	Block 17. Otherwise it is optional.

10.3.6.47 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		Primary CPICH info 10.3.6.60	This parameter indicates on which radio link the user will be allocated resource on the DSCH.
TFCI(field2) Combining set	OP	1 to <maxrl></maxrl>		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	MP		Primary CPICH info 10.3.6.60	

10.3.6.48 Persistence scaling factors

This IE defines scaling factors associated with ASC 2 – ASC 7 to be applied to the dynamic persistence value.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Access Service Class	MP	1 to maxASCpe rsist		multiplicity corresponds to the number of PRACH partitions minus 2
>Persistence scaling factor	MP		Real(0.90.2 , by step of 0.1)	Scaling factors in the range 0,,1

10.3.6.49 PICH Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>FDD				
>>Channelisation code	MP		Integer(025 5)	SF is fixed and equal to 256
>>Number of PI per frame	MP		Integer (18, 36, 72, 144)	
>>STTD indicator	MP		STTD Indicator 10.3.6.78	
>TDD				
>>Channelisation code	MD		Enumerated ((16/1)(16/1 6))	Default value is the channelisation code used by the SCCPCH carrying the associated PCH.
>>Timeslot number	MD		Timeslot number 10.3.6.84	Default value is the timeslot used by the SCCPCH carrying the associated PCH.
>>CHOICE Burst Type	MP			
>>>Type 1				
>>>>Midamble Shift	MP		Integer(015)	
>>>Type 2				
>>>>Midamble Shift	MP		Integer(05)	
>>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 (0Repetitio n period -1)	SFN mod Repetitionperiod = Offset.
>>Paging indicator length	MD		Integer (4, 8, 16)	Indicates the length of one paging indicator in Bits. Default value is 4.
>>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.

10.3.6.50 PICH Power offset

This is the power transmitted on the PICH minus power of the Primary CPICH in FDD and Primary CCPCH Tx Power in TDD.

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

10.3.6.51 PRACH Channelisation Code List

NOTE: Only for TDD.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE SF	MP			
>SF16				
>>Channelisation Code List	MP	1 to 8		
>>>Channelisation code	MP		Enumerated ((16/1)(16/ 16))	1:1 mapping between spreading code and midamble shift
>SF8				
>>Channelisation Code List	MP	1 to 8		
>>>Channelisation Code	MP		Enumerated(
			(8/1)(8/8))	

10.3.6.52 PRACH info (for RACH)

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>FDD				
>>Available Signature	MP		Bitstring(16)	Each bit indicates availability for a signature, where the signatures are numbered "signature 0" up to "signature 15". The value 1 of a bit indicates that the corresponding signature is available and the value 0 that it is not available.
>>Available SF	MP		Integer (32,64,128,2 56)	In chips per symbol Defines the minimum allowed SF (i.e. the maximum rate)
>>Preamble scrambling code number	MP		Integer (0 15)	Identification of scrambling code see [28]
>>Puncturing Limit	MP		Real(0.401. 00 by step of 0.04)	
>>Available Sub Channel Number	MP		Bitstring(12)	Each bit indicates availability for a subchannel, where the subchannels are numbered "subchannel 0" to "subchannel 11". The value 1 of a bit indicates that the corresponding subchannel is available and the value 0 indicates that it is not available.
>TDD				
>>Timeslot number	MP		Timeslot number 10.3.6.84	
>>PRACH Channelisation Code List	MP		PRACH Channelisati on Code List 10.3.6.51	
>>PRACH Midamble	MP		Enumerated (Direct, Direct/Invert ed)	Direct or direct and inverted midamble are used for PRACH

10.3.6.53 PRACH partitioning

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Access Service class	MP	1 to maxASC		
ASC Setting	MD		ASC setting 10.3.6.6	The default values are same as the previous ASC. If the "default" is used for the first ASC, the default values are all available signatures and "all available sub- channels" for FDD and "all available channelisation codes" and "all available subchannels" with "subchannel size=Size 1" in TDD.

10.3.6.54 PRACH power offset

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Power Ramp Step	MP		Integer (18)	Power step when no acquisition indicator is received in dB
Preamble Retrans Max	MP		Integer (164)	Maximum number of preambles in one preamble ramping cycle

10.3.6.55 PRACH system information list

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

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

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

10.3.6.56 Predefined PhyCH configuration

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

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

10.3.6.57 Primary CCPCH info

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode	MP			
>FDD				
>>TX Diversity indicator	MP		Boolean	
>TDD				
>>CHOICE SyncCase	OP			
>>>Sync Case 1				
>>>>Timeslot	MP		Integer	PCCPCH timeslot
			(014)	
>>>Sync Case 2				
>>>>Timeslot	MP		Integer(06)	
>>Cell parameters ID	OP		Cell	The Cell parameters ID is
			parameters	described in [32].
			ld 10.3.6.9	
>>Block STTD indicator	MP		Block STTD	
			indicator	
			10.3.6.7	

10.3.6.58 Primary CCPCH info post

NOTE: Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE SyncCase	MP		-	
>Sync Case 1				
>>Timeslot	MP		Integer (014)	PCCPCH timeslot
>Sync Case 2				
>>Timeslot	MP		Integer(06)	
Cell parameters ID	MP		Cell parameters Id 10.3.6.9	The Cell parameters ID is described in [32].
Block STTD indicator	MP		Block STTD indicator 10.3.6.7	

10.3.6.59 Primary CCPCH TX Power

NOTE: Only for TDD.

Information Element/group name	Need	Multi	Type and reference	Semantics description
Primary CCPCH Tx Power	MP		Integer(643	In dBm

10.3.6.60 Primary CPICH info

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary scrambling code	MP		Integer(051 1)	

10.3.6.61 Primary CPICH Tx power

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH Tx Power	MP		Integer(- 1050)	Power in dBm.

10.3.6.62 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)	

10.3.6.63 PUSCH info

NOTE: Only for TDD.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
TFCS ID	MD		Integer(18)	Default value is 1
Common timeslot info	OP		Common	
			timeslot info	
			10.3.6.10	
PUSCH timeslots and codes	OP		Uplink	
			Timeslots	
			and Codes	
			10.3.6.94	

10.3.6.64 PUSCH Capacity Allocation info

NOTE: Only for TDD.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE PUSCH allocation	MP			
>PUSCH allocation pending				(no data)
>PUSCH allocation assignment				
>>PUSCH allocation period info	MP		Allocation	
			Period Info	
			10.3.6.4	
>>PUSCH power control info	OP		PUSCH	
			power	
			control info	
			10.3.6.65	
>>TFCS ID	MD		Integer(18)	Default is 1.
>>CHOICE Configuration	MP			
>>>Old configuration				
>>>>PUSCH Identity	MP		Integer(1Hi	
			PUSCHIdent	
			ities)	
>>>New configuration				
>>>>PUSCH info	MP		PUSCH info	
			10.3.6.63	
>>>>PUSCH Identity	OP		Integer(1	
-			HiPUSCHIde	
			ntities)	

10.3.6.65 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	in dB
			20 by step of	
			0.5)	

10.3.6.66 PUSCH system information

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PUSCH information	MP	1 to <maxpus CH></maxpus 		
>PUSCH Identity	MP		Integer(1Hi PUSCHIdent ities)	
>PUSCH info	MP		PUSCH info 10.3.6.63	
>SFN Time Info	CH- Block17		SFN Time Info 10.3.6.75	
>USCH TFS	OP		Transport format set 10.3.5.23	
>USCH TFCS	MP		Transport Format Combination Set 10.3.5.20	

Condition	Explanation
Block17	This IE is absent not needed in System Information
	Block 17. Otherwise it is optional.

10.3.6.67 RACH transmission parameters

NOTE: Only for FDD.

I

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Mmax	MP		Integer(132)	Maximum number of preamble cycles
NB01min	MP		Integer(050	Sets lower bound for random back-off
NB01max	MP		Integer(050	Sets upper bound for random back-off

10.3.6.68 Radio link addition information

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Primary CPICH info	MP		Primary	
			CPICH info	
			10.3.6.60	
Downlink DPCH info for each RL	MP		Downlink	
			DPCH info	
			for each RL	
			10.3.6.21	
TFCI combining indicator	OP		TFCI	
			combining	
			indicator	
			10.3.6.81	
SCCPCH Information for FACH	OP		SCCPCH	Note 1
			Information	
			for FACH	
			10.3.6.70	

NOTE 1: These IEs are present when the UE needs to listen to system information on FACH in CELL_DCH state.

10.3.6.69 Radio link removal information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH info	MP		Primary CPICH info 10.3.6.60	

10.3.6.70 SCCPCH Information for FACH

Information Element/Group	Need	Multi	Type and	Semantics description
Secondary CCPCH info	MP		Secondary CCPCH info 10.3.6.71	
TFCS	MP		Transport format combination set 10.3.5.20	For FACHs and PCH
FACH/PCH information	MP	1 to <maxfac HPCH></maxfac 		
>TFS	MP		Transport format set 10.3.5.23	For each FACHs and PCH
>Transport channel identity	MP		Transport channel identity 10.3.5.18	
>CTCH indicator	MP		Boolean	The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.
CHOICE mode				
>>References to system information blocks	MP	1 to <maxsib- FACH></maxsib- 		
>>>Scheduling information	MP		Scheduling information 10.3.8.16	
>>>SIB type SIBs only	MP		SIB Type SIBs only, 10.3.8.22	
>TDD				(No data)

NOTE: TFS for PCH shall be the first "FACH/PCH information" in the list if a PCH exists for the respective secondary CCPCH.

10.3.6.71 Secondary CCPCH info

Information Element/Group	Need	Multi	Type and	Semantics description
CHOICE mode	MP		Telefelice	
>>Primary CPICH usage for channel estimation	MP		Primary CPICH usage for channel estimation	
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.73	May only be sent for SCCPCH channels not carrying the PCH.
>>Secondary scrambling code	OP		Secondary scrambling code 10.3.6.74	May only be sent for SCCPCH channels not carrying the PCH.
>>STTD indicator	MD		STTD Indicator 10.3.6.78	Default value is "TRUE"
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256)	
>>Code number	MP		Integer(0Sp reading factor - 1)	
>>Pilot symbol existence	MD		Boolean	TRUE means the existence. Default value is "TRUE"
>>TFCI existence	MD		Boolean	TRUE means the existence. Default value is "TRUE"
>>Fixed or Flexible Position	MD		Enumerated (Fixed, Flexible)	Default value is "Flexible"
>>Timing Offset	MD		Integer(038 144 by step of 256)	Chip Delay of the Secondary CCPCH relative to the Primary CCPCH. Default value is 0.
>TDD				
>>Offset	MP		Integer (0Repetitio n Period -1)	SFN modulo Repetition period = offset. Repetition period is the one indicated in the accompanying Common timeslot info IE
>>Common timeslot info	MP		Common timeslot info 10.3.6.10	
>>Individual timeslot info	MP		Individual timeslot info 10.3.6.37	
>>Code List	MP	1 to 16		
>>>Channelisation Code	MP		Enumerated((16/1)(16/1 6))	

10.3.6.72 Secondary CCPCH system information

Information element	Need	Multi	Type and reference	Semantics description
Secondary CCPCH system information	MP	1 to <maxscc PCH></maxscc 		
>Secondary CCPCH info	MP		Secondary CCPCH info 10.3.6.71	Note 1
>TFCS	MD		Transport format combination set 10.3.5.20	For FACHs and PCH Default value is the value of "TFCS" for the previous SCCPCH in the list (note : the first occurrence is then MP)
>FACH/PCH information	MD	1 to <maxfac HPCH></maxfac 		Default value is the value of "FACH/PCH" for the previous SCCPCH in the list (note : the first occurrence is then MP)
>>TFS	MP		Transport format set 10.3.5.23	For each FACH and PCH Note 2
>>Transport channel identity	MP		Transport channel identity 10.3.5.18	
>>CTCH indicator	MP		Boolean	The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.
>PICH info	OP		PICH info 10.3.6.49	PICH info is present only when PCH is multiplexed on Secondary CCPCH

NOTE 1: The secondary CCPCHs carrying a PCH shall be listed first.

NOTE 2: TFS for PCH shall be the first "FACH/PCH information" in the list if a PCH exists for the respective secondary CCPCH.

10.3.6.73 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 10.3.6.74	Default is the same scrambling code as for the Primary CPICH
Channelisation code	MP		Integer(025 5)	SF=256

10.3.6.74 Secondary scrambling code

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Secondary scrambling code	MP		Integer(115)	

10.3.6.75 SFN Time info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Activation time SFN	MP		Integer (04095)	System frame number start of the physical channel existence.
Duration	MP		Integer(140 96)	Total number of frames the physical channel will exist.

10.3.6.75a Special Burst Scheduling

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Special Burst Generation Period	MP		Integer (2, 4, 8, 16, 32, 64, 128, 256)	Value in radio frames

10.3.6.76 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)	

10.3.6.77 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		Integer (1, 2)	in bits
Code Word Set	MP		Enumerated (long, medium, short, SSDT off)	

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

10.3.6.78 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

10.3.6.79 TDD open loop power control

This information element contains parameters for open loop power control setting for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CCPCH Tx Power	MP		Primary CCPCH Tx Power 10.3.6.59	For path loss calculation
Alpha	OP		Alpha 10.3.6.5	
PRACH Constant Value	MP		Constant Value 10.3.6.11	Operator controlled PRACH Margin
DPCH Constant Value	MP		Constant Value 10.3.6.11	Operator controlled UL DPCH Margin
PUSCH Constant Value	OP		Constant Value 10.3.6.11	Operator controlled PUSCH Margin

10.3.6.80 TFC Control duration

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
TFC Control duration	MP		Integer (1, 2, 4, 8, 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.

10.3.6.81 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

10.3.6.82 TGPSI

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPSI	MP		Integer(1M axTGPS)	Transmission Gap Pattern Sequence Identifier Establish a reference to the compressed mode pattern sequence. Up to <maxtgps></maxtgps>

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				simultaneous compressed mode pattern sequences can be used.

10.3.6.83 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(140 96, infinite)	Total number of frames the physical channel will exist. Default value is "infinite".

10.3.6.84 Timeslot number

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timeslot number	MP		Integer(014)	Timeslot within a frame

10.3.6.85 TPC combination index

NOTE: Only for FDD.

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

10.3.6.86 TX Diversity Mode

NOTE: Only for FDD.

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

10.3.6.87 UL interference

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UL interference	MP		Integer (- 11070)	In dBm

NOTE: In TDD, this IE is a timeslot specific value.

10.3.6.88 Uplink DPCH info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Uplink DPCH power control info	OP		Uplink DPCH power control info 10.3.6.91	
CHOICE mode	MP			
>FDD				
>>Scrambling code type	MP		Enumerated(short, long)	
>>Scrambling code number	MP		Integer(016 777215)	
>>Number of DPDCH	MD		Integer(2m axDPDCH)	Default value is 1. Number of DPDCH is 1 in HANDOVER TO UTRAN COMMAND
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256)	Minimum allowed SF of the channelisation code for data part
>>TFCI existence	MD		Boolean	TRUE means existence. Default value is "TRUE"
>>Number of FBI bits	СН		Integer (1, 2)	In bits. Number of FBI bits is needed if SSDT or FB Mode Transmit Signalling is supported.
>>Puncturing Limit	MP		Real(0.401 by step of 0.04)	
>TDD				
>>Uplink Timing Advance Control	OP		Uplink Timing Advance Control 10.3.6.96	
>>UL CCTrCH List	MP	1 to <maxcctr CH></maxcctr 		
>>>TFCS ID	MD		Integer(18)	Default value is 1.
>>>Time info	MP		Time info 10.3.6.83	
>>>Common timeslot info	MD		Common timeslot info 10.3.6.10	Default is the current Common timeslot info
>>>Uplink DPCH timeslots and codes	MD		Uplink Timeslots and Codes 10.3.6.94	Default is to use the old timeslots and codes.

Condition	Explanation
Single	This IE is included mandatory present if IE "Number
	of DPDCH" is "1" and not needed otherwise

10.3.6.89 Uplink DPCH info Post

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Uplink DPCH power control info	MP		Uplink	
			DPCH power	
			control info	
			Post	
			10.3.6.92	
CHOICE mode	MP			
>FDD				
>>Scrambling code type	MP		Enumerated(
			short, long)	
>>Reduced scrambling code	MP		Integer(081	Sub-range of values for initial
number			91)	use upon handover to UTRAN.
>>Spreading factor	MP		Integer(4, 8,	SF of the channelisation code
			16, 32, 64,	for data part
			128, 256)	There is only one DPDCH for
				this case
>TDD				
>>Uplink Timing Advance	OP		Uplink	
Control			Timing	
			Advance	
			Control	
			10.3.6.96	
>>Uplink DPCH timeslots and	MP		Uplink	
codes			Timeslots	
			and Codes	
			10.3.6.94	

10.3.6.90 Uplink DPCH info Pre

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Uplink DPCH power control info	OP		Uplink DPCH power control info Pre 10.3.6.93	
CHOICE mode	MP			
>FDD				
>>TFCI existence	MP		Boolean	TRUE means existence. Default value is "TRUE"
>>Puncturing Limit	MP		Real(0.401 by step of 0.04)	
>TDD				
>>Common timeslot info	MP		Common Timeslot Info 10.3.6.10	

Condition	Explanation
Single	This IE is included mandatory present if IE "Number
	of DPDCH" is "1" and not needed otherwise

10.3.6.91 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	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode	MP			
>FDD				
>>DPCCH Power offset	MP		Integer(- 164,6 by step of 2)	In dB
>>PC Preamble	MP		Integer (07)	In number of frames
>>SRB delay	MP		Integer(07)	In number of frames
>>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		Integer (1, 2)	In dB
>TDD				
>>UL target SIR	MP		Real (-11 20 by step of 0.5dB)	In dB
>>CHOICE UL OL PC info	MP			
>>>Broadcast UL OL PC info			Null	No data
>>>Individually Signalled	OP			
>>>>Individual timeslot interference info	MP	1 to <maxts></maxts>		
>>>>Individual timeslot interference	MP		Individual timeslot interference 10.3.6.38	
>>>>DPCH Constant Value	OP		Constant Value 10.3.6.11	Quality Margin
>>>Primary CCPCH Tx Power	OP		Primary CCPCH Tx Power 10.3.6.59	For Pathloss Calculation

Condition	Explanation
algo	The IE is mandatory <u>present</u> if "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is not needed

10.3.6.92 Uplink DPCH power control info Post

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		Integer(- 11050 by step of 4)	In dB
>>PC Preamble	MP		Integer (07)	in number of frames
>>SRB delay	MP		Integer (07)	In number of frames
>TDD				
>>UL target SIR	MP		Real (-11 20 by step of 0.5dB)	In dB
>>UL Timeslot Interference	MP		UL Interference 10.3.6.87	

Condition	Explanation
algo	The IE is mandatory <u>present</u> if "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is not needed

10.3.6.93 Uplink DPCH power control info Pre

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	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode	MP			
>FDD				
>>Power Control Algorithm	MP		Enumerated	Specifies algorithm to be used
			(algorithm 1,	by UE to interpret TPC
			algorithm 2)	commands
>>TPC step size	CV-algo		Integer (1, 2)	In dB
>TDD				(No data)
>>DPCH Constant Value	MP		Constant	Quality Margin
			Value	
			10.3.6.11	

Condition	Explanation
Algo	The IE is mandatory <u>present</u> if "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is not needed

10.3.6.94 Uplink Timeslots and Codes

NOTE: Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Dynamic SF usage	MP		Boolean	
First Individual timeslot info	MP		Individual timeslot info 10.3.6.37	Individual timeslot info for the first timeslot used by the physical layer.
First timeslot Code List	MP	12		Code list used in the timeslot. given in First individual timeslot info.
>Channelisation Code	MP		Enumerated((1/1),)(2/1),(2/2),(4/1)(4/ 4),(8/1)(8/8) ,(16/1)(16/1 6))	
CHOICE more timeslots	MP			
>No more timeslots				(no data)
>Consecutive timeslots >>Number of additional timeslots	MP		Integer(1m axTS-1)	The timeslots used by the physical layer shall be timeslots: N mod maxTS (N+1) mod maxTS (N+k) mod maxTS in that order, where N is the timeslot number in the First individual timeslot info and k the Number of additional timeslots. The additional timeslots shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) as the first timeslot.
>Timeslot list				
>>Additional timeslot list	MP	1 to <maxts- 1></maxts- 		The first instance of this parameter corresponds to the timeslot that shall be used second by the physical layer, the second to the timeslot that shall be used third and so on.
>>>CHOICE parameters	MP			
>>>Same as last				<u></u>
>>>>Timeslot number	MP		Timeslot Number 10.3.6.84	This physical layer shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) for this timeslot as for the last one.
>>>>New parameters				
>>>>Individual timeslot info	MP		Individual timeslot info 10.3.6.37	
>>>>Code List >>>>Channelisation Code	MP MP	12	Enumerated((1/1),)(2/1),(2/2),(4/1)(4/ 4),(8/1)(8/8) ,(16/1)(16/1 6))	

10.3.6.95 Uplink Timing Advance

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UL Timing Advance	MP		Integer (063)	Absolute timing advance value to be used to avoid large delay spread at the NodeB

10.3.6.96 Uplink Timing Advance Control

NOTE: Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Timing Advance	MP			
>Disabled			Null	Indicates that no timing advance is applied
>Enabled				
>>UL Timing Advance	MD		Uplink Timing Advance 10.3.6.95	Absolute timing advance value to be used to avoid large delay spread at the NodeB. Default value is the existing value for uplink timing advance.
>>Activation Time	OP		Activation Time 10.3.3.1	Frame number timing advance is to be applied. This IE is required when a new UL Timing Advance adjustment is specified and Activation Time is not otherwise specified in the RRC message.

10.3.7 Measurement Information elements

10.3.7.1 Additional measurements list

Information Element/Group	Need	Multi	Type and	Semantics
name			reference	description
Additional measurements	MP	1 to <maxadditi onalMeas></maxadditi 		
>Additional measurement identity	MP		Measurement identity 10.3.7.48	

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	Need	Multi	Type and reference	Semantics description
Cell individual offset	MD		Real(-1010 by step of 0.5)	In dB Default value is 0 dB Used to offset measured quantity value
Reference time difference to cell	OP		Reference time difference to cell 10.3.7.60	In chips. This IE is absent for serving cell.
Read SFN indicator	MP		Boolean	TRUE indicates that read of SFN is requested for the target cell
CHOICE mode	MP			
>FDD				
>>Primary CPICH info	OP		Primary CPICH info 10.3.6.60	This IE is absent only if measuring RSSI only (broadband measurement.)
>>Primary CPICH Tx power	OP		Primary CPICH Tx power 10.3.6.61	Required if calculating pathloss.
>>TX Diversity Indicator	MP		Boolean	
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57	
>>Primary CCPCH TX power	OP		Primary CCPCH TX power 10.3.6.59	
>>Timeslot list	OP	1 to <maxts></maxts>		The UE shall report Timeslot ISCP values according the order of the listed Timeslot numbers
>>>Timeslot number	MP		Integer (014)	Timeslot numbers, for which the UE shall report Timeslot ISCP
>>>Burst Type	MD		Enumerated (Type1, Type2)	Use for Timeslot ISCP measurements only. Default value is "Type1"
Cell Selection and Re-selection Info	CV- BCHopt		Cell Selection and Re- selection for SIB11/12Info 10.3.2.4	This IE is absent for serving cell. For neighbouring cell, if HCS is not used and all the parameters in cell selection and re-selection info are default value, this IE is absent.

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

10.3.7.3 Cell measured results

Includes non-frequency related measured results for a cell.
Information Element/Group	Need	Multi	Type and	Semantics
name			reference	description
Cell Identity	OP		Cell Identity	
			10.3.2.2	
SFN-SFN observed time	OP		SFN-SFN observed	
difference			time difference	
			10.3.7.63	
Cell synchronisation information	OP		Cell synchronisation	
			information 10.3.7.6	
CHOICE mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info	
			10.3.6.60	
>>CPICH Ec/N0	OP		Integer(050)	According to
				CPICH_Ec/No in [19]
				and [20]
>>CPICH RSCP	OP		Integer(091)	According to
				CPICH_RSCP in [19]
				and [20]
>>Pathloss	OP		Integer(46158)	In dB
>TDD				
>>Cell parameters Id	MP		Cell parameters Id	
			10.3.6.9	
>>Proposed TGSN	OP		Integer (014)	Proposal for the next
				TGSN
>>Primary CCPCH RSCP	OP		Primary CCPCH	
			RSCP info	
			10.3.7.54	
>>Pathloss	OP		Integer(46158)	In dB
>>Timeslot list	OP	1 to <		
		maxTS>		
>>> I imeslot ISCP	MP		Timeslot ISCP Info	The UE shall report the
			10.3.7.65	Timeslot ISCP in the
				same order as
	1			indicated in the cell info

10.3.7.4 Cell measurement event results

Includes non-frequency related cell reporting quantities.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode	MP			
>FDD				
>>Primary CPICH info	MP	1 to	Primary	
		<maxcellm< td=""><td>CPICH info</td><td></td></maxcellm<>	CPICH info	
		eas>	10.3.6.60	
>TDD				
>>Primary CCPCH info	MP	1 to	Primary	
		<maxcellm< td=""><td>CCPCH info</td><td></td></maxcellm<>	CCPCH info	
		eas>	10.3.6.57	

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	Need	Multi	Type and	Semantics description
name			reference	
SFN-SFN observed time	MP		Enumerated(
difference reporting indicator			No report,	
			type 1, type	
			2)	
Cell synchronisation information	MP		Boolean	
reporting indicator				
Cell Identity reporting indicator	MP		Boolean	
CHOICE mode	MP			
>FDD				
>>CPICH Ec/N0 reporting	MP		Boolean	
indicator				
>>CPICH RSCP reporting	MP		Boolean	
indicator				
>>Pathloss reporting indicator	MP		Boolean	
>TDD				
>>Timeslot ISCP reporting	MP		Boolean	
indicator				
>>Proposed TGSN Reporting	MP		Boolean	
required				
>>Primary CCPCH RSCP	MP		Boolean	
reporting indicator				
>>Pathloss reporting indicator	MP		Boolean	

10.3.7.6 Cell synchronisation information

The IE "Cell synchronisation information" contains the OFF and Tm as defined in [7] and [8] and the four most significant bits of the difference between the 12 least significant bits of the RLC Transparent Mode COUNT-C in the UE and the SFN of the measured cell. It is notified to SRNC by Measurement Report message or Measurement Information Element in other RRC messages

Information Element/Group	Need	Multi	Type and	Semantics
name			reference	description
CHOICE mode	MP			
>FDD				
>>COUNT-C-SFN frame difference	OP			
>>>COUNT-C-SFN high	MP		Integer(03840 by step of 256)	in frames
>>>OFF	MP		Integer(0255)	in frames
>>Tm	MP		Integer(038399)	in chips
>TDD				
>>COUNT-C-SFN frame difference	OP			
>>>COUNT-C-SFN high	MP		Integer(03840 by step of 256)	in frames
>>>OFF	MP		Integer(0255)	in frames

NOTE: This measurement is only used in TDD when cells are not SFN synchronised

10.3.7.7 Event results

Information Element/Group	Need	Multi	Type and	Semantics
name			reference	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-RAT measurement event results			Inter-RAT measurement event results 10.3.7.28	For IS-2000 results, include fields of the <i>Pilot Strength</i> <i>Measurement Message</i> from subclause 2.7.2.3.2.5 of TIA/EIA/IS-2000.5
>Traffic volume measurement event results			Traffic volume measurement event results 10.3.7.69	
>Quality measurement event results			Quality measurement event results 10.3.7.57	
>UE internal measurement event results			UE internal measurement event results 10.3.7.78	
>UE positioning measurement event results			UE positioning measurement event results 10.3.7.101	

CHOICE event result	Condition under which the given <i>event result</i> 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-RAT measurement event results	If measurement type = inter-RAT 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
UE positioning measurement event results	If measurement type = UE positioning measurement

10.3.7.8 FACH measurement occasion info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
FACH Measurement occasion cycle length coefficient	OP		Integer(112)	
Inter-frequency FDD measurement indicator	MP		Boolean	TRUE means that measurements are required
Inter-frequency TDD measurement indicator	MP		Boolean	TRUE means that measurements are required
Inter-RAT measurement indicators	OP	1 to <maxother RAT></maxother 		
>RAT type	MP		Enumerated(GSM, IS2000)	

10.3.7.9 Filter coefficient

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Filter coefficient	MD		Integer(0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 13, 15, 17, 19)	Default value is 0

10.3.7.10 HCS Cell re-selection information

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

Condition	Explanation
Penalty used	This IE is Nnot allowed needed if IE Penalty time
	equals 'not used' else Mpit is mandatory present
FDD-Quality-Measure	Presence is not allowed needed if the IE
	"Cell_selection_and_reselection_quality_measure" has the value CPICH RSCP, otherwise the IE is
	mandatory <u>present</u> . This conditional presence is implemented in ASN.1 by the use of a specific RSCP
	and EcN0 variant of 10.3.7.10.

10.3.7.11 HCS neighbouring cell information

Information Element/Group	Need	Multi	Type and reference	Semantics description
HCS_PRIO	MD		Integer (07)	Default value = 0
Qhcs	MD		Qhcs	Default value = 0
			10.3.7.54a	
HCS Cell Re-selection	MP		HCS Cell	
Information			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 (07)	Default value = 0
Qhcs	MD		Qhcs 10.3.7.54a	Default value = 0
T _{CRmax}	MD		Enumerated(not used, 30, 60, 120, 180, 240)	[s] Default value is not used
N _{CR}	CV-UE speed detector		Integer(116)	Default value = 8
T _{CrmaxHyst}	CV-UE speed detector		Enumerated(not used, 10, 20, 30, 40, 50, 60, 70)	[s]

Condition	Explanation
UE Speed detector	Not allowed needed if T _{Crmax} equals 'not used' else
	Mandatory present

10.3.7.13 Inter-frequency cell info list

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

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

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

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(2	
			a, 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 <maxfreq></maxfreq>		
>Frequency info	MD		Frequency info 10.3.6.36	Default value is the value of the previous "frequency info" in the list (note : the first occurrence is then MP)
>UTRA carrier RSSI	OP		Integer(076)	According to UTRA_carrier_RSSI_LEV in [19] and [20]
>Inter-frequency cell measurement results	OP	1 to <maxcellm eas></maxcellm 		
>>Cell measured results	MP		Cell measured results 10.3.7.3	

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 measuremen t quantity 10.3.7.18	
Inter-frequency reporting quantity	OP		Inter- frequency reporting quantity 10.3.7.21	
Reporting cell status	CV- reporting		Reporting cell status 10.3.7.61	
Measurement validity	OP		Measuremen t validity 10.3.7.51	
Inter-frequency set update	OP		Inter- frequency set update 10.3.7.22	
CHOICE report criteria	MP			
>Intra-frequency measurement reporting criteria			Intra- frequency measuremen t reporting criteria 10.3.7.39	
>Inter-frequency measurement reporting criteria			Inter- frequency measuremen t reporting criteria 10.3.7.19	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.53	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement

Condition	Explanation
reporting	This IE is optional if the CHOICE " <i>report criteria</i> " is equal to "periodical reporting criteria" or "No reporting", otherwise the IE is not needed

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	Need	Multi	Type and	Semantics description
Inter-frequency event identity	MP		Inter- frequency event identity 10.3.7.14	
Inter-frequency cells	OP	1 to <maxfreq></maxfreq>		
>Frequency info	MP		Frequency info 10.3.6.36	
>Non frequency related measurement event results	MP		Cell measureme nt event results 10.3.7.4	

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 <maxmeas Event></maxmeas 		
>Inter-frequency event identity	MP		Inter- frequency event identity 10.3.7.14	
>Threshold used frequency	CV–clause 0		Integer(- 1150)	Ranges used depend on measurement quantity. CPICH Ec/No -240dB CPICH/Primary CCPCH RSCP -11525dBm
>W used frequency	CV– <i>clause</i> 0		Real(0, 0.12.0 by step of 0.1)	
>Hysteresis	MP		Real(0, 0.514.5 by step of 0.5)	In event 2a, 2b, 2c, 2d, 2e, 2f
>Time to trigger	MP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms.
>Reporting cell status	OP		Reporting cell status 10.3.7.61	
>Parameters required for each non-used frequency	OP	1 to <maxfreq ></maxfreq 		
>>Threshold non used frequency	CV–clause 1		Integer(- 1150)	Ranges used depend on measurement quantity. CPICH Ec/No -240dB CPICH/Primary CCPCH RSCP -11525dBm
>>W non-used frequency	CV-clause 1		Real(0, 0.12.0 by step of 0.1)	

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

10.3.7.20 Inter-frequency measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-frequency cell info list	OP		Inter- frequency cell info list 10.3.7.13	

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	Need	Multi	Type and	Semantics description
name			reference	
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 <maxrl></maxrl>		Radio link addition information required for each RL to add
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	Note 1
>Radio link removal information	OP	1 to <maxrl></maxrl>		Radio link removal information required for each RL to remove
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	Note 1

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

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-RAT cell info list

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE Inter-RAT cell removal	MP			
>Remove all inter-RAT cells				No data
>Remove some inter-RAT cells				
>>Removed inter-RAT cells	MP	1 to <maxcellm eas></maxcellm 		
>>>Inter-RAT cell id	MP		Integer(0 <maxcellmeas> - 1)</maxcellmeas>	
>Remove no inter-RAT cells				
New inter-RAT cells	OP	1 to <maxcellm eas></maxcellm 		
>Inter-RAT cell id	OP		Integer(0 <maxcellmeas> - 1)</maxcellmeas>	
>CHOICE Radio Access Technology	MP			
>>GSM				
>>>Cell individual offset	MP		Integer (-5050)	In dB Used to offset measured quantity value
>>>Cell selection and re- selection info	OP		Cell selection and re-selection info for SIB11/12 10.3.2.4	see 8.6.7.3 If HCS is not used and all the parameters in cell selection and re-selection info are default values, this IE is absent.
>>>BSIC	MP		BSIC 10.3.8.2	
>>>Band indicator	MP		Enumerated (DCS 1800 band used, PCS 1900 band used)	Indicates how to interpret the BCCH ARFCN
>>>BCCH ARFCN	MP		Integer (01023)	[45]
>>IS-2000				
>>>System specific measurement info			enumerated (frequency, timeslot, colour code, output power, PN offset)	For IS-2000, use fields from TIA/EIA/IS-2000.5, Subclause 3. 7.3.3.2.27, <i>Candidate Frequency</i> <i>Neighbour List Message</i>
Cell for measurement	OP	1 to <maxcellm eas></maxcellm 		
>Inter-RAT cell id	MP		Integer(0 <maxcellmeas> -1)</maxcellmeas>	

10.3.7.24 Inter-RAT event identity

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

10.3.7.25 Inter-RAT info

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT info	MP		Enumerated (GSM)	

10.3.7.26 Inter-RAT measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT measurement results	OP	1 to <maxother RAT></maxother 		
>CHOICE system	MP			At least one spare value needed
>>GSM				
>>>Measured GSM cells	MP	1 to <maxrepo rtedGSMC ells></maxrepo 		
>>>>GSM carrier RSSI	OP		bit string(6)	RXLEV, [46]. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit.
>>>>Pathloss	OP		Integer(461 58)	In dB
>>>>CHOICE BSIC	MP			
>>>>Verified BSIC				
>>>>>inter-RAT cell id	MP		Integer(0< maxCellMea s>-1)	
>>>>Non verified BSIC				
>>>>BCCH ARFCN	MP		Integer (01023)	[45]
>>>>Observed time difference to GSM cell	OP		Observed time difference to GSM cell 10.3.7.52	

10.3.7.27 Inter-RAT measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT cell info list	OP		Inter-RAT	Measurement object
	_		cell info list	
			10.3.7.23	
Inter-RAT measurement	OP		Inter-RAT	
quantity			measuremen	
			t quantity	
			10.3.7.29	
Inter-RAT reporting quantity	OP		Inter-RAT	
			reporting	
			quantity	
			10.3.7.32	
Reporting cell status	CV-		Reporting	
	reporting		cell status	
			10.3.7.61	
CHOICE report criteria	MP			
>Inter-RAT measurement			Inter-RAT	
reporting criteria			measuremen	
			t reporting	
			criteria	
			10.3.7.30	
>Periodical reporting criteria			Periodical	
			reporting	
			criteria	
			10.3.7.53	
>No reporting				(no data)
				Chosen when this
				measurement only is used as
				additional measurement to
				another measurement

Condition	Explanation
reporting	This IE is optional if the CHOICE " <i>report criteria</i> " is equal to "periodical reporting criteria" or "No reporting", otherwise the IE is not needed

10.3.7.28 Inter-RAT measurement event results

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Inter-RAT event identity	MP		Inter-RAT	
			event	
			identity	
			10.3.7.24	
Cells to report	MP	1 to		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		eas>		
>CHOICE BSIC	MP			
>>Verified BSIC				
>>>inter-RAT cell id	MP		Integer(0<	
			maxCellMea	
			s>-1)	
>>Non verified BSIC				
>>>BCCH ARFCN	MP		Integer	[45]
			(01023)	

10.3.7.29 Inter-RAT measurement quantity

The quantity the UE shall measure in case of inter-RAT 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	OP		Intra- frequency measuremen t 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		Enumerated(required, not required)	
>IS2000				
>>TADD E _c /I ₀	MP		Integer(063)	Admission criteria for neighbours, see subclause 2.6.6.2.6 of TIA/EIA/IS-2000.5
>>TCOMP E _c /I ₀	MP		Integer(015)	Admission criteria for neighbours, see subclause 2.6.6.2.5.2 of TIA/EIA/IS- 2000.5
>>SOFT SLOPE	OP		Integer(063)	Admission criteria for neighbours, see subclause 2.6.6.2.3 and 2.6.6.2.5.2 of TIA/EIA/IS-2000.5
>>ADD_INTERCEPT	OP		Integer(063)	Admission criteria for neighbours, see subclause 2.6.6.2.5.2 of TIA/EIA/IS- 2000.5

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

10.3.7.30 Inter-RAT measurement reporting criteria

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

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

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

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

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

1

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters required for each event	OP	1 to <maxmeas Event></maxmeas 		
>Inter-RAT event identity	MP		Inter-RAT event identity 10.3.7.24	
>Threshold own system	CV–clause 0		Integer (- 1150)	
>W	CV–clause 0		Real(0, 0.12.0 by step of 0.1)	In event 3a
>Threshold other system	CV–clause 1		Integer (- 1150)	In event 3a, 3b, 3c
>Hysteresis	MP		Integer (015)	
>Time to trigger	MP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report.
>Reporting cell status	OP		Reporting cell status 10.3.7.61	

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

10.3.7.31 Inter-RAT measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT cell info list	OP		Inter-RAT cell info list 10.3.7.23	

10.3.7.32 Inter-RAT 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			
>GSM				
>>Pathloss	MP		Boolean	
>>Observed time difference to GSM cell	MP		Boolean	
>>GSM Carrier RSSI	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
CHOICE Intra-frequency cell removal	OP			
>Remove all intra-frequency cells				No data
>Remove some intra-frequency cells				
>>Removed intra-frequency cells	MP	1 to <maxcell Meas></maxcell 		
>>>Intra-frequency cell id	MP		Integer(0 <maxcellmea s> - 1)</maxcellmea 	
>Remove no intra-frequency cells				
New intra-frequency cell	OP	1 to <maxcell Meas></maxcell 		This information element must be present when "Intra- frequency cell info list" is included in the system information
>Intra-frequency cell id	MD		Integer(0 <maxcellmea s> - 1)</maxcellmea 	
>Cell info	MP		Cell info 10.3.7.2	
Cell for measurement	CV- BCHopt	1 to <maxcell Meas></maxcell 		
>Intra-frequency cell id	MP		Integer(0 <maxcellmea s>-1)</maxcellmea 	

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

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)	

10.3.7.35 Intra-frequency measured results list

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

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
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	CV- reporting		Reporting cell status 10.3.7.61	
Measurement validity	OP		Measuremen t validity 10.3.7.51	
CHOICE report criteria	OP			
>Intra-frequency measurement reporting criteria			Intra- frequency measuremen t reporting criteria 10.3.7.39	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.53	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement

Condition	Explanation
reporting	This IE is optional if the CHOICE " <i>report criteria</i> " is equal to "periodical reporting criteria" or "No reporting", otherwise the IE is not needed

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 measurement event results	MP		Cell measureme nt 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 >FDD	MP			
>>Measurement quantity	MP		Enumerated(C PICH Ec/N0, CPICH RSCP, Pathloss, UTRA Carrier RSSI)	If used in Inter system measurement quantity only Ec/N0 and RSCP is allowed. If used in inter-frequency measurement quantity RSSI is not allowed.
>TDD				
>>Measurement quantity list	MP	1 to 4		
>>>Measurement quantity	MP		Enumerated(Pr imary CCPCH RSCP, Pathloss, Timeslot ISCP, UTRA Carrier RSSI)	If used in inter-frequency measurement quantity RSSI is not allowed.

10.3.7.39 Intra-frequency measurement reporting criteria

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

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

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

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

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

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

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

Event 1g: Change of best cell in TDD.

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

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters required for each event	OP	1 to <maxmeas Event></maxmeas 		
>Intra-frequency event identity	MP		Intra- frequency event identity 10.3.7.34	
>Triggering condition 1	CV–clause 0		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells)	Indicates which cells can trigger the event
>Triggering condition 2	CV–clause 6		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells, Detected set cells, Detected set cells and monitored set cells)	Indicates which cells can trigger the event
>Reporting Range Constant	CV–clause 2		Real(014.5 by step of 0.5)	In dB. In event 1a,1b.
>Cells forbidden to affect Reporting range	CV–clause 1	1 to <maxcellm eas></maxcellm 		In event 1a,1b
>>CHOICE mode	MP			
>>>FDD >>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57	
>W	CV–clause 2		Real(0.02.0 by step of 0.1)	
>Hysteresis	MP		Real(07.5 by step of 0.5)	In dB.
>Threshold used frequency	CV-clause 3		Integer (-115165)	Range used depend on measurement quantity. CPICH RSCP -11525 dBm CPICH Ec/No -240 dB Pathloss 30165dB ISCP -11525 dBm
>Reporting deactivation threshold	CV–clause 4		Integer(0, 1, 2, 3, 4, 5, 6, 7)	In event 1a Indicates the maximum number of cells allowed in the active set in order for event 1a to occur. 0 means not applicable

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

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

10.3.7.40 Intra-frequency measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Intra-frequency measurement identity	MD		Measuremen t identity 10.3.7.48	The intra-frequency measurement identity 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 measuremen t 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 10.3.7.43	
Reporting information for state CELL_DCH	OP		Reporting information for state CELL_DCH 10.3.7.62	Note 1

NOTE 1: 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
Reporting 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 detected 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	Need	Multi	Type and	Semantics description
name			reference	
SFN-SFN observed time	MP		Enumerated(
difference reporting indicator			No report,	
			type 1, type 2)	
CHOICE mode	MP			
>FDD				
>>Reporting quantity	MP		Enumerated(
			CPICH	
			Ec/N0,	
			CPICH	
			RSCP,	
			Pathloss, No	
			report)	
>IDD				
>>Reporting quantity list	MP	1 to 2		
>>>Reporting quantity	MP		Enumerated(
			Timeslot	
			ISCP,	
			Primary	
			CCPCH	
			RSCP, No	
			report)	

10.3.7.43 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)	

10.3.7.44 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" FDD cell has the largest value when the measurement quantity is "Ec/No" or "RSCP". On the other hand, the "best" cell has the smallest value when the measurement quantity is "Pathloss". The "best" TDD cell has the largest value when measurement quantity is "Primary CCPCH RSCP".

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE Measurement	MP			
>Intra-frequency measured			Intra-	
results list			frequency	
			measured	
			results list	
			10.3.7.35	
>Inter-frequency measured			Inter-	
results list			frequency	
			measured	
			results list	
			10.3.7.15	
>Inter-RAT measured results list			Inter-RAT	
			measured	
			results list	
			10.3.7.26	
>Traffic volume measured			Traffic	
results list			volume	
			measured	
			results list	
			10.3.7.67	
>Quality measured results list			Quality	
			measured	
			results list	
			10.3.7.55	
>UE Internal measured results			UE Internal	
			measured	
			results	
			10.3.7.76	
>UE positioning measured			UE	
results			positioning	
			measured	
			results	
			10.3.7.99	

10.3.7.45 Measured results on RACH

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

Information Element/group name	Need	Multi	Type and reference	Semantics description
Measurement result for current cell				
CHOICE mode	MP			
>FDD				
>>CHOICE measurement	MP			
>>>CPICH Ec/N0			Integer(050	In dB. According to CPICH_Ec/No in [19]
>>>CPICH RSCP			Integer(091)	In dBm. According to CPICH_RSCP_LEV in [19]
>>>Pathloss			Integer(461 58)	In dB
>TDD				
>>Timeslot List	OP	1 to 14		
>>>Timeslot ISCP	MP		Timeslot ISCP info 10.3.7.65	The UE shall report the Timeslot ISCP in the same order as indicated in the cell info
>>Primary CCPCH RSCP	OP		Primary CCPCH RSCP info 10.3.7.54	
Measurement results for monitored cells	OP	1 to 7		
>SFN-SFN observed time difference	OP		SFN-SFN observed time difference 10.3.7.63	It is absent for current cell
>CHOICE mode	MP			
>>FDD				
>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>>CHOICE measurement quantity	OP			It is absent for current cell
>>>>CPICH Ec/N0			Integer(- 200)	In dB. According to CPICH_Ec/No in [19].
>>>>CPICH RSCP			Integer(- 11540)	In dBm. According to CPICH_RSCP_LEV in [19].
>>>Pathloss			Integer(461 58)	In dB
>>TDD				
>>>Cell parameters Id	MP		Cell parameters Id 10.3.6.9	
>>>Primary CCPCH RSCP	MP		Primary CCPCH RSCP info 10.3.7.54	

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

10.3.7.46 Measurement Command

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

10.3.7.47	Measurement control	system information
10.0.1.11		by bloth in the intradiction

Information element/Group	Need	Multi	Type and	Semantics description
Use of HCS	MP		Enumerated (Not used, used)	Indicates if the serving cell belongs to a HCS structure
Cell_selection_and_reselection_ quality_measure	MP		Enumerated (CPICH Ec/N0, CPICH RSCP)	Choice of measurement (CPICH Ec/N0 or CPICH RSCP) to use as quality measure Q.
Intra-frequency measurement system information	OP		Intra- frequency measuremen t system information 10.3.7.40	
Inter-frequency measurement system information	OP		Inter- frequency measuremen t system information 10.3.7.20	
Inter-RAT measurement system information	OP		Inter-RAT measuremen t system information 10.3.7.31	
Traffic volume measurement system information	OP		Traffic volume measuremen t system information 10.3.7.73	
UE Internal measurement system information	OP		UE Internal measuremen t system information 10.3.7.81	

10.3.7.48 Measurement Identity

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	MP		Integer(116)	

10.3.7.49 Measurement reporting mode

Contains the type of Measurement Report transfer mode and the indication of periodical/event trigger.

Information Element/Group	Need	Multi	Type and	Semantics
name			reference	description
Measurement Report Transfer	MP		enumerated	
Mode			(Acknowledged	
			mode RLC,	
			Unacknowledged	
			mode RLC)	
Periodical Reporting / Event	MP		Enumerated	
Trigger Reporting Mode			(Periodical	
			reporting, Event	
			trigger)	

10.3.7.50 Measurement Type

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Measurement Type	MP		Enumerated(Intra-	
			frequency,	
			Inter-frequency,	
			Inter-RAT,	
			Traffic volume,	
			Quality,	
			UE internal, UE	
			positioning)	

10.3.7.51 Measurement validity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE state	MP		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'.

10.3.7.52 Observed time difference to GSM cell

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Observed time difference to GSM cell	OP		Integer(0,,40 95)	According to GSM_TIME in [19] and [20]

10.3.7.53 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	MD		Integer(1, 2, 4, 8, 16, 32, 64, Infinity)	The default value is infinity.
Reporting interval	MP		Integer(250, 500, 1000, 2000, 3000, 4000, 6000, 8000, 12000, 16000, 20000, 24000, 28000, 32000, 64000)	Indicates the interval of periodical report. Interval in milliseconds

10.3.7.53a PLMN identities of neighbour cells

This IE contains the PLMN identities of neighbour cells.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PLMNs of intra-frequency cells list	OP	1 to <maxcellm eas></maxcellm 		
>PLMN identity	MD		PLMN identity 10.3.1.11	Default value is the previous "PLMN identity" in the list. The default value for the first PLMN in the list is the identity of the selected PLMN if the "PLMN type" in the variable SELECTED_PLMN has the value "GSM-MAP"; otherwise, the first occurrence is MP.
PLMNs of inter-frequency cells list	OP	1 to <maxcellm eas></maxcellm 		
>PLMN identity	MD		PLMN identity 10.3.1.11	Default value is the previous "PLMN identity" in the list. The default value for the first PLMN in the list is the identity of the selected PLMN if the "PLMN type" in the variable SELECTED_PLMN has the value "GSM-MAP"; otherwise, the first occurrence is MP.
PLMNs of inter-RAT cells list	OP	1 to <maxcellm eas></maxcellm 		
>PLMN identity	MD		PLMN identity 10.3.1.11	Default value is the previous "PLMN identity" in the list. The default value for the first PLMN in the list is the identity of the selected PLMN if the "PLMN type" in the variable SELECTED_PLMN has the value "GSM-MAP"; otherwise, the first occurrence is MP.

10.3.7.54 Primary CCPCH RSCP info

NOTE: Only for TDD

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
Primary CCPCH RSCP	MP		Integer(091)	According to P- CCPCH_RSCP_LEV in [19] and [20]

10.3.7.54a Qhcs

Information Element/Group	Need	Multi	Type and Reference	Semantics description
Qhcs	MP		Integer(099)	Qhcs, mapped from CPICH Ec/No (FDD), see [4] [dB] 0: -24 1: -23.5 2: -23 3: -22.5 45: -1.5 46: -1 47: -0.5 48: 0 49: (spare) 98: (spare) 99: (spare)
				Qhcs, mapped from CPICH RSCP (FDD), see [4] [dBm] 0: -115 1: -114 2: -113 : 88: -27 89: -26 90: -(spare) 91: -(spare) 91: -(spare) 99: -(spare)
				Qhcs, mapped from PCCPCH RSCP (TDD), see [4] [dBm] 0: -115 1: -114 2: -113 : 88: -27 89: -26 90: -(spare) 91: -(spare) : 98: -(spare) 99: -(spare)

		Qhcs level, mapped from
		Averaged received signal level
		RXLEV (GSM), see [4]
		[dBm]
		0110
		1: -109
		2: -108
		2100
		6149 60. 40
		62: -48
		63: -47
		64: -46
		65: -45
		66: -44
		67: -43
		68: -42
		69: -41
		70: -40
		71: -39
		72: -38
		73: -37
		74: -(spare)
		08: (cpara)
		30(spare)
		99: -(spare)

10.3.7.55 Quality measured results list

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
BLER measurement results	OP	1 to		
		<maxtrch< td=""><td></td><td></td></maxtrch<>		
		>		
>DL Transport channel identity	MP		Transport	transport channel type = DCH
			channel	
			identity	
			10.3.5.18	
>DL Transport Channel BLER	OP		Integer	According to BLER_LOG in
			(063)	[19] and [20]
CHOICE mode	MP			
>FDD				No data
>TDD				
>>SIR measurement results	OP	1 to		SIR measurements for DL
		<maxcctr< td=""><td></td><td>CCTrCH</td></maxcctr<>		CCTrCH
		CH>		
>>>TFCS ID	MP		Integer(18)	
>>>Timeslot list	MP	1 to		for all timeslot on which the
		<maxts></maxts>		CCTrCH is mapped on
>>>>SIR	MP		Integer(063	According to UE_SIR in [20]
)	

10.3.7.56 Quality measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Quality reporting quantity	OP		Quality reporting quantity 10.3.7.59	
CHOICE report criteria	MP			
 >Quality measurement reporting criteria >Periodical reporting criteria 			Quality measuremen t reporting criteria 10.3.7.58 Periodical reporting criteria 10.3.7.53	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement

10.3.7.57 Quality measurement event results

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Transport channels causing the	OP	1 to		
event		<maxtrch< td=""><td></td><td></td></maxtrch<>		
		>		
>DL Transport channel identity	MP		Transport	transport channel type = DCH
			channel	
			identity	
			10.3.5.18	

10.3.7.58 Quality measurement reporting criteria

Event 5a: Number of bad CRCs on a certain transport channel exceeds a threshold.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters sent for each transport channel	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>DL Transport channel identity	MP	>	Transport channel identity 10.3.5.18	transport channel type = DCH
>Total CRC	MP		Integer(151 2)	Number of CRCs
>Bad CRC	MP		Integer(151 2)	Number of CRCs
>Pending after trigger	MP		Integer(151 2)	Number of CRCs

10.3.7.59 Quality reporting quantity

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
DL Transport Channel BLER	MP		Boolean	TRUE means report requested
Transport channels for BLER reporting	CV-BLER reporting	1 to <maxtrch ></maxtrch 		The default, if no transport channel identities are present, is that the BLER is reported for all downlink transport channels
>DL Transport channel identity	MP		Transport channel identity 10.3.5.18	transport channel type = DCH
CHOICE mode	MP			
>FDD				No data
>TDD				
>>SIR measurement list	OP	1 to <maxcctr CH></maxcctr 		SIR measurements shall be reported for all listed TFCS IDs
>>>TFCS ID	MP		Integer(18)	

Condition	Explanation
BLER reporting	This information element is <u>absent not needed</u> if 'DL Transport Channel BLER' is 'False' and optional, if 'DL Transport Channel BLER' is 'True'

10.3.7.60 Reference time difference to cell

In the System Information message, the reference time difference to cell indicates the timing difference between the primary CCPCH of the current cell and the primary CCPCH of a neighbouring cell.

In the Measurement Control message, the reference time difference to cell indicates the timing difference between UE uplink transmission timing and the primary CCPCH of a neighbouring cell.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE accuracy	MP			
>40 chips				
>>Reference time difference	MP		Integer(0384 00 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		Integer(0 38400 by step of 2560)	In chips

10.3.7.61 Reporting Cell Status

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE reported cell	MP			•
>Report cells within active set				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within monitored set cells on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within active set and/or monitored set cells on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within detected set on used frequency				
>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within monitored set and/or detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report all active set cells + cells within monitored set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within monitored set and/or detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	

>Report cells within virtual active			
set			
>>Maximum number of reported	MP	Integer(16)	
cells			
>Report cells within monitored			
set on non-used frequency			
>>Maximum number of reported	MP	Integer(16)	
cells			
>Report cells within monitored			
and/or active set on non-used			
frequency			
>>Maximum number of reported	MP	Integer(16)	
cells			
>Report all virtual active set			
cells + cells within monitored set			
on non-used frequency			
>>Maximum number of reported	MP	Enumerated	
cells		(virtual/active set	
		cells+1,	
		virtual/active set	
		cells+2,,	
		virtual/active set	
		cells+6)	
>Report cells within active set or			
within virtual active set			
>>Maximum number of reported	MP	Integer (112)	
cells			
>Report cells within active			
and/or monitored set on used			
frequency or within active and/or			
monitored set on non-used			
frequency			
>>Maximum number of reported	MP	Integer(112)	
cells			

10.3.7.62 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	
Measurement Reporting Mode	MP		Measurement Reporting Mode 10.3.7.49	
CHOICE report criteria	MP			
>Intra-frequency measurement reporting criteria			Intra-frequency measurement reporting criteria 10.3.7.39	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.53	

10.3.7.63 SFN-SFN observed time difference

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE type	MP			
>Type 1			Integer(09830399)	According to T1_SFN- SFN_TIME in [19] and [20]
>Type 2			Integer(040961)	According to T2_SFN- SFN_TIME in [19] and [20]

10.3.7.64 Time to trigger

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Time to trigger	MP		Integer(0, 10, 20, 40, 60, 80, 100, 120, 160, 200, 240, 320, 640, 1280, 2560, 5000)	Time in ms

10.3.7.65 Timeslot ISCP info

NOTE: Only for TDD

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
Timeslot ISCP	MP		Integer (091)	According to UE_TS_ISCP_LEV in [20]

10.3.7.66 Traffic volume event identity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Traffic volume event identity	MP		Enumerated(4a, 4b)	

10.3.7.67 Traffic volume measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Traffic volume measurement results	OP	1 to <maxrb ></maxrb 		
>RB Identity	MP		RB Identity 10.3.4.16	
>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 of 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
10.3.7.68 Traffic volume measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Traffic volume measurement	OP		Traffic	
Object	_		volume	
			measuremen	
			t Object	
			10.3.7.70	
Traffic volume measurement	OP		Traffic	
quantity			volume	
			measuremen	
			t quantity	
			10.3.7.71	
Traffic volume reporting quantity	OP		Traffic	
			volume	
			reporting	
			quantity	
			10.3.7.74	
Measurement validity	OP		Measuremen	
			t validity	
			10.3.7.51	
CHOICE report criteria	MP			
>Traffic volume measurement			Traffic	
reporting criteria			volume	
			measuremen	
			t reporting	
			criteria	
			10.3.7.72	
>Periodical reporting criteria			Periodical	
			reporting	
			criteria	
			10.3.7.53	
>No reporting				(no data)
				Chosen when this
				measurement only is used as
				additional measurement to
				another measurement

10.3.7.69 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
Uplink transport channel type causing the event	MP		Enumerated(DCH,RACH, USCH)	USCH is TDD only
UL Transport Channel identity	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	
Traffic volume event identity	MP		Traffic volume event identity 10.3.7.66	

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

10.3.7.70 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 ></maxtrch 		
>Uplink transport channel type	MP		Enumerated(DCH,RACH, USCH)	USCH is TDD only
>UL Target Transport Channel ID	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	

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

10.3.7.71 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)	The use of this parameter is described in section 8.6.7.10.
Time Interval to take an average or a variance	CV-A/V		Integer(20, 40,260, by steps of 20)	In ms

Condition	Explanation
A/V	This IE is <u>mandatory</u> present-when "Average RLC buffer" or "Variance of RLC buffer payload" is chosen and not needed otherwise.

10.3.7.72 Traffic volume measurement reporting criteria

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

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

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

Information Element/Group	Need	Multi	Type and reference	Semantics description
Parameters sent for each transport channel	OP	1 to <maxtrch ></maxtrch 		
>Uplink transport channel type	OP		Enumerated(DCH,RACH, USCH)	USCH is TDD only
>UL Transport Channel ID	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	
>Parameters required for each Event	OP	1 to <maxmeas perEvent></maxmeas 		
>>Traffic volume event identity	MP		Traffic volume event identity 10.3.7.66	
>>Reporting Threshold	MP		Enumerated(8,16,32,64,1 28,256,512,1 024,2K,3K,4 K,6K,8K,12K ,16K,24K,32 K,48K,64K,9 6K,128K,192 K,256K,384 K,512K,768 K)	Threshold in bytes And N Kbytes = N*1024 bytes
>>Time to trigger	OP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms
>>Pending time after trigger	OP		Integer(250, 500, 1000, 2000, 4000, 8000, 16000)	Indicates the period of time during which it is forbidden to send any new measurement reports with the same Traffic volume event identity even if the triggering condition is fulfilled. Time in milliseconds
>>Tx interruption after trigger	OP		Integer (250, 500, 1000, 2000, 4000, 8000, 16000)	Time in milliseconds. Indicates how long the UE shall block DTCH transmissions on the RACH after a measurement report is triggered.

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

10.3.7.73 Traffic volume measurement system information

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Information Element/Group name	Need	Multi	Type and reference	Semantics description
Traffic volume measurement identity	MD		Measuremen t identity 10.3.7.48	The traffic volume measurement identity has default value 4.
Traffic volume measurement object	OP		Traffic volume measuremen t object	

		10.3.7.70
Traffic volume	OP	Traffic
measurement quantity		volume
		measuremen
		t quantity
		10.3.7.71
Traffic volume reporting quantity	OP	Traffic
		volume
		reporting
		quantity
		10.3.7.74
Measurement validity	OP	Measuremen
		t validity
		10.3.7.51
Measurement Reporting Mode	MP	Measuremen
		t Reporting
		Mode
0110107		10.3.7.49
CHOICE reporting criteria	MP	
>Traffic volume measurement		Traffic
reporting criteria		volume
		measuremen
		t reporting
		criteria
		10.3.7.72
>Periodical reporting criteria		Periodical
		reporting
		criteria
		10.3.7.53

10.3.7.74 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	Need	Multi	Type and	Semantics description
name			reference	
RLC Buffer Payload for each RB	MP		Boolean	
Average of RLC Buffer Payload	MP		Boolean	
for each RB				
Variance of RLC Buffer Payload	MP		Boolean	
for each RB				

10.3.7.75 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)	

10.3.7.76 UE internal measured results

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>FDD				
>>UE Transmitted Power	OP		UE Transmitted Power info 10.3.7.85	
>>UE Rx-Tx report entries	OP	1 to <maxrl ></maxrl 		
>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	Primary CPICH info for each cell included in the active set
>>>UE Rx-Tx time difference type 1	MP		UE Rx-Tx time difference type 1 10.3.7.83	UE Rx-Tx time difference in chip for each RL included in the active set
>TDD				
>>UE Transmitted Power list	OP	1 to <maxts ></maxts 		UE Transmitted Power for each used uplink timeslot in ascending timeslot number order
>>>UE Transmitted Power	MP		UE Transmitted Power info 10.3.7.85	
>>Applied TA	OP		Uplink Timing Advance 10.3.6.95	Uplink timing advance applied by the UE

10.3.7.77 UE internal measurement

Information Element/Group	Need	Multi	Type and reference	Semantics description
UE internal measurement	OP		UE internal	
quantity			measuremen	
			t quantity 10.3.7.79	
UE internal reporting quantity	OP		UE internal	
			reporting	
			quantity	
			10.3.7.82	
CHOICE report criteria	MP			
>UE internal measurement			UE internal	
reporting criteria			measuremen	
			t reporting	
			criteria	
			10.3.7.80	
>Periodical reporting criteria			Periodical	
			reporting	
			criteria	
			10.3.7.53	
>No reporting				(no data)
				Chosen when this
				measurement only is used as
				additional measurement to
		1		another measurement

CHOICE report criteria	Condition under which the given <i>report criteria</i> 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

10.3.7.78 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	
			10.3.7.75	
CHOICE mode	MP			
>FDD				
>Primary CPICH info	CV-clause		Primary	
	1		CPICH info	
			10.3.6.60	
>TDD				(no data)

Condition	Explanation
Clause 1	This IE is mandatory <u>present</u> if "UE internal event identity" is set to "6f" or "6g", otherwise the IE is not needed

10.3.7.79 UE internal measurement quantity

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The quantity the UE shall measure in case of UE internal measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>FDD				
>>Measurement quantity	MP		Enumerated(UE Transmitted Power, UTRA Carrier RSSI, UE Rx-Tx time difference)	
>TDD				
>>Measurement quantity	MP		Enumerated(UE Transmitted Power, UTRA Carrier RSSI)	
Filter coefficient	MP		Filter coefficient 10.3.7.9	

10.3.7.80 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 UEs 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 <maxmeas Event></maxmeas 		
>UE internal event identity	MP		UE internal event identity 10.3.7.75	
>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(- 5033)	Power in dBm. In event 6a, 6b.
>UE Rx-Tx time difference threshold	CV- <i>clause</i> 2		Integer(768 1280)	Time difference in chip. In event 6f, 6g.

Condition	Explanation
Clause 1	The IE is mandatory <u>present</u> if UE internal event identity" is set to "6a" or "6b", otherwise the IE is not
	needed
Clause 2	The IE is mandatory <u>present</u> if "UE internal event identity" is set to "6f" or "6g", otherwise the IE is not needed

10.3.7.81 UE internal measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE internal measurement identity	MD		Measuremen t identity 10.3.7.48	The UE internal measurement identity has default value 5.
UE internal measurement quantity	MP		UE internal measuremen t quantity 10.3.7.79	

10.3.7.82 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	
CHOICE mode	MP			
>FDD				
>>UE Rx-Tx time difference	MP		Boolean	
>TDD				
>>Applied TA	MP		Boolean	

10.3.7.83 UE Rx-Tx time difference type 1

The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time), 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 type 1	MP		Integer(7681280)	In chips.

10.3.7.84 UE Rx-Tx time difference type 2

The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time), of the downlink DPCH frame from the measured radio link.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE Rx-Tx time difference type 2	MP		Real(768.0 1279.9375 by step of 0.0625)	Resolution of 1/16 of a chip.

10.3.7.85 UE Transmitted Power info

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
UE Transmitted Power	MP		Integer (0104)	According to UE_TX_POWER in [19] and [20]

10.3.7.86 UE positioning Ciphering info

This IE contains information for the ciphering of UE positioning assistance data broadcast in System Information.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Ciphering Key Flag	MP		Bitstring(1)	See note 1
Ciphering Serial Number	MP		Integer(065	The serial number used in the
			535)	DES ciphering algorithm

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

10.3.7.87 UE positioning Error

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Error reason	MP		Enumerated(ER1, ER2, ER3, ER4, ER5, ER6, ER7, ER8)	Note 1
GPS Additional Assistance Data Request	OP		UE positioning GPS Additional Assistance Data Request 10.3.7.88a	

NOTE 1: The following table gives the mapping of the IE "Error reason"

Value	Indication
ER1	There were not enough cells to be received when performing mobile-based OTDOA-IPDL.
ER2	There were not enough GPS satellites to be received, when performing UE-based GPS location.
ER3	Location calculation assistance data missing.
ER4	Requested method not supported.
ER5	Undefined error.
ER6	Location request denied by the user.
ER7	Location request not processed by the user and timeout
ER8	Reference cell for GPS is not the serving cell

10.3.7.88 UE positioning GPS acquisition assistance

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

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		Reference	
	IVIP			CBS Time of Week equated in
>UTRAINTEIEFEICE liine				TOW in milliseconds and GPS TOW in milliseconds and GPS TOW remainder in microseconds, UTRAN reference time = 1000
				TOW rem usec
>>GPS TOW msec	MP		Integer(06. 048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit)
>>GPS TOW rem usec >>CHOICE mode	MP		Integer(099 9)	GPS Time of Week in microseconds MOD 1000.
>>>>Primary CPICH Info	OP		Primary CPICH Info 10.3.6.60	Identifies the reference cell for the GPS TOW-SFN relationship
>>>TDD				
>>>>cell parameters id	OP		Cell parameters id 10.3.6.9	Identifies the reference cell for the GPS TOW-SFN relationship
>>SFN	MP		Integer(040 95)	
>GPS reference time only				
>>GPS TOW msec	MP		Integer(06. 048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit).
Satellite information	MP	1 to <maxsat></maxsat>		· · · · · ·
>SatID	MP		Integer (063)	
>Doppler (0" order term)	MP		Real(- 512051175 by step of 2.5)	Hz
>Extra Doppler	OP			
>>Doppler (1 st order term)	MP		Real (0.9660.48 3 by step of 0.023)	Scaling factor 1/42
>>Doppler Uncertainty	MP		Enumerated (12.5,25,50, 100.200)	Hz
>Code Phase	MP		Integer(010 22)	Chips, specifies the centre of the search window
>Integer Code Phase	MP		Integer(019)	1023 chip segments
>GPS Bit number	MP		Integer(03)	Specifies GPS bit number (20 1023 chip segments)
>Code Phase Search Window	MP		Integer(1023 ,1,2,3,4,6,8,1 2,16,24,32,4 8,64,96,128, 192)	Specifies the width of the search window.
>Azimuth and Elevation	OP			
>>Azimuth	MP		Real(0348. 75 by step of 11.25)	Degrees
>>Elevation	MP		Real(078.7 5 by step of 11.25)	Degrees

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

10.3.7.88a UE positioning GPS Additional Assistance Data Request

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Almanac	MP		Boolean	TRUE means requested
UTC Model	MP		Boolean	TRUE means requested
Ionospheric model	MP		Boolean	TRUE means requested
Navigation Model	MP		Boolean	TRUE means requested
DGPS Corrections	MP		Boolean	TRUE means requested
Reference Location	MP		Boolean	TRUE means requested
Reference Time	MP		Boolean	TRUE means requested
Acquisition Assistance	MP		Boolean	TRUE means requested
Real-Time Integrity	MP		Boolean	TRUE means requested
Navigation Model Additional data	CV- Navigation Model			this IE is present only if "Navigation Model" is set to TRUE otherwise it is absent
>GPS Week	MP		Integer (01023)	
>GPS_Toe	MP		Integer (0167)	GPS time of ephemeris in hours of the latest ephemeris set contained by the UE
>T-Toe limit	MP		Integer (010)	ephemeris age tolerance of the UE to UTRAN in hours
>Satellites list related data	MP	0 to <maxsat></maxsat>		
>>SatID	MP		Integer (063)	
>>IODE	MP		Integer (0255)	Issue of Data Ephemeris for SatID

10.3.7.89 UE positioning GPS almanac

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

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		Reference	
VVINa Setellite information		1.40	Bit String(8)	
Satellite information	MP	1 to		
- DatalD	MD	<11182381>	Integer(0, 2)	Sec [12]
	MP		Integer(03)	
Satid	MP		063)	
>e	MP		Bit string(16)	Eccentricity [12]
>t _{oa}	MP		Bit string(8)	Reference Time Ephemeris [12]
>δi	MP		Bit string(16)	
>OMEGADOT	MP		Bit string(16)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles/sec) [12]
>SV Health	MP		Bit string(8)	1/2
>A ^{1/2}	MP		Bit string(24)	Semi-Major Axis (meters) ¹⁷² [12]
>OMEGA ₀	MP		Bit string(24)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles) [12]
>M ₀	MP		Bit string(24)	Mean Anomaly at Reference Time (semi-circles) [12]
>ω	MP		Bit string(24)	Argument of Perigee (semi- circles) [12]
>af ₀	MP		Bit string(11)	apparent clock correction [12]
>af ₁	MP		Bit string(11)	apparent clock correction [12]
SV Global Health	OP		Bit	This enables GPS time
			string(364)	recovery and possibly
				extended GPS correlation
				intervals. It is specified in page
				25 of subframes 4 and 5 [12]

10.3.7.90 UE positioning GPS assistance data

This IE contains GPS assistance data.

Information Element/Group	Need	Multi	Type and	Semantics description
			Kelelelice	
UE positioning GPS reference	OP		UE	
time			positioning	
			GPS	
			reference	
			time	
			10.3.7.96	
UE positioning GPS reference	OP		Ellipsoid	A priori knowledge of UE 3-D
UE position				position.
			altitude and	
			uncertainty	
			ellipsola	
			10.3.8.4C	
	OP		UE	
corrections			positioning	
			GPS DGPS	
			corrections	
	0.0		10.3.7.91	
UE positioning GPS navigation	OP		UE	
model			positioning	
			GPS	
			navigation	
			model	
			10.3.7.94	
UE positioning GPS ionospheric	OP		UE	
model			positioning	
			GPS is a second second	
			ionospheric	
			model	
			10.3.7.92	
UE positioning GPS UTC model	OP		UE	
			GPSUIC	
			10.2 7 07	
LIE positioning CDS almonos			10.3.7.97	
DE positioning GPS aimanac	UP		UE	
			CDS	
			GF3 almanac	
			10 3 7 80	
LIE positioning CPS acquisition	OP		10.3.7.09	
assistance	01			
assistance			GPS	
			acquisition	
			assistance	
			10.3.7 88	
UE positioning GPS real-time	OP		UF	
integrity			positioning	
			GPS real-	
			time integrity	
			10.3.7.95	

10.3.7.90a UE positioning GPS Ephemeris and Clock Correction parameters

This IE contains information for GPS ephemeris and clock correction.

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
C/A or P on L2			Bit string(2)	Code(s) on L2 Channel [12]
			Bit string(4)	User Range Accuracy [12]
SV Health	MP		Bit string(6)	[12]
IODC	MP		Bit string(10/	Issue of Data, Clock [12]
L2 P Data Flag	MP		Bit string(1)	[12]
SF 1 Reserved	MP		Bit string(87)	[12]
IGD	МР		Bit string(8)	Estimated group delay differential [12]
t _{oc}	MP		Bit string(16 ⁾	apparent clock correction [12]
af ₂	MP		Bit string(8)	apparent clock correction [12]
af ₁	MP		Bit string(16)	apparent clock correction [12]
af ₀	MP		Bit string(22)	apparent clock correction [12]
C _{rs}	MP		Bit string(16)	Amplitude of the Sine Harmonic Correction Term to the Orbit Radius (meters) [12]
Δn	MP		Bit string(16)	Mean Motion Difference From Computed Value (semi- circles/sec) [12]
M ₀	MP		Bit string(32)	Mean Anomaly at Reference Time (semi-circles) [12]
C _{uc}	MP		Bit string(16)	Amplitude of the Cosine Harmonic Correction Term To The Argument Of Latitude (radians) [12]
е	MP		Bit string(32)	С
C _{us}	MP		Bit string(16)	Amplitude of the Sine Harmonic Correction Term To The Argument Of Latitude (radians) [12]
(A) ^{1/2}	MP		Bit string(32)	Semi-Major Axis (meters) ^{1/2} [12]
t _{oe}	MP		Bit string(16)	Reference Time Ephemeris [12]
Fit Interval Flag	MP		Bit string(1)	[12]
AODO	MP		Bit string(5)	Age Of Data Offset [12]
C _{ic}	MP		Bit string(16)	Amplitude of the Cosine Harmonic Correction Term To The Angle Of Inclination (radians) [12]
OMEGA ₀	MP		Bit string(32)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles) [12]
C _{is}	MP		Bit string(16)	Amplitude of the Sine Harmonic Correction Term To The Angle Of Inclination (radians) [12]
iO	MP		Bit string(32)	Inclination Angle at Reference Time (semi-circles) [12]
C _{rc}	MP		Bit string(16)	Amplitude of the Cosine Harmonic Correction Term to the Orbit Radius (meters) [12]
ω	MP		Bit string(32)	Argument of Perigee (semi- circles) [12]
OMEGAdot	MP		Bit string(24)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles/sec) [12]
ldot	MP		Bit string(14)	Rate of Inclination Angle (semi- circles/sec) [12]

10.3.7.91 UE positioning GPS DGPS corrections

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

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS TOW sec	MP		Integer(060 4799)	seconds GPS time-of-week when the DGPS corrections were calculated
Status/Health	MP		Enumerated(UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.2, UDRE scale 0.1, no data, invalid data)	
DPGS information	CV- Status/Hea Ith	1 to <maxsat></maxsat>		If the Cipher information is included these fields are ciphered.
>SatID	MP		Enumerated (063)	
>IODE	MP		Integer(025	
>UDRE	MP		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	The value in this field shall be multiplied by the UDRE Scale Factor in the IE Status/Health to determine the final UDRE estimate for the particular satellite.
>PRC	MP		Real(- 655.04655. 04 by step of 0.32)	meters (different from [13])
>RRC	MP		Real(- 4.0644.064 by step of 0.032)	meters/sec (different from [13])
>Delta PRC2	MP		Integer(- 127127)	meters
>Delta RRC2	MP		Real(- 0.2240.224 by step of 0.032)	meters/sec
>Delta PRC3	CV-DCCH		Integer(- 127127)	meters
>Delta RRC3	CV-DCCH		Real(- 0.2240.224 by step of 0.032)	meters/sec

1

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

10.3.7.92 UE positioning GPS ionospheric model

The IE contains fields needed to model the propagation delays of the GPS signals through the ionosphere.

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
α ₀	MP		Bit string(8)	Note 1
α ₁	MP		Bit string(8)	Note 1
α ₂	MP		Bit string(8)	Note 1
α ₃	MP		Bit string(8)	Note 1
βο	MP		Bit string(8)	Note 2
β ₁	MP		Bit string(8)	Note 2
β2	MP		Bit string(8)	Note 2
β ₃	MP		Bit string(8)	Note 2

- NOTE 1: The parameters αn are the coefficients of a cubic equation representing the amplitude of the vertical delay [12].
- NOTE 2: The parameters β n are the coefficients of a cubic equation representing the period of the ionospheric model [12].

10.3.7.93 UE positioning GPS measured results

Information Element/Group	Need	Multi	Type and	Semantics description
			Reference	
>>Primary CPICH Info	OP		Primary CPICH Info 10.3.6.60	Identifies the reference cell for the GPS TOW-SFN relationship
>TDD				
>>cell parameters id	OP		Cell parameters id 10.3.6.9	Identifies the reference cell for the GPS TOW-SFN relationship
Reference SFN	OP		Integer(040 95)	The SFN for which the location is valid
GPS TOW msec	MP		Integer(06. 048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit). 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 Time of Week in microseconds = 1000 * GPS TOW msec + GPS TOW rem usec
GPS TOW rem usec	CV- capability and request		Integer(099 9)	GPS Time of Week in microseconds MOD 1000.
Measurement Parameters	MP	1 to <maxsat></maxsat>		
>Satellite ID	MP		Enumerated(063)	
>C/N _o	MP		Integer(063)	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(- 327683276 8)	Hz, scale factor 0.2.
>Whole GPS Chips	MP		Integer(010 23)	Unit in GPS chips
>Fractional GPS Chips	MP		Integer(0(2 ¹ ⁰ -1))	Scale factor 2 ⁻¹⁰
>Multipath Indicator	MP		Enumerated(NM, low, medium, high)	See note 1
>Pseudorange RMS Error	MP		Enumerated(range index 0range index 63)	See note 2

Condition	Explanation
Capability and request	This field is included onlymandatory present -if the UE has this capability and if it was requested in the UE positioning reporting quantity and not needed otherwise.

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
Hiah	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
1	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

10.3.7.94 UE positioning GPS navigation model

This IE contain information required to manage the transfer of precise navigation data to the GPS-capable UE.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Satellite information	MP	1 to <maxsat ></maxsat 		
>SatID	MP		Enumerated(063)	Satellite ID
>Satellite Status	MP		Enumerated(NS_NN, ES_SN, ES_NN, REVD)	See note 1
>GPS Ephemeris and Clock Correction parameters	CV- Satellite status		UE positioning GPS Ephemeris and Clock Correction parameters 10.3.7.90a	

NOTE 1: The UE shall interpret enumerated symbols as follows.

Value	Indication
NS_NN	New satellite, new Navigation Model
ES_SN	Existing satellite, same Navigation Model
ES_NN	Existing satellite, new Navigation Model
REVD	Reserved

Condition	Explanation
Satellite status	The IE is present not needed unless if IE "Satellite
	status" is ES_SN and mandatory present otherwise.

10.3.7.95 UE positioning GPS real-time integrity

This IE contains parameters that describe the real-time status of the GPS constellation.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Satellite information	MP	1 to <maxsat ></maxsat 		
>BadSatID	MP		Enumerated(063)	

10.3.7.96 UE positioning GPS reference time

Information Element/Group	Need	Multi	Type and Reference	Semantics description
GPS Week	MP		Integer(010	
GPS TOW msec	MP		Integer(06. 048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit).
GPS TOW rem usec	OP		Integer(099 9)	GPS Time of Week in microseconds MOD 1000. GPS Time of Week in microseconds = 1000 * GPS TOW msec + GPS TOW rem usec
CHOICE mode				
>FDD				
>>Primary CPICH Info	OP		Primary CPICH Info 10.3.6.60	Identifies the reference cell for the GPS TOW-SFN relationship
>TDD				
>>cell parameters id	OP		Cell parameters id 10.3.6.9	Identifies the reference cell for the GPS TOW-SFN relationship
SFN	OP		Integer(040 95)	The SFN which the GPS TOW time stamps. SFN and GPS TOW msec and GPS TOW rem usec are included if relation GPS TOW/SFN is known to at least 10 µs.
SFN-TOW Uncertainty	OP		Enumerated (lessThan10, moreThan10)	This field indicates the uncertainty of the relation GPS TOW/SFN. lessThan10 means the relation is accurate to at least 10 ms.
Node B Clock Drift	OP		Real(- 0.09375 0.09375 by step of 0.0125)	μsec/sec (ppm)
GPS TOW Assist	OP	1 to <maxsat ></maxsat 		
>SatID	MP		Enumerated(063)	
>TLM Message	MP		Bit string(14)	
>TLM Reserved	MP		Bit string(2)	
>Alert	MP		Boolean	
>Anti-Spoof	MP		Boolean	

10.3.7.97 UE positioning 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 ₁	MP		Bit string(24)	sec/sec [12]
A ₀	MP		Bit string(32)	seconds [12]
t _{ot}	MP		Bit string(8)	seconds [12]
Δt _{LS}	MP		Bit string(8)	seconds [12]
WNt	MP		Bit string(8)	weeks [12]
WNLSF	MP		Bit string(8)	weeks [12]
DN	MP		Bit string(8)	days [12]
Δt_{LSF}	MP		Bit string(8)	seconds [12]

10.3.7.98 UE positioning IPDL parameters

This IE contains parameters for the IPDL mode. The use of this parameters is described in [29].

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
IP spacing	MP		Integer(5,7,1	See [29]
			0,15,20,30,4	
			0,50)	
IP length	MP		Integer(5,10)	See [29]
IP offset	MP		Integer(09)	Relates the BFN and SFN, should be same as T_cell defined in [10]; See [29]
Seed	MP		Integer(063	See [29]
Burst mode parameters	OP			
>Burst Start	MP		Integer(015)	See [29]
>Burst Length	MP		Integer(102 5)	See [29]
>Burst freq	MP		Integer(116)	See [29]

10.3.7.99 UE positioning measured results

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE positioning OTDOA measured results	OP		UE positioning OTDOA measured results 10.3.7.105	
UE positioning Position estimate info	OP		UE positioning Position estimate info 10.3.7.109	
UE positioning GPS measured results	OP		UE positioning GPS measured results 10.3.7.93	
UE positioning error	OP		UE positioning error 10.3.7.87	Included if UE positioning error occurred

10.3.7.100 UE positioning measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE positioning reporting quantity	MP		UE positioning reporting quantity 10.3.7.111	
CHOICE reporting criteria	MP			
>UE positioning reporting criteria			UE positioning reporting criteria 10.3.7.110	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.53	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement
UE positioning OTDOA assistance data	CV- OTDOA		UE positioning OTDOA assistance data 10.3.7.103	
UE positioning GPS assistance data	OP		UE positioning GPS assistance data 10.3.7.90	

Condition	Explanation
OTDOA	This IE is mandatory <u>present</u> if the IE "Positioning method" is set to "OTDOA" or "OTDOA or GPS" <u>and</u> not needed otherwise.

10.3.7.101 UE positioning measurement event results

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
CHOICE Event ID	MP			
>7a				
>>UE positioning Position	MP		UE	
estimate info			positioning	
			Position	
			estimate info	
			10.3.7.109	
>7b				
>>UE positioning OTDOA	MP		UE	
measurement			positioning	
			OTDOA	
			measureme	
			nt	
			10.3.7.105	
>7c				
>>UE positioning GPS	MP		UE	
measurement			positioning	
			GPS	
			measureme	
			nt 10.3.7.93	

10.3.7.102 Void

10.3.7.103 UE positioning OTDOA assistance data

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
UE positioning OTDOA reference cell info	OP		UE positioning OTDOA reference cell info 10.3.7.108	
UE positioning OTDOA neighbour cell list	OP	1 to <maxcellm eas></maxcellm 		
>UE positioning OTDOA neighbour cell info	MP		UE positioning OTDOA neighbour cell info 10.3.7.106	

10.3.7.104 Void

10.3.7.105 UE positioning OTDOA measurement

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

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
SFN	MP		Integer(040	SFN during which the last
			95)	measurement was performed
CHOICE mode				
>FDD				
>>Reference cell id	MP		Primary	
			CPICH into	
> LIE Dy Ty time difference type	MD		10.3.6.60	
2	IVIE			
2			difference	
			type 2	
			10.3.7.84	
>TDD				(no data)
>>Reference cell id	MP		Cell	
			parameters	
			ID 10.3.6.9	
Neighbours	MP	0 to		
>CHOICE mode	MD	eas>		
>>>Neighbour Identity	MD		Primary	Default value is the same as in
	me		CPICH info	the first set of multiple sets.
			10.3.6.60	
>>>UE Rx-Tx time difference	OP		UE Rx-Tx	Included if the neighbour is in
type 2			time	the active set
			difference	
			type 2	
			10.3.7.84	
>>IDD	MD			Defenditure has in the series as in
>>>Cell and Channel ID	MD		Cell and	befault value is the same as in
			Identity info	the first set of multiple sets.
			10.3.6.8a	
>UE positioning OTDOA quality	MP		UE	Quality of the measurement
			positioning	from the neighbour cell.
			OTDOA	
			quality	
			10.3.7.107	
>SFN-SFN observed time	MP		SFN-SFN	Gives the timing relative to the
afference type 2			observed	reference cell. Only type 2 is
			difference	anowed.
			10.3.7.63	

10.3.7.106 UE positioning OTDOA neighbour cell info

This IE gives approximate cell timing in order to decrease the search window, as well as the cell locations and fine cell timing for UE based OTDOA.

Information Element/Group	Need	Multi	Type and Reference	Semantics description
	MD		Kelerence	
>>Primary CPICH info	MP		Primary CPICH info	
	· · · · · · · · · · · · · · · · · · ·		10.3.0.00	
>>cell and channel ID	MP		Cell and Channel Identity info 10.3.6.8a	Identifies the channel to be measured on.
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
IPDL parameters	CV-IPDLs		UE positioning IPDL parameters 10.3.7.98	
SFN offset	CV-IPDLs		Integer (0 4095)	Define Tref as the time of beginning of system frame number SFNref of the reference cell. Define Tnc as the beginning of a frame from the neighbour cell occurring immediately after the time Tref. Let the corresponding system frame number be SFNnc. Then SFNnc = SFNref-SFN offset modulo 4096.
SFN-SFN relative time difference	MP		Integer(0 38399)	Gives the relative timing compared to the reference cell Equal to (Tnc-Tref)/($3.84^{*}10^{6}$) J where L()J denotes rounding to the nearest lower integer. in chips.
SFN-SFN drift	OP		Real(0,+0.33 ,+0.66,+1,+1 .33,+1.66,+2 ,+2.5,+3,+4, +5,+7,+9,+1 1,+13,+15,- 0.33,-0.66,- 1,-1.33,- 1.66,-2,-2.5,- 3,-4,-5,-7,-9,- 11,-13,-15)	meters/sec
Search Window Size	MP		Integer(20, 40, 80, 160, 320, 640, 1280, infinity)	in chips. If the value is X then the expected SFN-SFN observed time difference is in the range [RTD-X, RTD+X] where RTD is the value of the field SFN-SFN relative time difference. Infinity means that the uncertainty is larger than 1280 chips.
CHOICE PositioningMode	MP			
>UE based				
>>Cell Position	MD			Default is the same as previous cell
>>>Relative North	OP		Integer(- 200002000 0)	Seconds, scale factor 0.03. Relative position compared to reference cell.

>>>Relative East	OP	Integer(- 200002000	Seconds, scale factor 0.03. Relative position compared to
>>>Relative Altitude	OP	Integer(- 40004000)	Relative altitude in meters compared to ref. cell.
>>Fine SFN-SFN	MP	Real(00.93 75 in steps of 0.0625)	Gives finer resolution
>>Round Trip Time	OP	Real(876.00 2923.875) in steps of 0.0625	In chips. Included if cell is in active set.
>UE assisted			(no data)

Condition	Explanation
IPDLs	This IE is mandatory present only if IPDLs are applied
	and not needed otherwise.

10.3.7.107 UE positioning OTDOA quality

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Std Resolution	MP		Bit string(2)	Std Resolution field includesthe resolution used in Std ofOTDOA Measurements field.Encoding on two bits asfollows:'00'10 meters'01'20 meters'10'30 meters'11'Reserved
Number of OTDOA Measurements	MP		Bit string(3)	Number of measurements field is used together with Std of OTDOA Measurements field to define quality of a reported OTDOA measurement. The field indicates how many OTDOA measurements have been used in the UE to define the standard deviation of the measurements. Following 3 bit encoding is used: '000' 0-4 '001' 5-9 '010' 10-14 '001' 5-9 '010' 10-14 '011' 15-24 '100' 25-34 '101' 35-44 '110' 45-54 '111' 55 or more
Std of OTDOA Measurements	MP		Bit string(5)	Std of OTDOA Measurements field includes standard deviation of OTDOA measurements. Following linear 5 bit encoding is used: '00000' 0 - (R*1-1) meters '00001' R*1 - (R*2-1) meters '00010' R*2 - (R*3-1) meters '11111' R*31 meters or more where R is the resolution defined by Std Resolution field. E.g. R=20 m corresponds to 0-19 m, 20-39 m,,620+ m.

10.3.7.108 UE positioning OTDOA reference cell info

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

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
SFN	OP		Integer (04095)	Time stamp (SFN of Reference Cell) of the SFN- SFN relative time differences and SFN-SFN drift rates. Included if any SFN-SFN drift value is included in IE UE positioning OTDOA neighbour cell info.
CHOICE mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>TDD				
>>cell and channel ID	MP		Cell and Channel Identity info 10.3.6.8a	Identifies the channel to be measured on.
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information.
CHOICE PositioningMode	MP			
>UE based				
>>CHOICE Cell Position	OP			The position of the antenna that defines the cell. Used for the UE based method.
>>>Ellipsoid				
>>>>Ellipsoid point	MP		Ellipsoid point 10.3.8.4a	
>>>Ellipsoid with altitude				
>>>>Ellipsoid point with altitude	MP		Ellipsoid point with altitude 10.3.8.4b	
>>Round Trip Time	OP		Real(876.00 2923.875) in steps of 0.0625	In chips.
>UE assisted				(no data)
IPDL parameters	OP		UE positioning IPDL parameters 10.3.7.98	If this element is not included there are no idle periods present

10.3.7.109 UE positioning position estimate info

The purpose of this IE is to provide the position 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
CHOICE mode				
>FDD				
>>Primary CPICH Info	OP		Primary CPICH Info 10.3.6.60	Identifies the reference cell for the GPS TOW-SFN relationship
>TDD				
>>cell parameters id	OP		Cell parameters id 10.3.6.9	Identifies the reference cell for the GPS TOW-SFN relationship
Reference SFN	MP		Integer(040 95)	The SFN for which the location is valid
GPS TOW msec	CV- Capability and request		Integer(06. 048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit). This time-stamps the beginning of the frame defined in Reference SFN GPS Time of Week in microseconds = 1000 * GPS TOW msec + GPS TOW rem usec
GPS TOW rem usec	CV- Capability and request		Integer(099 9)	GPS Time of Week in microseconds MOD 1000.
CHOICE Position estimate	MP			
>Ellipsoid Point			Ellipsoid Point; 10.3.8.4a	
>Ellipsoid point with uncertainty circle			Ellipsoid point with uncertainty circle 10.3.8.4d	
>Ellipsoid point with uncertainty ellipse			Ellipsoid point with uncertainty ellipse 10.3.8.4e	
>Ellipsoid point with altitude			Ellipsoid point with altitude 10.3.8.4b	
>Ellipsoid point with altitude and uncertainty ellipsoid			Ellipsoid point with altitude and uncertainty ellipsoid 10.3.8.4c	

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Condition	Explanation
Capability and request	This field is included onlymandatory present if the UE has this capability and if it was requested in the UE positioning reporting quantity and if the method was UE-based GPS and not needed otherwise

10.3.7.110 UE positioning reporting criteria

The triggering of the event-triggered reporting for an UE positioning measurement.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Parameters required for each event	OP	1 to <maxmeas Event></maxmeas 		
>Amount of reporting	MP		Integer(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		Integer(5,15, 60,300,900,1 800,3600,72 00)	Indicates how often the UE should make the measurement In seconds
>CHOICE Event ID	MP			
>>7a				
>>>Threshold Position Change	MP		Integer(10,2 0,30,40,50,1 00,200,300,5 00,1000,200 0,5000,1000 0,20000,500 00,100000)	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. 5,1,2,3,4,5,1 0,20,50,100, 200,500,100 0,2000,5000)	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		Integer(1,2,3 ,5,10,20,50,1 00)	Time in ms. When the GPS TOW and SFN timer has drifted apart more than the specified value the event is triggered)

10.3.7.111 UE positioning reporting quantity

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

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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)	
Response Time	MP		Integer(1,2,4 , 8, 16, 32, 64, 128)	in seconds
Accuracy	CV- MethodTyp e		Bitstring(7)	The uncertainty is derived from the "uncertainty code" k by $r = 10^{*}(1.1^{k}-1)$
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	TRUE indicates that the UE is requested to send multiple OTDOA/GPS Measurement Information Sets. UE is expected to include the current measurement set.
Additional Assistance Data Request	MP		Boolean	TRUE indicates that the UE is requested to send the IE "Additional assistance Data Request" when the IE "UE positioning Error" is present in the UE positioning measured results.
Environment Characterisation	OP		Enumerated(possibly heavy multipath and NLOS conditions, no or light multipath and usually LOS conditions, not defined or mixed environment)	

Condition	Explanation
Method Type	The IE is optional if the IE "Method Type" is 'UE
	assisted'; otherwise it is mandatory present

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		MIB Value tag 10.3.8.9	
BCCH modification time	OP		Integer (0 4088 in step of 8)	All SFN values in which MIB may be mapped are allowed.

10.3.8.2 BSIC

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Base transceiver Station Identity	MP			[11]
Code (BSIC)				
>Network Colour Code (NCC)	MP		bit string(3)	
>Base Station Colour Code	MP		bit string(3)	
(BCC)				

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	$M_{TTI} \le N \le 4096 - K$,
			(1256)	N multiple of M _{TTI}
CBS frame offset (K)	MP		Integer	$0 \leq K \leq N-1$,
			(0255)	K multiple of MTTI

10.3.8.4 Cell Value tag

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell Value tag	MP		Integer (14)	

10.3.8.4a Ellipsoid point

This IE contains the description of an ellipsoid point as in [24].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Latitude sign	MP		Enumerated (North, South)	
Degrees Of Latitude	MP		Integer (02 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{23} X/90 < N+1$ X being the latitude in degree (0° 90°)
Degrees Of Longitude	MP		Integer (- 2 ²³ 2 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{24} X/360 < N+1$ X being the longitude in degree (-180°+180°)

10.3.8.4b Ellipsoid point with Altitude

This IE contains the description of an ellipsoid point with altitude as in [24].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Latitude sign	MP		Enumerated (North, South)	
Degrees Of Latitude	MP		Integer (02 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{23} X/90 < N+1$ X being the latitude in degree (0° 90°)
Degrees Of Longitude	MP		Integer (- 2 ²³ 2 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{24} X/360 < N+1$ X being the longitude in degree (-180°+180°)
Altitude Direction	MP		Enumerated (Height, Depth)	
Altitude	MP		Integer (02 ¹⁵ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le a < N+1$ <i>a</i> being the altitude in metres

10.3.8.4c Ellipsoid point with Altitude and uncertainty ellipsoid

This IE contains the description of an ellipsoid point with altitude and uncertainty ellipsoid as in [24].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Latitude sign	MP		Enumerated (North, South)	
Degrees Of Latitude	MP		Integer (02 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{23} X/90 < N+1$ X being the latitude in degree (0° 90°)
Degrees Of Longitude	MP		Integer (- 2 ²³ 2 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{24} X/360 < N+1$ X being the longitude in degree (-180°+180°)
Altitude Direction	MP		Enumerated (Height, Depth)	
Altitude	MP		Integer (02 ¹⁵ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le a < N+1$ <i>a</i> being the altitude in metres
Uncertainty semi-major	MP		Integer (0127)	The uncertainty <i>r</i> is derived from the "uncertainty code" <i>k</i> by $r = 10x(1.1^{k}-1)$
Uncertainty semi-minor	MP		Integer (0127)	The uncertainty <i>r</i> is derived from the "uncertainty code" <i>k</i> by $r = 10x(1.1^{k}-1)$
Orientation of major axis	MP		Integer (0179 by step of 2)	The IE value (<i>N</i>) is derived by this formula: $N \le a / 2 < N+1$ <i>a</i> being the orientation in degree (0° 360°)
Uncertainty Altitude	MP		Integer(012 7)	The uncertainty in altitude, h, expressed in metres is mapped from the IE value (<i>K</i>), with the following formula: $h = C((1 + x)^{K} - 1)$ with <i>C</i> = 45 and <i>x</i> = 0.025.
Confidence	MP		Integer (0100)	in percentage

10.3.8.4d Ellipsoid point with uncertainty Circle

This IE contains the description of an ellipsoid point with an uncertainty circle as in [24].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Latitude sign	MP		Enumerated (North, South)	
Degrees Of Latitude	MP		Integer (02 ²³ -1)	The IE value (N) is derived by this formula: $N \le 2^{23} X/90 < N+1$ X being the latitude in degree (0° 90°)
Degrees Of Longitude	MP		Integer (- 2 ²³ 2 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{24} X/360 < N+1$ X being the longitude in degree (-180°+180°)
Uncertainty Code	MP		Integer (0127)	The uncertainty <i>r</i> is derived from the "uncertainty code" <i>k</i> by $r = 10x(1.1^{k}-1)$

10.3.8.4e Ellipsoid point with uncertainty Ellipse

This IE contains the description of an ellipsoid point with an uncertainty ellipse as in [24].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Latitude sign	MP		Enumerated (North, South)	
Degrees Of Latitude	MP		Integer (02 ²³ -1)	The IE value (N) is derived by this formula: $N \le 2^{23} X/90 < N+1$ X being the latitude in degree (0° 90°)
Degrees Of Longitude	MP		Integer (- 2 ²³ 2 ²³ -1)	The IE value (N) is derived by this formula: $N \le 2^{24} X/360 < N+1$ X being the longitude in degree (-180°+180°)
Uncertainty semi-major	MP		Integer (0127)	The uncertainty <i>r</i> is derived from the "uncertainty code" <i>k</i> by $r = 10x(1.1^{k}-1)$
Uncertainty semi-minor	MP		Integer (0127)	The uncertainty <i>r</i> is derived from the "uncertainty code" <i>k</i> by $r = 10x(1.1^{k}-1)$
Orientation of major axis	MP		Integer (0179 by step of 2)	The IE value (<i>N</i>) is derived by this formula: $N \le a / 2 < N+1$ <i>a</i> being the orientation in degree (0° 360°)
Confidence	MP		Integer (0100)	in percentage

10.3.8.5 Inter-RAT change failure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT change failure cause	MP		Enumerated(C onfiguration unacceptable, physical	At least 3 spare values, criticality = default, are required

		channel failure, protocol error)
Protocol error information	CV-ProtErr	Protocol error
		information
		10.3.8.12

Condition	Explanation
ProtErr	The IE is mandatory present lif the IE "Inter-RAT handover failure cause" has the value "Protocol error" and not needed otherwise

10.3.8.6 Inter-RAT handover failure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT handover failure cause	MD		Enumerated(C onfiguration	Default value is "unspecified".
			unacceptable, physical channel failure	At least one spare value needed
			protocol error, inter-RAT	
			protocol error, unspecified)	
Protocol error information	CV-ProtErr		Protocol error	
			information	
			10.3.8.12	

Condition	Explanation
ProtErr	The IE is mandatory present lif the IE "Inter-RAT
	handover failure cause" has the value "Protocol error"
	and not needed otherwise

10.3.8.7 Inter-RAT UE radio access capability

This Information Element contains the inter-RAT UE radio access capability that is structured and coded according to the specification used for the corresponding system type.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE system	MP			
>GSM				
>>Mobile Station Classmark 2	MP		Octet string (5)	Defined in [5]
>>Mobile Station Classmark 3	MP		Octet string (132)	Defined in [5]
>cdma2000				
>>cdma2000Message	MP	1.to. <maxl nterSysMe ssages></maxl 		
>>>MSG_TYPE(s)	MP		Bitstring (8)	Formatted and coded according to cdma2000 specifications
>>>cdma2000Messagepayload(s)	MP		Bitstring (1512)	Formatted and coded according to cdma2000 specifications

10.3.8.8 Void

10.3.8.8a Inter-RAT UE security capability

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE system	MP			
>GSM				
>>GSM security capability	MP			The value TRUE means that the indicated ciphering algorithm is supported.
>>>A5/7 supported	MP		Boolean	
>>>A5/6 supported	MP		Boolean	
>>>A5/5 supported	MP		Boolean	
>>>A5/4 supported	MP		Boolean	
>>>A5/3 supported	MP		Boolean	
>>>A5/2 supported	MP		Boolean	
>>>A5/1 supported	MP		Boolean	

10.3.8.9 MIB Value tag

Information Element/Group name	Need	Multi	Type and reference	Semantics description
MIB Value tag	MP		Integer (18)	

10.3.8.10 PLMN Value tag

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
PLMN Value tag	MP		Integer (1256)	

10.3.8.11 Predefined configuration identity and value tag

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Predefined configuration identity	MP		Predefined configuration identity 10.3.4.5	
Predefined configuration value tag	MP		Predefined configuration value tag 10.3.4.6	

10.3.8.12 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	
			10.3.3.26	

10.3.8.13 References to other system information blocks

Information element/Group name	Need	Multi	Type and reference	Semantics description
References to other system information blocks	MP	1 to <maxsib></maxsib>		System information blocks for which multiple occurrences are used, may appear more than once in this list
>Scheduling information	MP		Scheduling information, 10.3.8.16	
>SIB type SIBs only	MP		SIB Type SIBs only, 10.3.8.22	

10.3.8.14 References to other system information blocks and scheduling blocks

Information element/Group name	Need	Multi	Type and reference	Semantics description
References to other system information blocks	MP	1 to <maxsib></maxsib>		System information blocks for which multiple occurrences are used, may appear more than once in this list
>Scheduling information	MP		Scheduling information, 10.3.8.16	
>SIB type	MP		SIB Type, 10.3.8.21	

10.3.8.15 Rplmn information

Contains information to provide faster RPLMN selection in the UE.
Information Element/Group	Need	Multi	Type and reference	Semantics description
GSM BA Range	OP	1 to maxNumG SMFreqRa nges		GSM BA Range
>GSM Lower Range (UARFCN)	MP	~	Integer(016 383)	Lower bound for range of GSM BA freqs
>GSM Upper Range (UARFCN)	MP		Integer(016 383)	Upper bound for range of GSM BA freqs
FDD UMTS Frequency list	OP	1 to maxNumF DDFreqs		
>UARFCN (NIow)	MP		Integer(016 383)	[21]
>UARFCN (Nupper)	OP		Integer(016 383)	[21] This IE is only needed when the FDD frequency list is specifying a range.
TDD UMTS Frequency list	OP	1 to maxNumT DDFreqs		
>UARFCN	MP		Integer(016 383)	[22]
CDMA2000 UMTS Frequency list	OP	1 to maxNumC DMA200Fr eqs		
>BAND_CLASS	MP		Bitstring(5 bits)	TIA/EIA/IS-2000. The BAND_CLASS bits are numbered b0 to b4, where b0 is the least significant bit.
>CDMA_FREQ	MP		Bitstring (11 bits)	TIA/EIA/IS-2000. The CDMA_FREQ bits are numbered b0 to b10, where b0 is the least significant bit.

10.3.8.16 Scheduling information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Value tag	OP			
>PLMN Value tag			PLMN Value tag 10.3.8.10	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. the SIB type does not equal system information block type 16
>Predefined configuration identity and value tag			Predefined configuration identity and value tag 10.3.8.11	This IE is included if the following conditions are fulfilled: the SIB type equals system information block type 16
>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.
>SIB occurrence identity and value tag			SIB occurrence identity and value tag 10.3.8.20b	This IE is included if the following conditions are fulfilled: the SIB type equals system information block types 15.2 and 15.3
Scheduling	MP			
>SEG_COUNT	MD		SEG COUNT 10.3.8.17	Default value is 1
>SIB_REP	MP		Integer (4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096)	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	115		see below for default value
>>SIB_OFF	MP		Integer(232 by step of 2)	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 except when MIB segment/complete MIB is
	scheduled to be transmitted in between segments
	from same SIB. In that case, SIB_OFF=4 in between
	segments which are scheduled to be transmitted at
	SFNprime = 8 *n-2 and 8*n + 2, and SIB_OFF=2 for
	the rest of the segments.

10.3.8.17 SEG COUNT

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SEG_COUNT	MP		Integer (116)	Number of segments in the system information block

10.3.8.18 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 (115)	Segments of a system information block are numbered starting with 0 for the first segment and 1 for the next segment, which can be the first subsequent segment or a last segment.

10.3.8.19 SIB data fixed

Contains the result of a master information block or a system information block after encoding and segmentation. The IE is used for segments with fixed length (segments filling an entire transport block).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB data fixed	MP		Bit string (222)	The first bit contains the first bit of the segment.

10.3.8.20 SIB data variable

Contains either a complete system information block or a segment of a system information block. Contains the result of a master information block or a system information block after encoding and segmentation. The IE is used for segments with variable length. The system information blocks are defined in clauses10.2.48.8.1 to10.2.48.8.18.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB data variable	MP		Bit string (1214)	The first bit contains the first bit of the segment.

10.3.8.20a SIB occurrence identity

This information element identifies a SIB occurrence for System Information Block types 15.2 and 15.3. For System Information Block type 15.2, this identity is assigned to the visible satellite only. Unused identities are claimed by newly rising satellites.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB occurrence identity	MP		Integer (015)	

10.3.8.20b SIB occurrence identity and value tag

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB occurrence identity	MP		SIB	
			occurrence	
			identity	
			10.3.8.20a	
SIB occurrence value tag	MP		SIB	
-			occurrence	
			value tag	
			10.3.8.20c	

10.3.8.20c SIB occurrence value tag

This information element is used to identify different versions of SIB occurrence for System Information Block types 15.2 and 15.3.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
SIB occurrence value tag	MP		Integer(015)	

10.3.8.21 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 15.1,
- System Information Type 15.2,
- System Information Type 15.3,
- System Information Type 15.4,
- System Information Type 16,
- System Information Type 17,
- System Information Type 18,
- Scheduling Block 1,
- Scheduling Block 2.

In addition, at least one spare value, criticality: ignore, is needed.

10.3.8.22 SIB type SIBs only

The SIB type identifies a specific system information block.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB type SIBs only	MP		Enumerated, see below	

The list of values to encode is:

- 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 15.1,
- System Information Type 15.2,
- System Information Type 15.3,
- System Information Type 15.4,
- System Information Type 16,
- System Information Type 17,
- System Information Type 18.

In addition, at least one spare value, criticality: ignore, is needed.

10.3.9 ANSI-41 Information elements

10.3.9.1 ANSI 41 Core Network Information

Information element/Group	Need	Multi	Type and	Semantics description
name			reference	
P_REV	MP		P_REV	
			10.3.9.10	
MIN_P_REV	MP		MIN_P_REV	
			10.3.9.8	
SID	MP		SID	
			10.3.9.11	
NID	MP		NID 10.3.9.9	

10.3.9.2 ANSI-41 Global Service Redirection information

This Information Element contains ANSI-41 Global Service Redirection information.

Information Element/Group	Need	Multi	Type and	Semantics description
nallie			relefence	
ANSI-41 Global Service	MP		ANSI-41	Formatted and coded
Redirection information			NAS	according to the 3GPP2
			parameter,	document "G3G CDMA DS on
			10.3.9.3	ANSI-41"

10.3.9.3 ANSI-41 NAS parameter

This Information Element contains ANSI-41 User Zone Identification information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ANSI-41 NAS parameter	MP		Bit string (size	The first bit contains the first bit of the ANSI-41 information.

10.3.9.4 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		ANSI-41 NAS parameter, 10.3.9.3	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.3.9.5 ANSI-41 Private Neighbour List information

This Information Element contains ANSI-41 Private Neighbour List information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ANSI-41 Private Neighbour List information	MP		ANSI-41 NAS parameter, 10.3.9.3	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.3.9.6 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		ANSI-41 NAS parameter, 10.3.9.3	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.3.9.7 ANSI-41 User Zone Identification information

This Information Element contains ANSI-41 User Zone Identification information.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
ANSI-41 User Zone	MP		ANSI-41	Formatted and coded
Identification information			NAS	according to the 3GPP2
			parameter,	document "G3G CDMA DS on
			10.3.9.3	ANSI-41"

10.3.9.8 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		Bitstring (8)	Minimum protocol revision level. The MIN_P_REV bits are numbered b0 to b7, where b0 is the least significant bit.

10.3.9.9 NID

This Information Element contains Network identification.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
NID	MP		Bitstring (16)	Network identification. The NID bits are numbered b0 to b15, where b0 is the least significant bit.

10.3.9.10 P_REV

This Information Element contains protocol revision level.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
P_REV	MP		Bitstring (8)	Protocol revision level. The P_REV bits are numbered b0 to b7, where b0 is the least significant bit.

10.3.9.11 SID

This Information Element contains System identification.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SID	MP		Bitstring (15)	System identification. The SID bits are numbered b0 to b14, where b0 is the least significant bit.

10.3.10 Multiplicity values and type constraint values

The following table includes constants that are either used as multi bounds (name starting with "max") or as high or low value in a type specification (name starting with "lo" or "hi"). Constants are specified only for values appearing more than once in the RRC specification. In case a constant is related to one or more other constants, an expression is included in the "value" column instead of the actual value.

Constant	Explanation	Value
CN information	•	
maxCNdomains	Maximum number of CN domains	4
UTRAN mobility		
information		
maxRAT	Maximum number or Radio Access Technologies	maxOtherRAT + 1
maxOtherRAT	Maximum number or other Radio Access Technologies	15
maxURA	Maximum number of URAs in a cell	8
maxInterSvsMessages	Maximum number of Inter System Messages	4
maxRABsetup	Maximum number of RABs to be established	16
UE information		
maxtransactions	Maximum number of parallel RRC transactions in downlink	25
maxPDCPalgoType	Maximum number of PDCP algorithm types	8
maxDRACclasses	Maximum number of UE classes which would require different DRAC parameters	8
maxFreqBandsFDD	Maximum number of frequency bands supported by the UE as defined in [21]	8
maxFreqBandsTDD	Maximum number of frequency bands supported by the UE as defined in [22]	4
maxFreqBandsGSM	Maximum number of frequency bands supported by the UE as defined in [45]	16
maxPage1	Number of UEs paged in the Paging Type 1 message	8
maxSystemCapability	Maximum number of system specific capabilities that can be requested in one message.	16
RB information		
maxPredefConfig	Maximum number of predefined configurations	16
maxRB	Maximum number of RBs	32
maxSRBsetup	Maximum number of signalling RBs to be established	8
maxRBperRAB	Maximum number of RBs per RAB	8
maxRBallRABs	Maximum number of non signalling RBs	27
maxRBMuxOptions	Maximum number of RB multiplexing options	8
maxLoCHperRLC	Maximum number of logical channels per RLC entity	2
TrCH information		
maxTrCH	Maximum number of transport channels used in one direction (UL or DL)	32
maxTrCHpreconf	Maximum number of preconfigured Transport channels, per direction	16
maxCCTrCH	Maximum number of CCTrCHs	8
maxTF	Maximum number of different transport formats that can be included in the Transport format set for one transport channel	32
maxTF-CPCH	Maximum number of TEs in a CPCH set	16
maxTFC	Maximum number of Transport Format Combinations	1024
maxTFCI-1-Combs	Maximum number of TECI (field 1) combinations	512
maxTFCI-2-Combs	Maximum number of TECI (field 2) combinations	512
maxCPCHsets	Maximum number of CPCH sets per cell	16
maxSIBperMsg	Maximum number of complete system information blocks per SYSTEM INFORMATION message	16
maxSIB	Maximum number of references to other system information blocks.	32
maxSIB-FACH	Maximum number of references to system information blocks on the FACH	8
PhyCH information		
maxSubCh	Maximum number of sub-channels on PRACH	12
maxPCPCH-APsubCH	Maximum number of available sub-channels for AP signature on PCPCH	12
maxPCPCH-CDsubCH	Maximum number of available sub-channels for CD signature on PCPCH	12
maxSig	Maximum number of signatures on PRACH	16
maxPCPCH-APsig	Maximum number of available signatures for AP on PCPCH	16
maxPCPCH-CDsig	Maximum number of available signatures for CD on PCPCH	16
maxAC	Maximum number of access classes	16
maxASC	Maximum number of access service classes	8
maxASCmap	Maximum number of access class to access service classes	7
	mappings	

maxASCpersist	Maximum number of access service classes for which persistence scaling factors are specified	6
maxPRACH	Maximum number of PRACHs in a cell	16
maxFACHPCH	Maximum number of FACHs and PCHs mapped onto one secondary CCPCHs	8
maxRL	Maximum number of radio links	8
maxSCCPCH	Maximum number of secondary CCPCHs per cell	16
maxDPDCH-UL	Maximum number of DPDCHs per cell	6
maxDPCH-DLchan	Maximum number of channelisation codes used for DL DPCH	8
maxDPCHcodesPerTS	Maximum number of codes for one timeslots (TDD)	16
maxPUSCH	Maximum number of PUSCHs	(8)
maxPDSCH	Maximum number of PDSCHs	8
maxPDSCHcodes	Maximum number of codes for PDSCH	16
maxPDSCH-TFCIgroups	Maximum number of TFCI groups for PDSCH	256
maxPDSCHcodeGroups	Maximum number of code groups for PDSCH	256
maxPCPCHs	Maximum number of PCPCH channels in a CPCH Set	64
maxPCPCH-SF	Maximum number of available SFs on PCPCH	7
maxTS	Maximum number of timeslots used in one direction (UL or DL)	14
HiPUSCHIdentities	Maximum number of PDSCH Identities	64
HiPDSCHIdentities	Maximum number of PDSCH Identities	64
Measurement information		
maxTGPS	Maximum number of transmission gap pattern sequences	6
maxAdditionalMeas	Maximum number of additional measurements for a given measurement identity	4
maxMeasEvent	Maximum number of events that can be listed in measurement reporting criteria	8
maxMeasParEvent	Maximum number of measurement parameters (e.g. thresholds) per event	2
maxMeasIntervals	Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value	1
maxCellMeas	Maximum number of cells to measure	32
maxReportedGSMCells	Maximum number of GSM cells to be reported	6
maxFreq	Maximum number of frequencies to measure	8
maxSat	Maximum number of satellites to measure	16
HiRM	Maximum number that could be set as rate matching attribute for a transport channel	256
Frequency information		
maxFDDFreqList	Maximum number of FDD carrier frequencies to be stored in USIM	4
maxTDDFreqList	Maximum number of TDD carrier frequencies to be stored in USIM	4
maxFDDFreqCellList	Maximum number of neighbouring FDD cells to be stored in USIM	32
maxTDDFreqCellList	Maximum number of neighbouring TDD cells to be stored in USIM	32
maxGSMCellList	Maximum number of GSM cells to be stored in USIM	32
Other information		
maxNumGSMFreqRanges	Maximum number of GSM Frequency Ranges to store	32
maxNumFDDFreqs	Maximum number of FDD centre frequencies to store	8
maxNumTDDFreqs	Maximum number of TDD centre frequencies to store	8
maxNumCDMA200Freqs	Maximum number of CDMA2000 centre frequencies to store	8

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

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

11.0 General

Some messages and/ or IEs may include one or more IEs with name "dummy" that are included only in the ASN.1. The UE should avoid sending information elements that are named "dummy" to UTRAN. Likewise, UTRAN should avoid sinding IEs with name "dummy" to the UE. If the UE anyhow receives an information element named "dummy", it shall ignore the IE and process the rest of the message as if the IE was not included.

Note An IE with name "dummy" concerns an information element that was (erroneously) included in a previous version of the specification and has been removed by replacing it with a dummy with same type.

If the abstract syntax of an IE is defined using the ASN.1 type "BIT STRING", and this IE corresponds to a functional IE definition in tabular format, in which the significance of bits is semantically defined, the following general rule shall be applied:

The bits in the ASN.1 bit string shall represent the semantics of the functional IE definition in decreasing order of bit significance;

- with the first (or leftmost) bit in the bit string representing the most significant bit; and
- with the last (or rightmost) bit in the bit string representing the least significant bit.

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Consequences if not approved:	#	Incon incon proble	sistent use of o sistencies may ems	conditions,	, spare v	alues, s. This	defaults and may again re	corre esult in	ction of h inter-op	erability

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Other specs affected:	% Other core specifications % 25.331 v3.7.0, CR 907r1 Test specifications O&M Specifications 6
Other comments:	ж

How to create CRs using this form:

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

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

9 Handling of unknown, unforeseen and erroneous protocol data

9.1 General

This subclause specifies procedures for the handling of unknown, unforeseen, and erroneous protocol data by the receiving entity. These procedures are called "error handling procedures", but in addition to provide recovery mechanisms for error situations they define a compatibility mechanism for future extensions of the protocol.

The error handling procedures specified in this subclause shall apply to all RRC messages. When there is a specific handling for messages received on different logical channels this is specified.

For system information received on the BCCH, the error handling procedures are applied on the BCCH message SYSTEM INFORMATION, the re-assembled system information segments as well as the system information blocks (including the master information block and the scheduling blocks), with specific error handling as specified below.

When the UE receives an RRC message, it shall set the variable PROTOCOL_ERROR_REJECT to FALSE and then perform the checks in the order as defined below.

The procedures specified in clause 8 are applied only for the messages passing the checks as defined below, except when procedure specific handling is used to recover from the error.

The error cases specified in the following includes the handling upon reception of spares values. This behaviour also applies in case the actual value of the IE results from mapping the originally sent IE value. Moreover, Iin certain error cases, as specified in the following, default values apply. In this case, the default values specified within the ASN.1, the tabular and the procedure specifications apply.

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.

Functional definitions of the information elements are then described in subclause 10.3.

Information elements are marked as either MP - Mandatory present, MD - Mandatory with default value, OP - Optional, CV - Conditional on value or CH - Conditional on history (see Table 10.1 with information extracted from [14]).

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

Abbreviation	Meaning
MP	Mandatory present A value for that information is always needed, and no information is provided about a particular default value. If
MD	extension), then absence leads to an error diagnosis. Mandatory with default value
	A value for that information is always needed, and a particular default value is mentioned (in the 'Semantical information' column). This opens the possibility for the transfer syntax to use absence or a special pattern to encode the default value
CV	Conditional on value <u>The need for a value for that information depends on the</u> <u>value of some other IE or IEs, and/or on the message flow</u> (a.g. abapted SAP). The need is appointed by means of a
	<u>condition, which result may be that the information is</u> <u>mandatory present, mandatory with default value, not</u> <u>needed or optional.</u>
	If one of the results of the condition is that the information is mandatory present, the transfer syntax must allow for the presence of the information. If in this case the
	Information is absent an error is diagnosed. If one of the results of the condition is that the information is mandatory with default value, and a particular default value is montioned (in the 'Somantical information'
	<u>column</u>), the transfer syntax may use absence or a special pattern to encode the default value.
	is not needed, the transfer syntax must allow encoding the absence. If in this case the information is present, it will be ignored. In specific cases however, an error may be
	diagnosed instead. If one of the results of the condition is that the information is optional, the transfer syntax must allow for the presence of the information. In this case,
	neither absence nor presence of the information leads to an error diagnosis. A value for that information is needed (presence needed)
	are met that can be evaluated on the sole basis of the content of the message.
	transfer syntax must allow for the presence of the information. If the transfer syntax allows absence, absence when the conditions for presence are met leads to an error
	diagnosis. If conditions for absence needed are specified, the transfer syntax must allow to encode the absence. If the
	information is present and the conditions for absence are met, an error is diagnosed. When neither conditions for presence or absence are met,
СН	the information is treated as optional, as described for 'OP'.
	The need for a value for that information depends on information obtained in the past (e.g., from messages received in the past from the peer). The need is specified
	by means of a condition, which result may be that the information is mandatory present, mandatory with default value, not needed or optional.
	The handling of the conditions is the same as described for CV. A value for that information is needed (presence needed)
	or unacceptable (absence needed) when some conditions are met that must be evaluated on the basis of information obtained in the past (e.g. from messages received in the

Abbreviation	Meaning
	past from the other party).
	If conditions for presence needed are specified, the
	transfer syntax must allow for the presence of the
	information. If the transfer syntax allows absence, absence
	when the conditions for presence are met leads to an error
	diagnosis.
	If conditions for absence needed are specified, the transfer
	syntax must allow to encode the absence. If the
	information is present and the conditions for absence are
	met, an error is diagnosed.
	When neither conditions for presence or absence are met,
	the information is treated as optional, as described for
	'OP'.
OP	Optional
	The presence or absence is significant and modifies the
	behaviour of the receiver. However whether the
	information is present or not does not lead to an error
	diagnosis.

10.1.1 Protocol extensions

RRC messages may be extended in future versions of this protocol, either by adding values for choices, enumerated and size constrained types or by adding information elements. An important aspect concerns the behaviour of a 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 9.

NOTE 1: 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.

Two kinds of protocol extensions are distinguished: non-critical and critical extensions. In general, a receiver shall process a message including not comprehended non-critical extensions as if the extensions were absent. However, a receiver shall entirely reject a message including not comprehended critical extensions (there is no partial rejection) and notify the sender, as specified in clause 9.

The general mechanism for adding critical extensions is by defining a new version of the message, which is indicated at the beginning of the message.

The UE shall always comprehend the complete transfer syntax specified for the protocol version it supports; if the UE comprehends the transfer syntax defined within protocol version A for message 1, it shall also comprehend the transfer syntax defined within protocol version A for message 2.

The following table shows for which messages only non-critical extensions may be added while for others both critical and non-critical extensions may be added.

NOTE 2: Critical extensions can only be added to certain downlink messages.

Extensions	Message
Critical and non-critical	ACTIVE SET UPDATE 10.2.1
extensions	ASSISTANCE DATA DELIVERY 10.2.4
	CELL CHANGE ORDER FROM UTRAN 10.2.5
	CELL UPDATE CONFIRM 10.2.8
	COUNTER CHECK 10.2.9
	DOWNLINK DIRECT TRANSFER 10.2.11
	HANDOVER TO UTRAN COMMAND 10.2.12
	HANDOVER FROM UTRAN COMMAND 10.2.15
	MEASUREMENT CONTROL 10.2.17
	PHYSICAL CHANNEL RECONFIGURATION 10.2.22
	RADIO BEARER RELEASE 10.2.30
	RADIO BEARER SETUP 10.2.33
	RRC CONNECTION REJECT 10.2.36
	RRC CONNECTION RELEASE 10.2.37
	RRC CONNECTION SETUP 10.2.40
	SECURITY MODE COMMAND 10.2.43
	SIGNALLING CONNECTION RELEASE 10.2.46
	TRANSPORT CHANNEL RECONFIGURATION 10.2.50
	TRANSPORT FORMAT COMBINATION CONTROL 10.2.53
	UE CAPABILITY ENQUIRY 10.2.55
	UE CAPABILITY INFORMATION CONFIRM 10.2.57
	UPLINK PHYSICAL CHANNEL CONTROL 10.2.59
Non critical autonaiana	
Non-chilical extensions	ACTIVE SET UPDATE COMPLETE 10.2.2
Only	CELL CHANGE ORDER FROM LITRAN FAILURE 10.2.6
	CELL LIPDATE 10.2.7
	COUNTER CHECK RESPONSE 10.2.10
	HANDOVER TO UTRAN COMPLETE 10.2.13
	INITIAL DIRECT TRANSFER 10.2.14
	HANDOVER FROM UTRAN FAILURE 10.2.16
	MEASUREMENT CONTROL FAILURE 10.2.18
	MEASUREMENT REPORT 10.2.19
	PAGING TYPE 1 10.2.20
	PAGING TYPE 2 10.2.21 DUVSICAL CHANNEL DECONFICURATION COMPLETE 40.3.32
	PHYSICAL CHANNEL RECONFIGURATION COMPLETE 10.2.23 DHYSICAL CHANNEL RECONFIGURATION FAILURE 10.2.24
	PUSCH CAPACITY REQUEST 10.2.26
	RADIO BEARER RECONFIGURATION COMPLETE 10.2.28
	RADIO BEARER RECONFIGURATION FAILURE 10.2.29
	RADIO BEARER RELEASE COMPLETE 10.2.31
	RADIO BEARER RELEASE FAILURE 10.2.32
	RADIO BEARER SETUP COMPLETE 10.2.34
	RADIO BEARER SETUP FAILURE 10.2.35
	RRC CONNECTION RELEASE COMPLETE 10.2.38
	RRC CONNECTION REQUEST 10.2.39
	RRC CONNECTION SETUP COMPLETE 10.2.41
	SECURITY MODE FAILURE 10.2.44
	SIGNALLING CONNECTION RELEASE REQUEST10.2.47
	Master Information Block 10.2.48.8.1
	System Information Block type 1 to
	System Information Block type 17 10.2.48.8.2 to 10.2.48.8.19
	SYSTEM INFORMATION CHANGE INDICATION 10.2.49
	TRANSPORT CHANNEL RECONFIGURATION COMPLETE 10.2.51
	IRANSPORT CHANNEL RECONFIGURATION FAILURE 10.2.52
	LIRA LIPDATE 10.2.60
	UTRAN MOBILITY INFORMATION CONFIRM 10.2.63
	UTRAN MOBILITY INFORMATION FAILURE 10.2.64
No extensions	SYSTEM INFORMATION 10.2.48

Extensions	Message			
	First Segment 10.2.48.1			
	Subsequent or last Segment 10.2.48.3			
	Complete SIB 10.2.48.5			
	SIB content 10.2.48.8.1			

NOTE: For the SYSTEM INFORMATION message protocol extensions are only possible at the level of system information blocks.

10.1.1.1 Non-critical extensions

10.1.1.1.1 Extension of an information element with additional values or choices

In future versions of this protocol, non-critical values may be added to choices, enumerated and size constrained types.

For choices, enumerated and size constrained types it is possible to indicate how many non-critical spare values need to be reserved for future extension. The number of spare values is specified within the ASN.1 type definitions; In this case, the tabular format only should indicates that at least one the number of spare values that is needed. Within the ASN.1 spare values should only be used to increase the encoded size of an IE. This means that the ASN.1 should only include spares if the number of spare values that is needed exceeds the number of undefined code points that exist after encoding of the information element. This kind of extension is allowed only for items with need set to OP or MD, and the receiver shall interpret the reception of a spare as absence of the IE and as reception of the default value respectively.

For downlink messages, spare values may be defined for non-critical information elements for which the need is specified to be MD or OP (or CV case leading to MD or OP). In this case, a receiver not comprehending the received spare value shall consider the information element to have the default value or consider it to be absent respectively.

For uplink messages spare values may be defined for all information elements, including those for which the need is specified to be MP (or CV case leading to MP).

In all cases at most one spare should be defined for choices. In this case, iInformation elements applicable to the spare choices reserved for future releases of the protocol shall be added to the end of the message.

10.1.1.1.2 Extension of a message with additional information elements

In future versions of this protocol, non-critical information elements may be added to RRC messages. These additional information elements shall be appended at the end of the message; the transfer syntax specified in this revision of the standard facilitates this. A receiver conformant to this revision of the standard shall accept such extension, and proceed as if it was not included.

10.1.1.2 Critical extensions

10.1.1.2.1 Extension of an information element with additional values or choices

In versions of this protocol, choices, enumerated and size constrained types may be extended with critical values. For extension with critical values the general critical extension mechanism is used, i.e. for this no spare values are reserved since backward compatibility is not required.

10.1.1.2.2 Extension of a message with additional information elements

In future versions of this protocol, RRC messages may be extended with new information elements. Since messages including critical extensions are rejected by receivers not comprehending them, these messages may be modified completely, e.g. IEs may be inserted at any place and IEs may be removed or redefined.

10.2 Radio Resource Control messages

10.2.1 ACTIVE SET UPDATE

NOTE: Only for FDD.

This message is used by UTRAN to add, replace or delete radio links in the active set of the UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN \rightarrow UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
0 71			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			Check Info	
Integrity protection mode info			10.3.3.10	
integrity protection mode into	OP		protection	
			mode info	
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
o.p			mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now".
			time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
CN information elements				
CN Information info	OP		CN	
			Information	
			info 10.3.1.3	
RB information elements				
Downlink counter	OP			
synchronisation info		4.40		This IF is readed for each DD
>RB with PDCP information list	OP	T IU		having PDCP in the case of
				lossless SRNS relocation
>>RB with PDCP information	MP	10.002	RB with	
			PDCP	
			information	
			10.3.4.22	
Phy CH information elements				
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum	Default value is the existing
			allowed UL	"maximum UL TX power.
			TX power	
			10.3.6.39	
Downlink radio resources		1 to		Padia link addition information
Radio link addition information	OF	r iu <maypl< td=""><td></td><td>required for each PL to add</td></maypl<>		required for each PL to add
				required for each KE to add
>Radio link addition information	MP	12	Radio link	
			addition	
			information	
			10.3.6.68	
Radio link removal information	OP	1 to		Radio link removal information
		<maxrl></maxrl>		required for each RL to
				remove
>Radio link removal information	MP		Radio link	
			removal	
			Information	
			10.3.6.69	Default value is the state TV
I A DIVERSITY IVIODE			I X Diversity	diversity mode
SSDT information	OP		SSDT	
			information	
			10.3.6.77	

10.2.2 ACTIVE SET UPDATE COMPLETE

NOTE: For FDD only.

This message is sent by UE when active set update has been completed.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Uplink integrity protection	OP		Integrity	
activation info			protection	
			activation	
			info	
			10.3.3.17	
RB Information elements				
Radio bearer uplink ciphering	OP		RB	
activation time info			activation	
			time info	
			10.3.4.13	
Uplink counter synchronisation	OP			
info				
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
		RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information	
			10.3.4.22	
>START list	MP	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains.</td></maxcndo<>		domains.
		mains>		
>>CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
>>START	MP		START	START value to be used in
		1	10.3.3.38	this CN domain.

10.2.3 ACTIVE SET UPDATE FAILURE

NOTE: Only for FDD.

This message is sent by UE if the update of the active set has failed, e.g. because the radio link is not a part of the active set.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.4 ASSISTANCE DATA DELIVERY

This message is sent by UTRAN to convey UE positioning assistance data to the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Measurement Information elements				
UE positioning OTDOA assistance data	OP		UE positioning OTDOA assistance data 10.3.7.103	
UE positioning GPS assistance data	OP		UE positioning GPS assistance data 10.3.7.90	

10.2.5 CELL CHANGE ORDER FROM UTRAN

This message is used to order a cell change from UTRA to another radio access technology, e.g., GSM.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN \rightarrow UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
5 71			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
Integrity of a dyinfe			10.3.3.36	
Integrity check into	CH		Integrity	
Activation time	MD		Activation	Default value is "now"
	NID .		time 10.3.3.1	
RB Information elements				
RAB information list	OP	1 to		For each RAB to be handed
		<maxrabs< td=""><td></td><td>over</td></maxrabs<>		over
		etup>		
>RAB info	MP		RAB info	
			10.3.4.8	
Other information elements				
Target cell description	MP			
>CHOICE Radio Access	MP			At least one spare choice,
Technology				Criticality: Reject, is needed.
>>GSM	MD		DCIC	
>>>B2IC	MP		10282	
>>>Band Indicator	MP		Fnumerated	Indicates how to interpret the
			(DCS 1800	BCCH ARECN
			band used.	
			PCS 1900	
			band used)	
>>>BCCH ARFCN	MP		Integer	[45]
			(01023)	
>>>NC mode	OP		Bitstring(3)	[43]
>>IS-2000				

10.2.6 CELL CHANGE ORDER FROM UTRAN FAILURE

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
Itallie			Telefence	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Other information elements				
Inter-RAT change failure	MP		Inter-RAT	
			change	
			failure	
			10 2 9 5	
		1	10.3.0.3	

10.2.7 CELL UPDATE

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

RLC-SAP: TM

Logical channel: CCCH

Direction: UE→UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
U-RNTI	MP		U-RNTI	
			10.3.3.47	
RRC transaction identifier	CV-Failure		RRC	
			identifier	
			10 3 3 36	
Integrity check info	СН		Integrity	
integrity check into			check info	
			10.3.3.16	
START list	MP	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains.</td></maxcndo<>		domains.
		mains>		
>CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
>START	MP		START	START value to be used in
			10.3.3.38	this CN domain.
AM_RLC error indication(RB2 or	MP		Boolean	IRUE Indicates AM_RLC
RB3)				unrecoverable error [16]
AM_RLC error indication(RB>3)	MP		Boolean	TRUE indicates AM_RLC
			Declouit	unrecoverable error [16]
				occurred on RB>3 in the UE
Cell update cause	MP		Cell update	
			cause	
			10.3.3.3	
Failure cause	OP		Failure	
			cause and	
			error	
			Information	
PR timor indicator	MD		10.3.3.14 DB timor	
	IVII		indicator	
			10.3.3.28	
Measurement information				
elements				
Measured results on RACH	OP		Measured	
			results on	
			RACH	
			10.3.7.45	

Condition	Explanation
Failure	This IE is mandatory present if the IE "Failure cause"
	is present <u>and not needed</u> . <u>o</u> Otherwise it is absent.

10.2.8 CELL UPDATE CONFIRM

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

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element/Group	Need	Multi	Type and	Semantics description
name Massage Ture			Massage	
Message Type	IVIP		Type	
UE Information Elements			- 76 -	
U-RNTI	CV-CCCH		U-RNTI	
			10.3.3.47	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
	0.1		10.3.3.36	
Integrity check info	СН		Integrity	
Integrity protection mode info	OP		Integrity	
integrity protection mode into	01		protection	
			mode info	
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RN II	OP		U-RNII	
New C DNTI	00		10.3.3.47	
New C-RN II	OP		C-RN11	
PPC State Indicator	MD		PPC State	
	IVIT		Indicator	
			10.3.3.10	
UTRAN DRX cycle length	MD		UTRAN DRX	Default value is the existing
coefficient			cycle length	DRX cycle length coefficient
			coefficient	
			10.3.3.49	
RLC re-establish indicator (RB2	MP		RLC re-	
and RB3)			establish	
			indicator	
DLC re establish indicator (DD4	MD		10.3.3.35	
and unwards)	MP		RLC IE-	
and upwards)			indicator	
			10.3.3.35	
CN Information Elements				
CN Information info	OP		CN	
			Information	
			info 10.3.1.3	
UTRAN Information Elements				
URA identity	OP		URA identity	
DD information alomenta			10.3.2.6	
RB information to release list	OP	1 to		
TO mornation to release list	01	<maxrb></maxrb>		
>RB information to release	MP		RB	
			information	
			to release	
			10.3.4.19	
RB information to reconfigure list	OP	1 to		
DD information to recention	MD	<maxrb></maxrb>		
>ro information to reconfigure	IVIP		KB	
			to	
			reconfigure	
			10.3.4.18	
RB information to be affected list	OP	1 to	-	
		<maxrb></maxrb>		
>RB information to be affected	MP		RB	
			information	

Initial Image: Construction of the c	Information Element/Group	Need	Multi	Type and	Semantics description
Image: second	name			to be	
Dewnlink counter synchronisation infoOP10>RB with PDCP information listOP1 to rmarRBallThis IE is needed for each RB having PDCP in the case of losses SRNS relocation>>RB with PDCP informationMPRB with PDCP information ElementsRB with PDCP information to an elementsUL Transport channelUL transport channelsUL Transport channelsUL Transport channelsUL Transport channelOP1 to rmarTiCHUL Transport channelsDeleted TiCH information information listOP1 to rmarTiCH>Deleted UL TiCH information information listOP1 to rmarTiCH>Deleted UL TiCH information information listOP1 to rmarTiCH>Added or Reconfigured TiCH information istOP1 to rmarTiCH>Added or Reconfigured TiCH information listOP1 to rmarTiCH>>Deleted VL TiCH information listOP1 to rmarTiCH>>DD Domink transport channelsOP <td></td> <td></td> <td></td> <td>affected</td> <td></td>				affected	
Downlink counter synchronisation infoOPII>R with PDCP information listOP1 to smarKBSThis IE is needed for each RB having PCCP in the case of lossless SRNS relocation>>RB with PDCP informationMPRB with PCCP information 10.3.4.22RB with PCCP information 10.3.4.22TrCH Information ElementsUIUL Transport channelsUIUL Transport channelsUIUL Transport channelsIIUL Transport channelsP1 to smartCHDeleted UL TrCH information listOP1 to smartCH>>Deleted UL TrCH informationMPDeleted UL TrCH information information information information information information information informationAdded or Reconfigured TrCH informationOP1 to smartrCH>>defeded or Reconfigured TrCH information informationMPAdded or Reconfigured information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information information informa				10.3.4.17	
synchronisation into Vertical The value This IE is needed for each RB having PDCP in the case of lossless SRNs relocation >>RB with PDCP information MP RB synchronization RB with PDCP information RB with PDCP information >>RB with PDCP information MP RB synchronization RB with PDCP information RB with PDCP information TrCH Information Elements UL Transport channels Information common for all transport channels >Deleted TrCH information list OP 1 to cmaxTrCH Deleted UL TrCH information Information 103.5.5 >Deleted UL TrCH information list OP 1 to cmaxTrCH Deleted UL TrCH information Information 103.5.5 >Added or Reconfigured TrCH information MP Added or Reconfigured TrCH information Information 103.5.5 >Added or Reconfigured TrCH information MP CPCH set ID Information 103.5.2 >>Added or Reconfigured TrCH information for DRAC list OP 1 to cmaxTrCH Information 103.5.7 >>>>>>>>>>>>>>>>>>>>>>>>>>>>	Downlink counter	OP			
Product PDCP information OP Itel s record and the phasing is respectively. >>RB with PDCP information MP RABs> RB with PDCP in the case of isosless SRNS relocation >>RB with PDCP information MP RB with PDCP in the case of isosless SRNS relocation Itel sector and the sector and t	synchronisation info		1 to		This IE is pooded for each PP
RABs- Iossless SRNS relocation >>RB with PDCP information MP RB with PDCP information Iossless SRNS relocation TrCH Information Elements	>RB with FDCF Information list	OF	<pre>r to cmaxRBall</pre>		having PDCP in the case of
>>RB with PDCP information MP RB with PDCP information 10.3.4.22 TrCH Information Elements Uplink transport channels Image: Comparison of the second information common for all transport channels OP UL Transport channels Deleted TrCH information list OP 1 to emaxTrCH > Deleted UL TrCH information OP 1 to emaxTrCH > Deleted UL TrCH information Added or Reconfigured TrCH information formation MP Deleted UL emaxTrCH > Deleted UL TrCH DP >Added or Reconfigured UL TrCH information MP Added or econfigured d UL TrCH information Added or Reconfigured d UL TrCH information >>Added or Reconfigured UL TrCH information MP Added or Reconfigured d UL TrCH information >>CHOICE mode MP Ito emaxTrCH >>CPCH set ID OP 1 to emaxTrCH >>DRAC static information MP DRAC static information information information for all transport channels >>DRAC static information information for all transport channels OP Ito emaxTrCH >>Deleted DL TrCH information OP Ito emaxTrCH >>Deleted DL TrCH information list OP 1 to emaxTrCH >>Deleted DL TrCH information list OP 1 to emaxTrCH			RABs>		lossless SRNS relocation
TrCH Information ElementsPDCP information 10.3.4.22Uplink transport channel information common for all transport channelsOPUL Transport channel information common for all transport channelsDeleted TrCH information list transport channelsOP1 to cmaxTrCHDeleted TrCH information information listOP1 to cmaxTrCH>>Deleted UL TrCH information informationMPDeleted UL TrCH informationAdded or Reconfigured TrCH informationOP1 to cmaxTrCH>>Added or Reconfigured UL TrCH informationMPAdded or Reconfigured UL TrCH information>>Added or Reconfigured UL TrCH informationMPAdded or cmaxTrCH>>Deleted UD >>>DRAC static informationOP1 to cmaxTrCH>>DDel >>DDDOP1 to cmaxTrCH>>DD >>DDDOP1 to cmaxTrCH>>DD >>DDDOP1 to cmaxTrCH>>Deleted DL TrCH informationMPOP>>DD >>DDOP1 to cmaxTrCH>>DD >>DDOP1 to cmaxTrCH>>DD >>DDOP1 to cmaxTrCH>>DD >>DDOP1 to cmaxTrCH>>Deleted DL TrCH information istOP1 to cmaxTrCH>>Deleted DL TrCH informationMPOP>>Deleted DL TrCH informationOP1 to cmaxTrCH>>Deleted DL TrCH information istOP1 to cmaxTrCH>>Deleted DL TrCH information istOP1 to cmaxTrCH>>Deleted DL TrCH i	>>RB with PDCP information	MP		RB with	
TrCH Information ElementsInternationUL Transport channelsOPUL Transport channelsInformation common for all transport channelsOP1 to channelsDeleted TrCH informationOP1 to cmaxTrCH>Deleted UL TrCH informationMPDeleted UL rCH information>Deleted UL TrCH informationMPDeleted UL rCH informationAdded or Reconfigured TrCH informationOP1 to cmaxTrCH>Added or Reconfigured UL TrCH informationMPAdded or reconfigured TrCH informationCHOICE modeMPAdded or cmaxTrCH>>>CPCPCH set IDOP1 to cmaxTrCH>>>DRAC static informationOP1 to cmaxTrCH>>DRAC static informationMPIto cmaxTrCH>>DRAC static information information for DRAC listOP1 to cmaxTrCH>>DRAC static information information for DRAC listOP1 to cmaxTrCH>>DL Transport channels information for DRAC listOP1 to cmaxTrCH>>DL Transport channels information for DRAC listOP1 to cmaxTrCH>>Deleted DL TrCH information information for all transport channelsOP1 to cmaxTrCH>>Deleted DL TrCH information information for all transport channelsOP1 to cmaxTrCH>>Deleted DL TrCH information information listOP1 to cmaxTrCH>>Deleted DL TrCH information information listOP1 to cmaxTrCH>>Deleted DL TrCH information information listOP <t< td=""><td></td><td></td><td></td><td>PDCP</td><td></td></t<>				PDCP	
TrCH Information Elements Up link transport channels OP UL Transport channel information common for all transport channels OP UL Transport channels Deleted TrCH information litransport channels OP 1 to cmaxTrCH Deleted UL TrCH information 10.3.5.5 Deleted UL TrCH information 10.3.5.5 Added or Reconfigured TrCH information list OP 1 to cmaxTrCH Added or Reconfigured UL TrCH information >>Added or Reconfigured TrCH information list MP Added or Reconfigured UL TrCH information Added or Reconfigured UL TrCH information CHOICE mode >>CPCH set ID OP 1 to cmaxTrCH > OP 1 to cmaxTrCH > >>Deleted Or Reconfigured TrCH information for DRAC list OP 1 to cmaxTrCH > OP 0 >>Determation for DRAC list OP 1 to cmaxTrCH > 0 0 0 >>Determation for DRAC list OP 0 0 0 0 >>Detered TrCH information information common for all transport channels OP 1 to cmaxTrCH > 0 0 >>Detered TrCH information information list OP 1 to cmaxTrCH > 0 0 0 >>Deleted DL TrCH information information list OP 1 to cmaxTrCH Deleted DL trCH <				10.3.4.22	
Uplink transport channelsOPUL Transport channel information common for all transport channelsUL Transport channelsOPI and all transport channelsDeleted TrCH information listOP1 to cmaxTrCH>Deleted UL TrCH informationMPDeleted UL rCH information 10.3.5.5Added or Reconfigured TrCH informationOP1 to cmaxTrCH>Added or Reconfigured UL TrCH informationMPAdded or reconfigured TrCH information 10.3.5.5>Added or Reconfigured TrCH informationOP1 to cmaxTrCH>>Added or Reconfigured TrCH informationOP1 to cmaxTrCH>>Added or Reconfigured TrCH informationOP1 to cmaxTrCH>>DEOP1 to cmaxTrCH>>DEOP1 to cmaxTrCH>>DEOP1 to cmaxTrCH>>DEOP1 to cmaxTrCH>>DEOP1 to cmaxTrCH>>DEOP1 to cmaxTrCH>>Deleted TrCH information information for DRAC listOP>>DEOP1 to cmaxTrCH>>Deleted TrCH information for all transport channelsOPInformation for all transport channelsOPInformation for all transport channelsOP>>Deleted TrCH information information for all transport channelsOP>>Deleted DL TrCH information informationOP>>Deleted DL TrCH information informationOP>>Deleted DL TrCH information information information information informa	TrCH Information Elements			10.0.1.22	
UL Transport channel information common for all transport channelsOPUL Transport channels information common for all transport channelsDeleted TrCH information listOP1 to cmaxTrCH >Deleted UL TrCH information 10.3.5.24Added or Reconfigured TrCH information information information information information 10.3.5.5Deleted UL TrCH information 10.3.5.5Added or Reconfigured TrCH information information information 	Uplink transport channels				
information common for all transport channelsOP1 to (maxTrCH)Deleted TrCH information odded or Reconfigured TrCH informationOP1 to (maxTrCH)Added or Reconfigured TrCH informationOP1 to (maxTrCH)Added or Reconfigured TrCH informationOP1 to (maxTrCH)Added or Reconfigured TrCH informationMPAdded or (maxTrCH)Added or Reconfigured TrCH informationMPAdded or (maxTrCH)CHOICE modeMPAdded or (maxTrCH)SPDDOP1 to (maxTrCH)SPDDOP1 to (maxTrCH)SPDAC static information information 10.3.5.7Ino data)Deleted TrCH information informationOP1 to (maxTrCH)SPDDOP1 to (maxTrCH)SPDDInformation (maxTrCH)Information (maxTrCH)SPDDInformation (maxTrCH)Information (maxTrCH)SPDDInformation (maxTrCH)Information (maxTrCH)SPDRC static information information (maxTrCH)Information (maxTrCH)SPDDInformation (maxTrCH)Information (maxTrCH)SPDDInformation (maxTrCH)Information (maxTrCH)SPDDInformation (maxTrCH)Information (maxTrCH)SPDDInformation (maxTrCH)Information (maxTrCH)SPDDInformation (maxTrCH)Information (maxTrCH)SPDDInformation (maxTrCH)Information (maxTrCH)SPDDInformation (maxTrCH) <td< td=""><td>UL Transport channel</td><td>OP</td><td></td><td>UL Transport</td><td></td></td<>	UL Transport channel	OP		UL Transport	
Hatsport chainesImage: Second chainesDeleted TrCH information listOP1 to <maxtrch< td="">>Deleted UL TrCH informationMPDeleted UL TrCH informationAdded or Reconfigured TrCH information listOP1 to <maxtrch< td="">>Added or Reconfigured UL TrCH informationOP1 to <maxtrch< td="">>Added or Reconfigured UL TrCH informationMPAdded or Reconfigured UL TrCH informationCHOICE modeMPAdded or <maxtrch< td="">>FDDOP1 to <maxtrch< td="">>>CCHOICE modeMPImaxTrCH>>Deleted IDOP1 to <maxtrch< td="">>>Deleted IDOP1 to <maxtrch< td="">>>DRAC static information information common for all transport channelsOPOP1 to <maxtrch< td="">ImaxTrCH>>Deleted TrCH information information common for all transport channelsOPDeleted TrCH information information common for all transport channelsOPDeleted TrCH information information istOPAdded or Reconfigured TrCH information common for all transport channelsOP>Deleted TrCH information information istOP>Deleted DL TrCH information information listOPAdded or Reconfigured TrCH information listOPAdded or Reconfigured</maxtrch<></maxtrch<></maxtrch<></maxtrch<></maxtrch<></maxtrch<></maxtrch<></maxtrch<>	Information common for all			channel	
all transport channelsall transport channelsDeleted TrCH information listOP1 to <maxtch< td="">Deleted UL TrCH information> Deleted UL TrCH informationMPDeleted UL TrCH informationDeleted UL TrCH informationAdded or Reconfigured TrCH informationOP1 to <maxtch< td="">Added or Reconfigure> Added or Reconfigured UL TrCH informationOP1 to <maxtch< td="">> Added or Reconfigured UL TrCH informationMPAdded or Reconfigure d UL TrCH or 10.3.5.2CHOICE modeMPMP> SCPCH set IDOP1 to <maxtch< td="">> >>DRAC static information information common for all transport channelsOP1 to <maxtch< td="">> >>DRAC static information information common for all transport channelsOP1 to <maxtch< td="">OP1 to <maxtch< td="">OP1 to <maxtrch< td="">> >>Deleted TrCH information information common for all transport channelsOP1 to <maxtrch< td="">> >>Deleted TrCH information information common for all transport channelsOP1 to <maxtrch< td="">> >>Deleted DL TrCH information information listMPDeleted DL <maxtrch< td="">> >Deleted DL TrCH information information listMPDeleted DL <maxtrch< td="">Added or Reconfigured TrCH information listOP1 to <maxtrch< td="">Added or Reconfigured TrCH information listMPDeleted DL <maxtrch< td="">Added or Reconfigured TrCH information listOP1 to <maxtrch< td="">Added or Reconfigured TrCH<</maxtrch<></maxtrch<></maxtrch<></maxtrch<></maxtrch<></maxtrch<></maxtrch<></maxtrch<></maxtch<></maxtch<></maxtch<></maxtch<></maxtch<></maxtch<></maxtch<>				common for	
channels 10.3.5.24channels 10.3.5.24Deleted TrCH informationOP1 to <maxtrch< td="">Deleted UL TrCH information>Deleted UL TrCH informationMPDeleted UL TrCH informationAdded or Reconfigured TrCH informationOP1 to <maxtrch< td="">>>Added or Reconfigured UL TrCH informationMPAdded or Reconfigured UL TrCH information>>Added or Reconfigured TrCH informationMPAdded or Reconfigured 10.3.5.5>>Added or Reconfigured TrCH informationMPAdded or Reconfigured 10.3.5.2CHOICE modeMPMP>>DCHOICE modeMPImomation (10.3.5.3)>>DCHOICE modeMPImomation (10.3.5.3)>>DCHOICE modeMPImomation (10.3.5.3)>>DCHOICE modeMPImomation (10.3.5.3)>>DRAC static information for DRAC listOPImomation (Imomation (10.3.5.7)>DD Downlink transport channels information common for all transport channelsOPImomation (Imomation (Imomation (Imomation (Imomation (Imomation (Imomation (Imomation) (Imomation (Imomation) (Imomation)OP>Deleted TrCH information informationMPImomation (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation) (Imomation</maxtrch<></maxtrch<>				all transport	
Deleted TrCH information listOP1 to smaxTrCH>Deleted UL TrCH informationMPDeleted UL TrCH informationAdded or Reconfigured TrCH information listOP1 to smaxTrCH>Added or Reconfigured UL TrCH informationOP1 to smaxTrCHCHOICE modeMPAdded or Reconfigured TrCH information>CHOICE modeMPAdded or Reconfigured TrCH information>>Deleted IDOPCPCH set ID 10.3.5.3>>Added or Reconfigured TrCH information for DRAC listOP1 to smaxTrCH >>>DARC static informationMPIto smaxTrCH>>DARC static informationMPIto smaxTrCH>>DL Transport channel information common for all transport channelsOP1 to smaxTrCHDeleted TrCH informationOP1 to smaxTrCHIto smaxTrCH>>Deleted TrCH informationOP1 to smaxTrCH>>Deleted TrCH informationOP1 to smaxTrCH>>Deleted TrCH informationOP1 to smaxTrCH>OP1 to smaxTrCH>				channels	
Deleted UL TrCH information MP Ito (maxTrCH information 10.3.6.5) Added or Reconfigured TrCH information list OP 1 to (maxTrCH information 10.3.6.5) >Added or Reconfigured UL TrCH information list MP Added or Reconfigured TrCH information 10.3.5.2 >Added or Reconfigured TrCH information MP Added or Reconfigured TrCH information 10.3.5.2 CHOICE mode MP Reconfigured UL TrCH information 10.3.5.2 CHOICE mode MP OP >FDD OP 1 to (maxTrCH 2000) >SCPCH set ID OP 1 to (maxTrCH 2000) >>DRAC static information MP DRAC static information 10.3.5.3 >TDD OP 1 to (maxTrCH 2000) DL Transport channels OP 1 to (mox a000) DL Transport channels OP 1 to (maxTrCH 2000) Deleted TrCH information list OP 1 to (maxTrCH 2000) >Deleted TrCH information MP DI Transport (channel) (normation 2000) >Deleted TrCH information list OP 1 to (maxTrCH 2000) >Deleted DL TrCH information MP Deleted DL TrCH information 2000) >Deleted DL TrCH information MP Deleted DL TrCH information 2000	Deleted TrCH information list	OP	1 to	10.3.5.24	
Image: series of the series	Deleted ITCITITIONIAtion list	OF	<maxtrch< td=""><td></td><td></td></maxtrch<>		
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>>CPCH set ID OP CPCH set ID >>Added or Reconfigured TrCH OP 1 to information for DRAC list OP 1 to >>>DRAC static information MP DRAC static information >>DD MP DRAC static information DD OP 0P Problem OP 0P Problem OP 0P Information for DRAC list MP DRAC static information ND OP DRAC static information Information common for all transport channels OP DL Transport channels DL Transport channels OP 1 to ommon for all transport channels Information common for all transport channels OP 1 to ommon for all transport channels Deleted TrCH information list OP 1 to ommon for all transport channels >Deleted DL TrCH information MP Deleted DL TrCH information DP Added or Reconfigured TrCH information OP 1 to information 10.3.5.4 Added or Reconfigured TrCH information list OP 1 to maxTrCH	>FDD				
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Information for Drote fist MP DRAC static information 10.3.5.7 >TDD Image: Constraint of the system of	>>Added or Reconfigured IrCH	OP	1 to		
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>TDD Image: Constraint of the second sec				information	
Downlink transport channels OP DL Transport channel information common for all transport channels OP DL Transport channel information common for all transport channels Deleted TrCH information list OP 1 to <maxtrch > Deleted DL TrCH information 10.3.5.4 Poeleted DL TrCH information MP Deleted DL TrCH information 10.3.5.4 Deleted DL TrCH information 10.3.5.4</maxtrch 	>TDD			10.3.3.7	(no data)
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Internation common for all transport channels 10.3.5.6 Deleted TrCH information list OP 1 to <maxtrch> >Deleted DL TrCH information MP Deleted DL TrCH information 10.3.5.4 Added or Reconfigured TrCH information OP 1 to <maxtrch 10.3.5.4<="" information="" td=""></maxtrch></maxtrch>	information common for all			channel	
Deleted TrCH information list OP 1 to <maxtrch< td=""> 10.3.5.6 >Deleted DL TrCH information MP Deleted DL - Deleted DL TrCH information 10.3.5.4 Added or Reconfigured TrCH information list OP 1 to <maxtrch< td=""></maxtrch<></maxtrch<>	transport channels			common for	
Deleted TrCH information list OP 1 to >Deleted DL TrCH information OP 1 to >Deleted DL TrCH information MP Deleted DL TrCH information Added or Reconfigured TrCH information OP 1 to Added or Reconfigured TrCH OP 1 to Information list OP 1 to				all transport	
Deleted TrCH information list OP 1 to <maxtrch > >Deleted DL TrCH information MP Deleted DL TrCH information 10.3.5.4 Added or Reconfigured TrCH information list OP 1 to <maxtrch< td=""></maxtrch<></maxtrch 				channels	
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>Deleted DL TrCH information MP Deleted DL TrCH information 10.3.5.4 Added or Reconfigured TrCH information list OP 1 to <maxtrch< td=""></maxtrch<>			<maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted DL TrCH information MP Deleted DL TrCH information 10.3.5.4 Added or Reconfigured TrCH information list OP 1 to <maxtrch< td=""></maxtrch<>			>		
Added or Reconfigured TrCH OP 1 to information list <maxtrch< td=""></maxtrch<>	>Deleted DL TrCH information	MP		Deleted DL	
Added or Reconfigured TrCH OP 1 to information list <maxtrch< td=""></maxtrch<>				IICH	
Added or Reconfigured TrCH OP 1 to information list <maxtrch< td=""></maxtrch<>				10.3.5.4	
information list <maxtrch< td=""><td>Added or Reconfigured TrCH</td><td>OP</td><td>1 to</td><td></td><td></td></maxtrch<>	Added or Reconfigured TrCH	OP	1 to		
	information list		<maxtrch< td=""><td></td><td></td></maxtrch<>		

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

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

10.2.9 COUNTER CHECK

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

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

10.2.10 COUNTER CHECK RESPONSE

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

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

10.2.11 DOWNLINK DIRECT TRANSFER

This message is sent by UTRAN to transfer higher layer messages.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN -> UE

Information Element/Group	Need	Multi	Type and	Semantics description
			reference	
Message Type	MP		Message	
			Гуре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
CN information elements				
CN Domain Identity	MP		Core	
			Network	
			Domain	
			Identity	
			10.3.1.1	
NAS message	MP		NAS	
-			message	
			10.3.1.8	

10.2.12 HANDOVER TO UTRAN COMMAND

This message is sent to the UE via other system to make a handover to UTRAN.

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

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

Direction: UTRAN \rightarrow UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
New U-RNTI	MP		U-RNTI Short 10.3.3.48	
Ciphering algorithm	OP		Ciphering algorithm 10.3.3.4	
CHOICE specification mode Complete specification	MP			
RB Information elements	MB			
setup list	MP	<pre>r to <maxsrbs etup=""></maxsrbs></pre>		bearer established
>>>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24	
>>RAB information to setup list	OP	1 to <maxrabs etup></maxrabs 		For each RAB established
>>>RAB information for setup	MP		RAB information for setup 10.3.4.10	
Uplink transport channels				
>>UL Transport channel information common for all transport channels	MP		UL Transport channel information common for all transport channels 10.3.5.24	
>>Added or Reconfigured TrCH information	MP	1 to <maxtrch ></maxtrch 	10.3.3.24	
>>>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d 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 10.3.5.6	
>>Added or Reconfigured TrCH information	MP	1 to <maxtrch ></maxtrch 		
>>>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
Uplink radio resources				
>>Uplink DPCH info	MP		Uplink DPCH info 10.3.6.88	
>>CHOICE mode	MP			
>>>FDD			00000000	
>>>>CPCH SET Info	OP		CPCH SET Info 10.3.6.13	

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Downlink radio resources				
>>>>Downlink PDSCH	OP		Downlink	
information			PDSCH	
			information	
			10.3.6.30	
>>>IDD			.	(no data)
>>Downlink information	MP		Downlink	
common for all radio links			information	
			common for	
>> Downlink information par	MD	1 to	10.3.0.24	
radio link		<pre>r to cmaxRL></pre>		
>>>Downlink information for	MP		Downlink	
each radio link	1011		information	
			for each	
			radio link	
			10.3.6.27	
>Preconfiguration				
>>CHOICE Preconfiguration	MP			
mode				
>>>Predefined configuration	MP		Predefined	
			configuration	
			identity	
			10.3.4.5	
>>>Default configuration				
>>>>Default configuration mode	MP		Enumerated	Indicates whether the FDD or
			(FDD, TDD)	TDD version of the default
			5 4 4	configuration shall be used
>>>>Default configuration	MP		Default	
Identity			configuration	
>>RAB info	OP		RAB info	One RAB is established
	01		Post	One ICAD is established
			10.3.4.9	
>>Uplink DPCH info	MP		Uplink	
			DPCH info	
			Post	
			10.3.6.89	
Downlink radio resources				
>>Downlink information common	MP		Downlink	
for all radio links			information	
			common for	
			all radio links	
			Post	
			10.3.6.25	
>>Downlink information per	MP	1 to		Send downlink information for
radio link		<maxrl></maxrl>		each radio link to be set-up.
>>>Downlink information for	MD		Downlink	
each radio link			information	
			for each	
			radio link	
			Post	
			10.3.6.28	
>>CHOICE mode	MP			
>>>FDD				(no data)
>>>TDD				
>>>Primary CCPCH Tx Power	MP		Primary	
-			CCPCH Tx	
			Power	
			10.3.6.59	
Frequency info	MP		Frequency	
	1	1	linfo	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			10.3.6.36	
Maximum allowed UL TX power	MP		Maximum allowed UL TX power 10.3.6.39	

10.2.13 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 \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE Information elements				
START list	СН	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains. The IE is mandatory</td></maxcndo<>		domains. The IE is mandatory
		mains>		if it has not been transferred
				prior to the handover.
>CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
>START	MP		START	
			10.3.3.38	
RB Information elements				
COUNT-C activation time	OP		Activation	Used for radio bearers
			time	mapped on RLC-TM.
			10.3.3.1	

10.2.14 INITIAL DIRECT TRANSFER

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE -> UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
CN information elements				
CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
Intra Domain NAS Node	MP		Intra Domain	
Selector			NAS Node	
			Selector	
			10.3.1.6	
NAS message	MP		NAS	
			message	
			10.3.1.8	
Measurement information				
elements				
Measured results on RACH	OP		Measured	
			results on	
			RACH	
			10.3.7.45	

10.2.15 HANDOVER FROM UTRAN COMMAND

This message is used for handover from UMTS to another system e.g. GSM. One or several messages from the other system can be included in the Inter-RAT message information element in this message. These messages are structured and coded according to that systems specification.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements			Турс	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
RB information elements				
RAB information list	OP	1 to <maxrabs etup></maxrabs 		For each RAB to be handed over. In this version, the maximum size of the list of 1 shall be applied for all system types.
>RAB info	MP		RAB info 10.3.4.8	
Other information elements				
CHOICE System type	MP			This IE indicates which specification to apply, to decode the transported messages
>GSM				¥
>>Frequency band	MP		Enumerated (GSM/DCS 1800 band used), GSM/PCS 1900 band used)	
>>GSM message				
>>>Single GSM message	MP		Bitstring (no explicit size constraint)	Formatted and coded according to GSM specifications The first bit of the bitstring contains the first bit of the GSM message.
>>>GSM message List	MP	1.to. <maxl nterSysMe ssages></maxl 	Bitstring (1512)	Formatted and coded according to GSM specifications. The first bit of the bitstring contains the first bit of the GSM message.
>cdma2000		4.1-		
>>cdma2000MessageList	MP	1.to. <maxl nterSysMe ssages></maxl 		
>>>MSG_TYPE(s)	MP		Bitstring (8)	Formatted and coded according to cdma2000 specifications. The MSG_TYPE bits are numbered b0 to b7, where b0 is the least significant bit.
>>>cdma2000Messagepayload(s)	MP		Bitstring (1512)	Formatted and coded according to cdma2000 specifications. The first bit of the bitstring contains the first bit of the cdma2000 message.
10.2.16 HANDOVER FROM UTRAN FAILURE

This message is sent on the RRC connection used before the Inter-RAT Handover was executed. The message indicates that the UE has failed to seize the new channel in the other system.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Other information elements				
Inter-RAT handover failure	OP		Inter-RAT handover failure 10.3.8.6	
CHOICE System type	MP			This IE indicates which specification to apply to decode the transported messages
>GSM				
>GSM message List	MP	1.to. <maxl nterSysMe ssages></maxl 	Bitstring (1512)	Formatted and coded according to GSM specifications. The first bit of the bitstring contains the first bit of the GSM message.
>cdma2000				
>>cdma2000MessageList	MP	1.to. <maxl nterSysMe ssages></maxl 		
>>>MSG_TYPE(s)	MP		Bitstring (8)	Formatted and coded according to cdma2000 specifications. The MSG_TYPE bits are numbered b0 to b7, where b0 is the least significant bit.
>>>cdma2000Messagepayload(s)	MP		Bitstring (1512)	Formatted and coded according to cdma2000 specifications. The first bit of the bitstring contains the first bit of the cdma2000 message.

10.2.17 MEASUREMENT CONTROL

This message is sent by UTRAN to setup, modify or release a measurement in the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UF information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		Integrity check info 10.3.3.16	
Measurement Information elements				
Measurement Identity	MP		Measurement Identity 10.3.7.48	
Measurement Command	MP		Measurement Command 10.3.7.46	
Measurement Reporting Mode	OP		Measurement Reporting Mode 10.3.7.49	
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-RAT measurement			Inter-RAT measurement 10.3.7.27	
>UE positioning measurement			UE positioning measurement 10.3.7.100	
>Traffic Volume measurement			Traffic Volume measurement 10.3.7.68	
>Quality measurement			Quality measurement 10.3.7.56	
>UE internal measurement			UE internal measurement 10.3.7.77	
Physical channel information elements				
DPCH compressed mode status info	OP		DPCH compressed mode status info 10.3.6.34	

Condition	Explanation
Command	The IE is mandatory present 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.

10.2.18 MEASUREMENT CONTROL FAILURE

This message is sent by UE, if it cannot initiate a measurement as instructed by UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.19 MEASUREMENT REPORT

This message is used by UE to transfer measurement results to the UTRAN.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Measurement Information				
Elements				
Measurement identity	MP		Measuremen	
			t identity	
			10.3.7.48	
Measured Results	OP		Measured	
			Results	
			10.3.7.44	
Measured Results on RACH	OP		Measured	
			Results on	
			RACH	
			10.3.7.45	
Additional Measured results	OP	1 to		
		<maxadditi< td=""><td></td><td></td></maxadditi<>		
		onalMeas>		
>Measured Results	MP		Measured	
			Results	
			10.3.7.44	
Event results	OP		Event results	
			10.3.7.7	

10.2.20 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 \rightarrow UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information elements				
Paging record list	OP	1 to <maxpage 1></maxpage 		
>Paging record	MP		Paging record 10.3.3.23	
Other information elements				
BCCH modification info	OP		BCCH modification info 10.3.8.1	

If the encoded message does not fill a transport block, the RRC layer shall add padding according to subclause 12.1.

10.2.21 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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Paging cause	MP		Paging	
			cause	
			10.3.3.22	
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	

10.2.22 PHYSICAL CHANNEL RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message Type	
UE Information Elements			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
	011		10.3.3.36	
Integrity check into	СН		Integrity	
			10 3 3 16	
Integrity protection mode info	OP		Integrity	
	0.		protection	
			mode info	
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
	MD		10.3.3.5	Defenditure has in the suit
Activation time	MD		Activation	Default value is "now"
	OP			
	01		10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
RRC State Indicator	MP		RRC State	
			Indicator	
			10.3.3.10	
UTRAN DRX cycle length	MD		UTRAN DRX	Default value is the existing
coenicient			coefficient	length coefficient
			10.3.3.49	length coefficient
CN Information Elements			101010110	
CN Information info	OP		CN	
			Information	
			info 10.3.1.3	
UTRAN mobility information				
elements				
URA Identity	OP		URA Identity	
RB information elements			10.3.2.0	
Downlink counter	OP			
synchronisation info	_			
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
	MD	RABs>		lossless SRNS relocation
>>RB with PDCP information	MP			
			information	
			10.3.4.22	
PhyCH information elements				
Frequency info	MD		Frequency	Default value is the existing
			info	value of frequency information
			10.3.6.36	
	MD		Maximum	Default value is the ovicting
	IVID			value of the maximum allowed
			TX power	UL TX power
			10.3.6.39	P
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink	
			DPCH info	
			10.3.6.88	
>CPCH SET Into			CPCH SET	
			103613	
SCPCH set ID			CPCH set ID	
	1	1		1

Information Element/Group	Need	Multi	Type and	Semantics description
nane			10.3.5.3	
Downlink radio resources				
CHOICE mode	MP			
>FDD				
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

10.2.23 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

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message	•	
5 71			Туре		
UE information elements					
RRC transaction identifier	MP		RRC		
			transaction		
			identifier		
			10.3.3.36		
Integrity check info	CH		Integrity		
			check info		
			10.3.3.16		
Uplink integrity protection	OP		Integrity		
activation info			protection		
			activation		
			info		
			10.3.3.17		
CHOICE mode	MP				
>FDD				(no data)	
>TDD					
>>CHOICE TDD option	MP				REL-4
>>>3.84 Mcps TDD	MP				REL-4
>>>>Uplink Timing Advance	OP		Uplink		
			Timing		
			Advance		
			10.3.6.95		
>>>1.28 Mcps TDD				(no data)	REL-4
RB Information elements					
COUNT-C activation time	OP		Activation	Used for radio	
			time	bearers mapped	
			10.3.3.1	on RLC-TM.	
Radio bearer uplink ciphering	OP		RB		
activation time info			activation		
			time info		
	0.5		10.3.4.13		
Uplink counter synchronisation	OP				
INIO		1 + -			
>RB with PDCP information list	OP				
	MD	RADS>	DD with		
>>RB with PDCP information	IVIP				
			information		
			10 3 4 22		
START list	MP	1 to	10.0.4.22	START [40]	
		<maxcndo< td=""><td></td><td>values for all CN</td><td></td></maxcndo<>		values for all CN	
		mains>		domains.	
>>CN domain identity	MP		CN domain		
			identity		
			10.3.1.1		
>>START	MP		START	START value to	
			10.3.3.38	be used in this CN	
				domain.]

10.2.24 PHYSICAL CHANNEL RECONFIGURATION FAILURE

This message is sent by UE if the configuration given by UTRAN is unacceptable or if the UE failed to assign, replace or release a set of physical channel(s).

RLC-SAP: AM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message type	MP		Message	
			type	
UE information elements				
RRC transaction identifier	OP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.25 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: UM on SHCCH, UM on DCCH

Logical channel: SHCCH or DCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			type	
C-RNTI	OP		C-RNTI	
			10.3.3.8	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Uplink timing advance Control	MD		Uplink	Default value is the existing
			Timing	value for uplink timing advance
			Advance	
			Control	
			10.3.6.96	
PUSCH capacity allocation info	OP		PUSCH	
			Capacity	
			Allocation	
			info	
			10.3.6.64	
PDSCH capacity allocation info	OP		PDSCH	
			Capacity	
			Allocation	
			info	
			10.3.6.42	
Confirm request	MD		Enumerated(Default value is No Confirm
			No Confirm,	
			Confirm	
			PDSCH,	
			Confirm	
			PUSCH)	
Traffic volume report request	OP		Integer (0	Indicates the number of
			255)	frames between start of the
				allocation period and sending
				measurement report. The
				value should be less than the
				value for Allocation Duration.
ISCP Timeslot list	OP	1 to		
		maxTS		
>Timeslot number	MP		Timeslot	Timeslot numbers, for which
			number	the UE shall report the timeslot
			10.3.6.84	ISCP IN PUSCH CAPACITY
				REQUEST message.

10.2.26 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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
C-RNTI	OP		C-RNTI	
			10.3.3.8	
RRC transaction identifier	CV-ProtErr		RRC	
			transaction	
			identifier	
			10.3.3.36	
Traffic Volume	OP		Traffic	
			Volume,	
			measured	
			results list	
T 1 <i>i</i> 1 <i>i</i> i <i>i</i>	0.5		10.3.7.67	
l imesiot list	OP			
- Timeslet number	MD	maxis	Timoolot	
>Timesiot number	MP		Timesiot	
Timoslot ISCP	MD		Timoclot	
>TIMESIOU ISCF	IVIE		ISCP info	
			10 3 7 65	
Primary CCPCH RSCP	OP		Primary	
			CCPCH	
			RSCP info	
			10.3.7.54	
CHOICE Allocation confirmation	OP			
>PDSCH Confirmation			Integer(1Hi	
			PDSCHIdent	
			ities)	
>PUSCH Confirmation			Integer(1Hi	
			PUSCHIdent	
			ities)	
Protocol error indicator	MD		Protocol	Default value is FALSE
			error	
			Indicator	
			10.3.3.27	
Protocol error information	CV-ProtErr		Protocol	
			error	
			iniormation	
			10.3.8.12	

	L	
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	•	

Condition	Explanation
ProtErr	This IE is mandatory <u>present if</u> the IE "Protocol error indicator" has the value "TRUE". Otherwise it is not needed.

10.2.27 RADIO BEARER RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message Type	
UE Information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
Integrity protection mode info	OP		Integrity	
Integrity protection mode into	01		protection	
			mode info	
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RIVIT	OP		10220	
PPC State Indicator	MD		PPC State	
	IVII		Indicator	
			10.3.3.10	
UTRAN DRX cycle length	MD		UTRAN DRX	Default value is the existing
coefficient			cycle length	value of UTRAN DRX cycle
			coefficient	length coefficient
			10.3.3.49	
CN information elements				
CN Information info	OP		CN	
			Information	
LITRAN mobility information			Into 10.3.1.3	
elements				
URA identity	OP		URA identity	
			10.3.2.6	
RB information elements				
RAB information to reconfigure	OP	1 to <		
list		maxRABse		
· DAD information to reconfigure		tup >	DAD	
>RAB information to reconfigure	IVIP		information	
			to	
			reconfigure	
			10.3.4.11	
RB information to reconfigure list	MP	1to		Although this IE is not always
		<maxrb></maxrb>		required, need is MP to align
				with ASN.1
>RB information to reconfigure	MP		RB	
			Information	
			reconfigure	
			10.3.4.18	
RB information to be affected list	OP	1 to		
		<maxrb></maxrb>		
>RB information to be affected	MP		RB	
			information	
			to be	
			affected	
TrCH Information Elements			10.3.4.17	
Unlink transport channels				
III Transport channel	OP		III Transport	

Information Element/Group	Need	Multi	Type and	Semantics description
			reierence	
information common for all			channel	
transport channels			information	
			common for	
			all transport	
Deleted TrCH information list	OP	1 to	10.3.3.24	
Deleted ITCH mornation list	0F	<maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted UL TrCH information	MP		Deleted UL	
			TrCH	
			information	
			10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Added or Reconfigured UL	MP		Added or	
TrCH information			Reconfigure	
			d UL TrCH	
			information	
			10.3.5.2	
	OP			
>>CPCH set ID	OP		CPCH set ID	
			10.3.5.3	
>>Added or Reconfigured TrCH	OP	1 to		
information for DRAC list		<maxtrch< td=""><td></td><td></td></maxtrch<>		
		>		
>>>DRAC static information	MP		DRAC static	
			information	
			10.3.5.7	(no data)
>IDD Downlink transport channels				(no data)
Di Transport channel	OP		DI Transport	
information common for all	OF		channel	
transport channels			information	
			common for	
			all transport	
			channels	
			10.3.5.6	
Deleted TrCH information list	OP	1 to	-	
		<maxtrch< td=""><td></td><td></td></maxtrch<>		
		>		
>Deleted DL TrCH information	MP		Deleted DL	
			TrCH	
			information	
			10.3.5.4	
Added or Reconfigured IrCH	90	1 to		
information list		<max1rch< td=""><td></td><td></td></max1rch<>		
>Added or Reconfigured DI	MD	>	Added or	
TrCH information			Reconfiguro	
			information	
			10.3.5.1	
PhyCH information elements				
Frequency info	MD		Frequency	Default value is the existing
			info	value of frequency information
			10.3.6.36	
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum	Default value is the existing
			allowed UL	maximum UL IX power
			102620	
CHOICE channel requirement	OP		10.3.0.39	
		1	1	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
CHOICE mode >FDD	MP			
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	MP	1 to <maxrl></maxrl>		Although this IE is not always required, need is MP to align with ASN.1
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

10.2.28 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

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message	•	
			Туре		
UE information elements					
RRC transaction identifier	MP		RRC		
			transaction		
			identifier		
			10.3.3.36		
Integrity check info	СН		Integrity		
Liplink integrity protection	OP		Integrity		
activation info			nrotection		
			activation		
			info		
			10.3.3.17		
CHOICE mode	MP				
>FDD				(no data)	
>TDD					
>>CHOICE TDD option	MP				REL-4
>>>3.84 Mcps TDD					REL-4
>>>>Uplink Timing Advance	OP		Uplink		
			Timing		
			Advance		
			10.3.6.95		
>>>1.28 Mcps TDD				(no data)	REL-4
RB Information elements				l la a d fa r ra dia	
COUNT-C activation time	OP		Activation	Used for radio	
				on RI C-TM	
Radio bearer uplink ciphering	OP		RB		
activation time info	01		activation		
			time info		
			10.3.4.13		
Uplink counter synchronisation	OP				
info					
>RB with PDCP information list	OP	1 to			
		<maxrball< td=""><td></td><td></td><td></td></maxrball<>			
		RABs>			
>>RB with PDCP information	MP		RB with		
			PDCP		
			102422		
START list	MP	1 to	10.3.4.22	START [40]	
	IVII	<maxcndo< td=""><td></td><td>values for all CN</td><td></td></maxcndo<>		values for all CN	
		mains>		domains.	
>>CN domain identity	MP		CN domain		
			identity		
			10.3.1.1		
>>START	MP		START	START value to	
			10.3.3.38	be used in this CN	
	1	1	1	domain.	1

10.2.29 RADIO BEARER RECONFIGURATION FAILURE

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

RLC-SAP: AM

Logical channel: DCCH

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

10.2.30 RADIO BEARER RELEASE

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

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description
Message Type	MP		Message	
message Type			Type	
UE Information Elements			21	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
Integrity protection mode info	OP		Integrity	
integrity protection mode into	01		protection	
			mode info	
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RINTI	OP		10 3 3 <i>4</i> 7	
New C-RNTI	OP		C-RNTI	
	01		10.3.3.8	
RRC State Indicator	MP		RRC State	
			Indicator	
			10.3.3.10	
UTRAN DRX cycle length	MD		UTRAN DRX	Default value is the existing
coefficient			cycle length	value of UTRAN DRX cycle
			coefficient	length coefficient
CN Information Flomanta			10.3.3.49	
CN Information Liements	OP		CN	
CN Information info	OF		Information	
			info 10.3.1.3	
Signalling Connection release	OP		CN domain	
indication	01		identity	
indiodion			10.3.1.1	
UTRAN mobility information				
elements				
URA identity	OP		URA identity	
			10.3.2.6	
RB Information Elements				
RAB information to reconfigure	OP	1 to <		
list				
>RAB information to reconfigure	MP		RAB	
			information	
			to	
			reconfigure	
			10.3.4.11	
RB information to release list	MP	1 to		
SRB information to release	MP		RB	
			information	
			to release	
			10.3.4.19	
RB information to be affected list	OP	1 to		
>PR information to be offected	MD	<maxrb></maxrb>	DD	
			information	
			to be	
			affected	
			10.3.4.17	
Downlink counter	OP			
synchronisation info			1	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>RB with PDCP information list	OP	1 to <maxrball RABs></maxrball 		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements				
Uplink transport channels			LU Transmort	
information common for all transport channels	UP		channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Deleted UL TrCH information	MP	>	Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch ></maxtrch 		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	OP			
>FDD >>CPCH set ID	OP		CPCH set ID	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch< td=""><td>10.3.5.3</td><td></td></maxtrch<>	10.3.5.3	
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch ></maxtrch 		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch ></maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	

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

10.2.31 RADIO BEARER RELEASE COMPLETE

This message is sent from the UE when radio bearer release has been completed.

RLC-SAP: AM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description	Version
	MP		Message	ucsonption	
			Туре		
UE information elements					
RRC transaction identifier	MP		RRC		
			transaction		
			identifier		
			10.3.3.36		
Integrity check info	СН		Integrity	Integrity check	
			Check Info	into is included if	
			10.3.3.10	is applied	
Uplink integrity protection	OP		Integrity		
activation info			protection		
			activation		
			info		
			10.3.3.17		
CHOICE mode	MP				
>FDD				(no data)	
>>CHOICE TOD Option	MP				REL-4
>>>3.84 MCps TDD			Lipliple	This information	REL-4
>>>>Oplink Timing Advance	OP		Uplink	cloment chell be	
			Advance	procent in case of	
			10 3 6 95	bandover	
			10.3.0.95	procedure if timing	
				advance is	
				enabled.	
				Calculated timing	
				advance value for	
				the new cell after	
				handover in a	
				synchronous TDD	
				network	
>>>1.28 Mcps TDD				(no data)	REL-4
RB Information elements	0.5		a		
COUNT-C activation time	OP		Activation	Used for radio	
				bearers mapped	
Padia baarar unlink ciphoring	OP		10.3.3.1 DB	UT RLC-TW.	
activation time info	OF		activation		
			time info		
			10.3.4.13		
Uplink counter synchronisation	OP				
IIIIU		1 to		This IE is pooded	
>RB with PDCP information list	OP	1 to		for each DR	
				howing DDCD in	
		KADS>		the case of	
				lossless SRNS	
				relocation	
>>RB with PDCP information	MP		RB with		
			PDCP		
			information		
			10.3.4.22		
>START list	MP	1 to		START [40]	
		<maxcndo< td=""><td></td><td>values for all CN</td><td></td></maxcndo<>		values for all CN	
		mains>		domains.	
>>CN domain identity	MP		CN domain		
			identity		
			10.3.1.1		
>>START	MP		START	START value to	
			10.3.3.38	be used in this CN	
		L		domain.	

10.2.32 RADIO BEARER RELEASE FAILURE

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

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

10.2.33 RADIO BEARER SETUP

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

RLC-SAP: AM or UM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE Information Elements	MD		DDO	
RRC transaction identifier	MP		RRC	
			identifier	
Integrity check info	СН		Integrity	
integrity check into	OIT		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	Default value is "now"
			time 10.3.3.1	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
RRC State Indicator	MP		RRC State	
			Indicator	
	MD		10.3.3.10	Default value is the evicting
UTRAN DRX cycle length	MD		UTRAN DRX	Default value is the existing
coenicient			cycle length	longth coefficient
				length coefficient
CN Information Elements			10.0.0.40	
CN Information info	OP		CN	
	01		Information	
			info 10.3.1.3	
UTRAN mobility information				
elements				
URA identity	OP		URA identity	
DD Information Flore anta			10.3.2.6	
RB Information Elements	00	4.1-		Fan angle sinnedling and in
Signalling RB information to	OP	1 to		For each signalling radio
setup list				bearer established
Signalling PR information to	MD	etup>	Signalling	
solution to			BB	
setup			information	
			to setup	
			10.3.4.24	
RAB information to setup list	OP	1 to		For each RAB established
	-	<maxrabs< td=""><td></td><td></td></maxrabs<>		
		etup>		
>RAB information for setup	MP		RAB	
			information	
			for setup	
			10.3.4.10	
RB information to be affected list	OP	1 to		
		<maxrb></maxrb>		
>RB information to be affected	MP		RB information	
			information	
			affected	
			10 3 / 17	
Downlink counter	OP		10.3.4.17	
synchronisation info				
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of

Information Element/Group	Need	Multi	Type and reference	Semantics description
		RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	
TrCH Information Elements			_	
Uplink transport channels UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxtrch ></maxtrch 		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch ></maxtrch 		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
CHOICE mode	OP			
>FDD >>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels10. 3.5.6	
Deleted TrCH information list	OP	1 to <maxtrch ></maxtrch 		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch ></maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
Frequency info	MD		Frequency	Default value is the existing

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

10.2.34 RADIO BEARER SETUP COMPLETE

This message is sent by UE to confirm the establishment of the radio bearer.

RLC-SAP: AM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reterence	description	
Message Type	MP		Message		
LIE information alomenta			туре		
DE Information elements	MD		BBC		
RRC transaction identifier	IVIP		transaction		
			identifier		
			10 3 3 36		
Integrity check info	СН		Integrity		
Integrity check into	CIT		check info		
			10.3.3.16		
Liplink integrity protection	OP		Integrity		
activation info	01		protection		
			activation		
			info		
			10.3.3.17		
CHOICE mode	OP				
>FDD				(no data)	
>TDD					
>>CHOICE TDD option	MP				REL-4
>>>3.84 Mcps TDD					REL-4
>>>>Uplink Timing Advance	OP		Uplink	This information	
	01		Timina	element shall be	
			Advance	present in case of	
			10.3.6.95	handover	
				procedure if timing	
				advance is	
				enabled.	
				Calculated timing	
				advance value for	
				the new cell after	
				handover in a	
				synchronous TDD	
				network	
>>>1.28 Mcps TDD				(No data)	REL-4
START	OP		START	This information	
			10.3.3.38	element is not	
				needed for	
				transparent mode	
				RBS	
RB Information elements	0.0		A (? (?		
COUNT-C activation time	OP		Activation	Used for radio	
				bearers mapped	
Dedie heeven unlink einhering			10.3.3.1	ON RLC-TIVI.	
Radio bearer uplink ciphening	UP		KD activation		
			time info		
Liplink counter synchronisation	OP		10.0.4.10		
info	01				
>RB with PDCP information list	OP	1 to		This IF is needed	
	01	<maxrball< td=""><td></td><td>for each RB</td><td></td></maxrball<>		for each RB	
		RABs>		having PDCP in	
		_		the case of	
				lossless SRNS	
				relocation	
>>RB with PDCP information	MP		RB with		
			PDCP		
			information		
			10.3.4.22		
>START list	MP	1 to		START [40]	
		<maxcndo< td=""><td></td><td>values for all CN</td><td></td></maxcndo<>		values for all CN	
		mains>		domains.	
>>CN domain identity	MP		CN domain		
			identity		
	1	1	10.3.1.1		1

>>START	MP	START	START value to	
		10.3.3.30	domain.	

10.2.35 RADIO BEARER SETUP FAILURE

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

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

10.2.36 RRC CONNECTION REJECT

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

RLC-SAP: UM

Logical channel: CCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Initial UE identity	MP		Initial UE	
			identity	
			10.3.3.15	
Rejection cause	MP		Rejection	
			cause	
			10.3.3.31	
Wait time	MP		Wait time	
			10.3.3.50	
Redirection info	OP		Redirection	
			info	
			10.3.3.29	

10.2.37 RRC CONNECTION RELEASE

This message is sent by UTRAN to release the RRC connection. The message also releases the signalling connection and all radio bearers between the UE and UTRAN.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
U-RNTI	CV-CCCH		U-RNTI	
			10.3.3.47	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CV-DCCH		Integrity	Integrity check info is included
			check info	if integrity protection is applied
			10.3.3.16	
N308	CH-		Integer(18)	
	Cell_DCH			
Release cause	MP		Release	
			cause	
			10.3.3.32	
Other information elements				
Rplmn information	OP		Rplmn	
-			information	
			10.3.8.15	

Condition	Explanation
СССН	This IE is mandatory present only sent when CCCH is
	used and not needed otherwise.
DCCH	This IE is mandatory present only sent when DCCH is
	used and not needed otherwise.
Cell_DCH	This IE is mandatory present when UE is in
	CELL_DCH state and not needed otherwise.

10.2.38 RRC CONNECTION RELEASE COMPLETE

This message is sent by UE to confirm that the RRC connection has been released.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Error indication	OP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.39 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 \rightarrow UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
Initial UE identity	MP		Initial UE identity 10.3.3.15	
Establishment cause	MP		Establishme nt cause 10.3.3.11	
Protocol error indicator	MD		Protocol error indicator 10.3.3.27	Default value is FALSE
Measurement information elements				
Measured results on RACH	OP		Measured results on RACH 10.3.7.45	

If the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.1.

10.2.40 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		Mossage	
Message Type	IVII		Type	
UE Information Elements			Турс	
Initial UE identity	MP		Initial UF	
			identity	
			10.3.3.15	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RNTI	MP		U-RNTI	
	05		10.3.3.47	
New C-RN II	OP		C-RNTI	
DDO Otata kadiaatan	MD		10.3.3.8	
RRC State Indicator	MP		RRC State	
			103310	
LITRAN DRX cycle length	MP			
coefficient	IVII		cycle length	
Cochicient			coefficient	
			10.3.3.49	
Capability update requirement	MD		Capability	Default value is defined in
			update	subclause 10.3.3.2
			requirement	
			10.3.3.2	
RB Information Elements				
Signalling RB information to	MP	3 to 4		Information for signalling radio
setup list				bearers, in the order RB1 up to
				RB4.
>Signalling RB information to	MP		Signalling	
setup			RB	
			information	
			to setup	
TrCH Information Elements			10.3.4.24	
Unlink transport channels				
	OP		III Transport	
information common for all	01		channel	
transport channels			information	
			common for	
			all transport	
			channels	
			10.3.5.24	
Added or Reconfigured TrCH	MP	1 to		Although this IE is not required
information list		<maxtrch< td=""><td></td><td>when the IE "RRC state</td></maxtrch<>		when the IE "RRC state
		>		indicator" is set to
				"CELL_FACH", need is MP to
>Added or Poconfigured LI	MD		Added or	anyn with ASN. I
TrCH information			Reconfigure	
Terrinomaton				
			information	
			10.3.5.2	
Downlink transport channels				
DL Transport channel	OP		DL Transport	
information common for all			channel	
transport channels			information	
			common for	
			all transport	
			channels	
			10.3.5.6	
Added or Reconfigured TrCH	MP	1 to		Although this IE is not required
information list		<max1rch< td=""><td>1</td><td>when the IE "KKC state</td></max1rch<>	1	when the IE "KKC state

Information Element/Group name	Need	Multi	Type and reference	Semantics description
		>		indicator" is set to "CELL_FACH", need is MP to align with ASN.1
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <maxrl></maxrl>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

10.2.41 RRC CONNECTION SETUP COMPLETE

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

RLC-SAP: AM

Logical channel: DCCH

Information Element/Group	Need	Multi	Type and	Semantics description
name	MD		reference	
Message Type	MP		Message	
			Туре	
UE Information Elements			550	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
START list	MP	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains.</td></maxcndo<>		domains.
		mains>		
>CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
>START	MP		START	START value to be used in
			10.3.3.38	this CN domain.
UE radio access capability	OP		UE radio	
			access	
			capability	
			10.3.3.42	
UE radio access capability	OP		UE radio	
extension			access	
			capability	
			extension	
			10.3.3.42a	
Other information elements				
UE system specific capability	OP	1 to		
		<maxinter< td=""><td></td><td></td></maxinter<>		
		SysMessa		
		ges>		
>Inter-RAT UE radio access	MP		Inter-RAT	
capability			UE radio	
			access	
			capability	
			10.3.8.7	

10.2.42 RRC STATUS

This message is sent to indicate a protocol error.

RLC-SAP: AM

Logical channel: DCCH

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

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

10.2.43 SECURITY MODE COMMAND

This message is sent by UTRAN to start or reconfigure ciphering and/or integrity protection parameters.

RLC-SAP: AM

1

Logical channel: DCCH

Direction: UTRAN to UE

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	MP		Integrity	
			check info	
			10.3.3.16	
Security capability	MP		Security	
			capability	
			10.3.3.37	
Ciphering mode info	OP		Ciphering	Only present if ciphering shall
			mode info	be controlled
			10.3.3.5	
Integrity protection mode info	OP		Integrity	Only present if integrity
			protection	protection shall be controlled
			mode info	
			10.3.3.19	
CN Information elements				
CN domain identity	MP		CN domain	Indicates which cipher and
			identity	integrity protection keys are
			10.3.1.1	applicable
Other information elements				
UE system specific security	СН	1 to		This IE is included if the IE
capability		<maxinter< td=""><td></td><td>"Inter-RAT UE radio access</td></maxinter<>		"Inter-RAT UE radio access
		SysMessa		capability" was included in
		ges>		RRC CONNECTION SETUP
		-		COMPLETE message
>Inter-RAT UE security	MP		Inter-RAT	
capability			UE security	
-			capability	
			10.3.8.8a	

10.2.44 SECURITY MODE COMPLETE

This message is sent by UE to confirm the reconfiguration of ciphering and/or integrity protection.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	MP		Integrity	
			check info	
			10.3.3.16	
Uplink integrity protection	OP		Integrity	
activation info			protection	
			activation	
			info	
			10.3.3.17	
RB Information elements				
Radio bearer uplink ciphering	OP		RB	
activation time info			activation	
			time info	
			10.3.4.13	

10.2.45 SECURITY MODE FAILURE

This message 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/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.46 SIGNALLING CONNECTION RELEASE

This message is used to notify the UE that its ongoing signalling connection to a CN domain has been released.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	Integrity check info is included
			check info	if integrity protection is applied
			10.3.3.16	
CN information elements				
CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	

10.2.47 SIGNALLING CONNECTION RELEASE REQUEST

This message is used by the UE to request for the release of an existing signalling connection.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group	Need	Multi	IE type and	Semantics description
name			reference	
Message Type	MP		Message	
			type	
UE Information Elements				
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
CN information elements				
CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
1

10.2.48 SYSTEM INFORMATION

Information Element/Group	Need	Multi	Type and	Semantics description
			Magazza	The measure type is
Message type	channel1Q		type	mandatory on the EACH and
	₽		type	absent on the BCH
SFNprime	CV-		Integer(040	SFN=SFNprime (for first 10ms
	channel <u>2</u>		94 by step of	frame of 20ms TTI),
			2)	SFN=SFNprime+1 (for last
				10ms frame of 20ms TTI)
CHOICE Segment combination	MP			
>Combination 1				(no data)
>Combination 2	MD		First	
>>Filst Segment	MP		Segment	
			10.2.48.1	
>Combination 3				
>>Subsequent Segment	MP		Subsequent	
			Segment,	
			10.2.48.3	
>Combination 4				
>>Last segment	MP		Last	
			segment	
			48.5	
>Combination 5			10.0	
>>Last segment	MP		Last	
5			Segment	
			(short)10.2.4	
			8.5	
>>First Segment	MP		First	
			Segment	
			(Short), 10.2.48.2	
>Combination 6			10.2.40.2	
>>Last Segment	MP		Last	
			Segment	
			(short),	
			10.2.48.5	
>>Complete list	MP	1 to		Note 1
		Mag		
>>>Complete	MP	IVISY	Complete	
			SIB	
			(short),10.2.	
			48.7	
>Combination 7				
>>Last Segment	MP		Last	
			Segment	
			(Short), 10.2.48.5	
>>Complete list	MP	1 <	10.2.40.0	Note 1
		maxSIBper		
		Msg>		
>>>Complete	MP		Complete	
			SIB	
			(short),10.2.	
>> First Sogmont	MD		48.7 Eirot	
>>First Segment	IVIE		Segment	
			(short).	
			10.2.48.2	
>Combination 8				
>>Complete list	MP	1 to		Note 1
		maxSIBper		
		IVISQ		

>>>Complete	MP		Complete SIB (short),10.2. 48.7	
>Combination 9				
>>Complete list	MP	1MaxSIB perMsg		Note 1
>>>Complete	MP		Complete SIB (short),10.2. 48.7	
>>First Segment	MP		First Segment (short), 10.2.48.2	
>Combination 10				
>>>Complete SIB of size 215 to 226	MP		Complete SIB,10.2.48. 6	
>Combination 11				
>>Last segment of size 215 to 222	MP		Last segment,10. 2.48.4	

Condition	Explanation
<u>channel1</u>	The IE is mandatory present if the message is sent on
	the FACH and not needed otherwise.
channel <u>2</u>	This IE is mandatory <u>present</u> if the channel is BCH,
	otherwise it is <u>not neededabsent</u> .

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

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

10.2.48.1 First Segment

This segment type is used to transfer the first segment of a segmented system information block. The IE is used when the first segment fills the entire transport block (Combination 2).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
SIB type	MP		SIB Type,	
			10.3.8.21	
SEG_COUNT	MP		SEG	
			COUNT,	
			10.3.8.17	
SIB data fixed	MP		SIB data	
			fixed,	
			10.3.8.19	

10.2.48.2 First Segment (short)

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Other information elements				
SIB type	MP		SIB Type,	
			10.3.8.21	
SEG_COUNT	MP		SEG	
			COUNT,	
			10.3.8.17	
SIB data variable	MP		SIB data	
			variable,	
			10.3.8.20	

10.2.48.3 Subsequent Segment

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
SIB type	MP		SIB Type, 10.3.8.21	
Segment index	MP		Segment Index, 10.3.8.18	
SIB data fixed	MP		SIB data fixed, 10.3.8.19	

10.2.48.4 Last Segment

This segment type is used to transfer the last segment of a segmented system information block. The IE is used when the last segment has a length, excluding length denominator, from 215 through 222 (Combination 11).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
SIB type	MP		SIB Type, 10.3.8.21	
Segment index	MP		Segment Index, 10.3.8.18	
SIB data fixed	MP		SIB data fixed, 10.3.8.19	In case the SIB data is less than 222 bits, padding shall be used. The same padding bits shall be used as defined in clause 12.1

10.2.48.5 Last Segment (short)

This segment type is used to transfer the last segment of a segmented system information block. The IE is used when the last segment has a length, excluding length denominator, of upto 214 bits (Combination 4, 5, 6 and 7).

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Other information elements				
SIB type	MP		SIB Type,	
			10.3.8.21	
Segment index	MP		Segment	
			Index,	
			10.3.8.18	
SIB data variable	MP		SIB data	
			variable,	
			10.3.8.20	

10.2.48.6 Complete SIB

This segment type is used to transfer a non-segmented system information block. The IE is used when the complete SIB has a length, excluding length denominator, from 215 through 226 (Combination 10).

Information Element/Group	Need	Multi	Type and reference	Semantics description
Other information elements			Telefende	
Other information elements				
SIB type	MP		SIB Type,	
			10.3.8.21	
SIB data fixed	MP		Bit string (226)	In case the SIB data is less than 226 bits, padding shall be used. The same padding bits shall be used as defined in clause 12.1

10.2.48.7 Complete SIB (short)

This segment type is used to transfer a non-segmented system information block. The IE is used when the complete SIB has a length, excluding length denominator, of upto 214 bits (Combination 6, 7, 8 and 9).

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Other information elements				
SIB type	MP		SIB Type,	
			10.3.8.21	
SIB data variable	MP		SIB data	
			variable,	
			10.3.8.20	

10.2.48.8 System Information Blocks

The IE "SIB data" within the IEs, "First Segment", "Subsequent or last Segment" and "Complete SIB" contains either complete system information block or a segment of a system information block. The actual system information blocks are defined in the following clauses.

10.2.48.8.1 Master Information Block

Information Element/Group	Need	Multi	Type and	Semantics description
Other information elements			Tererende	
MIB Value tag	MP		MIB Value	
CN information elements			tay 10.3.6.9	
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	
References to other system information blocks and scheduling blocks	MP		References to other system information blocks and scheduling blocks 10.3.8.14	

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

10.2.48.8.2 Scheduling Block 1

1

Information Element/Group name	Need	Multi	Type and reference	Semantics description
References to other system information blocks	MP		References to other system information blocks 10.3.8.13	

10.2.48.8.3 Scheduling Block 2

Information Element/Group name	Need	Multi	Type and reference	Semantics description
References to other system	MP		References	
information blocks			to other	
			system	
			information	
			blocks	
			10.3.8.13	

10.2.48.8.4 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 and in connected mode.

Information Element/Group name	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 <maxcndo mains></maxcndo 		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	MD		UE Timers and constants in idle mode 10.3.3.44	Default value means that for all timers and constants - For parameters with need MD, the defaults specified in 10.3.3.44 apply and - For parameters with need OP, the parameters are absent
UE Timers and constants in connected mode	MD		UE Timers and constants in connected mode 10.3.3.43	Default value means that for all timers and constants - For parameters with need MD, the defaults specified in 10.3.3.43 apply and - For parameters with need OP, the parameters are absent

10.2.48.8.5 System Information Block type 2

The system information block type 2 contains the URA identity.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
UTRAN mobility information elements				
URA identity list	MP	1 <maxur A></maxur 		
>URA identity	MP		URA identity 10.3.2.6	

10.2.48.8.6 System Information Block type 3

The system information block type 3 contains parameters for cell selection and re-selection.

Information Element/Group	Need	Multi	Type and	Semantics description
SIB4 Indicator	MP		Boolean	TRUE indicates that SIB4 is
UTRAN mobility information elements				broadcast in the cell.
Cell identity	MP		Cell identity 10.3.2.2	
Cell selection and re-selection info	MP		Cell selection and re- selection info for SIB3/4 10.3.2.3	
Cell Access Restriction	MP		Cell Access Restriction 10.3.2.1	

10.2.48.8.7 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.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
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 for SIB3/4 10.3.2.3	
Cell Access Restriction	MP		Cell Access Restriction 10.3.2.1	

10.2.48.8.8 System Information Block type 5

The system information block type 5 contains parameters for the configuration of the common physical channels in the cell.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
SIB6 Indicator	MP		Boolean	TRUE indicates that SIB6 is
				broadcast in the cell.
PhyCH information elements				
PICH Power offset	MP		PICH Power	
			offset	
			10.3.6.50	
CHOICE mode	MP			
>FDD				
>>AICH Power offset	MP		AICH Power	This AICH Power offset also
			offset	indicates the power offset for
			10.3.6.3	AP-AICH and for CD/CA-ICH.
>TDD				
>>PUSCH system information	OP		PUSCH	
	•		system	
			information	
			10.3.6.66	
>>PDSCH system information	OP		PDSCH	
	01		system	
			information	
			10.3.6.46	
>>TDD open loop power control	MP		TDD open	
	1011		loop power	
			control	
			10 3 6 79	
Primary CCPCH info	OP		Primary	Note 1
	01		CCPCH info	
			10 3 6 57	
PRACH system information list	MD		DRACH	
T INACIT System information list	IVII		evetem	
			information	
			lict 10 2 6 55	
Secondary CCDCH system	MD		list 10.3.0.55	
information				
monnation			COFCIT	
			information	
			103672	
CRS DRY Lovel 1 information				
			Level I	
			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
СТСН	The IE is mandatory <u>present</u> if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed in the message

10.2.48.8.9 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.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PhyCH information elements				
PICH Power offset	MP		PICH Power offset 10.3.6.50	
CHOICE mode	MP			
>FDD				
>>AICH Power offset	MP		AICH Power offset 10.3.6.3	This AICH Power offset also indicates the power offset for AP-AICH and for CD/CA-ICH.
>TDD				
>>PUSCH system information	OP		PUSCH system information 10.3.6.66	
>>PDSCH system information	OP		PDSCH system information 10.3.6.46	
>>TDD open loop power control	MP		TDD open loop power control 10.3.6.79	
Primary CCPCH info	OP		Primary CCPCH info 10.3.6.57	Note 1
PRACH system information list	OP		PRACH system information list 10.3.6.55	
Secondary CCPCH system information	OP		Secondary CCPCH system information 10.3.6.72	
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
СТСН	The IE is mandatory <u>present</u> if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed

10.2.48.8.10 System Information Block type 7

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode	MP			
>FDD				
>>UL interference	MP		UL interference 10.3.6.87	
>TDD				(no data)
PhyCH information elements				
PRACHs listed in system information block type 5	MP	1 to <maxpr ACH></maxpr 		The order of the PRACHs is the same as in system information block type 5.
>Dynamic persistence level	MP		Dynamic persistence level 10.3.6.35	
PRACHs listed in system information block type 6	OP	1 to <maxpra CH></maxpra 		The order of the PRACHs is the same as in system information block type 6.
>Dynamic persistence level	MP		Dynamic persistence level 10.3.6.35	
Expiration Time Factor	MD		Expiration Time Factor 10.3.3.12	Default is 1.

10.2.48.8.11 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/Group name	Need	Multi	Type and reference	Semantics description
UE information				
CPCH parameters	MP		CPCH	
			parameters	
			10.3.3.7	
PhyCH information elements				
CPCH set info list	MP	1 to		
		<maxcpc< td=""><td></td><td></td></maxcpc<>		
		Hsets>		
>CPCH set info	MP		CPCH set	
			info	
			10.3.6.13	
CSICH Power offset	MP		CSICH	
			Power offset	
			10.3.6.15	

10.2.48.8.12 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/Group	Need	Multi	Type and	Semantics description
name			reference	
PhyCH information elements				
CPCH set persistence levels list	MP	1 to <maxcpc Hsets></maxcpc 		
>CPCH set persistence levels	MP		CPCH persistence levels 10.3.6.12	

10.2.48.8.13 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/Group name	Need	Multi	Type and reference	Semantics description
UE information				
DRAC system information	MP		DRAC system information 10.3.3.9	DRAC information is sent for each class of terminal

10.2.48.8.14 System Information Block type 11

The system information block type 11 contains measurement control information to be used in the cell.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB12 Indicator	MP		Boolean	TRUE indicates that SIB12 is broadcast in the cell.
Measurement information elements				
FACH measurement occasion info	OP		FACH measuremen t occasion info 10.3.7.8	
Measurement control system information	MP		Measuremen t control system information 10.3.7.47	

10.2.48.8.15 System Information Block type 12

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Measurement information elements				
FACH measurement occasion info	OP		FACH measuremen t occasion info 10.3.7.8	
Measurement control system information	MP		Measuremen t control system information 10.3.7.47	

10.2.48.8.16 System Information Block type 13

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
CN Information Elements				
CN Domain system information list	MP	1 to <maxcndo mains></maxcndo 		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	OP		UE timers and constants in idle mode 10.3.3.44	
Capability update requirement	MD		Capability update requirement 10.3.3.2	Default value is defined in subclause 10.3.3.2

10.2.48.8.16.1 System Information Block type 13.1

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

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

10.2.48.8.16.2 System Information Block type 13.2

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

Information Element/Group	Need	Multi	Type and	Semantics description
ANSI-41 information elements			Telefelice	
ANOI-41 Information elements				
ANSI-41 User Zone	MP		ANSI-41	
Identification information			User Zone	
			Identification	
			information	
			10.3.9.7	

10.2.48.8.16.3 System Information Block type 13.3

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ANSI-41 information elements				
ANSI-41 Private Neighbour List	MP		ANSI-41	
information			Private	
			Neighbour	
			List	
			information	
			10.3.9.5	

10.2.48.8.16.4 System Information Block type 13.4

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

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

10.2.48.8.17 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.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
PhyCH information elements				
Individual Timeslot interference	MP	1 to		
list		<maxts></maxts>		
>Individual Timeslot interference	MP		Individual	
			Timeslot	
			interference	
			10.3.6.38	
Expiration Time Factor	MD		Expiration	Default is 1.
			Time Factor	
			10.3.3.12	

10.2.48.8.18 System Information Block type 15

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

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS Data ciphering info	OP		UE positioning Cipher info 10.3.7.86	If this IE is present then the SIB types 15.1, 15.2 & 15.3 are ciphered in accordance with the Data Assistance Ciphering Algorithm specified in [18]
Reference position	MP		Ellipsoid point with altitude and uncertainty ellipsoid 10.3.8.4c	approximate position where the UE is located
GPS Reference Time	MP		UE positioning GPS reference time 10.3.7.96	
Satellite information	OP	1 to <maxsat></maxsat>		This IE is present whenever bad (failed/failing) satellites are detected by UTRAN [18].
>BadSatID	MP		Enumerated(063)	

10.2.48.8.18.1 System Information Block type 15.1

The system information block type 15.1 contains information useful for UE positioning DGPS Corrections. The DGPS Corrections message contents are based on a Type-1 message of DGPS specified in [13].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
DGPS corrections	MP		UE positioning GPS DGPS corrections 10.3.7.91	

10.2.48.8.18.2 System Information Block type 15.2

The system information block type 15.2 contains information useful for GPS Navigation Model. These IE fields are based on information extracted from the subframes 1 to 3 of the GPS navigation message [12].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Transmission TOW	MP		Integer (0604799)	The approximate GPS time-of- week when the message is broadcast. in seconds
SatID	MP		Enumerated(063)	Satellite ID
GPS Ephemeris and Clock Correction Parameters	MP		UE positioning GPS Ephemeris and Clock Correction parameters 10.3.7.90a	

10.2.48.8.18.3 System Information Block type 15.3

The system information block type 15.3 contains information useful for ionospheric delay, UTC offset, and Almanac. These IEs contain information extracted from the subframes 4 and 5 of the GPS navigation message, [12].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Transmission TOW	MP		Integer (0604799)	The approximate GPS time-of- week when the message is broadcast. in seconds
GPS Almanac and Satellite Health	OP		UE positioning GPS almanac 10.3.7.89	
GPS ionospheric model	OP		UE positioning GPS ionospheric model 10.3.7.92	
GPS UTC model	OP		UE positioning GPS UTC model 10.3.7.97	
SatMask	CV- Almanac		Bitstring(13 2)	indicates the satellites that contain the pages being broadcast in this data set
LSB TOW	CV- Almanac		Bit string(8)	

ſ	Condition	Explanation
	Almanac	This IE is <u>mandatory</u> present if the IE "GPS Almanac and Satellite Health" is present

10.2.48.8.18.4 System Information Block type 15.4

The system information block type 15.4 contains information useful for OTDOA based UE Positioning method.

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
OTDOA Data ciphering info	OP		UE	If this IE is present then the IE
_			positioning	"OTDOA Assistance Data" is
			Ciphering	ciphered in accordance with the
			info	Data Assistance Ciphering
			10.3.7.86	Algorithm specified in [18]
OTDOA assistance data	MP		UE	
			positioning	
			OTDOA	
			assistance	
			data	
			10.3.7.103	

10.2.48.8.19 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.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
RB information elements				
Predefined RB configuration	MP		Predefined RB configuration 10.3.4.7	
TrCH Information Elements				
Predefined TrCH configuration	MP		Predefined TrCH configuration 10.3.5.9	
PhyCH Information Elements				
Predefined PhyCH configuration	MP		Predefined PhyCH configuration 10.3.6.56	

10.2.48.8.20 System Information Block type 17

NOTE: Only for TDD.

The system information block type 17 contains fast changing parameters for the configuration of the shared physical channels to be used in connected mode.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
PhyCH information elements				
PUSCH system information	OP		PUSCH	
			system	
			information	
			10.3.6.66	
PDSCH system information	OP		PDSCH	
-			system	
			information	
			10.3.6.46	

10.2.48.8.21 System Information Block type 18

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

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

10.2.49 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 \rightarrow UE

Information Element/Group name	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 12.1.

10.2.50 TRANSPORT CHANNEL RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN \rightarrow UE

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message Type	
UE Information Elements				
RRC transaction identifier	MP		RRC	
			transaction	
			Identifier	
late with a she she infe			10.3.3.36	
птедпту спеск пто	СН		Integrity	
Integrity protection mode info	OP		Integrity	
integrity protection mode into	01		protection	
			mode info	
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
			mode info	
			10.3.3.5	
Activation time	MD		Activation	Default value is "now"
			time 10.3.3.1	
New U-RN11	OP		U-RNII	
			10.3.3.47	
New C-RNTI	OP		10 2 2 9	
RRC State Indicator	MP		RRC State	
	1711		Indicator	
			10.3.3.10	
UTRAN DRX cycle length	MD		UTRAN DRX	Default value is the existing
coefficient			cycle length	value of UTRAN DRX cycle
			coefficient	length coefficient
			10.3.3.49	-
CN Information Elements				
CN Information info	OP		CN	
			Information	
LITDAN mehility information			info 10.3.1.3	
olomonts				
	OP			
ORA Identity	01		10 3 2 6	
RB information elements			10.0.2.0	
Downlink counter	OP			
synchronisation info	-			
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
		RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information	
TrCH Information Elements			10.3.4.22	
Unlink transport channels				
UL Transport channel	OP		UL Transport	
information common for all	0.		channel	
transport channels			information	
			common for	
			all transport	
			channels	
		4.	10.3.5.24	
Added or Reconfigured TrCH	OP	1 to		
information list		<max1rch< td=""><td></td><td></td></max1rch<>		
>Added or Reconfigured LI	MP	>	Added or	
TrCH information	IVIT		Reconfigure	
			d UL TrCH	
			information	
			10.3.5.2	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE mode	OP			
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxtrch ></maxtrch 		
>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>IDD Devenlink trenenert ekennele				(no data)
Downlink transport channels			DI Transport	
information common for all transport channels			channel information common for all transport channels 10.3.5.6	
Added or Reconfigured TrCH information list	OP	1 to <maxtrch ></maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	
PhyCH information elements Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
CHOICE channel requirement	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
	MP			
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP	1 to	Downlink information common for all radio links 10.3.6.24	Sand downlink information for
link list	UP	i l∪ ∠mayPl ⊳		Send downlink information for
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

10.2.51 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 \rightarrow UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message		
UF information elements			Турс		
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	СН		Integrity check info 10.3.3.16		
Uplink integrity protection activation info	OP		Integrity protection activation info 10.3.3.17		
CHOICE mode	OP				
>FDD				(no data)	
>TDD					
>>CHOICE TDD option	MP				REL-4
>>>3.84 Mcps TDD					REL-4
>>>>Uplink Timing Advance	OP		Uplink Timing Advance 10.3.6.95		
>>>1.28 Mcps TDD				(no data)	REL-4
RB Information elements					
COUNT-C activation time	OP		Activation time 10.3.3.1	Used for radio bearers mapped on RLC-TM. Only applicable if the UE is moving to CELL_DCH state due to this procedure	
Radio bearer uplink ciphering activation time info	OP		RB activation time info 10.3.4.13		
Uplink counter synchronisation info	OP				
>RB with PDCP information list	OP	1 to <maxrball RABs></maxrball 			
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22		
>START list	MP	1 to <maxcndo mains></maxcndo 		START [40] values for all CN domains.	
>>CN domain identity	MP		CN domain identity 10.3.1.1		
>>START	MP		START 10.3.3.38	START value to be used in this CN domain.	

10.2.52 TRANSPORT CHANNEL RECONFIGURATION FAILURE

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.53 TRANSPORT FORMAT COMBINATION CONTROL

This message is sent by UTRAN to control the uplink transport format combination within the allowed transport format combination set.

RLC-SAP: TM, AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group	Need	Multi	Type and	Semantics description
	CV/ notTM		Magaza	
Message Type	CV-110(11VI		Ture	
LIE information alements			туре	
DE Information elements	CV/ notTM		DDC	
RRC transaction identifier	CV-NOLTM		KKC transaction	
			identifier	
Integrity check info	CV/ notTM		10.3.3.30	
птедпту спеск пто	CV-NOLTM		integrity	
TrCU information alementa			10.3.3.10	
CUOICE mode	MD			
	MP			(no doto)
>FDD				(no data)
>IDD			-	
>>TFCS Id	OP		Transport	
			Format	
			Combination	
			Set Identity	
	MD		10.3.5.21	
DPCH/POSCH TECS in uplink	MP		Transport	
			Format	
			Combination	
			SUDSET	
	01		10.3.5.22	
Activation time for TFC subset			Activation	Default value is "now"
	not i MMD		time	
750.0			10.3.3.1	
IFC Control duration	CV-		IFC Control	
	not I Mopt		duration	
	1	1	10.3.6.80	

Condition	Explanation
NotTM	The message type is not needed included when
	transmitting the message on the transparent mode signalling DCCH <u>and mandatory present otherwise</u>
NotTMopt	The information element is not <u>needed included</u> when transmitting the message on the transparent mode signalling DCCH and is optional otherwise.
NotTMMD	The information element is not <u>needed included</u> when transmitting the message on the transparent mode signalling DCCH and is Mandatory with default otherwise.

If transparent mode signalling is used and the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.1.

10.2.54 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

1

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

10.2.55 UE CAPABILITY ENQUIRY

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN \rightarrow UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	СН		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	

10.2.56 UE CAPABILITY INFORMATION

This message is sent by UE to convey UE specific capability information to the UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		Massage	
Message Type	IVIP		Message	
			туре	
UE information elements				
RRC transaction identifier	OP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	Integrity check info is included
			check info	if integrity protection is applied
			10.3.3.16	
UE radio access capability	OP		UE radio	
			access	
			capability	
			10.3.3.42	
UE radio access capability	OP		UE radio	
extension			access	
			capability	
			extension	
			10.3.3.42a	
Other information elements				
UE system specific capability	OP	1 to		
		<maxinter< td=""><td></td><td></td></maxinter<>		
		SysMessa		
		ges>		
>Inter-RAT UE radio access	MP	-	Inter-RAT	
capability			UE radio	
			access	
			capability10.	
			3.8.7	

10.2.57 UE CAPABILITY INFORMATION CONFIRM

This message is sent by UTRAN to confirm that UE capability information has been received.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN \rightarrow UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	Integrity check info is included
			check info	if integrity protection is applied
			10.3.3.16	

10.2.58 UPLINK DIRECT TRANSFER

This message is used to transfer NAS messages for an existing signalling connection.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE ->UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
Integrity check info	СН		Integrity check info 10.3.3.16	Integrity check info is included if integrity protection is applied
CN information elements				
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 10.3.7.45	

10.2.59 UPLINK PHYSICAL CHANNEL CONTROL

NOTE: Only for 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/Group name	Need	Multi	Type and Reference	Semantics description	Version
Message Type	MP		Message	•	
			Туре		
UE information elements					
RRC transaction identifier	MP		RRC transaction identifier		
			10.3.3.36		
Integrity check info	OP		Integrity check info 10.3.3.16		
PhyCH information elements					
CCTrCH power control info	OP		CCTrCH power control info 10.3.6.8	Power control information for one CCTrCH	
CHOICE TDD option >3.84Mcps TDD	MP				REL-4 REL-4
>>Alpha	OP		Alpha 10.3.6.5		
>>Special Burst Scheduling	OP		Special Burst Scheduling 10.3.6.75a	UL Special Burst generation period in radio frames	
>>Timing Advance Control	OP		UL Timing Advance Control 10.3.6.96		
>>PRACH Constant Value	OP		Constant value 10.3.6.11	Operator controlled PRACH Margin	
>>PUSCH Constant Value	OP		Constant value 10.3.6.11	Operator controlled PUSCH Margin	RFI -4
>>Uplink synchronisation parameters	MD			Default: Uplink synchronisation step size 1. Uplink synchronisation frequency 1.	REL-4
>>>Uplink synchronisation step size	MP		Integer(18)	This parameter specifies the step size to be used for the adjustment of the uplink transmission timing	REL-4
>>>Uplink synchronisation frequency	MP		Integer(18)	This parameter specifies the frequency of the adjustment of the uplink transmission timing	REL-4
UE positioning related parameters	CV-IPDLs				REL-4
>IPDL-Alpha	MP		Alpha 10.3.6.5		REL-4
>Max power increase	MP		Integer (03)	In db	REL-4

Condition	Explanation
IPDLs	This IE is present only if idle periods are applied

10.2.60 URA UPDATE

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

RLC-SAP: TM

Logical channel: CCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
U-RNTI	MP		U-RNTI	
			10.3.3.47	
RRC transaction identifier	CV-		RRC	
	ProtErr		transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	
			check info	
			10.3.3.16	
URA update cause	MP		URA update	
			cause	
			10.3.3.46	
Protocol error indicator	MD		Protocol	Default value is FALSE
			error	
			indicator	
			10.3.3.27	
Other information elements				
Protocol error information	CV-ProtErr		Protocol	
			error	
			information	
			10.3.8.12	

Condition	Explanation
ProtErr	The IE is mandatory present ilf the IE "Protocol error indicator" has the value "TRUE" and not needed otherwise

10.2.61 URA UPDATE CONFIRM

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

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
			Туре	
UE information elements				
U-RNTI	CV-CCCH		U-RNTI	
			10.3.3.47	
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	СН		Integrity	Integrity check into is included
			check info	if integrity protection is applied
			10.3.3.16	
Integrity protection mode into	OP		Integrity	
			protection	
Ciphoring mode info	OP		Ciphoring	
Cipitering mode into	OF		mode info	
			10335	
New H-RNTI	OP		II-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
RRC State Indicator	MP		RRC State	
			Indicator	
			10.3.3.10	
UTRAN DRX cycle length	MD		UTRAN DRX	Default value is the existing
coefficient			cycle length	value of UTRAN DRX cycle
			coefficient	length coefficient
			10.3.3.49	
CN Information Elements				
CN Information info	OP		CN	
			Information	
LITRAN mobility information			Info 10.3.1.3	
elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements				
Downlink counter	OP			
synchronisation info				
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
		RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			10.3.4.22	

Condition	Explanation
СССН	This IE is mandatory present only sent when CCCH is
	used and not needed otherwise

10.2.62 UTRAN MOBILITY INFORMATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message	
LIE Information Elements			Туре	
			Into gritu	
ппедпту спеск ппо	СП		integrity	
PPC transaction identifier	MD		10.3.3.10 PPC	
KKC transaction identilier	IVIE		transaction	
			identifier	
			10 3 3 36	
Integrity protection mode info	OP		Integrity	
integrity protection mode into	01		nrotection	
			mode info	
			10.3.3.19	
Ciphering mode info	OP		Ciphering	
	•		mode info	
			10.3.3.5	
New U-RNTI	OP		U-RNTI	
			10.3.3.47	
New C-RNTI	OP		C-RNTI	
			10.3.3.8	
UE Timers and constants in	OP		UE Timers	
connected mode			and	
			constants in	
			connected	
			mode	
			10.3.3.43	
CN Information Elements				
CN Information info	OP		CN	
			Information	
			10.3.1.3a	
UTRAN Information Elements			LIDA identity	
URA Identity	OP		10.3.2.6	
RB Information elements				
Downlink counter	OP			
synchronisation info				
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
		RABs>		lossless SRNS relocation
>>RB with PDCP information	MP		RB with	
			PDCP	
			information	
			10.3.4.22	

10.2.63 UTRAN MOBILITY INFORMATION CONFIRM

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
Integrity abook info			10.3.3.30	
Integrity check into	CIT		check info	
			10.3.3.16	
Uplink integrity protection	OP		Integrity	
activation info			protection	
			activation	
			info	
			10.3.3.17	
COUNT C optivation time			Activation	Llood for radio boarara
COUNT-C activation time	UF		time	manned on RI C-TM. Only
			10331	applicable if the UE is moving
				to CELL DCH state due to this
				procedure
Radio bearer uplink ciphering	OP		RB	
activation time info			activation	
			time info	
			10.3.4.13	
info	OP			
>RB with PDCP information list	OP	1 to		This IE is needed for each RB
		<maxrball< td=""><td></td><td>having PDCP in the case of</td></maxrball<>		having PDCP in the case of
>> PR with PDCP information	MD	RABS>	DR with	lossiess SRINS relocation
>>RB with FDCF Information	IVIE		PDCP	
			information	
			10.3.4.22	
>START list	MP	1 to		START [40] values for all CN
		<maxcndo< td=""><td></td><td>domains.</td></maxcndo<>		domains.
		mains>		
>>CN domain identity	MP		CN domain	
			Identity	
	MD		10.3.1.1 START	START value to be used in
			10.3.3.38	this CN domain.

10.2.64 UTRAN MOBILITY INFORMATION FAILURE

This message is sent to indicate a failure to act on a received UTRAN MOBILITY INFORMATION message.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE \rightarrow UTRAN

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Message Type	MP		Message	
			Туре	
UE information elements				
RRC transaction identifier	MP		RRC	
			transaction	
			identifier	
			10.3.3.36	
Integrity check info	CH		Integrity	
			check info	
			10.3.3.16	
Failure cause	MP		Failure	
			cause and	
			error	
			information	
			10.3.3.14	

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)	

10.3.1.2 CN Domain System Information

Information Element/Group	Need	Multi	Type and	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, 10.3.9.4	
CN domain specific DRX cycle length coefficient	MP		CN domain specific DRX cycle length coefficient, 10.3.3.6	

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 <maxcndo mains></maxcndo 		
>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	

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

10.3.1.3a CN Information info full

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 <maxcndo mains></maxcndo 		
>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	
>CN domain specific DRX cycle length coefficient	MP		CN domain specific DRX cycle length coefficient, 10.3.3.6	

10.3.1.4 IMEI

This IE contains an International Mobile Equipment Identity. Setting specified in [11].

Information Element/Group name	Need	Multi	Type and reference	Semantics description
IMEI	MP	15		The first element contains the first IMEI digit, the second element the second IMEI digit and so on.
>IMEI digit	MP		INTEGER(0. .15)	

10.3.1.5 IMSI (GSM-MAP)

This IE contains an International Mobile Subscriber Identity, used towards a GSM-MAP type of PLMN. Setting specified in [11].

Information Element/Group name	Need	Multi	Type and reference	Semantics description
IMSI	MP	6 to 15		The first element contains the first IMSI digit, the second element the second IMSI digit and so on.
>IMSI digit	MP		INTEGER(0. .9)	

10.3.1.6 Intra Domain NAS Node Selector

This IE carries information to be used to route the establishment of a signalling connection to a CN node within a CN domain.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE version	MP			
>R99				
>>CHOICE CN type	MP			
>>GSM-MAP				
>>>CHOICE Pouting basis	MD			
	IVIE			TMSI allocated in the ourrent
				LA or PTMSI allocated in the current current RA
>>>>Routing parameter	MP		Bitstring (10)	The TMSI/ PTMSI consists of 4 octets (32bits). The bits are numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bitstring consists of bits b14 through b23 of the TMSI/ PTMSI where bit b14 is the least significant.
>>>>(P)TMSI of same PLMN, different (RA)LA				TMSI allocated in another LA of this PLMN or PTMSI allocated in another RA this
>>>>Routing parameter	MP		Bitstring (10)	PLMN The TMSI/ PTMSI consists of
			g(,	4 octets (32bits). The bits are numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bitstring consists of bits b14 through b23 of the TMSI/ PTMSI where bit b14 is the least significant.
>>>>(P)TMSI of different PLMN				TMSI or a PTMSI allocated in another PLMN
>>>>>Routing parameter	MP		Bitstring (10)	The TMSI/ PTMSI consists of 4 octets (32bits). The bits are numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bitstring consists of bits b14 through b23 of the TMSI/ PTMSI where bit b14 is the least significant.
paging)				
>>>>Routing parameter	MP		Bitstring (10)	The "Routing parameter" bitstring consists of DecimalToBinary [(IMSI div 10) mod 1000]. The bits of the result are numbered from b0 to b9, with bit b0 being the least significant.
>>>>>IMSI(cause UE initiated event)				NAS identity is IMSI
>>>>Routing parameter	MP		Bitstring (10)	The "Routing parameter" bitstring consists of DecimalToBinary [(IMSI div 10) mod 1000]. The bits of the result are numbered from b0 to b9, with bit b0 being the least significant.
>>>>> M⊢	1	1		NAS parameter is IMEL

>>>>Routing parameter	MP	Bitstring (10)	The "Routing parameter" bitstring consists of DecimalToBinary [(IMEI div 10) mod 1000]. The bits of the result are numbered from b0 to b9, with bit b0 being the least significant.
>>>>Spare 1		Bitstring (10)	This choice shall not be used in this version
>>>>Spare 2		Bitstring (10)	This choice shall not be used in this version
>>>>Entered parameter	MP	Boolean	Entered parameter shall be set to TRUE if the most significant byte of the current LAI/RAI is different compared to the most significant byte of the LAI/RAI stored on the SIM; Entered parameter shall be set to FALSE otherwise
>>>ANSI-41		Bitstring (14)	All bits shall be set to 0
>Later		Bitstring(15)	This bitstring shall not be sent by mobiles that are compliant to this version of the protocol.

10.3.1.7 Location Area Identification

Identifies uniquely a location area for a GSM-MAP type of PLMN. Setting specified in [5].

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)	The LAC bits are numbered b0-b15, where b0 is the least significant bit.

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 (14095)	The first octet contains octet 1 [17] of the NAS message, the second octet contains octet 2 of the NAS message and so on.

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(18)	The first octet contains octet 1 [17] of the NAS system information element, the second octet contains octet 2 of the NAS system information element and so on.

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 [11].

Information Element/Group name	Need	Multi	Type and reference	Semantics description
MCC	MP	3		The first element contains the first MCC digit, the second element the second MCC digit and so on.
>MCC digit	MP		INTEGER(09)	
MNC	MP	2 to 3		The first element contains the first MNC digit, the second element the second MNC digit and so on.
>MNC digit	MP		INTEGER(09)	

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	Need	Multi	Type and	Semantics description
name			reference	
PLMN Type	MP		Enumerated	
			(GSM-MAP,	
			ÀNSI-41,	
			GSM-MAP	
			and ANSI-41)	

10.3.1.13 P-TMSI (GSM-MAP)

This IE contains a 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 [11]. The P-TMSI bits are numbered b0- b31, where b0 is the least significant bit.

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 [5]. The bits are numbered b1-b8, where b1 is the least significant bit.
>RAB identity (ANSI-41)			Bit string (8)	The bits are numbered b1-b8, where b1 is the least significant bit.

CHOICE NAS binding info type	Condition under which the given <i>RAB identity</i> <i>type</i> 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 [11]. The Routing Area Code bits are numbered b0 to b7, where b0 is the least significant bit.

10.3.1.16 Routing Area Identification

Identifies uniquely a routing area for a GSM-MAP type of PLMN. Setting specified in [11].

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 TMSI (GSM-MAP)

This IE contains a 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 [11]. The TMSI bits are numbered b0- b31, where b0 is the least significant bit.

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)	
Intra-frequency cell re-selection indicator	CV-Barred		Enumerated(not allowed, allowed)	
Tbarred	CV-Barred		Integer (10,20,40,80 ,160,320,640 ,1280)	[4]
Cell Reserved for operator use	MP		Enumerated(reserved, not reserved)	
Cell Reservation Extension	MP		Enumerated(reserved, not reserved)	
Access Class Barred list	MD	maxAC		Default is no access class barred is applied. 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)	

	Condition	Explanation
Barred		The IE Presence is mandatory present 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)	

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Mapping Info	OP		Mapping info 10.3.2.5	
Cell_selection_and_reselection_ quality_measure	MP		Enumerated (CPICH Ec/N0, CPICH RSCP)	Choice of measurement (CPICH Ec/N0 or CPICH RSCP) to use as quality measure Q for FDD cells.
CHOICE mode >FDD	MP			
>>Sintrasearch	OP		Integer (- 3220 by step of 2)	[4] [dB]
>>Sintersearch	OP		Integer (- 3220 by step of 2)	[4] [dB]
>>SsearchHCS	OP		Integer (- 10591 by step of 2)	[4] [dB]
>>RAT List	OP	1 to <maxother RAT></maxother 		
>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	
>>>S _{search,RAT}	MP		Integer (- 3220 by step of 2)	In case the value 20 is received the UE shall consider this IE as if it was absent according to [4] [dB]
>>>S _{HCS,RAT}	OP		Integer (- 10591 by step of 2)	[4] [dB]
>>>Slimit,SearchRAT	OP		Integer (- 3220 by step of 2)	[4] [dB]
>>Qqualmin	MP		Integer (- 240)	Ec/N0, [dB]
>>Qrxlevmin	MP		Integer (- 11525 by step of 2)	RSCP, [dBm]
>TDD	OP		Integer (-	[4]
	01		10591 by step of 2)	[4] [dB]
>>Sintersearch	OP		Integer (- 10591 by step of 2)	[4] [dB]
>>SsearchHCS	OP		Integer (- 10591 by step of 2)	[4] [dB]
>>RAT List	OP	1 to <maxother RAT></maxother 		
>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	
>>>S _{search,RAT}	MP		Integer (- 10591 by step of 2)	In case the value 91 is received the UE shall consider this IE as if it was absent according to [4] [dB]
>>>SHCS,RAT	OP		Integer (-	[4]

		10591 by	[dB]
		step of 2)	
>>>Slimit,SearchRAT	MP	Integer (-	[4]
		10591 by	[dB]
		step of 2)	
>>Qrxlevmin	MP	Integer (-	RSCP, [dBm]
		11525 by	
		step of 2)	
Qhyst1 _s	MP	Integer	[4]
-		(040 by	[dB]
		step of 2)	
Qhyst2 _s	CV-FDD-	Integer	Default value is Qhyst1s
-	Quality-	(040 by	[4]
	Measure	step of 2)	[dB]
Treselection _s	MP	Integer	[s]
		(031)	
HCS Serving cell Information	OP	HCS Serving	
_		cell	
		information	
		10.3.7.12	
Maximum allowed UL TX power	MP	Maximum	[dBm]
		allowed UL	UE_TXPWR_MAX_RACH in
		TX power	[4].
		10.3.6.39	

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

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Qoffset1 _{s,n}	MD		Integer(- 5050)	Default value is 0. [dB]
Qoffset2 _{s,n}	CV-FDD- Quality- Measure		Integer(- 5050)	Default value is 0. [dB]
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	[dBm] UE_TXPWR_MAX_RACH in [4]. Default is the Maximum allowed UL TX power for the serving cell
HCS neighbouring cell information	OP		HCS Neighbourin g cell information 10.3.7.11	
CHOICE mode	MP			
>FDD				
>>Qqualmin	MD		Integer (- 240)	Ec/N0, [dB] Default value is Qqualmin for the serving cell
>>Qrxlevmin	MD		Integer (- 11525 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell
>TDD				
>>Qrxlevmin	MD		Integer (- 11525 by step of 2)	RSCP, [dBm] Default value is Qrxlevmin for the serving cell
>GSM				
>>Qrxlevmin	MD		Integer (- 11525 by step of 2)	RXLEV, [dBm] Default value is Qrxlevmin for the serving cell

Condition	Explanation
FDD-Quality-Measure	This IE is mandatory and has a default value for Intra/Inter Frequency Cells if the IE "Cell_selection_and_reselection_quality_measure" has the value CPICH Ec/No. Otherwise the IE is Optional

10.3.2.5 Mapping Info

Information Element/Group name	Need	Multi	Type and Reference	Semantics description	Version
Mapping List	MP	1 to <maxrat></maxrat>		•	
>RAT	MP		Enumerated (UTRA FDD, UTRA TDD 3.84 Mcps, UTRA TDD 1.28 Mcps, GSM, cdma2000)		UTRA TDD 1.28 Mcps is included for REL- 4.
>Mapping Function Parameter List	MP	1 to <maxmeas< td=""><td></td><td></td><td></td></maxmeas<>			
>>Function type	MP		Enumerated (linear, function type 2, function type 3, function type 4)	Type of the function within the interval.	
>>Map_parameter_1	MD		Integer (099)	Parameter describing the mapping function between the quality measurement and the representing quality value, see [4]. Default value is zero for the first interval or otherwise the value of Map_parameter_2 of the interval before.	
>>Map_parameter_2	MP		Integer (099)	Parameter describing the mapping function between the quality measurement and the representing quality value, see [4].	
>>Upper_limit	CV-MaxInt		Integer (1MaxMeas)	Upper limit of interval for which the Map_parameter_1 and Map_parameter_2 are valid. MaxMeas = 25 if RAT = UTRA FDD / CPICH Ec/N0, MaxMeas = 91 if RAT = UTRA TDD 3.84 Mcps or if RAT = UTRA TDD 1.28 Mcps or if RAT = UTRA	UTRA TDD 1.28 Mcps is included for REL- 4.

	FDD/ CPICH RSCP, MaxMeas = 63 if RAT = GSM.	

Condition	Explanation
MaxInt	This IE information is mandatory present only sent if
	Mapping Function Parameter List has not reached
	maxMeasIntervals and is not needed otherwise.

10.3.2.6 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 frame number/time at which the operation/changes caused by the related message shall take effect. Values between 0 and 255 indicate the absolute value of CFN (Connection Frame Number) of that frame number/time.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Activation time	MP		Integer(0 255)	CFN [10]

10.3.3.2 Capability Update Requirement

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

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reference	description	
UE radio access FDD capability	MP		Boolean	TRUE indicates	
update requirement				update required	
UE radio access 3.84Mcps TDD	MP		Boolean	TRUE indicates	Name
capability update requirement				update required	changed
					in REL-4
UE radio access 1.28Mcps TDD	MP		Boolean	TRUE indicates	REL-4
capability update requirement				update required	
System specific capability	OP	1 to		In this version, a	
update requirement list		<maxsyste< td=""><td></td><td>maximum size of</td><td></td></maxsyste<>		maximum size of	
		mCapabilit		4 of the list shall	
		y>		be applied and	
				any items after the	
				4 th item in the list	
				shall be ignored.	
>System specific capability	MP		Enumerated		
update requirement			(GSM)		

Default value is:

"UE radio capability FDD update requirement" = false

"UE radio capability 3.84Mcps TDD update requirement" = false

"UE radio capability 1.28Mcps TDD update requirement" = false

"System specific capability update requirement" not present.

10.3.3.3 Cell update cause

Indicates the cause for cell update.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Cell update cause	MP		Enumerated (cell reselection, periodical cell update, uplink data transmission , paging response, re-entered service area, radio link failure, RLC unrecoverabl e error)	At least one spare value needed.

10.3.3.4 Ciphering Algorithm

need	WUITI	l ype and reference	Semantics description
Ρ		Enumerated (UEA0,	
F	>	D	Enumerated (UEA0, UEA1)

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-		Ciphering	
	notStop		algorithm	
			10.3.3.4	
Ciphering activation time for	OP		Activation	Used for radio bearers
DPCH			time	mapped on RLC-TM. Only
			10.3.3.1	applicable if the UE is already
				in CELL_DCH state
Radio bearer downlink ciphering	OP		RB	Used for radio bearers
activation time info			activation	mapped on RLC-AM or RLC-
			time info,	UM
			10.3.4.13	

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

10.3.3.6 CN domain specific DRX cycle length coefficient

A coefficient in the formula to count the paging occasions to be used by a specific UE (specified in [4]).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CN domain specific DRX cycle length coefficient	MP		Integer(69)	Refers to 'k' in the formula as specified in [4], Discontinuous reception

10.3.3.7 CPCH Parameters

NOTE: Only for FDD.

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

Information Element/Group	Need	Multi	Type and	Semantics description
Initial Priority Delay	OP	1 to	Telefende	Initial delays for ASC priority
Initial I honty Delay	01	maxASC		Initial delays for ASC phonty.
>NS_IP	MP		Integer (028)	Number of slots for initial fixed delay for each ASC priority
	MD			level
Backoff control parameters	MP		laterer	
>N_ap_retrans_max	MP		Integer (164)	Max number of AP transmissions without AP- AICH response, a PHY parameter.
>N_access_fails	MP		Integer (164)	Max number of preamble ramping cycles when NAK response received, a MAC parameter.
>NF_bo_no aich	MP		Integer (031)	Number of frames for UE backoff after N ap_retrans_max unsuccessful AP access attempts, a MAC parameter.
>NS_bo_busy	MP		Integer (063)	Number of slots for UE fixed backoff after access attempt to busy CPCH, a MAC parameter.
>NF_bo_all_busy	MP		Integer (031)	Max number of frames for UE backoff after access attempt to last busy CPCH, a MAC parameter. UE randomly selects backoff value from range (0NF bo all busy)
>NF_bo_ mismatch	MP		Integer (0127)	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 (0NF_bo_mismatch)
>Т_СРСН	MP		Enumerate d (0, 1)	CPCH channel timing used to determine Tau, a PHY parameter
Power Control Algorithm	MP		Enumerate d (algorithm 1, algorithm 2)	Specifies algorithm to be used by UE to interpret TPC commands
TPC step size	CV-algo		Integer (1, 2)	In dB
DL DPCCH BER	MP		Integer (063)	The BER quality value shall be set in the range $0 \le DPCCH BER \le 1$ in the unit BER_dB where:
				BER_dB_0: DPCCH BER = 0
				BER_dB_1: -∞ < Log10(DPCCH BER) < -4.03
				BER_dB_2: -4.03 ≤ Log10(DPCCH BER) < -3.965
				BER_dB_3: -3.965 ≤ Log10(DPCCH BER) < -3.9
				 BER_dB_61: -0.195 ≤ Log10(DPCCH BER) < -0.13
				BER_dB_62: -0.13 ≤

	Log10(DPCCH BER) < -0.065
	BER_dB_63: -0.065 ≤ Log10(DPCCH BER) ≤ 0

Condition	Explanation
algo	The IE is mandatory <u>present</u> if "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is not needed

10.3.3.8 C-RNTI

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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)	

10.3.3.9 DRAC system information

Information element	Need	Multi	Type and reference	Semantics description
DRAC system information	MP	1 to <maxdra Cclasses></maxdra 		DRAC information is sent for each class of terminal
>Transmission probability	MP		Transmissio n probability 10.3.3.39	
>Maximum bit rate	MP		Maximum bit rate 10.3.3.20	

10.3.3.10 RRC State Indicator

Indicates to a UE the RRC state to be entered.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
RRC State indicator	MP		Enumerated(CE	
			LL_DCH,	
			CELL_FACH,	
			CELL_PCH,	
			URA_PCH)	

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 Conversational Call, Originating Streaming Call, Originating Interactive Call, Originating Background Call, Originating Subscribed traffic Call, Terminating Conversational Call, Terminating Streaming Call, Terminating Interactive Call, Terminating Interactive Call, Terminating Background Call, Emergency Call, Inter-RAT cell re-selection, Inter-RAT cell change order, Registration, Detach, Originating High Priority Signalling, Call re-establishment, Terminating High Priority Signalling, Call re-establishment, Terminating Low Priority Signalling, Terminating Low Priority Signalling,	At least one spare value needed.

10.3.3.12 Expiration Time Factor

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Expiration Time Factor	MP		Enumerated(
			2times,	
			4times,	
			8times,	
			16times,	
			32times,	
			64times,	
			128times,	
			256times)	

10.3.3.13 Failure cause

Cause for failure to perform the requested procedure.

Need	Multi	Type and reference	Semantics description
1P		Enumerated (configuration unsupported, physical channel failure, incompatible simultaneous reconfiguration, protocol error, compressed mode runtime error, cell update occurred, invalid configuration, configuration incomplete, unsupported measurement)	At least one spare value needed.
1	P	P	Need Multi Type and reference P Enumerated (configuration unsupported, physical channel failure, incompatible simultaneous reconfiguration, protocol error, compressed mode runtime error, cell update occurred, invalid configuration, configuration incomplete, unsupported measurement)

10.3.3.14 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		Failure cause 10.3.3.13	
Protocol error information	CV-ProtErr		Protocol error information 10.3.8.12	
Deleted TGPSI	CV- CompMod eErr		TGPSI 10.3.6.82	

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

10.3.3.15 Initial UE identity

1

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE UE id type	MP			
>IMSI (GSM-MAP)			IMSI (GSM-	
			MAP)	
			10.3.1.5	
>TMSI and LAI (GSM-MAP)				
>>TMSI (GSM-MAP)	MP		TMSI (GSM-	
			MAP)	
			10.3.1.17	
>>LAI (GSM-MAP)	MP		Location	
			Area	
			Identification	
			10.3.1.7	
>P-TMSI and RAI (GSM-MAP)				
>>P-TMSI (GSM-MAP)	MP		P-TMSI	
			(GSM-MAP)	
			10.3.1.13	
>>RAI (GSM-MAP)	MP		Routing Area	
			Identification	
			10.3.1.16	
>IMEI			IMEI	
			10.3.1.4	
>ESN (DS-41)			bitstring	TIA/EIA/IS-2000-4
			(SIZE (32))	
>IMSI (DS-41)			octetstring	TIA/EIA/IS-2000-4
			(SIZE (57))	
>IMSI and ESN (DS-41)				TIA/EIA/IS-2000-4
>>IMSI (DS-41)	MP		octetstring	TIA/EIA/IS-2000-4
			(SIZE (57))	
>>ESN (DS-41)	MP		bitstring	TIA/EIA/IS-2000-4
			(SIZE (32))	
>TMSI (DS-41)			octetstring	TIA/EIA/IS-2000-4
			(SIZE	
			(212))	

10.3.3.16 Integrity check info

The Integrity check info contains the RRC message sequence number needed in the calculation of XMAC-I [40] 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 [40]. The Message Authentication Code bits are numbered b0-b31, where b0 is the least significant bit. The 27 MSB of the IE shall be set to zero and the 5 LSB of the IE shall be set to the used signalling radio bearer identity when the encoded RRC message is used as the MESSAGE parameter in the integrity protection algorithm.
RRC Message sequence number	MP		Integer (015)	The local RRC hyper frame number (RRC HFN) is concatenated with the RRC message sequence number to form the input parameter COUNT-I for the integrity protection algorithm. The IE value shall be set to zero when the encoded RRC message is used as the MESSAGE parameter in 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.

		reference	Semantics description
MP	4 to 5		The RRC sequence number when a new integrity protection configuration shall be applied, for CCCH (=RB0) and signalling radio bearers in the order RB0, RB1, RB2, RB3, RB4. The value for RB1 shall be ignored if this IE was included in a RRC message sent on RB1. The value for RB2 shall be ignored if this IE was included in a RRC message sent on RB2.
MP		Integer (0	
1	MР	MP	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 (UIA1)	

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)	
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 [40]

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

10.3.3.20 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	Need	Multi	Type and	Semantics description
name			reference	
Maximum bit rate	MP		integer(0512	=kbit/s
			by step of 16)	

10.3.3.21 Measurement capability

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reference	description	
Need for downlink compressed					
mode				TOUE	
FDD measurements	MP		Boolean	TRUE means that	
				the UE requires	
				DL compressed	
				noue in order to	
				measurements on	
				FDD	
3.84Mcps TDD measurements	CV-		Boolean	TRUE means that	Name
	3.84Mcps			the UE requires	changed
	tdd_sup			DL compressed	in REL-4
				mode in order to	
				perform	
				measurements on	
				3.84Mcps TDD	
1.28Mcps IDD measurements	CV-		Boolean	IRUE means that	REL-4
	1.28Mcps_			the UE requires	
	ida_sup			DL compressed	
				noue in order to	
				measurements on	
				1.28Mcps TDD	
GSM 900	CV-		Boolean	TRUE means that	
	Gsm900_s			the UE requires	
	upM			DL compressed	
				mode in order to	
				perform	
				measurements on	
				GSM 900	
DCS 1800	CV-		Boolean	TRUE means that	
	Gsm1800_			the UE requires	
	sup			DL compressed	
				nerform	
				measurements on	
				DCS 1800	
GSM 1900	CV-		Boolean	TRUE means that	
	Gsm1900_			the UE requires	
	sup			DL compressed	
				mode in order to	
				perform	
				measurements on	
Multi-carrier measurement	CV/-		Boolean	TRUE magne that	
Multi-camer measurement	mc sup		Doolean	the LIF requires	
	mc_sup			DL compressed	
				mode in order to	
				perform	
				measurements on	
				multi-carrier	
Need for uplink compressed					
FDD measurements	MP		Boolean	TRUE means that	
				the UE requires	
				UL compressed	
				mode in order to	
				perform	
				measurements on	
			Declary		Nie
ט.ס.א אין איי איי איי איי איי אייי אייי איי	CV-		Boolean	the UE requiree	Name
	tdd sun				in RFI -4
	ida_oup			mode in order to	

			perform measurements on 3.84Mcps TDD	
1.28Mcps TDD measurements	CV- 1.28Mcps_ tdd_sup	Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on 1.28Mcps TDD	REL-4
GSM 900	CV- Gsm900_s up	Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on GSM 900	
DCS 1800	CV- Gsm1800_ sup	Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on DCS 1800	
GSM 1900	CV- Gsm1900_ sup	Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on GSM 1900	
Multi-carrier measurement	CV- mc_sup	Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on multi-carrier	

Condition	Explanation
3.84Mcps_tdd_sup	The IE Presence is mandatory present if an IE "TDD RF capability" is present with the IE "Chip rate capability" set to "3.84Mcps". Otherwise this field is not needed in the message.
1.28Mcps_tdd_sup	The IE Presence is mandatory present if an IE "TDD RF capability" is present with the IE "Chip rate capability" set to "1.28Mcps". Otherwise this field is not needed in the message.
Gsm900_sup	The IE is mandatory present Presence is needed if the IE "Inter-RAT UE radio access capability" indicates support for GSM900 <u>and not needed</u> <u>otherwise</u> . Absence is needed if the IE "Inter-RAT UE radio access capability" indicates no support for GSM900.
Gsm1800_sup	The IE is mandatory present Presence is needed if the IE "Inter-RAT UE radio access capability" indicates support for GSM1800 <u>and not needed</u> <u>otherwise</u> . Absence is needed if the IE "Inter-RAT UE radio access capability" indicates no support for GSM1800.
Gsm1900_sup	The IE is mandatory present Presence is needed if the IE "Inter-RAT UE radio access capability" indicates support for GSM1900 and not needed otherwise. Absence is needed if the IE "Inter-RAT UE radio access capability" indicates no support for GSM1900.
mc_sup	The IE_Presence is mandatory present if IE Support of multi-carrier has the value TRUE. Otherwise this field is not needed in the message.

10.3.3.21a Measurement capability extension

This IE may be used to replace the measurement capability information provided within IE "Measurement capability".

Information Element/Group	Need	Multi	Type and	Semantics description
	MD	1 to	reference	
ruu measurements	MP	າ ເບ <maxfreq< td=""><td></td><td></td></maxfreq<>		
		BandsFDD		
>FDD Frequency band	MD		Enumerated(FDD2100, FDD1900)	The default value is the same as indicated in the IE "Frequency band" included in the IE " UE radio access capability extension". At least one spare value is needed
>Need for DL compressed mode	MP		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on the FDD frequency band indicated by the IE "FDD Frequency band"
>Need for UL compressed mode	MP		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on the FDD frequency band indicated by the IE "FDD Frequency band"
TDD measurements	CV- tdd_sup	1 to <maxfreq BandsTDD ></maxfreq 		
>TDD Frequency band	MP		Enumerated(a, b, c)	
>Need for DL compressed mode	MP		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on TDD frequency band indicated by the IE "TDD Frequency band"
>Need for UL compressed mode	MP		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on TDD frequency band indicated by the IE "TDD Frequency band"
GSM measurements	CV- gsm_sup	1 to <maxfreq BandsGS M></maxfreq 		
>GSM Frequency band	MP		Enumerated(GSM450, GSM480, GSM850, GSM900P, GSM900E, GSM1800, GSM1900)	as defined in [45] at least one spare value
>Need for DL compressed mode	MP		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on GSM frequency band indicated by the IE "GSM Frequency band"
>Need for UL compressed mode	MP		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on GSM frequency band indicated by the IE "GSM Frequency band"

Multi-carrier measurement	CV- mc_sup		
>Need for DL compressed mode	MP	Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on multi-carrier
>Need for UL compressed mode	MP	Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on multi-carrier

Condition	Explanation			
tdd_sup	The IE Presence is mandatory present if IE Multi-			
	mode capability has the value "TDD" or "FDD/TDD".			
	Otherwise this field is not needed in the message.			
gsm_sup	The IE Presence is mandatory present if IE Support of			
	GSM has the value TRUE. Otherwise this field is no			
	needed in the message.			
mc_sup	The IE Presence is mandatory present if IE Support of			
	multi-carrier has the value TRUE. Otherwise this field			
	is not needed in the message.			

10.3.3.22 Paging cause

Cause for a CN originated page.

1

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Paging cause	MP		Enumerated(Terminating Conversational Call, Terminating Streaming Call, Terminating Interactive Call, Terminating Background Call, Terminating High Priority Signalling, Terminating Low Priority Signalling, Terminating – cause unknown)	

10.3.3.23 Paging record

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Used paging identity	MP			
>CN identity				
>>Paging cause	MP		Paging	
			cause	
			10.3.3.22	
>>CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
>>CHOICE UE Identity	MP			
>>>IMSI (GSM-MAP)			IMSI	
			(GSM-	
			MAP)	
			10.3.1.5	
>>>TMSI (GSM-MAP)			TMSI	
			(GSM-	
			MAP)	
			10.3.1.17	
>>>P-TMSI (GSM-MAP)			P-TMSI	
			(GSM-	
			MAP)	
			10.3.1.13	
>>>IMSI (DS-41)			TIA/EIA/IS-	
			2000-4	
>>>1MSI (DS-41)			TIA/EIA/IS-	
			2000-4	
	MD			
>>U-RINTI	IVIP		U-RN11	
. CN originated page to			10.3.3.47	
connected mode UE	OP			
>>>Paging cause	MP		Paging	
			cause	
			10.3.3.22	
>>>CN domain identity	MP		CN domain	
			identity	
			10.3.1.1	
>>>Paging record type identifier	MP		Paging	
			record type	
			identifier	
			10.3.1.10	

Condition	Explanation
CHOICE Used paging identity	Condition under which the given used paging
	<i>identity</i> is chosen
CN identity	For CN originating pages (for idle mode UEs)
UTRAN identity	For UTRAN originating pages (for connected mode
	UEs)

10.3.3.24 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	Version
Support for lossless SRNS relocation	MP		Boolean	TRUE means supported	
Support for RFC2507	MP		Boolean	TRUE means supported	
>Max HC context space			Integer(512, 1024, 2048, 4096, 8192)		
Support for RFC 3095	MP		Boolean	TRUE means supported	REL-4
>Maximum number of ROHC context sessions	MD		Integer(2, 4, 8, 12, 16, 24, 32, 48, 64, 128, 256, 512, 1024, 16384)	Default value is 16.	REL-4
>Reverse decompression depth	MD		Integer (065535)	Default value is 0 (reverse decompression shall not be used).	REL-4

10.3.3.25 Physical channel capability

Information Element/Group name Downlink physical channel	Need	Multi	Type and Reference	Semantics description	Version
capability information elements					
capability	fdd_req_su				
>Max no DPCH/PDSCH codes	MP		Integer (18)	Maximum number of DPCH/PDSCH codes to be simultaneously received	
>Max no physical channel bits received	MP		Integer (600, 1200, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 48000, 57600, 67200, 76800)	Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)	
>Support for SF 512	MP		Boolean	TRUE means	
				supported	
>Support of PDSCH	MP		Boolean	IRUE means	
>Simultaneous reception of	MP		Boolean	TRUE means	
SCCPCH and DPCH				supported	
Simultaneous reception of SCCPCH, DPCH and PDSCH	CV- if_sim_rec _pdsch _sup		Boolean	IRUE means supported	
>Max no of S-CCPCH RL	CV- if_sim_rec		Integer(1)	Maximum number of simultaneous S-CCPCH radio links	
3.84Mcps TDD downlink physical channel capability	CH- 3.84Mcps_ tdd_req_su p				Name changed in REL-4
>Maximum number of timeslots	MP		Integer		
>Maximum number of physical	MP		Integer		
channels per frame	MD		(1224)		
>IMINIMUM SF	IVIP		16)		
>Support of PDSCH	MP		Boolean	TRUE means supported	
>Maximum number of physical	MP		Integer		
1 28Mcps TDD downlink	CH-		(116)		REI -4
physical channel capability	1.28Mcps_ tdd_req_su				
>Maximum number of timeslots per subframe	MP		Integer (16)		REL-4
>Maximum number of physical	MP		Integer		REL-4
channels per subframe >Minimum SF	MP		(196) Integer (1, 16)		REL-4
>Support of PDSCH	MP		Boolean	TRUE means	REL-4
>Maximum number of physical	MP		Integer		REL-4

channels per timeslot		(116)		
>Support of 8PSK	MP	Boolean	TRUE means supported	REL-4
Uplink physical channel capability information elements				
FDD uplink physical channel capability	CH- fdd_req_su p			
>Maximum number of DPDCH bits transmitted per 10 ms	MP	Integer (600, 1200, 2400, 4800. 9600, 19200. 28800, 38400, 48000, 57600)		
>Support of PCPCH	MP	Boolean	TRUE means supported	
3.84Mcps TDD uplink physical channel capability	CH- 3.84Mcps_ tdd_req_su p			Name changed in REL-4
>Maximum Number of timeslots per frame	MP	Integer (114)		
>Maximum number of physical channels per timeslot	MP	Integer (1, 2)		
>Minimum SF	MP	Integer (1, 2, 4, 8, 16)		
>Support of PUSCH	MP	Boolean	TRUE means supported	
1.28Mcps TDD uplink physical channel capability	CH- 1.28Mcps_ tdd_req_su p			REL-4
>Maximum Number of timeslots per subframe	MP	Integer (16)		REL-4
>Maximum number of physical channels per timeslot	MP	Integer (1, 2)		REL-4
>Minimum SF	MP	Integer (1, 2, 4, 8, 16)		REL-4
>Support of PUSCH	MP	Boolean	TRUE means supported	REL-4
>Support of 8PSK	MP	Boolean	TRUE means supported	REL-4

Condition	Explanation
if_sim_rec_pdsch_sup	The IE Presence is mandatory present if IE
	Simultaneous reception of SCCPCH and DPCH =
	True and IE Support of PDSCH = True. Otherwise this
	field is not needed in the message.
if_sim_rec	The IE Presence is mandatory present if IE capability
	Simultaneous reception of SCCPCH and DPCH =
	True. Otherwise this field is not needed in the
	message.
3.84Mcps_tdd_req_sup	The IE Presence is mandatory present if an IE "TDD
	RF capability" is present with the IE "Chip rate
	capability" set to "3.84Mcps" and a 3.84Mcps TDD
	capability update has been requested in a previous
	message. Otherwise this field is not needed in the
	message.
1.28Mcps_tdd_req_sup	The IE Presence is mandatory present if an IE "TDD
	RF capability" is present with the IE "Chip rate
	capability" set to "1.28Mcps" and a 1.28Mcps TDD
	capability update has been requested in a previous
	message. Otherwise this field is not needed in the
	message.
fdd_req_sup	The IE Presence is mandatory present if IE Multi-
	mode capability has the value "FDD" or "FDD/TDD"
	and a FDD capability update has been requested in a
	previous message. Otherwise this field is not needed
	in the message.

10.3.3.26 Protocol error cause

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Protocol error cause	MP		Enumerated (ASN.1 violation or encoding error, Message type non- existent or not implemented, Message not compatible with receiver state, Information element value not comprehended, Conditional information element error, Message extension not comprehended)	At least one spare value needed.

10.3.3.27 Protocol error indicator

This IE indicates whether a message was transmitted due to a protocol 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.

10.3.3.28 RB timer indicator

This IE is used to indicate to UTRAN if the timers T314 or T315 has expired in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T314 expired	MP		Boolean	TRUE means that the timer has expired or the stored value is zero. FALSE means that the timer has not expired.
T315 expired	MP		Boolean	TRUE means that the timer has expired or the stored value is zero. FALSE means that the timer has not expired.

10.3.3.29 Redirection info

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

Information Element/Group	Need	Multi	Type and	Semantics description
CHOICE Redirection Information	MP			
>Frequency info			Frequency info 10.3.6.36	
>Inter-RAT info			Inter-RAT info 10.3.7.25	

10.3.3.30 Re-establishment timer

This information element indicates which timer to associate with RAB.

Ir	nformation Element/Group name	Need	Multi	Type and reference	Semantics description
Re-	-establishment timer	MP		Enumerate	
				d(useT314,	
				useT315)	

10.3.3.31 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(con	
			gestion,	
			unspecified)	

10.3.3.32 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, user inactivity), directed signalling connection re- establishment)	

10.3.3.33 RF capability FDD

Information Element/Group name	Need	Multi	Type and Reference	Semantics description	Version
UE power class	MP		Enumerated(14)	as defined in [21]	
Tx/Rx frequency separation	MP		Enumerated(190, 174.8- 205.2, 134.8-245.2)	In MHz as defined in [21]. NOTE: Not applicable if UE is not operating in frequency band a (as defined in [21]).	

10.3.3.33a RF capability FDD extension

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
UE power class extension	MP		Enumerated(14)	as defined in [21]. Al least one spare value is needed
Tx/Rx frequency separation	MP		Enumerated(190, 174.8- 205.2, 134.8-245.2)	In MHz as defined in [21]. NOTE: Not applicable if UE is not operating in frequency band a (as defined in [21]).

10.3.3.33b RF capability TDD

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
UE power class	MP		Enumerated (14)	as defined in [22]
Radio frequency bands	MP		Enumerated(a, b, c, a+b, a+c, b+c, a+b+c)	as defined in [22]
Chip rate capability	MP		Enumerated(3.84Mcps,1. 28Mcps)	as defined in [22]

10.3.3.34 RLC capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Total RLC AM buffer size	MP		Integer (2,10,50,100 ,150,500,100 0)	Total receiving and transmitting RLC AM buffer capability in kBytes
Maximum RLC AM Window Size	MP		Integer(2047 ,4095)	Maximum supported RLC TX and RX window in UE
Maximum number of AM entities	MP		Integer (3,4,5,6,8,16 ,30)	

10.3.3.35 RLC re-establish 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-establish indicator	MP		Boolean	TRUE means re-establish required FALSE means re-establish not required

10.3.3.36 RRC transaction identifier

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RRC transaction identifier	MP		Integer (03)	

10.3.3.37 Security capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Ciphering algorithm capability	MP			
>UEA0	MP		Boolean	The value TRUE means that an unciphered connection after the Security mode control procedure is accepted by the UE.
>UEA1	MP		Boolean	The value TRUE means that UEA1, Kasumi, is supported
>Spare	MP	14	Boolean	Shall be set to FALSE by UEs complying with this version of the protocol.
Integrity protection algorithm capability	MP			
>UIA1	MP		Boolean	The value TRUE means that UIA1, Kasumi, is supported
>Spare	MP	15	Boolean	Shall be set to FALSE by UEs complying with this version of the protocol.

NOTE: The UE shall support at least one UEAx other than UEA0 and one UIAx.

10.3.3.38 START

There is a START value per CN domain. The START is used to initialise the 20 MSBs of all hyper frame numbers (MAC-d HFN, RLC UM HFN, RLC AM HFN, RRC HFN) for a CN domain.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
START	MP		Bit string (20)	The START [40] bits are numbered b0-b19, where b0 is the least significant bit.

10.3.3.39 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	Need	Multi	Type and	Semantics description
Transmission probability	MP		Real(0.125 1.0 by step of 0.125)	probability

10.3.3.40 Transport channel capability

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
Downlink transport channel				
elements				
Max no of bits received	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 162840)	Maximum sum of number of bits of all transport blocks received at an arbitrary time instant
Max convolutionally coded bits received	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920,	Maximum sum of number of bits of all convolutionally coded transport blocks received at an arbitrary time instant
Max turbo coded bits received	CV- turbo_dec_ sup		163840) Integer(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 at an arbitrary time instant
Maximum number of	MP		Integer(4, 8,	
simultaneous transport channels			16, 32)	
Maximum number of	MP		Integer (18)	
Max no of received transport blocks	MP		Integer(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
Maximum number of TFC in the TFCS	MP		Integer(16, 32, 48, 64, 96, 128, 256, 512, 1024)	
Maximum number of TF	MP		Integer(32, 64, 128, 256, 512, 1024)	
Support for turbo decoding Uplink transport channel capability information elements	MP		Boolean	TRUE means supported
Max no of bits transmitted	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all transport blocks transmitted at an arbitrary time instant
Max convolutionally coded bits transmitted	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480,	Maximum sum of number of bits of all convolutionally coded transport blocks transmitted at an arbitrary time instant

		40960, 81920, 163840)	
Max turbo coded bits transmitted	CV- turbo_enc_ sup	Integer(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 at an arbitrary time instant
Maximum number of simultaneous transport channels	MP	Integer(2, 4, 8, 16, 32)	
Maximum number of simultaneous CCTrCH of DCH type	CH- tdd_req_su p	Integer (18)	
Max no of transmitted transport blocks	MP	Integer(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
Maximum number of TFC in the TFCS	MP	Integer(4, 8, 16, 32, 48, 64, 96, 128, 256, 512, 1024)	
Maximum number of TF	MP	Integer(32, 64, 128, 256, 512, 1024)	
Support for turbo encoding	MP	Boolean	TRUE means supported

Condition	Explanation
turbo_dec_sup	The IE Presence is mandatory present if IE Support
	turbo decoding = True. Otherwise this field is not
	needed in the message.
turbo_enc_sup	The IE Presence is mandatory present if IE Support
	turbo encoding = True. Otherwise this field is not
	needed in the message.
tdd_req_sup	The IE Presence is mandatory present if IE Multi-
	mode capability has the value "TDD" or "FDD/TDD"
	and a TDD capability update has been requested in
	previous message. Otherwise this field is not needed
	in the message.

10.3.3.41 UE multi-mode/multi-RAT capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Multi-RAT capability				
Support of GSM	MP		Boolean	
Support of multi-carrier	MP		Boolean	
Multi-mode capability	MP		Enumerated	
			(TDD, FDD,	
			FDD/TDD)	

10.3.3.42 UE radio access capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
ICS version	MP		Enumerated(R99, REL-4)	Indicates the release version of [42]-2 (Implementation Conformance Statement (ICS) proforma specification) that is applicable for the UE.	Value REL-4 added in REL-4
PDCP capability	MP		PDCP capability 10.3.3.24		
RLC capability	MP		RLC capability 10.3.3.34		
Transport channel capability	MP		Transport channel capability 10.3.3.40		
RF capability FDD	OP		RF capability FDD 10.3.3.33		
RF capability TDD	OP	1 to 2	RF capability TDD 10.3.3.33b	One "TDD RF capability" entity shall be included for every Chip rate capability supported.	Multi=2 is included in REL-4
Physical channel capability	MP		Physical channel capability 10.3.3.25		
UE multi-mode/multi-RAT capability	MP		UE multi- mode/multi- RAT capability 10.3.3.41		
Security capability	MP		Security capability 10.3.3.37		
UE positioning capability	MP		UE positioning capability 10.3.3.45		
Measurement capability	CH- fdd_req_su p		Measuremen t capability 10.3.3.21		

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Condition	Explanation
fdd_req_sup	<u>The IE Presence is mandatory present if IE Multi-</u> mode capability has the value "FDD" or "FDD/TDD" and a FDD capability update has been requested in a previous message. Otherwise this field is not needed in the message.

10.3.3.42a UE radio access capability extension

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Frequency band specific capability list	MP	1 to < maxFreqba ndsFDD>		
>Frequency band	MP		Enumerated(FDD2100, FDD1900)	At least one spare value is needed
>RF capability FDD extension	MD		RF capability FDD extension 10.3.3.33a	the default values are the same values as in the immediately preceding IE "RF capability FDD extension"; the first occurrence is MP
>Measurement capability extension	MP		Measuremen t capability extension 10.3.3.21a	

10.3.3.43 UE Timers and Constants in connected mode

This information element specifies timer- and constants values used by the UE in connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T301	MD		Integer(10 0, 200 2000 by step of 200, 3000, 4000, 6000, 8000)	Value in milliseconds. Default value is 2000. This IE should not be used by the UE in this release of the protocol.
N301	MD		Integer(0 7)	Default value is 2. This IE should not be used by the UE in this release of the protocol.
T302	MD		Integer(10 0, 200 2000 by step of 200, 3000, 4000, 6000, 8000)	Value in milliseconds. Default value is 4000.
N302	MD		Integer(0 7)	Default value is 3.
T304	MD		Integer(10 0, 200, 400, 1000, 2000)	Value in milliseconds. Default value is 2000. At least one spare value is needed. Note 1.
N304	MD		Integer(0 7)	Default value is 2. Note 1.
T305	MD		Integer(5, 10, 30, 60, 120, 360, 720, infinity)	Value in minutes. Default value is 30. Infinity means no update
T307	MD		Integer(5, 10, 15, 20, 30, 40, 50)	Value in seconds. Default value is 30.
T308	MD		Integer(40, 80, 160, 320)	Value in milliseconds. Default value is 160. Note 1.
T309	MD		Integer(1 8)	Value in seconds. Default value is 5. Note 1.
T310	MD		Integer(40 320 by step of 40)	Value in milliseconds. Default value is 160. Note 1.
N310	MD		Integer(0 7)	Default value is 4. Note 1.
T311	MD		Integer(25 02000 by step of 250)	Value in milliseconds. Default value is 2000. Note 1.
T312	MD		Integer (015)	Value in seconds. Default value is 1.
N312	MD		Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1.
T313	MD		Integer (015)	Value in seconds. Default value is 3. Note 1.
N313	MD		Integer (1, 2, 4, 10, 20, 50, 100, 200)	Default value is 20. Note 1.
T314	MD		Integer(0, 2, 4, 6, 8, 12, 16, 20)	Value in seconds. Default value is 12. Note 1.
T315	MD		Integer	Value in seconds. Default
		(0,10, 30, 60, 180, 600, 1200, 1800)	value is 180. Note 1.	
------	----	------------------------------------------------------------	-------------------------------------------	
N315	MD	Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1. Note 1.	
T316	MD	Integer(0, 10, 20, 30, 40, 50, infinity)	Value in seconds. Default value is 30.	
T317	MD	Integer (0,10, 30, 60, 180, 600, 1200, 1800)	Value in seconds Default value is 180.	

NOTE 1: If the value of SIB1 changes, the UE shall re-read SIB1 and use the new value of the parameter, if modified.

10.3.3.44 UE Timers and Constants in idle mode

This information element specifies timer- and constant values used by the UE in idle mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T300	MP		Integer(10 0, 200 2000 by step of 200, 3000, 4000, 6000, 8000)	Value in milliseconds. Default value is 1000.
N300	MP		Integer(0 7)	Default value is 3.
T312	MP		Integer(0 15)	Value in seconds. Default value is 1.
N312	MP		Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1.

10.3.3.45 UE positioning capability

Information Element/Group	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 [7]. 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

10.3.3.46 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(cha nge of URA, periodic URA update, re- entered service area)	At least one spare value needed.

10.3.3.47 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)	

10.3.3.48 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		bit string(10)	

10.3.3.49 UTRAN DRX cycle length coefficient

A coefficient in the formula to count the paging occasions to be used by a specific UE (specified in [4]).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
DRX cycle length coefficient	MP		Integer(39)	Refers to 'k' in the formula as specified in [4], Discontinuous reception

10.3.3.50 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

10.3.4.0 Default configuration identity

This information element identifies a default radio parameter configuration.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Default configuration identity	MP		Integer (09)	The corresponding default configurations are specified in 13.7

10.3.4.1 Downlink RLC STATUS info

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Timer_Status_Prohibit	OP		Integer(105	Minimum time in ms between
			50 by step of	STATUS reports
			10,	
			5501000 by	
			step of 50)	
Timer_EPC	OP		Integer(50,	Time in ms
			60, 70, 80,	
			90, 100, 120,	
			140, 160,	
			180, 200,	
			300, 400,	
			500, 700,	
			900)	
Missing PDU Indicator	MP		Boolean	Value true indicates that UE
				should send a STATUS report
				for each missing PDU that is
				detected
Timer_STATUS_periodic	OP		Integer(100,	Time in milliseconds
			200, 300,	
			400, 500,	
			750, 1000,	
			2000)	

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	Need	Multi	Type and	Semantics	Version
name			reference	description	
Support for lossless SRNS	CV-		Boolean	TRUE means	
relocation	LOSSIESSCr			support	
Max BDCB SN window aiza	Iteria		Enumerated(
Max PDCP Sin window size	Lossless		Enumerated(
	LUSSIESS		sn25535)	window size The	
			31100000)	handling of	
				sequence number	
				when the Max	
				PDCP SN window	
				size is 255 is	
			-	specified in [23].	
PDCP PDU header	MD		Enumerated	Whether a PDCP	
			(present,	PDU fieader is	
			absenty	Default value is	
				"present"	
Header compression information	OP	1 to		•	
		<maxpdc< td=""><td></td><td></td><td></td></maxpdc<>			
		PAlgoType			
> CHOICE algorithm type	MD	>			
>CHOICE algonithin type	IVIP			Header	
2201				compression	
				according to IETF	
				standard RFC	
				2507	
>>>F_MAX_PERIOD	MD		Integer	Largest number of	
			(165535)	compressed non-	
				TCP headers that	
				without sending a	
				full header.	
				Default value is	
				256.	
>>>F_MAX_TIME	MD		Integer	Compressed	
			(1255)	headers may not	
				F_IVIAA_TIIVIE	
				sending last full	
				header. Default	
				value is 5.	
>>>MAX_HEADER	MD		Integer	The largest	
			(6065535)	header size in	
				octets that may be	
				compressed.	
>>>TCP SPACE	MD		Integer	Maximum CID	
			(3255)	value for TCP	
				connections.	
				Default value is	
			late com	15. Maximum OID	
>>>NON_TCP_SPACE	MD		Integer	value for non TCP	
			(300000)	connections	
				Default value is	
				15.	
>>>EXPECT_REORDERING	MD		Enumerated	Whether the	
			(reordering	algorithm shall	
			not	reorder PDCP	
			expected,	SDUs or not.	
			reordering	Default value is	
			expected)	expected"	
1	1	1	1	supported .	1

>>RFC 3095				Header compression according to IETF standard RFC 3095	REL-4
>>>Max_CID	MD		Integer (1 16383)	Highest context ID number to be used by the compressor. Default value is 15.	REL-4
>>>Profiles	MP	1 to <maxroh C- Profiles></maxroh 		Profiles supported by the decompressor.	REL-4
>>>>Profile instance	MP		Integer(1 3)	Supported profile types. At least four spare values.	REL-4
>>>MRRU	MD		Integer (0 65535)	Maximum reconstructed reception unit. Default value is 0 (no segmentation).	REL-4
>>>Packet _Sizes_Allowed	OP	1 to <maxroh C- PacketSize s></maxroh 		List of packet sizes that are allowed to be produced by RFC 3095.	REL-4
>>>Packet size	MP		Integer (2 1500)	Packet size as defined in RFC 3095.	REL-4
>>>Reverse_Decompression_D epth	MD		Integer (065535)	Determines whether reverse decompression should be used or not and the maximum number of packets that can be reverse decompressed by the decompressor. Default value is 0 (reverse decompression shall not be used).	REL-4

Condition	Explanation
LosslessCriteria	This IE is mandatory present only-if the IE "RLC
	mode" is "Acknowledged" and the IE "In-sequence
	delivery " is "True" and not needed otherwise.
Lossless	This IE is mandatory shall be present if the IE
	"Support for lossless SRNS relocation" Is TRUE,
	otherwise it is not neededshall be absent.

10.3.4.3 PDCP SN info

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Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Receive PDCP sequence number	MP		Integer(065 535)	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	Need	Multi	Type and reference	Semantics description
Timer_poll_prohibit	OP		Integer(105 50 by step of 10, 6001000 by step of 50)	Minimum time between polls in ms
Timer_poll	OP		Integer(105 50 by step of 10, 6001000 by step of 50)	Time in ms.
Poll_PDU	OP		Integer(1,2,4 ,8,16,32,64,1 28)	Number of PDUs, interval between pollings
Poll_SDU	OP		Integer(1,4,1 6,64)	Number of SDUs, interval between pollings
Last transmission PDU poll	MP		Boolean	TRUE indicates that poll is made at last PDU in transmission buffer
Last retransmission PDU poll	MP		Boolean	TRUE indicates that poll is made at last PDU in retransmission buffer
Poll_Window	OP		Integer(50,6 0,70,80,85,9 0,95,99)	Percentage of transmission window, threshold for polling
Timer_poll_periodic	OP		Integer(100, 200, 300, 400, 500, 750, 1000, 2000)	Time in milliseconds Timer for periodic polling.

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		Integer (015)	

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(015)	

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
UE information elements				
Re-establishment timer	MP		Re- establishme nt timer 10.3.3.30	Only one RAB supported
Signalling radio bearer information				
Signalling RB information to setup List	MP	1 to <maxsrbs etup></maxsrbs 		For each signalling radio bearer
>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24	
RB information				Only one RAB supported
RB information to setup list	MP	1 to <maxrbpe rRAB></maxrbpe 		
>RB information to setup	MP		RB information to setup 10.3.4.20	

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	
NAS Synchronization Indicator	OP		NAS Synchronizat ion indicator 10.3.4.12	
Re-establishment timer	MP		Re- establishme nt timer 10.3.3.30	

10.3.4.9 RAB info Post

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	
NAS Synchronization Indicator	OP		NAS Synchronizat ion indicator 10.3.4.12	

10.3.4.10 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 <maxrbpe rRAB></maxrbpe 		
>RB information to setup	MP		RB information to setup 10.3.4.20	

10.3.4.11 RAB information to reconfigure

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	
NAS synchronization indicator	MP		NAS Synchronizat ion info 10.3.4.12	

10.3.4.12 NAS Synchronization indicator

A container for non-access stratum information to be transferred transparently through UTRAN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
NAS Synchronization indicator	MP		Bitstring(4)	The bits are numbered b1-b4, where b1 is the least significant bit.

10.3.4.13 RB activation time info

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

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

10.3.4.14 RB COUNT-C MSB information

The MSB of the COUNT-C values of the radio bearer.

Information Element/Group name	Needed	Multi	Type and reference	Semantics description
RB identity	MP		RB identity	
			10.3.4.16	
COUNT-C-MSB-uplink	MP		Integer (0	25 MSBs from COUNT-C
			2^25-1)	associated to this RB
COUNT-C-MSB-downlink	MP		Integer (0	25 MSBs from COUNT-C
			2^25-1)	associated to this RB

10.3.4.15 RB COUNT-C information

The COUNT-C values of the radio bearer.

Information Element/Group	Needed	Multi	Type and reference	Semantics description
RB identity	MP		RB identity	
			10.3.4.16	
COUNT-C-uplink	MP		Integer (0	
			2^32-1)	
COUNT-C-downlink	MP		Integer (0	
			2^32-1)	

10.3.4.16 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(132)	Values 1-4 shall only be used for signalling radio bearers. The IE value minus one shall be used as BEARER in the ciphering algorithm.

10.3.4.17 RB information to be affected

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity	
			10.3.4.16	
RB mapping info	MP		RB mapping	
			info	
			10.3.4.21	

10.3.4.18 RB information to reconfigure

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
RB identity	MP		RB identity	
			10.3.4.16	
PDCP info	OP		PDCP info	
			10.3.4.2	
PDCP SN info	OP		PDCP SN	PDCP sequence number info
			info	from the network. Present only
			10.3.4.3	in case of lossless SRNS
				relocation.
RLC info	OP		RLC info	
			10.3.4.23	
RB mapping info	OP		RB mapping	
			info	
			10.3.4.21	
RB stop/continue	OP		Enumerated(
			stop,	
			continue)	

10.3.4.19 RB information to release

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

10.3.4.20 RB information to setup

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.16	
PDCP info	OP		PDCP info 10.3.4.2	
CHOICE RLC info type	MP			
>RLC info			RLC info 10.3.4.23	
>Same as RB			RB identity 10.3.4.16	Identity of RB with exactly the same RLC info IE values
RB mapping info	MP		RB mapping info 10.3.4.21	

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

10.3.4.21 RB mapping info

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Information for each multiplexing	MP	1 to		
option		<maxrbm< td=""><td></td><td></td></maxrbm<>		
		uxOptions>		
>RLC logical channel mapping indicator	CV-UL- RLCLogica IChannels		Boolean	TRUE indicates that the first logical channel shall be used for data PDUs and the second logical channel shall be used for control PDUs. FALSE indicates that control and data PDUs can be sent on either of the two logical channels. This parameter is not used in this release and shall be set to TPUE
Number of unlink RLC logical	CV-1// -	1 to		1 or 2 logical channels per
channels	RLC info	MaxLoCHp		RLC entity or radio bearer
>>I Inlink transport channel type	MP	enteo	Enumerated(
			DCH,RACH, CPCH,USC H)	USCH is TDD only
>>ULTransport channel identity	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	This is the ID of a DCH or USCH (TDD only) that this RB could be mapped onto.
>>Logical channel identity	OP		Integer(115)	This parameter is used to distinguish logical channels multiplexed by MAC on a transport channel.
>>CHOICE RLC size list	MP			The RLC sizes that are allowed for this logical channel For radio bearers mapped to RACH, "Explicit list" is the only valid choice. The UE shall regard all other choices as undefined IE values and handle these as specified in clause 9.
>>>All			Null	All RLC sizes listed in the Transport Format Set.
>>>Configured			Null	The RLC sizes configured for this logical channel in the <i>Transport Format Set.</i> 10.3.5.23 if present in this message or in the previously stored configuration otherwise
>>>Explicit List		1 to <maxtf></maxtf>		Lists the RLC sizes that are valid for the logical channel.
>>>>RLC size index	MP		Integer(1m axTF)	The integer number is a reference to the <i>RLC size</i> which arrived at that position in the <i>Transport Format Set</i> 10.3.5.23
>>MAC logical channel priority	MP		Integer(18)	This is priority between a user's different RBs (or logical channels). [15]
>Downlink RLC logical channel info	CV-DL- RLC info			
>>Number of downlink RLC logical channels	MD	1 to MaxLoCHp erRLC		1 or 2 logical channels per RLC entity or radio bearer RLC [16] Default value is that parameter values for DL are exactly the same as for corresponding UL

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			logical channel. In case two multiplexing options are specified for the UL, the first options shall be used as default for the DL. As regards to the IE "Channel type", rule is specified in 8.6.4.8.
>>>Downlink transport channel type	MP	Enumerated(DCH,FACH, DSCH,DCH+ DSCH)	
>>>DL DCH Transport channel identity	CV-DL- DCH	Transport channel identity 10.3.5.18	
>>>DL DSCH Transport channel identity	CV-DL- DSCH	Transport channel identity 10.3.5.18	
>>>Logical channel identity	OP	Integer(115)	16 is reserved

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

10.3.4.22 RB with PDCP information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.16	
PDCP SN info	MP		PDCP SN info 10.3.4.3	PDCP sequence number info from the sender of the message for lossless SRNS relocation.

10.3.4.23 RLC info

Information Element/Group	Need	Multi	Type and	Semantics description
CHOICE Unlink RLC mode	OP		Telefelice	Indicates if Acknowledged
				Unacknowledged or Transparent mode RLC shall be used
>AM RLC				
>>Transmission RLC discard	MP		Transmission RLC discard 10.3.4.25	
>>Transmission window size	MP		Integer(1,8,16,3 2,64,128,256,51 2,768,1024,153 6,2047,2560,30 72,3584,4095)	Maximum number of RLC PUs sent without getting them acknowledged. This parameter is needed if acknowledged mode is used. UE shall also assume that the UTRAN receiver window is equal to this value.
>>Timer_RST	MP		Integer(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	Elapsed time in milliseconds. It is used to trigger the retransmission of RESET PDU.
>>Max_RST	MP		Integer(1, 4, 6, 8, 12 16, 24, 32)	The maximum number of retransmission of RESET PDU
>>Polling info	OP		Polling info 10.3.4.4	
>UM RLC				
>>Transmission RLC discard	OP		Transmission RLC discard 10.3.4.25	
>IM RLC			Transmission	
>> transmission RLC discard	OP		RLC discard 10.3.4.25	
>>Segmentation indication	MP		Boolean	TRUE indicates that segmentation is performed.
CHOICE Downlink RLC mode	OP			Indicates if Acknowledged, Unacknowledged or Transparent mode RLC shall be used
>AM RLC				
>>In-sequence delivery	MP		Boolean	TRUE indicates that RLC shall preserve the order of higher layer PDUs when these are delivered. FALSE indicates that receiving RLC entity could allow SDUs to be delivered to the higher layer in different order than submitted to RLC sublayer at the transmitting side.
>>Receiving window size	MP		Integer(1,8,16,3 2,64,128,256,51 2,768,1024,153 6,2047,2560,30 72,3584,4095)	Maximum number of RLC PUs allowed to be received. This parameter is needed if acknowledged mode is used. UE shall also assume that the UTRAN transmitter window is equal to this value
>>Downlink RLC status Info	MP		Downlink RLC status info 10.3.4.1	
>UM RLC				(No data)
>TM RLC				

>>Segmentation indication	MP	Boolean	IRUE indicates that
			segmentation is performed.

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

10.3.4.24 Signalling RB information to setup

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MD		RB identity 10.3.4.16	Default value is specified in subclause 8.6.4.1
CHOICE RLC info type	MP			
>RLC info			RLC info	
			10.3.4.23	
>Same as RB			RB identity	Identity of RB with exactly the
			10.3.4.16	same RLC info IE values
RB mapping info	MP		RB mapping	
-			info	
			10.3.4.21	

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

10.3.4.25 Transmission RLC Discard

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE SDU Discard Mode	MP			Different modes for discharge
				the RLC buffer on the
				transmitter side;
				nimer based with explicit
				without explicit signalling"
				"Discard after Max DAT
				retransmissions" or
				"No discard". For
				unacknowledged mode and
				transparent mode, only Timer
				based without explicit
				signalling is applicable. If
				"No_discard" is used, reset
				procedure shall be done after
. Timer based explicit				Max_DAT retransmissions
>Timer based explicit	MD		Integer/E0.6	Elanged time in milliggende It
>>TIMEI_WRW	IVIP			is used to trigger the
			100 120	retransmission of a STATUS
			140, 160,	PDU containing an MRW SUFI
			180, 200,	field
			300, 400,	
			500, 700,	
			900)	
>>Timer_discard	MP		Integer(100,	Elapsed time in milliseconds
			250, 500,	before a SDU is discarded.
			1250, 1000,	
			1750, 2000	
			2500, 3000,	
			3500, 4000,	
			4500, 5000,	
			7500)	
>>MaxMRW	MP		Integer(1, 4,	It is the maximum value for the
			6, 8, 12 16,	number of retransmissions of a
			24, 32)	MRW command
>Timer based no explicit				
>> I imer_discard	MP		Integer(10,2	Elapsed time in milliseconds
			0,30,40,50,0	before a SDO is discarded.
			00)	
>Max DAT retransmissions			,	
>>Max_DAT	MP		Integer(1, 2,	Number of retransmissions of
			3, 4, 5, 6, 7,	a PDU before a SDU is
			8, 9, 10, 15,	discarded.
			20, 25, 30,	
>> Timor MPW	MD		35, 40)	Elapsod timo in milliogoanda It
			60 70 80	is used to trigger the
			90, 100, 120	retransmission of a STATUS
			140, 160.	PDU containing an MRW SUFI
			180, 200,	field
			300, 400,	
			500, 700,	
			900)	
>>MaxMRW	MP		Integer(1, 4,	It is the maximum value for the
			0, 0, 12 10, 24 32)	MRW command
>No discard			<i>L</i> 1, <i>UL</i>	
>>Max_DAT	MP		Integer(1, 2,	Number of retransmissions of
			3, 4, 5, 6, 7,	a PDU before the RLC entity is
			8, 9, 10, 15,	reset.
			20, 25, 30,	

35, 40)			
		35, 40)	

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

Condition	Explanation
MessageType	This IE is not needed absent in Radio Bearer Release
	message and Radio Bearer Reconfiguration
	message. Otherwise it is optional OPTIONAL.

10.3.5.2 Added or Reconfigured UL TrCH information

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

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

10.3.5.3 CPCH set ID

NOTE: Only for FDD.

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

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

10.3.5.4 Deleted DL TrCH information

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

10.3.5.5 Deleted UL TrCH information

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

10.3.5.6 DL Transport channel information common for all transport channels

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SCCPCH TFCS	OP		Transport Format Combination Set 10.3.5.20	This IE should be absent within IE "Predefined RB configuration"
CHOICE mode	MP			Although this IE is not always required, need is MP to align with ASN.1
>FDD				
>>CHOICE DL parameters	OP			
>>>Explicit				
>>>>DL DCH TFCS	MP		Transport Format Combination Set 10.3.5.20	Although this IE is not always required, need is MP to align with ASN.1
>>>SameAsUL				(no data)
>TDD				
>>Individual DL CCTrCH information	OP	1 to <maxcctr CH></maxcctr 		
>>>DL TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Identifies a special CCTrCH for shared or dedicated channels.
>>>CHOICE DL parameters	MP			
>>>>Independent				
>>>>DL TFCS	MP		Transport format combination set 10.3.5.20	
>>>SameAsUL				
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	MP		Transport format combination set identity 10.3.5.21	Same TFCS applies as specified for the indicated UL DCH TFCS identity except for information applicable for UL only

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

10.3.5.7 DRAC Static Information

NOTE: Only for FDD.

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Transmission Time Validity	MP		Integer(1256)	number of frames
Time duration before retry	MP		Integer(1256)	number of frames
DRAC Class Identity	MP		Integer(1	Indicates the class of
			maxDRACclass	DRAC parameters to use
			es)	in SIB10 message

10.3.5.8 Power Offset Information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Gain Factors	MP			
>Signalled Gain Factors				
>>CHOICE mode				
>>>FDD				
>>>>Gain Factor β_c	MP		Integer (0 15)	For UL DPCCH or control part of PRACH or PCPCH
>>>TDD				(no data)
>>Gain Factor β_d	MP		Integer (015)	For UL DPDCH or data part of PRACH or PCPCH in FDD and all uplink channels in TDD
>>Reference TFC ID	OP		Integer (03)	If this TFC is a reference TFC, indicates the reference ID.
>Computed Gain Factors				
>>Reference TFC ID	MP		Integer (0 3)	Indicates the reference TFC Id of the TFC to be used to calculate the gain factors for this TFC. In case of using computed gain factors, at least one signalled gain factor is necessary for reference.
CHOICE mode	MP			
>FDD				
>>Power offset P p-m	OP		Integer(- 510)	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) Needed only for PRACH
>100				(no data)

CHOICE Gain Factors	Condition under which the way to signal the Gain Factors is chosen
Signalled Gain Factors	The values for gain factors β_c (only in FDD mode) and β_d are signalled directly for a TFC.
Computed Gain Factors	The gain factors β_c (only in FDD mode) and β_d are computed for a TFC, based on the signalled settings for the associated reference TFC.

10.3.5.9 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	MP		UL Transport channel information common for all transport channels 10.3.5.24	
Added or Reconfigured TrCH information				
Added or Reconfigured UL TrCH information	MP	1 to <maxtrch preconf></maxtrch 		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigure d UL TrCH information 10.3.5.2	
DL Transport channel information common for all transport channels	MP		DL Transport channel information common for all transport channels 10.3.5.6	
Downlink transport channels				
Added or Reconfigured DL TrCH information	MP	1 to <maxtrch preconf></maxtrch 		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigure d DL TrCH information 10.3.5.1	

10.3.5.10 Quality Target

Information Element/Group name	Need	Multi	Type and reference	Semantics description
BLER Quality value	MP		Real(-6.3 0 by step of 0.1)	Signalled value is Log10(Transport channel BLER quality target)

10.3.5.11 Semi-static Transport Format Information

Information Element/Group	Need	Multi	Type and	Semantics description	Version
Transmission time interval	MP		Integer(5, 10, 20, 40, 80, dynamic)	In ms. The value dynamic is only used in TDD mode. 5 is only applicable for the RACH in 1.28 Mcps TDD	REL-4
Type of channel coding	MP		Enumerated(No coding, Convolutiona I, Turbo)		
Coding Rate	CV-Coding		Enumerated(1/2, 1/3)		
Rate matching attribute	MP		Integer(1hi RM)		
CRC size	MP		Integer(0, 8, 12, 16, 24)	in bits	

Condition	Explanation
Coding	This IE is <u>mandatory only</u> present if IE "Type of channel coding" is "Convolutional" <u>and not needed</u> otherwise

10.3.5.12 TFCI Field 2 Information

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

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
CHOICE Signalling method	MP			
>TFCI range				
>>TFCI(field 2) range	MP	1 to <maxpds CH- TFCIgroup s></maxpds 		
>>>Max TFCI(field2) value	MP		Integer(110 23)	This is the Maximum value in the range of TFCI(field2) values for which the specified CTFC(field2) applies
>>>TFCS Information for DSCH (TFCI range method)	MP		TFCS Information for DSCH (TFCI range method) 10.3.5.14	
>Explicit				
>>TFCS explicit configuration	MP		TFCS explicit configuration 10.3.5.13	

10.3.5.13 TFCS Explicit Configuration

Information Element/Group	Need	Multi	IE type and	Semantics description
CHOICE TECS representation	MP		101010100	
>Complete reconfiguration				
>>TFCS complete	MP		TECS	
reconfiguration information			Reconfigurat	
······································			ion/Addition	
			information	
			10.3.5.15	
>Addition				
>>TFCS addition information	MP		TFCS	
			Reconfigurat	
			ion/Addition	
			information	
			10.3.5.15	
>Removal				
>>TFCS removal information	MP		TFCS	
			Removal	
			Information	
			10.3.5.16	
>Replace				
>>TFCS removal information	MP		TFCS	
			Removal	
			Information	
			10.3.5.16	
>>TFCS addition information	MP		TECS	
			Reconfigurat	
			ion/Addition	
			Information	
			10.3.5.15	

10.3.5.14 TFCS Information for DSCH (TFCI range method)

Information Element/Group	Need	Multi	IE type and	Semantics description
name			reference	
CHOICE CTFC Size	MP			
>2 bit CTFC				
>>2bit CTFC	MP		Integer(03)	
>4 bit CTFC				
>>4bit CTFC	MP		Integer(015	
)	
>6 bit CTFC				
>>6 bit CTFC	MP		Integer(063	
	-)	
>8 bit CTFC				
>>8 bit CTFC	MP		Integer(025	
			5)	
>12 bit CTFC				
>>12 bit CTFC	MP		Integer(040	
			95)	
>16 bit CTFC				
>>16 bit CTFC	MP		Integer(065	
			535)	
>24 bit CTFC				
>>24 bit CTFC	MP		Integer(016	
			777215)	

10.3.5.15 TFCS Reconfiguration/Addition Information

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
CHOICE CTFC Size	MP			
>2 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>2bit CTFC	MP		Integer(03)	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.
>4 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>4bit CTFC	MP		Integer(015	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.
>6 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>6 bit CTFC	MP		Integer(063	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.
>8 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>8 bit CTFC	MP		Integer(025 5)	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.
>12 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>12 bit CTFC	MP		Integer(040 95)	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.
>16 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>16 bit CTFC	MP		Integer(065 535)	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.
>24 bit CTFC				
>>CTFC information	MP	1 to <maxtfc></maxtfc>		
>>>24 bit CTFC	MP		Integer(016 777215)	
>>>Power offset Information	OP		Power Offset Information 10.3.5.8	Needed only for uplink physical channels.

10.3.5.16 TFCS Removal Information

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
Removal TFCI information	MP	1 to <maxtfc></maxtfc>		
>TFCI	MP		Transport Format Combination (TFC) 10.3.5.19	In TDD 0 is a reserved value

10.3.5.17 Transparent mode signalling info

Information Element	Need	Multi	Type and reference	Semantics description
Type of message	MP		Enumerated (TRANSPORT FORMAT COMBINATION CONTROL)	Indicates which type of message sent on the transparent mode signalling DCCH
CHOICE Transparent signalling mode	MP			
>Mode 1				(no data)
>Modo 2				
>>Controlled transport channels list	MP	1 to <maxtrc H></maxtrc 		The transport channels that are effected by the rate control commands sent on this transparent mode DCCH
>>>UL Controlled transport channels	MP		Transport channel identity, 10.3.5.18	transport channel type = DCH

10.3.5.18 Transport channel identity

This information element is used to distinguish transport channels. Transport channels of different type (RACH, CPCH, USCH, FACH/PCH, DSCH or DCH) have separate series of identities. This also holds for uplink and downlink transport channel identities (i.e. for DCH). Depending on in which context a transport channel identity *n* that is sent, it will have different meaning

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transport channel identity	MP		Integer(132)	

10.3.5.19 Transport Format Combination (TFC)

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transport format combination	MP		Integer (0 1023)	

10.3.5.20 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 TDD, different coded composite transport channels have independent transport format combination sets and thus independent TFCI values.

For FDD, Where the UE is assigned access to one or more DSCH transport channels, a TFCI(field2) is used to signal the transport format combination for the DSCH. The following two cases exist:

- Case 1:

Using one TFCI-word on the physical layer. A logical split determines the available number of transport format combinations for DCH and DSCH.

- Case 2:

Using split TFCI on the physical layer. Two TFCI-words, each having a static length of five bits, are used.

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
CHOICE TFCI signalling	MP			'Normal' : meaning no split in the TFCI field (either 'Logical' or 'Hard') 'Split' : meaning there is a split in the TFCI field (either 'Logical' or 'Hard'). This value is only valid for FDD downlink when using DSCH.
>Normal				
>>TFCI Field 1 Information	MP		TFCS explicit Configuratio n 10.3.5.13	
>Split				
>>Split type	OP		Enumerated ('Hard', 'Logical')	'Hard' : meaning that TFCI (field 1) and TFCI (field 2) are each 5 bits long and each field is block coded separately. 'Logical' : meaning that on the physical layer TFCI (field 1) and TFCI (field 2) are concatenated, field 1 taking the most significant bits and field 2 taking the least significant bits). The whole is then encoded with a single block code.
>>Length of TFCI(field2)	OP		Integer (110)	This IE indicates the length measured in number of bits of TFCI(field2)
>>TFCI Field 1 Information	OP		TFCS explicit Configuratio n 10.3.5.13	
>>TFCI Field 2 Information	OP		TFCI field 2 information 10.3.5.12	

CHOICE TFCI signalling	Condition under which <i>TFCI signalling type</i> is chosen
Normal	It is chosen when no split in the TFCI field.
Split	It is chosen when split in the TFCI field. This value is only valid for FDD downlink when using DSCH.

10.3.5.21 Transport Format Combination Set Identity

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCS ID	MD		Integer (18)	Indicates the identity of every TFCS within a UE. Default value is 1.
Shared Channel Indicator	MP		Boolean	TRUE indicates the use of shared channels. Default is false.

10.3.5.22 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			Transport	
format combination index			format	
			combination	
			10.3.5.19	
>Allowed transport format		1 to		
combination list		<maxtfc></maxtfc>		
>>Allowed transport format	MP		Transport	
combination			format	
			combination	
			10.3.5.19	
>Non-allowed transport format		1 to		
combination list	145	<max1fc></max1fc>	– ,	
>>Non-allowed transport format	MP		Transport	
combination			iomial	
			10 3 5 10	
>Restricted TrCH information		1 to	10.3.3.13	
		<maxtrch< td=""><td></td><td></td></maxtrch<>		
		>		
>>Uplink transport channel type	MP	-	Enumerated(USCH is TDD only
			DCH, USCH)	
>>Restricted UL TrCH identity	MP		Transport	
,			channel	
			identity	
			10.3.5.18	
>>Allowed TFIs	OP	1 to		
		<maxtf></maxtf>		
>>>Allowed TFI	MP		Integer(031	
)	
>Full transport format				(No data)
combination set				

10.3.5.23 Transport Format Set

Information Element/Group	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 <maxtf></maxtf>		
>>>RLC Size	MP		Integer(049 92)	Unit is bits
>>>Number of TBs and TTI List	MP	1 to <maxtf></maxtf>		Present for every valid number of TB's (and TTI) for this RLC Size.
>>>>Transmission Time Interval	CV- dynamicTT I		Integer(10,2 0,40,80)	Unit is ms.
>>>Number of Transport blocks	MP		Integer(051 2)	
>>>CHOICE Logical Channel List	MP			The logical channels that are allowed to use this RLC Size
>>>>ALL			Null	All logical channels mapped to
>>>>Configured			Null	The logical channels configured to use this RLC size in the <i>RB mapping info</i> . 10.3.4.21 if present in this message or in the previously stored configuration otherwise
>>>Explicit List		1 to 15		Lists the logical channels that are allowed to use this RLC size.
>>>>RB Identity	MP		RB identity 10.3.4.16	
>>>>LogicalChannel	CH-UL- RLCLogica IChannels		Integer(01)	Indicates the relevant UL logical channel for this RB. "0" corresponds to the first, "1" corresponds to the second UL logical channel configured for this RB in the IE "RB mapping info"
>>Semi-static Transport Format Information	MP		Semi-static Transport Format Information 10.3.5.11	
>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 <maxtf></maxtf>		Note
>>>RLC Size	MP		Integer(049 92)	Unit is bits
>>>Number of TBs and TTI List	MP	1 to <maxtf></maxtf>		Present for every valid number of TB's (and TTI) for this RLC Size.
>>>>Number of Transport blocks	MP		Integer(051 2)	
>>>>CHOICE mode	MP			
>>>>FDD				(no data)
>>>>TDD				
>>>>> I ransmission Time Interval	dynamicTT		0,40,80)	Unit is ms.

I

Information Element/Group name	Need	Multi	Type and reference	Semantics description
	1			
>>>CHOICE Logical Channel List	MP			The logical channels that are allowed to use this RLC Size. For radio bearers mapped to RACH, the UE shall regard "Explicit list" as an undefined IE value and handle these as specified in clause 9.
>>>>ALL			Null	All logical channels mapped to this transport channel.
>>>Configured			Null	The logical channels configured to use this RLC size in the <i>RB mapping info</i> . 10.3.4.21 if present in this message or in the previously stored configuration otherwise
>>>Explicit List		1 to 15		Lists the logical channels that are allowed to use this RLC size.
>>>>RB Identity	MP		RB identity 10.3.4.16	
>>>>LogicalChannel	CV-UL- RLCLogica IChannels		Integer(01)	Indicates the relevant UL logical channel for this RB. "0" corresponds to the first, "1" corresponds to the second UL logical channel configured for this RB in the IE "RB mapping info".
>>Semi-static Transport Format Information	MP		Semi-static Transport Format Information 10.3.5.11	

Condition	Explanation
dynamicTTI	This IE is <u>mandatory present included</u> if dynamic TTI usage is indicated in IE Transmission Time Interval in Semi-static Transport Format Information. Otherwise it is not needed.
UL-RLCLogicalChannels	If "Number of uplink RLC logical channels" in IE "RB mapping info" in this message is 2 or the IE "RB mapping info" is not present in this message and 2 UL logical channels are configured for this RB, then this IE is <u>mandatory</u> present. Otherwise this IE is not needed.

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 [34].

əls

PRACH TFCS OP Transport format This IE should not be included in this version of the protocol. set 10.3.5.20 set 10.3.5.20
PRACH IFCS OP I ransport This IE should not be included format in this version of the protocol. combination set 10.3.5.20
format in this version of the protocol. combination set 10.3.5.20
combination set 10.3.5.20
Set 10.3.5.20
CHOICE mode OP
>FDD
>>TFC subset MD Transport Default value is the complete
Format existing set of transport format
Combination combinations
Subset
10.3.5.22
>>UL DCH IFCS MP Transport
formation
combination
Set 10.3.5.20
>>Individual OL CCTICH OP 1 to
Information
>>>ULIFUS Identity MP Iransport Identifies a special CUITCH
formation for shared or dedicated
combination channels.
IU.3.3.21
>>>ULTECS IVIE Transport
combination
set 10 3 5 20
SSTEC subset MD Transport Default value is the complete
Format existing set of transport format
Combination combinations
Subset
10.3.5.22

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

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	MP	maxASCm ap		
>AC-to-ASC mapping	MP		Integer(07)	Mapping of Access Classes to Access Service Classes (see subclause 8.5.13.)

10.3.6.2 AICH Info

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Channelisation code	MP		Integer(025 5)	SF is fixed and equal to 256
STTD indicator	MP		STTD Indicator 10.3.6.78	
AICH transmission timing	MP		Enumerated (0, 1)	See parameter AICH_Transmission_Timing in [26]

10.3.6.3 AICH Power offset

NOTE: Only for FDD.

This parameter is used to indicate the power level of AICH, AP-AICH and CD/CA-ICH channels. This is the power per transmitted Acquisition Indicator, AP Acquisition Indicator or CD/CA Indicator minus power of the Primary CPICH.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
AICH Power offset	MP		Integer(- 22+5)	Offset in 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	Need	Multi	Type and	Semantics description
name			reference	
Allocation Activation Time	MP		Integer	Start the allocation period at
			(0255)	the given CFN.
Allocation Duration	MP		Integer	Total number of frames for the
			(1256)	allocation period.

10.3.6.5 Alpha

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Alpha Value	MP		Enumerated(0, 1/8, 2/8, 3/8, 4/8, 5/8, 6/8, 7/8, 1)	

10.3.6.6 ASC setting

Information Element/Group	Need	Multi	Type and	Semantics description	Version
CHOICE mode	MD			desemption	
> Available signature Start Index	MD		Integer(0, 15)		
>>Available signature Start Index					
>>Available signature End Index	MP		Integer(015)		
>>Assigned Sub-Channel Number	MP		Bitstring(4)	This IE defines the subchannel assignment as specified in 8.6.6.29. The bits are numbered b0 to b3, where b0 is the least significant bit.	
>TDD					
>>CHOICE TDD option	MP				REL-4
>>>3.84 Mcps TDD					REL-4
>>>>Available Channelisation codes indices	MD		Bitstring(8)	Each bit indicates availability of a channelisation code index, where the channelisation code indices are numbered "channelisation code index 0" to "channelisation code index 7". The value 1 of a bit indicates that the channelisation code index is available for the ASC this IE is associated to. The value 0 of a bit indicates that the channelisation code index is not available for the ASC this IE is associated to. Default is that all channelisation codes defined in PRACH Info are available.	
>>>1.28 Mcps TDD					REL-4
>>>Available SYNC_UL codes indices	MD		Bitstring(8)	Each bit indicates availability of a SYNC_UL code index, where the SYNC_UL code indices are numbered "SYNC_UL code index 0" to "SYNC_UL code index 7". The value 1 of a bit indicates that the SYNC_UL code index is available for the ASC this IE is	REL-4

			associated to. The value 0 of a bit indicates that the SYNC_UL code index is not available for the ASC this IE is associated to. Default is that all SYNC_UL codes defined in SYNC_UL Info are available.	
>>CHOICE subchannel size	MP			_
>>>Size1				
>>>Available Subchannels	MP	null	Indicates that all Subchannels are available	
>>>Size2				
>>>>Available Subchannels	MD	Bitstring (2)	NOTE 1	
>>>Size4				
>>>>Available Subchannels	MD	Bitstring (4)	NOTE 1	
>>>Size8				
>>>>Available Subchannels	MD	Bitstring (8)	NOTE 1	

NOTE 1: Each bit indicates availability of a subchannel, where the subchannels are numbered subchannel 0, subchannel 1 etc. The value 1 of a bit indicates that the subchannel is available for the ASC this IE is associated with. The value 0 of a bit indicates that the subchannel is not available for the ASC this IE is associated with. Default value of the IE is that all subchannels within the size are available for the ASC this IE is this IE is associated with.

10.3.6.7 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

10.3.6.8 CCTrCH power control info

Parameters used by UE to set the SIR target value for uplink open loop power control in TDD.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
TFCS Identity	OP		Transport Format Combination Set Identity 10.3.5.21	TFCS Identity of this CCTrCH. Default value is 1.
Uplink DPCH power control info	MP		Uplink DPCH power control info 10.3.6.91	

10.3.6.8a Cell and Channel Identity info

NOTE: Only for TDD.

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
Burst type	MP		Enumerated	Identifies the channel in
			(Type1,	combination with the Midamble
			Type2)	shift and slot number
Midamble Shift	MP		Integer	
			(015)	
Time Slot	OP		Timeslot	This IE is present only if no
			number	IPDL scheme is configured in
			10.3.6.84	the reference cell. Otherwise
				the slot is defined by the IPDL
				configuration.
Cell parameters ID	MP		Cell	Identifies the cell
			parameters	
			ID 10.3.6.9	

10.3.6.9 Cell parameters Id

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Cell parameter Id	MP		Integer(012 7)	

10.3.6.10 Common timeslot info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
2 nd interleaving mode	MD		Enumerated(Frame, Timeslot)	Frame timeslot related interleaving. Default value is "Frame"
TFCI coding	MD		Integer(4,8,1 6,32)	Describes the amount of bits for the TFCI bits code word as described in [31]. Defaults is no TFCI bit: In case of 8 PSK in 1.28Mcps TDD: 4 corresponds to 6 TFCI code word bits. 8 corresponds to 12 TFCI code word bits. 16 corresponds to 24 TFCI code word bits. 32 corresponds to 48 TFCI code word bits.
Puncturing limit	MP		Real(0.401. 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

10.3.6.11 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. In TDD constant values are used for open loop power control of PRACH, USCH and UL DPCH as defined in subclause 8.5.7.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Constant value	MP		Integer (- 3510)	

10.3.6.12 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 <maxcpchs ets>)</maxcpchs 	Identifier for CPCH set info.
Dynamic persistence level	MP	1 to <maxtf- CPCH></maxtf- 		
>Dynamic persistence level	MP		Dynamic persistence level 10.3.6.35	Persistence level for transport format.

10.3.6.13 CPCH set info

NOTE: Only for FDD.

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

Information Element/Group	Need	Multi	Type and reference	Semantics description
CPCH set ID	MP		CPCH set ID 10.3.5.3	Indicates the ID number for a particular CPCH set allocated to a cell.
TFS	MP		Transport Format Set 10.3.5.23	Transport Format Set Information allocated to this CPCH set.
TFCS	MP		Transport Format Combination Set 10.3.5.20	Transport Format Set Information allocated to this CPCH set
AP preamble scrambling code	MP		Integer (079)	Preamble scrambling code for AP in UL
AP-AICH channelisation code	MP		Integer(025 5)	Channelisation code for AP- AICH in DL
CD preamble scrambling code CD/CA-ICH channelisation code	MP MP		Integer (079) Integer	Preamble scrambling code for CD in UL Channelisation code for
Available CD access slot subchannel	CV- CDSigPres ent	1 to <maxpcp CH- CDsubCh></maxpcp 	(0255)	CD/CA-ICH in DL Lists the set of subchannels to be used for CD access preambles. Note: if not present, all subchannels are to be used without access delays
>CD access slot subchannel	MP		Integer (011)	dolayo.
Available CD signatures	OP	1 to <maxpcp CH-CDsig></maxpcp 		Signatures for CD preamble in UL. Note: if not present, all signatures are available for use.
>CD signatures	MP		Integer (015)	
DeltaPp-m UL DPCCH Slot Format	MP MP		Integer (- 1010) Enumerated (0,1,2)	In dB. Power offset between the transmitted CD preamble and UL DPCCH of the power control preamble or message part (added to the preamble power to calculate the power of the UL DPCCH) Slot format for UL DPCCH in power control preamble and in
N_start_message	MP		Integer (18)	message part Number of Frames for start of
N_EOT	MP		Integer(07)	Actual number of appended EOT indicators is T_EOT = N_TTI * ceil(N_EOT/N_TTI), where N_TTI is the number of frames per TTI and "ceil" refers to rounding up to nearest integer
Channel Assignment Active	OP		Boolean	When present, indicates that Node B send a CA message and VCAM mapping rule (14.11) shall be used.
CPCH status indication mode	MP		CPCH status indication mode 10.3.6.14	
PCPCH Channel Info.	MP	1 to <maxpcp CHs></maxpcp 		
>UL scrambling code	MP		Integer (079)	For PCPCH message part
>DL channelisation code	MP		Integer	For DL DPCCH for PCPCH
--------------------------------	--------	-----------------------------------------------------------------------------	--------------	----------------------------------
	145		(0511)	message part
>DL scrambling code	MD		Secondary	code as for the primary
			Code	CPICH.
			10.3.6.74	
>PCP length	MP		Enumerated	Indicates length of power
			(0, 8)	control preamble, Oslots (no
>UCSM Info				preamble used) or 8 slots
>>Minimum Spreading Factor	MP		Integer	The UE may use this PCPCH
s s in man oproading i actor			(4,8,16,32,6	at any Spreading Factor equal
			4,128,256)	to or greater than the indicated
				minimum Spreading Factor.
				The Spreading Factor for Initial
				Spreading Factor.
>>NF_max	MP		Integer	Maximum number of frames
			(164)	for PCPCH message part
>>Channel request parameters	MP			Required in UE channel
TOF UCSM	MD	1 to		AP preamble signature codes
>>>Available AF Signature	IVIE	<maxpcp< td=""><td></td><td>for selection of this PCPCH</td></maxpcp<>		for selection of this PCPCH
		CH-APsig>		channel.
>>>>AP signature	MP		Integer	
	0.0		(015)	
>>>Available AP access slot	OP	1 to		Lists the set of subchannels to
Subchanner		CH-		preambles in combination with
		APsubCh>		the above AP signature(s).
				Note: if not present, all
				subchannels are to be used
>>>AP access slot subchannel	MP		Integer	without access delays.
			(011)	
VCAM info	CV-CAA			
>Available Minimum Spreading	MP	1 to		
Factor				
>>Minimum Spreading Factor	MP	011-012	Enumerated	
			(4,8,16,32,6	
			4,128,256)	
>>NF_max	MP		Integer	Maximum number of frames
>> Maximum available number of	MD		(164)	for PCPCH message part
PCPCH	MP		(1 64)	PCPCH for the indicated
			(1	Spreading Factor.
>>Available AP signatures	MP	1 to		Signatures for AP preamble in
		<maxpcp< td=""><td></td><td>UL.</td></maxpcp<>		UL.
		CH-APsig>	Integer	
>>>AF Signature			(0, 15)	
>>Available AP sub-channel	OP	1 to	(00)	AP sub-channels for the given
		<maxpcp< td=""><td></td><td>AP signature in UL. Note: if not</td></maxpcp<>		AP signature in UL. Note: if not
		CH-		present, all subchannels are to
		APsubCh>		de used without access
				dolayo.
>>>AP sub-channel	MP		Integer	
			(011)	

Condition	Explanation
CDSigPresent	This IE is optional may be included if IE "Available CD
	signatures" is present and not needed otherwise.
NCAA	This IE is mandatory present included if IE "Channel
	Assignment Active" is not present and not needed
	<u>otherwise</u>
CAA	This IE is mandatory present included if IE ""Channel
	Assignment Active" is present and not needed
	<u>otherwise</u> .

10.3.6.14 CPCH Status Indication mode

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CPCH Status Indication mode	MP		Enumerated (PA mode, PAMSF mode)	Defines the status information type broadcast on the CPCH Status Indication Channel (CSICH)

CPCH Status Indication mode defines the structure of the CSICH information that is broadcast by Node B on the CSICH channel. CSICH 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). [26] defines the structure of the CSICH information for both CSICH modes.

10.3.6.15 CSICH Power offset

NOTE: Only for FDD.

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

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

10.3.6.16 Default DPCH Offset Value

Indicates the default offset value within interleaving size at a resolution of 512chip (1/5 slot) in FDD and a resolution of one frame in TDD 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	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode				
>FDD				
>>Default DPCH Offset Value (DOFF)	MP		Integer (0306688 by step of 512)	Number of chips=. 0 to 599 time 512 chips, see [10].
>TDD				
>>Default DPCH Offset Value (DOFF)	MP		Integer(07)	Number of frames; See [10]

10.3.6.17 Downlink channelisation codes

NOTE: Only for TDD

Information Element/Group	Need	Multi	Type and	Semantics description
			reference	
CHOICE codes representation	MP			
>Consecutive codes				
>>First channelisation code	MP		Enumerated ((16/1)(16/16))	The codes from First channelisation code to Last channelisation code shall be used in that order by the physical layer in this timeslot. If a TFCI exists in this timeslot, it is mapped in the First channelisation code.
>>Last channelisation code	MP		Enumerated ((16/1)(16/16))	If this is the same as First channelisation code, only one code is used by the physical layer.
>Bitmap				
>>Channelisation codes bitmap	MP		Bitstring(16)	Each bit indicates the availability of a channelisation code for SF16, where the channelisation codes are numbered as channelisation code 1 (SF16) to channelisation code 16 (SF16). (For SF 16, a 1 in the bitmap means that the corresponding code is used, a 0 means that the corresponding code is not used.) If all bits are set to zero, SF 1 shall be used.

10.3.6.18 Downlink DPCH info common for all RL

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timing Indication	MP		Enumerated(Initialise, Maintain)	Note 1
CFN-targetSFN frame offset	CV-TimInd		Integer(025 5)	In frame
Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.23	
CHOICE mode	MP			
>>Power offset P _{Pilot-DPDCH}	MP		Integer(024)	Power offset equals P _{Pilot} - P _{DPDCH} , range 06 dB, in steps of 0.25 dB
>>Downlink rate matching restriction information	OP		Downlink rate matching restriction information 10.3.6.31	If this IE is set to "absent", no Transport CH is restricted in TFI.
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	
>>Fixed or Flexible Position	MP		Enumerated (Fixed, Flexible)	
>>TFCI existence	MP		Boolean	TRUE indicates that TFCI exists
>>CHOICE SF	MP			
>>>SF = 256				
>>>Number of bits for Pilot bits	MP		Integer (2,4,8)	In bits
>>>SF = 128			_	
>>>>Number of bits for Pilot bits	MP		Integer(4,8)	In bits
>>>Otherwise				(no data). In ASN.1 choice "Otherwise" is not explicitly available as all values are available, it is implied by the use of any value other than 128 or 256.
>TDD				
>>Common timeslot info	MD		Common Timeslot Info 10.3.6.10	Derault is the current Common timeslot info

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

Condition	Explanation
TimInd	This IE is <u>optional OPTIONAL</u> if the IE "Timing Indication" is set to "Initialise". Otherwise it is <u>not</u> needed absent .

NOTE 1: Within the HANDOVER TO UTRAN COMMAND message, only value "initialise" is applicable.

10.3.6.19 Downlink DPCH info common for all RL Post

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.23	

10.3.6.20 Downlink DPCH info common for all RL Pre

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode	MP			
>FDD				
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	Defined in CHOICE SF512- Andpilot with "number of its for pilot bits" in ASN.1
>>Fixed or Flexible Position	MP		Enumerated (Fixed, Flexible)	
>>TFCI existence	MP		Boolean	TRUE indicates that TFCI exists
>>CHOICE SF	MP			
>>>SF = 256				
>>>>Number of bits for Pilot bits	MP		Integer (2,4,8)	In bits
>>>SF = 128				
>>>>Number of bits for Pilot bits	MP		Integer(4,8)	In bits
>>>Otherwise				(no data)
>TDD				
>>Common timeslot info	MP		Common Timeslot Info 10.3.6.10	

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

10.3.6.21 Downlink DPCH info for each RL

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		reference	
	IVIP			
>FDD			<u> </u>	
 >>Primary CPICH usage for channel estimation >>DPCH frame offset 	MP		Primary CPICH usage for channel estimation 10.3.6.62 Integer(0381 44 by step of 256)	Offset (in number of chips) between the beginning of the P-CCPCH frame and the beginning of the DPCH frame This is called $\tau_{DPCH,n}$ in [26]
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.73	
>>DL channelisation code	MP	1 to <maxdpc H-DLchan></maxdpc 		For the purpose of physical channel mapping [27] the DPCHs are numbered, starting from DPCH number 1, according to the order that they are contained in this IE.
>>>Secondary scrambling code	MD		Secondary scrambling code 10.3.6.74	Default is the same scrambling code as for the Primary CPICH
>>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	Defined in CHOICE SF512- AndCodenumber with "code number" in ASN.1
>>>Code number	MP		Integer(0Spre ading factor - 1)	
>>>Scrambling code change	CH- <i>SF/</i> 2		Enumerated (code change, no code change)	Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.
>>TPC combination index	MP		TPC combination index 10.3.6.85	
>>SSDT Cell Identity	OP		SSDT Cell Identity 10.3.6.76	
>>Closed loop timing adjustment mode	CH- TxDiversity Mode		Integer(1, 2)	It is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2". Value in slots
>>DL CCTrCh List	MP	1 <maxcc TrCH></maxcc 		
>>>TFCS ID	MD		Integer(18)	Identity of this CCTrCh. Default value is 1
>>>Time info	MP		Time Info 10.3.6.83	
>>>Downlink DPCH timeslots and codes	MD		Downlink Timeslots and Codes 10.3.6.32	Default is to use the old timeslots and codes.
>>>UL CCTrCH TPC List	MD	0 <maxcc TrCH></maxcc 		UL CCTrCH identities for TPC commands associated with this DL CCTrCH. Default is previous list or all defined UL CCTrCHs

I

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>>UL TPC TFCS Identity	MP		Transport Format Combination Set Identity 10.3.5.21	

Condition	Explanation
SF/2	The information element is mandatory present if the
	UE has an active compressed mode pattern
	sequence, which is using compressed mode method
	"SF/2". Otherwise the IE is not needed.
TxDiversity Mode	This IE is mandatory present if current TX Diversity
	Mode in UE is "closed loop mode 1" or "closed loop
	mode 2". Otherwise the IE is not needed.

10.3.6.22 Downlink DPCH info for each RL Post

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode	MP			
>FDD				
>>Primary CPICH usage for	MP		Primary	
channel estimation			CPICH usage	
			for channel	
			estimation	
			10.3.6.62	
>>Secondary scrambling code	MD		Secondary	Default is the same
			scrambling	scrambling code as for the
			code 10.3.6.74	Primary CPICH
>>CHOICE Spreading factor	MP		Integer(4, 8,	Defined in CHOICE SF512-
			16, 32, 64,	AndCodenumber with "code
			128, 256, 512)	number" in ASN.1
>>Code number	MP		Integer(0	
			Spreading	
			factor - 1)	
>>Scrambling code change	CH-SF/2		Enumerated	Indicates whether the
			(code change,	alternative scrambling code
			no code	is used for compressed
			change)	mode method 'SF/2'.
>>>TPC combination index	MP		TPC	
			combination	
			index	
			10.3.6.85	
>TDD				
>>Downlink DPCH timeslots and	MP		Downlink	
codes			Timeslots and	
			Codes	
			10.3.6.32	

10.3.6.23 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 [29].
>TDD				
>>TPC Step Size	OP		Integer (1, 2, 3)	In dB

10.3.6.24 Downlink information common for all radio links

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Downlink DPCH info common for all RL	OP		Downlink DPCH info	•	
			common for all RL		
CHOICE mode	MD		10.3.6.18		
	IVIP				
>>DPCH compressed mode info	MD		DPCH compressed mode info 10.3.6.33	Default value is the existing value of DPCH compressed mode information	
>>TX Diversity Mode	MD		TX Diversity Mode 10.3.6.86	Default value is the existing value of TX Diversity mode	
>>SSDT information	OP		SSDT information 10.3.6.77		
>TDD				(no data)	
>>CHOICE TDD option	MP				REL-4
>>>3.84 Mcps TDD				(no data)	REL-4
>>>1.28 Mcps TDD					REL-4
>>>>TSTD indicator	MP		TSTD indicator 10.3.6.85a		REL-4
Default DPCH Offset Value	OP		Default DPCH Offset Value, 10.3.6.16		

10.3.6.25 Downlink information common for all radio links Post

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Downlink DPCH info common	MP		Downlink	
for all RL			DPCH info	
			common for	
			all RL Post	
			10.3.6.19	

10.3.6.26 Downlink information common for all radio links Pre

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink DPCH info common for all RL	MP		Downlink DPCH info common for all RL Pre 10.3.6.20	

10.3.6.27 Downlink information for each radio link

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Choice mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>PDSCH with SHO DCH Info	OP		PDSCH with SHO DCH Info 10.3.6.47	
>>PDSCH code mapping	OP		PDSCH code mapping 10.3.6.43	
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57	
Downlink DPCH info for each RL	OP		Downlink DPCH info for each RL 10.3.6.21	
SCCPCH Information for FACH	OP		SCCPCH Information for FACH 10.3.6.70	

10.3.6.28 Downlink information for each radio link Post

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

10.3.6.29 Void

10.3.6.30 Downlink PDSCH information

NOTE: Only for FDD.

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

10.3.6.31 Downlink rate matching restriction information

This IE indicates which TrCH is restricted in TFI.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Restricted TrCH information	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>Downlink transport channel type	MP		Enumerated(DCH,DSCH)	
>Restricted DL TrCH identity	MP		Transport channel identity 10.3.5.18	
>Allowed TFIs	MP	1 to <maxtf></maxtf>		
>>Allowed TFI	MP		Integer(031	

10.3.6.32 Downlink Timeslots and Codes

NOTE: Only for TDD

Information Element/Group	Need	Multi	Type and	Semantics description
First Individual time a lat info	MD			Individual time a latinfa for the
First Individual timeslot into	MP		timeslot info 10.3.6.37	first timeslot used by the physical layer.
First timeslot channelisation codes	MP		Downlink channelisation codes 10.3.6.17	These codes shall be used by the physical layer in the timeslot given in First Individual timeslot info.
CHOICE more timeslots	MP			
>No more timeslots				(no data)
>Consecutive timeslots				
>>Number of additional timeslots	MP		Integer(1max TS-1)	The timeslots used by the physical layer shall be timeslots: N mod maxTS (N+1) mod maxTS (N+k) mod maxTS in that order, where N is the timeslot number in the First individual timeslot info and k the Number of additional timeslots. The additional timeslots shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) as the first timeslot.
>Timeslot list				mat umesiot.
>>Additional timeslot list	MP	1 to <maxts- 1></maxts- 		The first instance of this parameter corresponds to the timeslot that shall be used second by the physical layer, the second to the timeslot that shall be used third and so on.
>>>CHOICE parameters	MP			
>>>Same as last				
>>>>Timeslot number	MP		Timeslot Number 10.3.6.84	The physical layer shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) for this timeslot as for the last one.
>>>New parameters				
>>>>Individual timeslot info	MP		Individual timeslot info 10.3.6.37	
>>>>Channelisation codes	MP		Downlink channelisation codes 10.3.6.17	

10.3.6.33 DPCH compressed mode info

NOTE: Only for FDD.

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transmission gap pattern sequence	MP	1 to <maxtgp S></maxtgp 		
>TGPSI	MP		TGPSI	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			10.3.6.82	
>TGPS Status Flag	MP		Enumerated(active, inactive)	This flag indicates the current status of the Transmission Gap Pattern Sequence, whether it shall be activated or deactivated.
>TGCFN	CV-Active		Integer (0255)	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence.
>Transmission gap pattern sequence configuration parameters	OP			
>>TGMP	MP		Enumerated(TDD measuremen t, FDD measuremen t, GSM carrier RSSI measuremen t, GSM Initial BSIC identification, GSM BSIC re- confirmation, Multi-carrier measuremen t)	Transmission Gap pattern sequence Measurement Purpose.
>>TGPRC	MP		Integer (1511, Infinity)	The number of transmission gap patterns within the Transmission Gap Pattern Sequence.
>>TGSN	MP		Integer (014)	Transmission Gap Starting Slot Number The slot number of the first transmission gap slot within the TGCFN.

Information Element/Group	Need	Multi	Type and	Semantics description
	MD			The length of the first
>>IGLI	MP		integer(114	The length of the linst
)	transmission dap within the
				expressed in number of slots
>>TGI 2	MD		Integer	The length of the second
2210L2	MB		(1 14)	Transmission Gap within the
			()	transmission gap pattern. If
				omitted, then TGL2=TGL1.
>>TGD	MP		Integer(152	Transmission gap distance
			69,	indicates the number of slots
			undefined)	between starting slots of two
				consecutive transmission gaps
				within a transmission gap
				pattern. If there is only one
				transmission gap in the
				transmission gap pattern, this
				parameter shall be set to zero.
	MD		Integer	The duration of transmission
>>IGPLI	MP		$(1 \ 1 \ 4 \ 4)$	ap pattern 1
	MD			The duration of transmission
>>101 L2	NID		$(1 \ 144)$	ap pattern 2 If omitted then
			(1	TGPI 2=TGPI 1
>>RPP	MP		Enumerated	Recovery Period Power
			(mode 0,	control mode during the frame
			mode 1).	after the transmission gap
				within the compressed frame.
				Indicates whether normal PC
				mode or compressed PC
				mode is applied
>>ITP	MP		Enumerated	Initial Transmit Power is the
			(mode 0,	uplink power control method to
			mode 1).	be used to compute the initial
				transmit power after the
>>CHOICE ////DL mode	MP			compressed mode gap.
				Compressed mode used in DI
				only
>>>>Downlink compressed	MP		Enumerated	Method for generating
mode method			(puncturina.	downlink compressed mode
			SF/2, higher	gap
			layer	
			scheduling)	
>>>UL only				Compressed mode used in UL
			· · ·	only
>>>Uplink compressed mode	MP		Enumerated	Method for generating uplink
methoa			(SF/2, higher	compressed mode gap
			layer	
>>>III and DI			scheduling)	Compressed mode used in LII
				and DI
>>>>Downlink compressed	MP		Enumerated	Method for generating
mode method			(puncturing.	downlink compressed mode
			SF/2, higher	gap
			layer	
			scheduling)	
>>>>Uplink compressed mode	MP		Enumerated	Method for generating uplink
method			(SF/2, higher	compressed mode gap
			layer	
			scheduling)	
>>Downlink frame type	MP		Enumerated	
			(A, B)	
>>DeltaSIR1	MP		Real(03 by	Delta in DL SIR target value to
			step or 0.1)	frame containing the start of
				the first transmission gap in

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				the transmission gap pattern (without including the effect of the bit-rate increase)
>>DeltaSIRafter1	MP		Real(03 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the first transmission gap in the transmission gap pattern.
>>DeltaSIR2	OP		Real(03 by step of 0.1)	Delta in DL SIR target value to be set in the UE during the frame containing the start of the second transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase) When omitted, DeltaSIR2 = DeltaSIR1.
>>DeltaSIRafter2	OP		Real(03 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the second transmission gap in the transmission gap pattern. When omitted, DeltaSIRafter2 = DeltaSIRafter1.
>>N Identify abort	CV-Initial BSIC		Integer(112 8)	Indicates the maximum number of repeats of patterns that the UE shall use to attempt to decode the unknown BSIC of the GSM cell in the initial BSIC identification procedure
>>T Reconfirm abort	CV-Re- confirm BSIC		Real(0.510. 0 by step of 0.5)	Indicates the maximum time allowed for the re-confirmation of the BSIC of one GSM cell in the BSIC re-confirmation procedure. The time is given in steps of 0.5 seconds.

Condition	Explanation
Active	This information element is mandatory present only
	sent when the value of the "TGPS Status Flag" IE is
	"Active" and not needed otherwise.
Initial BSIC	This information element is mandatory present only
	sent-when the value of the IE "TGMP" is set to "GSM
	Initial BSIC identification" and not needed otherwise.
Re-confirm BSIC	This information element is mandatory present only
	sent when the value of the IE "TGMP" is set to "GSM
	BSIC re-confirmation" and not needed otherwise.

10.3.6.34 DPCH Compressed Mode Status Info

This information element indicates status information of the compressed mode used by the UE in order to perform inter-frequency and inter-RAT measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPS reconfiguration CFN	MP		Integer (0255)	Connection Frame Number of the frame where already active Transmission Gap Pattern Sequences shall be deactivated

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transmission gap pattern sequence	MP	1 to <maxtgp S></maxtgp 		
>TGPSI	MP		TGPSI 10.3.6.82	Transmission Gap Pattern Sequence Identifier
>TGPS Status Flag	MP		Enumerated(active, inactive)	This flag indicates the current status of the Transmission Gap Pattern Sequence, whether it shall be active or inactive.
>TGCFN	CV-Active		Integer (0255)	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence.

Condition	Explanation
Active	This information element is mandatory present only
	sent when the value of the "TGPS Status Flag" IE is
	"Active" and not needed otherwise.

10.3.6.35 Dynamic persistence level

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Dynamic persistence level	MP		Integer(18)	Level shall be mapped to a dynamic persistence value in the range 0 1.

10.3.6.35a FPACH info

NOTE: Only for 1.28 Mcps TDD.

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reference	description	
Timeslot number	MP		Integer(16)		REL-4
Channelisation code	MP		Enumerated((16/1)(16/1 6)		REL-4
Midamble Shift and burst type	MP		Midamble shift and burst type 10.3.6.41		REL-4
WT	MP		Integer(14)	The number of sub-frames, following the sub- frame in which the SYNC UL is transmitted, in which the FPACH can be transmitted.	REL-4

10.3.6.36 Frequency info

Information Element/Group	Need	Multi	Type and	Semantics description
CHOICE mode	MP		Telefende	
>FDD				
>>UARFCN uplink (Nu)	OP		Integer(0 16383)	[21] If IE not present, default duplex distance of 190 MHz shall be used.
>>UARFCN downlink (Nd)	MP		Integer(0 16383)	[21]
>TDD				
>>UARFCN (Nt)	MP		Integer(0 16383)	[22]

10.3.6.37 Individual timeslot info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Timeslot number	MP		Timeslot number 10.3.6.84	Timeslot within a frame	
TFCI existence	MP		Boolean	TRUE indicates that the TFCI exists. It shall be coded in the first physical channel of this timeslot.	
Midamble Shift and burst type	MP		Midamble shift and burst type 10.3.6.41		
CHOICE TDD option	MP				REL-4
>3.84 Mcps TDD				(no data)	REL-4
>1.28 Mcps TDD					REL-4
>>Modulation	MP		Enumerated(QPSK, 8PSK)		REL-4
>>SS-TPC Symbols	MP		Enumerated(0, 1, 16/SF)	Denotes amount of SS and TPC bits send in this timeslot	REL-4

10.3.6.38 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		Timeslot	
			number	
			10.3.6.84	
UL Timeslot Interference	MP		UL	
			Interference	
			10.3.6.87	

10.3.6.39 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(- 5033)	In dBm

10.3.6.40 Void

10.3.6.41 Midamble shift and burst type

NOTE: Only for TDD.

This information element indicates burst type and midamble allocation. Three different midamble allocation schemes exist:

- Default midamble: the midamble shift is selected by layer 1 depending on the associated channelisation code (DL and UL)
- Common midamble: the midamble shift is chosen by layer 1 depending on the number of channelisation codes (possible in DL only)
- UE specific midamble: a UE specific midamble is explicitly assigned (DL and UL).

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reference	description	
CHOICE TDD option	MP				REL-4
>3.84 Mcps TDD					REL-4
>>CHOICE Burst Type	MP				
>>>Type 1					
>>>>Midamble Allocation Mode	MP		Enumerated		
			(Default		
			midamble,		
			Common		
			midamble,		
A A A Midamble configuration	MD			As defined in [20]	
burst type 1 and 2			16)	As defined in [30]	
>>>>Midamble Shift	CV-UE		Integer(0, 15		
	0V-0L				
>>>Type 2			/		
>>>>Midamble Allocation Mode	MP		Enumerated		
			(Default		
			midamble,		
			Common		
			midamble,		
			UE specific		
			midamble)		
>>>>Midamble configuration	MP		Integer(3, 6)	As defined in [30]	
burst type 2					
>>>>Midamble Shift	CV-UE		Integer(05)		
>>>Type 3					
>>>>Midamble Allocation Mode	MP		Enumerated		
			(Default		
			LIE specific		
			midamble)		
>>>>Midamble configuration	MP		Integer(4, 8	As defined in [30]	
burst type 1 and 3			16)		
>>>>Midamble Shift	CV-UE		Integer	NOTE: Burst	
			(015)	Type 3	
				is only	
				used in	
				uplink.	
>1.28 Mcps TDD					REL-4
>>Midamble Allocation Mode	MP		Enumerated		REL-4
			(Default		
			midamble,		
	MD		Integer(2, 4	As defined in [30]	
			6 8 10 12		INEL=4
			14 16)		
>>Midamble Shift	CV-UF		Integer		REL-4
			(015)		

Condition	Explanation
UE	This information element is <u>mandatory present only</u> sent when the value of the "Midamble Allocation Mode" IE is "UE-specific midamble" <u>and not needed</u> otherwise.

10.3.6.42 PDSCH Capacity Allocation info

NOTE: Only for TDD.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
PDSCH allocation period info	MP		Allocation	
			Period Info	
			10.3.6.4	
TFCS ID	MD		Integer(18)	Default is 1.
CHOICE Configuration	MP			
>Old configuration				
>>PDSCH Identity	MP		Integer(1Hi	
			PDSCHIdent	
			ities)	
>New configuration				
>>PDSCH Info	MP		PDSCH Info	
			10.3.6.44	
>>PDSCH Identity	OP		Integer(1Hi	
			PDSCHIdent	
			ities)	
>>PDSCH power control info	OP		PDSCH	
			power	
			control info	
			10.3.6.45	

10.3.6.43 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). The following signalling methods are specified:

- 'code range': the mapping is described in terms of a number of groups, each group associated with a given spreading factor;
- TFCI range': the mapping is described in terms of a number of groups, each group corresponding to a given PDSCH channelisation code;
- Explicit': the mapping between TFCI(field 2) value and PDSCH channelisation code is spelt out explicitly for each value of TFCI (field2);
- Removal': replace individual entries in the TFCI(field 2) to PDSCH code mapping table with new PDSCH code values.

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		Socondary	Scrambling and an which
DL Scrambling Code	MD		Secondary scrambling code 10.3.6.74	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 < maxPDSC H- TFCIgroup		
>>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256)	
>>>multi-code info	MP		Integer(116	
>>>Code number (for PDSCH code) start >>>Code number (for PDSCH	MP MP		Integer(0Sp reading factor-1) Integer(0Sp	
code) stop			factor-1)	
>TFCI range				
>>DSCH mapping	MP	1 to < maxPDSC H- TFCIgroup s >		
>>>Max TFCI(field2) value	MP		Integer(110 23)	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		Integer(4, 8, 16, 32, 64, 128, 256)	
>>>Code number (for PDSCH code)	MP		Integer(0Sp reading factor-1)	
>>>multi-code info	MP		Integer(116	
>Explicit				
>>PDSCH code info	MP	1 to < maxTFCI- 2-Combs >		The first instance of the parameter <i>PDSCH code</i> corresponds to TFCI (field2) = 0, the second to TFCI(field 2) = 1and so on.
>>>Spreading factor (for PDSCH code)	MP		Integer(4, 8, 16, 32, 64, 128, 256)	
>>>Code number (for PDSCH code)	MP		Integer(0Sp reading factor-1)	
>>>multi-code info	MP		Integer(116	
>Replace >>Replaced PDSCH code	MP	1 to < maxTFCI- 2-Combs >		This choice is made if the PDSCH code(s) associated with a given value of TFCI(field 2) is to be replaced. 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	Value of TFCI(field 2) for

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			(01023)	which PDSCH code mapping will be changed
>>>Spreading factor (for PDSCH code)	MP		Integer(4, 8, 16, 32, 64, 128, 256)	
>>>Code number (for PDSCH code)	MP		Integer(0Sp reading factor-1)	
>>>multi-code info	MP		Integer(116)	

10.3.6.44 PDSCH info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCS ID	MD		Integer(18)	TFCS to be used. Default value is 1.
Common timeslot info	OP		Common timeslot info 10.3.6.10	
PDSCH timeslots and codes	OP		Downlink Timeslots and Codes 10.3.6.32	Default is to use the old timeslots and codes.

10.3.6.45 PDSCH Power Control info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TPC Step Size	OP		Integer (1, 2, 3)	In dB
UL CCTrCH TPC List	OP	1 <maxcc TrCH></maxcc 		UL CCTrCH identities for TPC commands associated with this DL CCTrCH
>UL TPC TFCS Identity	MP		Transport Format Combination Set Identity 10.3.5.21	

10.3.6.46 PDSCH system information

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PDSCH information	MP	1 to <maxpds CH></maxpds 		
>PDSCH Identity	MP		Integer(1Hi PDSCHIdent ities)	
>PDSCH info	MP		PDSCH info 10.3.6.44	
>SFN Time Info	CH- Block17		SFN Time Info 10.3.6.75	
>DSCH TFS	OP		Transport format set 10.3.5.23	
>DSCH TFCS	OP		Transport Format Combination Set 10.3.5.20	

Condition	Explanation
Block17	This IE is not needed absent in System Information
	Block 17. Otherwise it is optional.

10.3.6.47 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		Primary CPICH info 10.3.6.60	This parameter indicates on which radio link the user will be allocated resource on the DSCH.
TFCI(field2) Combining set	OP	1 to <maxrl></maxrl>		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	MP		Primary CPICH info 10.3.6.60	

10.3.6.48 Persistence scaling factors

This IE defines scaling factors associated with ASC 2 – ASC 7 to be applied to the dynamic persistence value.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Access Service Class	MP	1 to maxASCpe rsist		multiplicity corresponds to the number of PRACH partitions minus 2
>Persistence scaling factor	MP		Real(0.90.2 , by step of 0.1)	Scaling factors in the range 0,,1

10.3.6.49 PICH Info

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reference	description	
CHOICE mode	MP				
>FDD					
>>Channelisation code	MP		Integer(025 5)	SF is fixed and equal to 256	
>>Number of PI per frame	MP		Integer (18, 36, 72, 144)		
>>STTD indicator	MP		STTD Indicator 10.3.6.78		
>TDD					
>>Timeslot number	MD		Timeslot number 10.3.6.84	Default value is the timeslot used by the SCCPCH carrying the associated PCH.	
>>>>CHOICE TDD option	MP				REL-4
>>>>3.84 Mcps TDD					REL-4
>>>>>Channelisation code	MD		Enumerated ((16/1)(16/1 6))	Default value is the channelisation code used by the SCCPCH carrying the associated PCH.	
>>>>CHOICE Burst Type	MP				
>>>>Type 1					
>>>>>Midamble Shift	MP		Integer(015)		
>>>>Type 2					
>>>>>Midamble Shift	MP		Integer(05)		
>>>1.28 Mcps TDD					REL-4
>>>>Midamble shift and burst type	MP		Midamble shift and burst type 10.3.6.41		REL-4
>>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	SFN mod	
>>Paging indicator length	MD		(0Repetitio n period -1) Integer (4, 8, 16)	Repetitionperiod = Offset. Indicates the length of one paging indicator in Bits. Default value is 4.	
>>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.	

10.3.6.50 PICH Power offset

This is the power transmitted on the PICH minus power of the Primary CPICH in FDD and Primary CCPCH Tx Power in TDD.

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

10.3.6.51 PRACH Channelisation Code List

NOTE: Only for 3.84Mcps TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE SF	MP				
>SF16					
>>Channelisation Code List	MP	1 to 8			
>>>Channelisation code	MP		Enumerated ((16/1)(16/ 16))	1:1 mapping between spreading code and midamble shift	
>SF8					
>>Channelisation Code List	MP	1 to 8			
>>>Channelisation Code	MP		Enumerated((8/1)(8/8))		

10.3.6.51a PRACH Channelisation Code 1.28Mcps TDD

NOTE: Only for 1.28Mcps TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Channelisation Code List	MP	1 to 4			REL-4
>Channelisation Code	MP		Enumerated((4/1)(4/4),(8 /1)(8/8),(16/ 1)(16/16))		REL-4

10.3.6.52 PRACH info (for RACH)

Information Element/Group	Need	Multi	Type and	Semantics	Version
	MD		Telefence	description	
	IVIE				
>>Available Signature	MP		Bitstring(16)	Each bit indicates availability for a signature, where the signatures are numbered "signature 0" up to "signature 15".	
				The value 1 of a bit indicates that the corresponding signature is available and the value 0 that it is not available.	
>>Available SF	MP		Integer (32,64,128,2 56)	In chips per symbol Defines the minimum allowed SF (i.e. the maximum rate)	
>>Preamble scrambling code number	MP		Integer (0 15)	Identification of scrambling code see [28]	
>>Puncturing Limit	MP		Real(0.401. 00 by step of 0.04)		
>>Available Sub Channel Number	MP		Bitstring(12)	Each bit indicates availability for a subchannel, where the subchannels are numbered "subchannel 0" to "subchannel 11". The value 1 of a bit indicates that the corresponding subchannel is available and the value 0 indicates that it is not available.	
>>CHOICE TDD option	MP				REL-4
>>>3.84 Mcps TDD					REL-4
>>>>Timeslot number	MP		Timeslot number 10.3.6.84		
>>>>PRACH Channelisation Code List	MP		PRACH Channelisati on Code List 10.3.6.51		
>>>>PRACH Midamble	MP		Enumerated (Direct, Direct/Invert ed)	Direct or direct and inverted midamble are used for PRACH	
>>>1.28 Mcps TDD					REL-4
>>>SYNC_UL info	MP		SYNC_UL info 10.3.6.78a		REL-4
>>>>PRACH Definition	MP	1 <maxpr< td=""><td></td><td></td><td>REL-4</td></maxpr<>			REL-4

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
		ACH_FPA CH>			
>>>>Timeslot number	MP		Timeslot number 10.3.6.84		REL-4
>>>>PRACH Channelisation Code	MP		PRACH Channelisati on Code 1.28Mcps TDD 10.3.6.51a		REL-4
>>>>Midamble Shift and burst type	MP		Midamble shift and burst type 10.3.6.41		REL-4
>>>>FPACH info	MP		FPACH info 10.3.6.35a		REL-4
>>PNBSCH allocation	OP		PNBSCH allocation 10.3.8.10a	Identifies frames used for cell synchronisation purposes	REL-4

10.3.6.53 PRACH partitioning

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Access Service class	MP	1 to maxASC		
ASC Setting	MD		ASC setting 10.3.6.6	The default values are same as the previous ASC. If the "default" is used for the first ASC, the default values are all available signatures and "all available sub- channels" for FDD and "all available channelisation codes" and "all available subchannels" with "subchannel size=Size 1" in TDD.

10.3.6.54 PRACH power offset

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Power Ramp Step	MP		Integer (18)	Power step when no acquisition indicator is received in dB
Preamble Retrans Max	MP		Integer (164)	Maximum number of preambles in one preamble ramping cycle

10.3.6.55 PRACH system information list

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

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

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

10.3.6.56 Predefined PhyCH configuration

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

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

10.3.6.57 Primary CCPCH info

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reference	description	
CHOICE mode	MP				
>FDD					
>>TX Diversity indicator	MP		Boolean		
>TDD					
>>CHOICE TDD option	MP				REL-4
>>>3.84 Mcps TDD					REL-4
>>>>CHOICE SyncCase	OP				
>>>>Sync Case 1					
>>>>>Timeslot	MP		Integer	PCCPCH timeslot	
			(014)		
>>>>Sync Case 2					
>>>>>Timeslot	MP		Integer(06)		
>>>1.28 Mcps TDD					REL-4
>>>>TSTD indicator	MP		TSTD		REL-4
			indicator		
			10.3.6.85a		
>>Cell parameters ID	OP		Cell	The Cell	
			parameters	parameters ID is	
			ld 10.3.6.9	described in [32].	
>>Block STTD indicator	MP		Block STTD		
			indicator		
			10.3.6.7		

10.3.6.58 Primary CCPCH info post

NOTE: Only for TDD

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reference	description	
CHOICE TDD option	MP				REL-4
>3.84 Mcps TDD					REL-4
>>CHOICE SyncCase	MP				
>>>Sync Case 1					
>>>>Timeslot	MP		Integer	PCCPCH timeslot	
			(014)		
>>>Sync Case 2					
>>>>Timeslot	MP		Integer(06)		
>1.28 Mcps TDD					REL-4
>>TSTD indicator	MP		TSTD		REL-4
			indicator		
			10.3.6.85a		
Cell parameters ID	MP		Cell	The Cell	
			parameters	parameters ID is	
			ld 10.3.6.9	described in [32].	
Block STTD indicator	MP		Block STTD		
			indicator		
			10.3.6.7		

10.3.6.59 Primary CCPCH TX Power

NOTE: Only for TDD.

Information Element/group	Need	Multi	Type and reference	Semantics description
Primary CCPCH Tx Power	MP		Integer(643	In dBm

10.3.6.60 Primary CPICH info

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary scrambling code	MP		Integer(051 1)	

10.3.6.61 Primary CPICH Tx power

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH Tx Power	MP		Integer(- 1050)	Power in dBm.

10.3.6.62 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)	

10.3.6.63 PUSCH info

NOTE: Only for TDD.

Information Element/Group	Need	Multi	Type and	Semantics description
Tracine				
TECSID	MD		Integer(18)	Default value is 1
Common timeslot info	OP		Common	
			timeslot info	
			10.3.6.10	
PUSCH timeslots and codes	OP		Uplink	
			Timeslots	
			and Codes	
			10.3.6.94	

10.3.6.64 PUSCH Capacity Allocation info

NOTE: Only for TDD.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE PUSCH allocation	MP			
>PUSCH allocation pending				(no data)
>PUSCH allocation assignment				
>>PUSCH allocation period info	MP		Allocation	
			Period Info	
			10.3.6.4	
>>PUSCH power control info	OP		PUSCH	
			power	
			control info	
			10.3.6.65	
>>TFCS ID	MD		Integer(18)	Default is 1.
>>CHOICE Configuration	MP			
>>>Old configuration				
>>>>PUSCH Identity	MP		Integer(1Hi	
			PUSCHIdent	
			ities)	
>>>New configuration				
>>>>PUSCH info	MP		PUSCH info	
			10.3.6.63	
>>>>PUSCH Identity	OP		Integer(1	
			HiPUSCHIde	
			ntities)	

10.3.6.65 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	Version
UL target SIR	MP		Real (-11 20 by step of 0.5)	in dB	
CHOICE TDD option	MP				REL-4
>3.84 Mcps TDD				(no data)	REL-4
>1.28 Mcps TDD					REL-4
>>TPC Step Size	OP		Integer (1, 2, 3)	In dB	REL-4
>>DL CCTrCH TPC List	OP	0 <maxcc TrCH></maxcc 		DL CCTrCH identities for TPC commands associated with this UL CCTrCH	REL-4
>>>DL TPC TFCS Identity	MP		Transport Format Combination Set Identity 10.3.5.21		REL-4

10.3.6.66 PUSCH system information

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PUSCH information	MP	1 to <maxpus CH></maxpus 		
>PUSCH Identity	MP		Integer(1Hi PUSCHIdent ities)	
>PUSCH info	MP		PUSCH info 10.3.6.63	
>SFN Time Info	CH- Block17		SFN Time Info 10.3.6.75	
>USCH TFS	OP		Transport format set 10.3.5.23	
>USCH TFCS	MP		Transport Format Combination Set 10.3.5.20	

Condition	Explanation
Block17	This IE is not needed absent in System Information
	Block 17. Otherwise it is optional.

10.3.6.67 RACH transmission parameters

NOTE: Only for FDD.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Mmax	MP		Integer(132	Maximum number of preamble
)	cycles
NB01min	MP		Integer(050	Sets lower bound for random
)	back-off
NB01max	MP		Integer(050	Sets upper bound for random
)	back-off

10.3.6.68 Radio link addition information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
Downlink DPCH info for each RL	MP		Downlink DPCH info for each RL 10.3.6.21	
TFCI combining indicator	OP		TFCI combining indicator 10.3.6.81	
SCCPCH Information for FACH	OP		SCCPCH Information for FACH 10.3.6.70	Note 1

NOTE 1: These IEs are present when the UE needs to listen to system information on FACH in CELL_DCH state.

10.3.6.69 Radio link removal information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH info	MP		Primary	
			CPICH info	
			10.3.6.60	

10.3.6.70 SCCPCH Information for FACH

Information Element/Group	Need	Multi	Type and	Semantics description
Secondary CCPCH info	MD		Secondary	
Secondary CCI CITINIO	IVIT		CCPCH info	
			103671	
TECS	MP		Transport	For FACHs and PCH
			format	
			combination	
			set 10.3.5.20	
FACH/PCH information	MP	1 to		
		<maxfac< td=""><td></td><td></td></maxfac<>		
		HPCH>		
>TFS	MP		Transport	For each FACHs and PCH
			format set	
			10.3.5.23	
>Transport channel identity	MP		Transport	
			channel	
			Identity	
			10.3.5.18	
>CICH Indicator	MP		Boolean	The value "TRUE" indicates
				That a CTCH is mapped on the
				CTCH is managed
CHOICE mode				CTCTTIS mapped.
>FDD				
>>References to system	MP	1 to		
information blocks		<maxsib-< td=""><td></td><td></td></maxsib-<>		
		FACH>		
>>>Scheduling information	MP		Scheduling	
5			information	
			10.3.8.16	
>>>SIB type SIBs only	MP		SIB Type	
			SIBs only,	
			10.3.8.22	
>TDD				(No data)

NOTE: TFS for PCH shall be the first "FACH/PCH information" in the list if a PCH exists for the respective secondary CCPCH.

10.3.6.71 Secondary CCPCH info

Information Element/Group	Need	Multi	Type and	Semantics description
	MP		Telefelice	
>>Primary CPICH usage for channel estimation	MP		Primary CPICH usage for channel estimation	
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.73	May only be sent for SCCPCH channels not carrying the PCH.
>>Secondary scrambling code	OP		Secondary scrambling code 10.3.6.74	May only be sent for SCCPCH channels not carrying the PCH.
>>STTD indicator	MD		STTD Indicator 10.3.6.78	Default value is "TRUE"
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256)	
>>Code number	MP		Integer(0Sp reading factor - 1)	
>>Pilot symbol existence	MD		Boolean	TRUE means the existence. Default value is "TRUE"
>>TFCI existence	MD		Boolean	TRUE means the existence. Default value is "TRUE"
>>Fixed or Flexible Position	MD		Enumerated (Fixed, Flexible)	Default value is "Flexible"
>>Timing Offset	MD		Integer(038 144 by step of 256)	Chip Delay of the Secondary CCPCH relative to the Primary CCPCH. Default value is 0.
>TDD				
>>Offset	MP		Integer (0Repetitio n Period -1)	SFN modulo Repetition period = offset. Repetition period is the one indicated in the accompanying Common timeslot info IE
>>Common timeslot info	MP		Common timeslot info 10.3.6.10	
>>Individual timeslot info	MP		Individual timeslot info 10.3.6.37	
>>Code List	MP	1 to 16		
>>>Channelisation Code	MP		Enumerated((16/1)(16/1 6))	

10.3.6.72 Secondary CCPCH system information

Information element	Need	Multi	Type and reference	Semantics description
Secondary CCPCH system information	MP	1 to <maxscc PCH></maxscc 		
>Secondary CCPCH info	MP		Secondary CCPCH info 10.3.6.71	Note 1
>TFCS	MD		Transport format combination set 10.3.5.20	For FACHs and PCH Default value is the value of "TFCS" for the previous SCCPCH in the list (note : the first occurrence is then MP)
>FACH/PCH information	MD	1 to <maxfac HPCH></maxfac 		Default value is the value of "FACH/PCH" for the previous SCCPCH in the list (note : the first occurrence is then MP)
>>TFS	MP		Transport format set 10.3.5.23	For each FACH and PCH Note 2
>>Transport channel identity	MP		Transport channel identity 10.3.5.18	
>>CTCH indicator	MP		Boolean	The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.
>PICH info	OP		PICH info 10.3.6.49	PICH info is present only when PCH is multiplexed on Secondary CCPCH

NOTE 1: The secondary CCPCHs carrying a PCH shall be listed first.

NOTE 2: TFS for PCH shall be the first "FACH/PCH information" in the list if a PCH exists for the respective secondary CCPCH.

10.3.6.73 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 10.3.6.74	Default is the same scrambling code as for the Primary CPICH
Channelisation code	MP		Integer(025 5)	SF=256

10.3.6.74 Secondary scrambling code

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Secondary scrambling code	MP		Integer(115	
)	
10.3.6.75 SFN Time info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Activation time SFN	MP		Integer (04095)	System frame number start of the physical channel existence.
Duration	MP		Integer(140 96)	Total number of frames the physical channel will exist.

10.3.6.75a Special Burst Scheduling

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Special Burst Generation Period	MP		Integer (2, 4, 8, 16, 32, 64, 128, 256)	Value in radio frames

10.3.6.76 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)	

10.3.6.77 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	Version
S field	MP		Integer (1, 2)	In bits	
Code Word Set	MP		Enumerated (long, medium, shortSSDT off)		
SSDT UL	OP		Enumerated (UL, ULandDL)		REL-4

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

10.3.6.78 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

10.3.6.78a SYNC_UL info

NOTE: Only for 1.28 Mcps TDD.

Information Element/ Group name	Need	Multi	Type and reference	Semantics description	Version
SYNC_UL codes bitmap	MP		Bitstring(8)	00000001 indicates code 0 can be used,10000001 indicates that codes 0 and 7 can be used.	REL-4
UL Target SIR	MP		Real(-11 20 by step of 0.5)	In dB	REL-4
Power Ramping Step	MP		Integer(0,1,2 ,3)	In dB	REL-4
Max SYNC_UL Transmissions	MP		Integer(1,2,4 ,8)	Maximum numbers of SYNC_UL transmissions in a power ramping sequence.	REL-4
Mmax	MP		Integer(132)	Maximum number of synchronisation attempts.	REL-4

10.3.6.79 TDD open loop power control

This information element contains parameters for open loop power control setting for TDD.

Information Element/Group	Need	Multi	Type and reference	Semantics description	Version
Primary CCPCH Tx Power	MP		Primary CCPCH Tx Power 10.3.6.59	For path loss calculation	
CHOICE TDD option	MP				REL-4
>3.84 Mcps TDD					REL-4
>>Alpha	OP		Alpha 10.3.6.5		
>>PRACH Constant Value	MP		Constant Value 10.3.6.11	Operator controlled PRACH Margin	
>>DPCH Constant Value	MP		Constant Value 10.3.6.11	Operator controlled UL DPCH Margin	
>>PUSCH Constant Value	OP		Constant Value 10.3.6.11	Operator controlled PUSCH Margin	
>>UE positioning related parameters	CV-IPDLs				REL-4
>>>IPDL-Alpha	MP		Alpha 10.3.6.5		REL-4
>>>Max power increase	MP		Integer (03)	In db	REL-4
>1.28 Mcps TDD				(no data)	REL-4

Condition	Explanation
IPDLs	This IE is present only if idle periods are applied

10.3.6.80 TFC Control duration

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFC Control duration	MP		Integer (1, 2, 4, 8, 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.

10.3.6.81 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

10.3.6.82 TGPSI

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPSI	MP		Integer(1M axTGPS)	Transmission Gap Pattern Sequence Identifier Establish a reference to the compressed mode pattern sequence. Up to <maxtgps> simultaneous compressed mode pattern sequences can be used.</maxtgps>

10.3.6.83 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(140 96, infinite)	Total number of frames the physical channel will exist. Default value is "infinite".

10.3.6.84 Timeslot number

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE TDD option	MP				REL-4
>3.84 Mcps TDD					REL-4
>>Timeslot number	MP		Integer(014)	Timeslot within a frame	
>1.28 Mcps TDD					REL-4
>>Timeslot number	MP		Integer(06)	Timeslot within a subframe	REL-4

10.3.6.85 TPC combination index

NOTE: Only for FDD.

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

10.3.6.85a TSTD indicator

NOTE: Only for 1.28Mcps TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
TSTD indicator	MD		Boolean	Default value is "TRUE"	REL-4

10.3.6.86 TX Diversity Mode

NOTE: Only for FDD.

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

10.3.6.87 UL interference

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UL interference	MP		Integer (- 11070)	In dBm

NOTE: In TDD, this IE is a timeslot specific value.

10.3.6.88 Uplink DPCH info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Uplink DPCH power control info	OP		Uplink DPCH power control info 10.3.6.91	
CHOICE mode	MP			
>FDD				
>>Scrambling code type	MP		Enumerated(short, long)	
>>Scrambling code number	MP		Integer(016 777215)	
>>Number of DPDCH	MD		Integer(2m axDPDCH)	Default value is 1. Number of DPDCH is 1 in HANDOVER TO UTRAN COMMAND
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256)	Minimum allowed SF of the channelisation code for data part
>>TFCI existence	MD		Boolean	TRUE means existence. Default value is "TRUE"
>>Number of FBI bits	СН		Integer (1, 2)	In bits. Number of FBI bits is needed if SSDT or FB Mode Transmit Signalling is supported.
>>Puncturing Limit	MP		Real(0.401 by step of 0.04)	
>TDD				
>>Uplink Timing Advance Control	OP		Uplink Timing Advance Control 10.3.6.96	
>>UL CCTrCH List	MP	1 to <maxcctr CH></maxcctr 		
>>>TFCS ID	MD		Integer(18)	Default value is 1.
>>>Time info	MP		Time info 10.3.6.83	
>>>Common timeslot info	MD		Common timeslot info 10.3.6.10	Default is the current Common timeslot info
>>>Uplink DPCH timeslots and codes	MD		Uplink Timeslots and Codes 10.3.6.94	Default is to use the old timeslots and codes.

Condition	Explanation
Single	This IE is mandatory present included if IE "Number
	of DPDCH" is "1" and not needed otherwise

10.3.6.89 Uplink DPCH info Post

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Uplink DPCH power control info	MP		Uplink	
			DPCH power	
			control info	
			Post	
			10.3.6.92	
CHOICE mode	MP			
>FDD				
>>Scrambling code type	MP		Enumerated(
			short, long)	
>>Reduced scrambling code	MP		Integer(081	Sub-range of values for initial
number			91)	use upon handover to UTRAN.
>>Spreading factor	MP		Integer(4, 8,	SF of the channelisation code
			16, 32, 64,	for data part
			128, 256)	There is only one DPDCH for
				this case
>TDD				
>>Uplink Timing Advance	OP		Uplink	
Control			Timing	
			Advance	
			Control	
			10.3.6.96	
>>Uplink DPCH timeslots and	MP		Uplink	
codes			Timeslots	
			and Codes	
			10.3.6.94	

10.3.6.90 Uplink DPCH info Pre

Information Element/Group	Need	Multi	Type and	Semantics description
name			reterence	
Uplink DPCH power control info	OP		Uplink DPCH power	
			control info	
			Pre	
			10.3.6.93	
CHOICE mode	MP			
>FDD				
>>TFCI existence	MP		Boolean	TRUE means existence.
				Default value is "TRUE"
>>Puncturing Limit	MP		Real(0.401	
-			by step of	
			0.04)	
>TDD				
>>Common timeslot info	MP		Common	
			Timeslot Info	
			10.3.6.10	

Condition	Explanation
Single	This IE is mandatory present included if IE "Number
	of DPDCH" is "1" and not needed otherwise

10.3.6.91 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 1.28Mcps TDD and parameters for uplink open loop power control in 3.84Mcps TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE mode	MP				
>FDD					
>>DPCCH Power offset	MP		Integer(- 164,6 by step of 2)	In dB	
>>PC Preamble	MP		Integer (07)	In number of frames	
>>SRB delay	MP		Integer(07)	In number of frames	
>>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		Integer (1, 2)	In dB	
>TDD					
>>UL target SIR	MP		Real (-11 20 by step of 0.5dB)	In dB	
>>CHOICE UL OL PC info	MP				
>>>Broadcast UL OL PC info			Null	No data	
>>>Individually Signalled	OP				
>>>>CHOICE TDD option	MP				REL-4
>>>>3.84Mcps TDD					REL-4
>>>>>Individual timeslot interference info	MP	1 to <maxts></maxts>			
>>>>>>Individual timeslot interference	MP		Individual timeslot interference 10.3.6.38		
>>>>>DPCH Constant Value	OP		Constant Value 10.3.6.11	Quality Margin	
>>>>1.28 Mcps TDD					REL-4
>>>>>TPC step size	MP		Integer(1,2,3)		REL-4
>>>>Primary CCPCH Tx Power	OP		Primary CCPCH Tx Power 10.3.6.59	For Pathloss Calculation	

Condition	Explanation
algo	The IE is mandatory <u>present</u> if "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is not needed

10.3.6.92 Uplink DPCH power control info Post

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

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reference	description	
CHOICE mode	MP				
>FDD					
>>DPCCH Power offset	MP		Integer(- 11050 by step of 4)	In dB	
>>PC Preamble	MP		Integer (07)	in number of frames	
>>SRB delay	MP		Integer (07)	In number of frames	
>TDD					
>>UL target SIR	MP		Real (-11 20 by step of 0.5dB)	In dB	
>>CHOICE TDD option	MP				REL-4
>>>3.84Mcps TDD					REL-4
>>>>UL Timeslot Interference	MP		UL Interference 10.3.6.87		
>>>1.28Mcps TDD				(no data)	REL-4

Condition	Explanation
algo	The IE is mandatory <u>present if</u> "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is not needed

10.3.6.93 Uplink DPCH power control info Pre

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 3.84 Mcps TDD.

Information Element/Group	Need	Multi	Type and reference	Semantics description	Version
CHOICE mode	MP			decomption	
>FDD					
>>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		Integer (1, 2)	In dB	
>TDD				(No data)	
>>CHOICE TDD option	MP				REL-4
>>>3.84Mcps TDD					REL-4
>>DPCH Constant Value	MP		Constant Value 10.3.6.11	Quality Margin	
>>>1.28Mcps TDD				(no data)	REL-4

ſ	Condition	Explanation
	Algo	The IE is mandatory <u>present</u> if "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is not needed

10.3.6.94 Uplink Timeslots and Codes

NOTE: Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Dynamic SF usage	MP		Boolean	
First Individual timeslot info	MP		Individual timeslot info 10.3.6.37	Individual timeslot info for the first timeslot used by the physical layer.
First timeslot Code List	MP	12		Code list used in the timeslot. given in First individual timeslot info.
>Channelisation Code	MP		Enumerated((1/1),)(2/1),(2/2),(4/1)(4/ 4),(8/1)(8/8) ,(16/1)(16/1 6))	
CHOICE more timeslots	MP			
>No more timeslots				(no data)
>Consecutive timeslots				
>>Number of additional timeslots	MP		Integer(1m axTS-1)	The timeslots used by the physical layer shall be timeslots: N mod maxTS (N+1) mod maxTS (N+k) mod maxTS in that order, where N is the timeslot number in the First individual timeslot info and k the Number of additional timeslots.
				The additional timeslots shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) as the first timeslot.
>Timeslot list				
>>Additional timeslot list	MP	1 to <maxts- 1></maxts- 		The first instance of this parameter corresponds to the timeslot that shall be used second by the physical layer, the second to the timeslot that shall be used third and so on.
>>>CHOICE parameters	MP			
>>>Same as last				<u> </u>
>>>>Timeslot number	MP		Timeslot Number 10.3.6.84	This physical layer shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) for this timeslot as for the last one.
>>>>New parameters				
>>>>Individual timeslot info	MP		Individual timeslot info 10.3.6.37	
>>>>Code List >>>>>Channelisation Code	MP MP	12	Enumerated((1/1),)(2/1),(2/2),(4/1)(4/ 4),(8/1)(8/8) ,(16/1)(16/1 6))	

10.3.6.95 Uplink Timing Advance

NOTE: Only for 3.84 Mcps TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
UL Timing Advance	MP		Integer (063)	Absolute timing advance value to be used to avoid large delay spread at the NodeB	

10.3.6.96 Uplink Timing Advance Control

NOTE: Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE Timing Advance	MP				
>Disabled			Null	Indicates that no timing advance is applied	
>Enabled					
>>CHOICE TDD option >>>3.84 Mcps TDD	MP				REL-4 REL-4
>>>UL Timing Advance	MD		Uplink Timing Advance 10.3.6.95	Absolute timing advance value to be used to avoid large delay spread at the NodeB. Default value is the existing value for uplink timing advance.	
>>>Activation Time	OP		Activation Time 10.3.3.1	Frame number timing advance is to be applied. This IE is required when a new UL Timing Advance adjustment is specified and Activation Time is not otherwise specified in the RRC message.	
>>1.28 Mcps TDD				(no data)	REL-4
>>>Uplink synchronisation parameters	MD			Default: Uplink synchronisation parameters is 1. Uplink synchronisation frequency is 1.	REL-4
>>>>Uplink synchronisation step size	MP		Integer(18)	This parameter specifies the step size to be used for the adjustment of the uplink transmission timing	REL-4
>>>>Uplink synchronisation frequency	MP		Integer(18)	This parameter specifies the frequency of the adjustment of the uplink transmission timing	REL-4
	MD		Ritetring(9)	0000001	
>>>>> STING_UL COORS DITMAP			Bitstring(8)	indicates code 0 can be used, 10000001 indicates that codes 0 and 7 can be used. Default: all SYNC_UL codes can be used	REL-4
>>>>FPACH info	MP		FPACH info 10.3.6.?		REL-4
>>>>SYNC_UL procedure	MD			Default is: Max SYNC_UL Transmission is 2. Power Ramping	REL-4

			Step is 2.	
>>>>Max SYNC_UL Transmissions	MP	Integer(1,2,4 ,8)	Maximum numbers of SYNC_UL transmissions in a power ramping	REL-4
			sequence.	
>>>>Power Ramping Step	MP	Integer(0,1,2 .3)	In dB	REL-4

10.3.7 Measurement Information elements

10.3.7.1 Additional measurements list

Information Element/Group	Need	Multi	Type and reference	Semantics description
Additional measurements	MP	1 to <maxadditi onalMeas></maxadditi 		
>Additional measurement identity	MP		Measurement identity 10.3.7.48	

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	Need	Multi	Type and reference	Semantics description	Version
Cell individual offset	MD		Real(-1010	In dB	
			by step of	Default value is 0	
			0.5)	Used to offset	
				measured quantity	
Reference time difference to cell	OP		Reference	value In chips	
	0.		time	This IE is absent	
			difference to	for serving cell.	
			10.3.7.60		
Read SFN indicator	MP		Boolean	TRUE indicates	
				that read of SFN is requested for	
				the target cell	
CHOICE mode	MP		_		
>>Primary CPICH info	OP		Primary	This IE is absent	
			CPICH info	only if measuring	
			10.3.6.60	RSSI only (broadband	
				measurement.)	
>>Primary CPICH Tx power	OP		Primary	Required if	
			power	pathloss.	
			10.3.6.61	•	
>>TX Diversity Indicator >TDD	MP		Boolean		
>>Primary CCPCH info	MP		Primary		
			10.3.6.57		
>>Primary CCPCH TX power	OP		Primary		
			Dower		
			10.3.6.59		
>>Timeslot list	OP	1 to		The UE shall	
				ISCP values	
				according the	
				Timeslot numbers	
>>>CHOICE TDD option	MP				REL-4
>>>>3.84 Mcps TDD	MD		Integer	Timoglot numbers	REL-4
	IVIP		(014)	for which the UE	
				shall report	
	MD		Enumerated	l'imeslot ISCP	
Duist Type			(Type1,	ISCP	
			Type2)	measurements	
				only. Default value	
>>>>1.28Mcps TDD					REL-4
>>>>Timeslot number	MP		Integer	Timeslot numbers,	REL-4
			(10)	shall report	
				Timeslot ISCP	
Cell Selection and Re-selection	CV- BCHont		Cell	This IE is absent	
	Deriopt		and Re-	For neighbouring	
			selection for	cell, if HCS is not	
			SIB11/12Into 10.3.2.4	used and all the	
				selection and re-	
				selection info are	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
				default value, this IE is absent.	

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

10.3.7.3 Cell measured results

Includes non-frequency related measured results for a cell.

Information Element/Group	Need	Multi	Type and	Semantics
name			reference	description
Cell Identity	OP		Cell Identity	
			10.3.2.2	
SFN-SFN observed time	OP		SFN-SFN observed	
difference			time difference	
			10.3.7.63	
Cell synchronisation information	OP		Cell synchronisation	
			information 10.3.7.6	
CHOICE mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info	
			10.3.6.60	
>>CPICH Ec/N0	OP		Integer(050)	According to
				CPICH_Ec/No in [19]
				and [20]
>>CPICH RSCP	OP		Integer(091)	According to
				CPICH_RSCP in [19]
				and [20]
>>Pathloss	OP		Integer(46158)	In dB
>TDD				
>>Cell parameters Id	MP		Cell parameters Id	
			10.3.6.9	
>>Proposed TGSN	OP		Integer (014)	Proposal for the next
				TGSN
>>Primary CCPCH RSCP	OP		Primary CCPCH	
			RSCP info	
			10.3.7.54	
>>Pathloss	OP		Integer(46158)	In dB
>>Timeslot list	OP	1 to <		
		maxTS>		
>>>Timeslot ISCP	MP		Timeslot ISCP Info	The UE shall report the
			10.3.7.65	Timeslot ISCP in the
				same order as
				indicated in the cell info

10.3.7.4 Cell measurement event results

Includes non-frequency related cell reporting quantities.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode	MP			
>FDD				
>>Primary CPICH info	MP	1 to <maxcellm eas></maxcellm 	Primary CPICH info 10.3.6.60	
>TDD				
>>Primary CCPCH info	MP	1 to <maxcellm eas></maxcellm 	Primary CCPCH info 10.3.6.57	

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	Need	Multi	Type and	Semantics description
name			reference	_
SFN-SFN observed time	MP		Enumerated(
difference reporting indicator			No report,	
			type 1, type	
			2)	
Cell synchronisation information	MP		Boolean	
reporting indicator				
Cell Identity reporting indicator	MP		Boolean	
CHOICE mode	MP			
>FDD				
>>CPICH Ec/N0 reporting	MP		Boolean	
indicator				
>>CPICH RSCP reporting	MP		Boolean	
indicator				
>>Pathloss reporting indicator	MP		Boolean	
>TDD				
>>Timeslot ISCP reporting	MP		Boolean	
indicator				
>>Proposed TGSN Reporting	MP		Boolean	
required				
>>Primary CCPCH RSCP	MP		Boolean	
reporting indicator				
>>Pathloss reporting indicator	MP		Boolean	

10.3.7.6 Cell synchronisation information

The IE "Cell synchronisation information" contains the OFF and Tm as defined in [7] and [8] and the four most significant bits of the difference between the 12 least significant bits of the RLC Transparent Mode COUNT-C in the UE and the SFN of the measured cell. It is notified to SRNC by Measurement Report message or Measurement Information Element in other RRC messages

Information Element/Group	Need	Multi	Type and	Semantics
name			reference	description
CHOICE mode	MP			
>FDD				
>>COUNT-C-SFN frame	OP			
difference				
>>>COUNT-C-SFN high	MP		Integer(03840 by	in frames
			step of 256)	
>>>OFF	MP		Integer(0255)	in frames
>>Tm	MP		Integer(038399)	in chips
>TDD				
>>COUNT-C-SFN frame	OP			
difference				
>>>COUNT-C-SFN high	MP		Integer(03840 by	in frames
			step of 256)	
>>>OFF	MP		Integer(0255)	in frames

NOTE: This measurement is only used in TDD when cells are not SFN synchronised

10.3.7.7 Event results

Information Element/Group	Need	Multi	Type and	Semantics
	MD		TETETETICE	description
Sintra-frequency			Intra-frequency	
measurement event results			measurement event results 10.3.7.37	
>Inter-frequency			Inter-frequency	
measurement event results			measurement event results 10.3.7.17	
>Inter-RAT measurement			Inter-RAT	For IS-2000 results,
event results			measurement event results 10.3.7.28	include fields of the <i>Pilot Strength</i> <i>Measurement Message</i> from subclause 2.7.2.3.2.5 of TIA/EIA/IS-2000.5
>Traffic volume measurement event results			Traffic volume measurement event results 10.3.7.69	
>Quality measurement event			Quality	
results			measurement event results 10.3.7.57	
>UE internal measurement			UE internal	
event results			measurement event results 10.3.7.78	
>UE positioning measurement			UE positioning	
event results			measurement event	
			results 10.3.7.101	

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-RAT measurement event results	If measurement type = inter-RAT 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
UE positioning measurement event results	If measurement type = UE positioning measurement

10.3.7.8 FACH measurement occasion info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
FACH Measurement occasion cycle length coefficient	OP		Integer(112)		
Inter-frequency FDD measurement indicator	MP		Boolean	TRUE means that measurements are required	
Inter-frequency TDD 3.84 Mcps measurement indicator	MP		Boolean	TRUE means that measurements are required	REL-4
Inter-frequency TDD 1.28 Mcps measurement indicator	MP		Boolean	TRUE means that measurements are required	
Inter-RAT measurement indicators	OP	1 to <maxother RAT></maxother 			
>RAT type	MP		Enumerated(GSM, IS2000)		

10.3.7.9 Filter coefficient

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Filter coefficient	MD		Integer(0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 13, 15, 17, 19)	Default value is 0

10.3.7.10 HCS Cell re-selection information

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

Condition	Explanation
Penalty used	This IE is nNot needed allowed if IE Penalty time
	equals 'not used' else it is mandatory presentMP
FDD-Quality-Measure	Presence is not needed allowed if the IE
	"Cell_selection_and_reselection_quality_measure"
	has the value CPICH RSCP, otherwise the IE is
	mandatory present. This conditional presence is
	implemented in ASN.1 by the use of a specific RSCP
	and EcN0 variant of 10.3.7.10.

10.3.7.11 HCS neighbouring cell information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
HCS_PRIO	MD		Integer (07)	Default value = 0
Qhcs	MD		Qhcs 10.3.7.54a	Default value = 0
HCS Cell Re-selection Information	MP		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 (07)	Default value = 0
Qhcs	MD		Qhcs 10.3.7.54a	Default value = 0
T _{CRmax}	MD		Enumerated(not used, 30, 60, 120, 180, 240)	[s] Default value is not used
N _{CR}	CV-UE speed detector		Integer(116)	Default value = 8
TCrmaxHyst	CV-UE speed detector		Enumerated(not used, 10, 20, 30, 40, 50, 60, 70)	[\$]

Condition	Explanation
UE Speed detector	This IE is nNot needed allowed if T _{Crmax} equals 'not
	used' else Mandatory present

10.3.7.13 Inter-frequency cell info list

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

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

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

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(2 a, 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 <maxfreq></maxfreq>		
>Frequency info	MD		Frequency info 10.3.6.36	Default value is the value of the previous "frequency info" in the list (note : the first occurrence is then MP)
>UTRA carrier RSSI	OP		Integer(076)	According to UTRA_carrier_RSSI_LEV in [19] and [20]
>Inter-frequency cell measurement results	OP	1 to <maxcellm eas></maxcellm 		
>>Cell measured results	MP		Cell measured results 10.3.7.3	

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 measuremen t quantity 10.3.7.18	
Inter-frequency reporting quantity	OP		Inter- frequency reporting quantity 10.3.7.21	
Reporting cell status	CV- reporting		Reporting cell status 10.3.7.61	
Measurement validity	OP		Measuremen t validity 10.3.7.51	
Inter-frequency set update	OP		Inter- frequency set update 10.3.7.22	
CHOICE report criteria	MP			
>Intra-frequency measurement reporting criteria			Intra- frequency measuremen t reporting criteria 10.3.7.39	
>Inter-frequency measurement reporting criteria			Inter- frequency measuremen t reporting criteria 10.3.7.19	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.53	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement

Condition	Explanation
reporting	This IE is optional if the CHOICE " <i>report criteria</i> " is equal to "periodical reporting criteria" or "No reporting", otherwise the IE is not needed

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	Need	Multi	Type and	Semantics description
Inter-frequency event identity	MP		Inter- frequency event identity 10.3.7.14	
Inter-frequency cells	OP	1 to <maxfreq></maxfreq>		
>Frequency info	MP		Frequency info 10.3.6.36	
>Non frequency related measurement event results	MP		Cell measureme nt event results 10.3.7.4	

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 <maxmeas Event></maxmeas 		
>Inter-frequency event identity	MP		Inter- frequency event identity 10.3.7.14	
>Threshold used frequency	CV–clause 0		Integer(- 1150)	Ranges used depend on measurement quantity. CPICH Ec/No -240dB CPICH/Primary CCPCH RSCP -11525dBm
>W used frequency	CV– <i>clause</i> 0		Real(0, 0.12.0 by step of 0.1)	
>Hysteresis	MP		Real(0, 0.514.5 by step of 0.5)	In event 2a, 2b, 2c, 2d, 2e, 2f
>Time to trigger	MP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms.
>Reporting cell status	OP		Reporting cell status 10.3.7.61	
>Parameters required for each non-used frequency	OP	1 to <maxfreq ></maxfreq 		
>>Threshold non used frequency	CV–clause 1		Integer(- 1150)	Ranges used depend on measurement quantity. CPICH Ec/No -240dB CPICH/Primary CCPCH RSCP -11525dBm
>>W non-used frequency	CV-clause 1		Real(0, 0.12.0 by step of 0.1)	

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

10.3.7.20 Inter-frequency measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-frequency cell info list	OP		Inter- frequency cell info list 10.3.7.13	

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	Need	Multi	Type and	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 <maxrl></maxrl>		Radio link addition information required for each RL to add
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	Note 1
>Radio link removal information	OP	1 to <maxrl></maxrl>		Radio link removal information required for each RL to remove
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	Note 1

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

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-RAT cell info list

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE Inter-RAT cell removal	MP			
>Remove all inter-RAT cells				No data
>Remove some inter-RAT cells				
>>Removed inter-RAT cells	MP	1 to <maxcellm eas></maxcellm 		
>>>Inter-RAT cell id	MP		Integer(0 <maxcellmeas> - 1)</maxcellmeas>	
>Remove no inter-RAT cells				
New inter-RAT cells	OP	1 to <maxcellm eas></maxcellm 		
>Inter-RAT cell id	OP		Integer(0 <maxcellmeas> - 1)</maxcellmeas>	
>CHOICE Radio Access Technology	MP			
>>GSM				
>>>Cell individual offset	MP		Integer (-5050)	In dB Used to offset measured quantity value
>>>Cell selection and re- selection info	OP		Cell selection and re-selection info for SIB11/12 10.3.2.4	see 8.6.7.3 If HCS is not used and all the parameters in cell selection and re-selection info are default values, this IE is absent.
>>>BSIC	MP		BSIC 10.3.8.2	
>>>Band indicator	MP		Enumerated (DCS 1800 band used, PCS 1900 band used)	Indicates how to interpret the BCCH ARFCN
>>>BCCH ARFCN	MP		Integer (01023)	[45]
>>IS-2000				
>>>System specific measurement info			enumerated (frequency, timeslot, colour code, output power, PN offset)	For IS-2000, use fields from TIA/EIA/IS-2000.5, Subclause 3. 7.3.3.2.27, <i>Candidate Frequency</i> <i>Neighbour List Message</i>
Cell for measurement	OP	1 to <maxcellm eas></maxcellm 		
>Inter-RAT cell id	MP		Integer(0 <maxcellmeas> -1)</maxcellmeas>	

10.3.7.24 Inter-RAT event identity

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

10.3.7.25 Inter-RAT info

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT info	MP		Enumerated (GSM)	

10.3.7.26 Inter-RAT measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT measurement results	OP	1 to <maxother RAT></maxother 		
>CHOICE system	MP			At least one spare value needed
>>GSM				
>>>Measured GSM cells	MP	1 to <maxrepo rtedGSMC ells></maxrepo 		
>>>>GSM carrier RSSI	OP		bit string(6)	RXLEV, [46]. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit.
>>>>Pathloss	OP		Integer(461 58)	In dB
>>>>CHOICE BSIC	MP			
>>>>Verified BSIC				
>>>>>inter-RAT cell id	MP		Integer(0< maxCellMea s>-1)	
>>>>Non verified BSIC			-	
>>>>BCCH ARFCN	MP		Integer (01023)	[45]
>>>>Observed time difference to GSM cell	OP		Observed time difference to GSM cell 10.3.7.52	

10.3.7.27 Inter-RAT measurement

Information Element/Group	Need	Multi	Type and	Semantics description
Inter PAT coll info list	OP			Moosurement object
Inter-RAT cell Into list	OF		Inter-RAT	Measurement object
	00		10.3.7.23	
Inter-RAT measurement	OP		Inter-RAI	
quantity			measuremen	
			t quantity	
			10.3.7.29	
Inter-RAT reporting quantity	OP		Inter-RAT	
			reporting	
			quantity	
			10.3.7.32	
Reporting cell status	CV-		Reporting	
	reporting		cell status	
			10.3.7.61	
CHOICE report criteria	MP			
>Inter-RAT measurement			Inter-RAT	
reporting criteria			measuremen	
			t reporting	
			criteria	
			10.3.7.30	
>Periodical reporting criteria			Periodical	
· · · · · · · · · · · · · · · · · · ·			reporting	
			criteria	
			10.3.7.53	
>No reporting				(no data)
		1		Chosen when this
				measurement only is used as
				additional measurement to
				another measurement
				another measurement

Condition	Explanation
reporting	This IE is optional if the CHOICE "report criteria" is equal to "periodical reporting criteria" or "No
	reporting", otherwise the IE is not needed

10.3.7.28 Inter-RAT measurement event results

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Inter-RAT event identity	MP		Inter-RAT	
			event	
			identity	
			10.3.7.24	
Cells to report	MP	1 to		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		eas>		
>CHOICE BSIC	MP			
>>Verified BSIC				
>>>inter-RAT cell id	MP		Integer(0<	
			maxCellMea	
			s>-1)	
>>Non verified BSIC				
>>>BCCH ARFCN	MP		Integer	[45]
			(01023)	

10.3.7.29 Inter-RAT measurement quantity

The quantity the UE shall measure in case of inter-RAT 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	OP		Intra- frequency measuremen t quantity	
CHOICE system	MP		10.3.7.30	
>GSM				
>>Measurement quantity	MP		Enumerated(GSM Carrier RSSI, Pathloss)	
>>Filter coefficient	MP		Filter coefficient 10.3.7.9	
>>BSIC verification required	MP		Enumerated(required, not required)	
>IS2000				
>>TADD E₀/I₀	MP		Integer(063)	Admission criteria for neighbours, see subclause 2.6.6.2.6 of TIA/EIA/IS-2000.5
>>TCOMP E ₀ /I ₀	MP		Integer(015)	Admission criteria for neighbours, see subclause 2.6.6.2.5.2 of TIA/EIA/IS- 2000.5
>>SOFT SLOPE	OP		Integer(063)	Admission criteria for neighbours, see subclause 2.6.6.2.3 and 2.6.6.2.5.2 of TIA/EIA/IS-2000.5
>>ADD_INTERCEPT	OP		Integer(063)	Admission criteria for neighbours, see subclause 2.6.6.2.5.2 of TIA/EIA/IS- 2000.5

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

10.3.7.30 Inter-RAT measurement reporting criteria

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

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

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

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

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

Information Element/Group	Need	Multi	Type and	Semantics description
Parameters required for each event	OP	1 to <maxmeas Event></maxmeas 		
>Inter-RAT event identity	MP		Inter-RAT event identity 10.3.7.24	
>Threshold own system	CV–clause 0		Integer (- 1150)	
>W	CV–clause 0		Real(0, 0.12.0 by step of 0.1)	In event 3a
>Threshold other system	CV–clause 1		Integer (- 1150)	In event 3a, 3b, 3c
>Hysteresis	MP		Integer (015)	
>Time to trigger	MP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report.
>Reporting cell status	OP		Reporting cell status 10.3.7.61	

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

10.3.7.31 Inter-RAT measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT cell info list	OP		Inter-RAT cell info list 10.3.7.23	

10.3.7.32 Inter-RAT 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			
>GSM				
>>Pathloss	MP		Boolean	
>>Observed time difference to GSM cell	MP		Boolean	
>>GSM Carrier RSSI	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
CHOICE Intra-frequency cell removal	OP			
>Remove all intra-frequency cells				No data
>Remove some intra-frequency cells				
>>Removed intra-frequency cells	MP	1 to <maxcell Meas></maxcell 		
>>>Intra-frequency cell id	MP		Integer(0 <maxcellmea s> - 1)</maxcellmea 	
>Remove no intra-frequency cells				
New intra-frequency cell	OP	1 to <maxcell Meas></maxcell 		This information element must be present when "Intra- frequency cell info list" is included in the system information
>Intra-frequency cell id	MD		Integer(0 <maxcellmea s> - 1)</maxcellmea 	
>Cell info	MP		Cell info 10.3.7.2	
Cell for measurement	CV- BCHopt	1 to <maxcell Meas></maxcell 		
>Intra-frequency cell id	MP		Integer(0 <maxcellmea s>-1)</maxcellmea 	

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

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)	

10.3.7.35 Intra-frequency measured results list

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

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
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	CV- reporting		Reporting cell status 10.3.7.61	
Measurement validity	OP		Measuremen t validity 10.3.7.51	
CHOICE report criteria	OP			
>Intra-frequency measurement reporting criteria			Intra- frequency measuremen t reporting criteria 10.3.7.39	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.53	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement

Condition	Explanation
reporting	This IE is optional if the CHOICE "report criteria" is equal to "periodical reporting criteria" or "No reporting", otherwise the IE is not needed

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	Need	Multi	Type and	Semantics description
name			reference	
Intra-frequency event identity	MP		Intra-	
			frequency	
			event	
			identity	
			10.3.7.34	
Cell measurement event results	MP		Cell	
			measureme	
			nt 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 >FDD	MP			
>>Measurement quantity	MP		Enumerated(C PICH Ec/N0, CPICH RSCP, Pathloss, UTRA Carrier RSSI)	If used in Inter system measurement quantity only Ec/N0 and RSCP is allowed. If used in inter-frequency measurement quantity RSSI is not allowed.
>TDD				
>>Measurement quantity list	MP	1 to 4		
>>>Measurement quantity	MP		Enumerated(Pr imary CCPCH RSCP, Pathloss, Timeslot ISCP, UTRA Carrier RSSI)	If used in inter-frequency measurement quantity RSSI is not allowed.

10.3.7.39 Intra-frequency measurement reporting criteria

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

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

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

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

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

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

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

Event 1g: Change of best cell in TDD.

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

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters required for each	OP	1 to	-	
event		<maxmeas Event></maxmeas 		
>Intra-frequency event identity	MP		Intra-	
			frequency	
			identity	
			10.3.7.34	
>Triggering condition 1	CV-clause		Enumerated(Indicates which cells can
	0		Active set	trigger the event
			Cells, Monitorod	
			set cells.	
			Active set	
			cells and	
			monitored	
>Triggering condition 2	CV-clause		Enumerated(Indicates which cells can
	6		Active set	trigger the event
			cells,	
			Monitored	
			Active set	
			cells and	
			monitored	
			set cells,	
			cells	
			Detected set	
			cells and	
			monitored	
>Reporting Range Constant	CV-clause		Real(0 14.5	In dB In event 1a 1b
shopening hange constant	2		by step of	
>Cells forbidden to affect	CV-clause	1 to	0.5)	In event 1a 1b
Reporting range	1	<maxcellm< td=""><td></td><td></td></maxcellm<>		
>>CHOICE mode	MP			
>>>FDD			_	
>>>>Primary CPICH info	MP		Primary	
>>>TDD			10.0.00	
>>>Primary CCPCH info	MP		Primary	
			CCPCH info	
> \0/			10.3.6.57	
>vv	2		hv step of	
	-		0.1)	
>Hysteresis	MP		Real(07.5	In dB.
			by step of	
>Threshold used frequency	CV-clause		U.S) Integer	Range used depend on
	3		(-115165)	measurement quantity.
				CPICH RSCP -11525 dBm
				CPICH Ec/No -240 dB
				Pathloss 30165dB
>Reporting deactivation	CV-clause		Integer(0_1	In event 1a
threshold	4		2, 3, 4, 5, 6,	Indicates the maximum
			7)	number of cells allowed in the
				active set in order for event
				0 means not applicable

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

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

10.3.7.40 Intra-frequency measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Intra-frequency measurement identity	MD		Measuremen t identity 10.3.7.48	The intra-frequency measurement identity 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 measuremen t 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 10.3.7.43	
Reporting information for state CELL_DCH	OP		Reporting information for state CELL_DCH 10.3.7.62	Note 1

NOTE 1: 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
Reporting 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 detected 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	Need	Multi	Type and	Semantics description
name			reference	
SFN-SFN observed time	MP		Enumerated(
difference reporting indicator			No report,	
			type 1, type 2)	
CHOICE mode	MP			
>FDD				
>>Reporting quantity	MP		Enumerated(
			CPICH	
			Ec/N0,	
			CPICH	
			RSCP,	
			Pathloss, No	
			report)	
>TDD				
>>Reporting quantity list	MP	1 to 2		
>>>Reporting quantity	MP		Enumerated(
			Timeslot	
			ISCP,	
			Primary	
			CCPCH	
			RSCP, No	
			report)	

10.3.7.43 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)	

10.3.7.44 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" FDD cell has the largest value when the measurement quantity is "Ec/No" or "RSCP". On the other hand, the "best" cell has the smallest value when the measurement quantity is "Pathloss". The "best" TDD cell has the largest value when measurement quantity is "Primary CCPCH RSCP".
Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE Measurement	MP			
>Intra-frequency measured			Intra-	
results list			frequency	
			measured	
			results list	
			10.3.7.35	
>Inter-frequency measured			Inter-	
results list			frequency	
			measured	
			results list	
			10.3.7.15	
>Inter-RAT measured results list			Inter-RAT	
			measured	
			results list	
			10.3.7.26	
>Traffic volume measured			Traffic	
results list			volume	
			measured	
			results list	
			10.3.7.67	
>Quality measured results list			Quality	
			measured	
			results list	
			10.3.7.55	
>UE Internal measured results			UE Internal	
			measured	
			results	
			10.3.7.76	
>UE positioning measured			UE	
results			positioning	
			measured	
			results	
			10.3.7.99	

10.3.7.45 Measured results on RACH

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

Information Element/group name	Need	Multi	Type and reference	Semantics description	Version
Measurement result for current					
	MD				
	IVIE				
>>CHOICE measurement	MP				
quantity					
>>>CPICH Ec/N0			Integer(050)	In dB. According to CPICH_Ec/No in [19]	
>>>CPICH RSCP			Integer(091	In dBm. According	
)	to CPICH_RSCP_LE V in [19]	
>>>Pathloss			Integer(461 58)	In dB	
>TDD					
>>CHOICE TDD option >>>3.84 Mcps TDD	MP				REL-4 REL-4
>>>>Timeslot List	OP	1 to 14			
>>>>Timeslot ISCP	MP		Timeslot	The UE shall	
			ISCP info 10.3.7.65	report the Timeslot ISCP in the same order as indicated in the cell info	
>>>1.28 Mcps TDD					REL-4
>>>>Timeslot List >>>>>Timeslot ISCP	OP MP	1 to 6	Timeslot ISCP info 10.3.7.65	The UE shall report the Timeslot ISCP in the same order as indicated in the	REL-4 REL-4
>>Primary CCPCH RSCP	OP		Primary CCPCH RSCP info	cell info	
Measurement results for	OP	1 to 7	10.3.7.34		
monitored cells					
>SFN-SFN observed time difference	OP		SFN-SFN observed time difference 10.3.7.63	It is absent for current cell	
>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60		
>>>CHOICE measurement	OP			It is absent for	
>>>CPICH Ec/N0			Integer(050	In dB. Accordina	
)	to CPICH_Ec/No in [19].	
>>>>CPICH RSCP			Integer(091)	In dBm. According to CPICH_RSCP_LE V in [19].	
>>>Pathloss			Integer(461 58)	In dB	
>>TDD					
>>>Cell parameters Id	MP		Cell parameters Id 10.3.6.9		
>>>Primary CCPCH RSCP	MP		Primary		

	CCPCH RSCP info	
	10.3.7.54	

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

10.3.7.46 Measurement Command

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

10.3.7.47 Measurement control system information

Information element/Group	Need	Multi	Type and	Semantics description
Lise of HCS	MP		Enumerated	Indicates if the serving cell
			(Not used.	belongs to a HCS structure
			used)	<u> </u>
Cell_selection_and_reselection_	MP		Enumerated	Choice of measurement
quality_measure			(CPICH	(CPICH Ec/N0 or CPICH
			Ec/N0,	RSCP) to use as quality
				measure Q.
Intro fraguanay magguramant			RSCP)	
system information	OP		froquency	
system mornation			measuremen	
			t system	
			information	
			10.3.7.40	
Inter-frequency measurement	OP		Inter-	
system information			frequency	
			measuremen	
			t system	
			information	
			10.3.7.20	
inter-RAT measurement system	OP		Inter-RAT	
momation			t system	
			information	
			10.3.7.31	
Traffic volume measurement	OP		Traffic	
system information			volume	
			measuremen	
			t system	
			information	
	0.0		10.3.7.73	
UE Internal measurement	OP			
system mormation			t system	
			information	
			10.3.7.81	

10.3.7.48 Measurement Identity

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	MP		Integer(116)	

10.3.7.49 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)	

10.3.7.50 Measurement Type

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Measurement Type	MP		Enumerated(Intra-	
			frequency,	
			Inter-frequency,	
			Inter-RAT,	
			Traffic volume,	
			Quality,	
			UE internal, UE	
			positioning)	

10.3.7.51 Measurement validity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE state	MP		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'.

10.3.7.52 Observed time difference to GSM cell

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Observed time difference to GSM cell	OP		Integer(0,,40 95)	According to GSM_TIME in [19] and [20]

10.3.7.53 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	MD		Integer(1, 2, 4, 8, 16, 32, 64, Infinity)	The default value is infinity.
Reporting interval	MP		Integer(250, 500, 1000, 2000, 3000, 4000, 6000, 8000, 12000, 16000, 20000, 24000, 28000, 32000, 64000)	Indicates the interval of periodical report. Interval in milliseconds

10.3.7.53a PLMN identities of neighbour cells

This IE contains the PLMN identities of neighbour cells.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PLMNs of intra-frequency cells list	OP	1 to <maxcellm eas></maxcellm 		
>PLMN identity	MD		PLMN identity 10.3.1.11	Default value is the previous "PLMN identity" in the list. The default value for the first PLMN in the list is the identity of the selected PLMN if the "PLMN type" in the variable SELECTED_PLMN has the value "GSM-MAP"; otherwise, the first occurrence is MP.
PLMNs of inter-frequency cells list	OP	1 to <maxcellm eas></maxcellm 		
>PLMN identity	MD		PLMN identity 10.3.1.11	Default value is the previous "PLMN identity" in the list. The default value for the first PLMN in the list is the identity of the selected PLMN if the "PLMN type" in the variable SELECTED_PLMN has the value "GSM-MAP"; otherwise, the first occurrence is MP.
PLMNs of inter-RAT cells list	OP	1 to <maxcellm eas></maxcellm 		
>PLMN identity	MD		PLMN identity 10.3.1.11	Default value is the previous "PLMN identity" in the list. The default value for the first PLMN in the list is the identity of the selected PLMN if the "PLMN type" in the variable SELECTED_PLMN has the value "GSM-MAP"; otherwise, the first occurrence is MP.

10.3.7.54 Primary CCPCH RSCP info

NOTE: Only for TDD

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
Primary CCPCH RSCP	MP		Integer(091)	According to P- CCPCH_RSCP_LEV in [19] and [20]

10.3.7.54a Qhcs

Information Element/Group	Need	Multi	Type and Reference	Semantics description
Qhcs	MP		Integer(099)	Qhcs, mapped from CPICH Ec/No (FDD), see [4] [dB] 0: -24 1: -23.5 2: -23 3: -22.5 45: -1.5 46: -1 47: -0.5 48: 0 49: (spare) 98: (spare) 99: (spare)
				Qhcs, mapped from CPICH RSCP (FDD), see [4] [dBm] 0: -115 1: -114 2: -113 : 88: -27 89: -26 90: -(spare) 91: -(spare) 91: -(spare) 99: -(spare)
				Qhcs, mapped from PCCPCH RSCP (TDD), see [4] [dBm] 0: -115 1: -114 2: -113 : 88: -27 89: -26 90: -(spare) 91: -(spare) : 98: -(spare) 99: -(spare)

		Qhcs level, mapped from
		Averaged received signal level
		RXLEV (GSM), see [4]
		[dBm]
		0: -110
		1: -109
		2: -108
		2100
		6149 60. 40
		62: -48
		63: -47
		64: -46
		65: -45
		66: -44
		67: -43
		68: -42
		69: -41
		70: -40
		71: -39
		72: -38
		73: -37
		74 [·] -(spare)
		98: -(spare)
		$\frac{90.}{(apara)}$
		99(spare)

10.3.7.55 Quality measured results list

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
BLER measurement results	OP	1 to		
		<maxtrch< td=""><td></td><td></td></maxtrch<>		
		>		
>DL Transport channel identity	MP		Transport	transport channel type = DCH
			channel	
			identity	
			10.3.5.18	
>DL Transport Channel BLER	OP		Integer	According to BLER_LOG in
·			(063)	[19] and [20]
CHOICE mode	MP			
>FDD				No data
>TDD				
>>SIR measurement results	OP	1 to		SIR measurements for DL
		<maxcctr< td=""><td></td><td>CCTrCH</td></maxcctr<>		CCTrCH
		CH>		
>>>TFCS ID	MP		Integer(18)	
>>>Timeslot list	MP	1 to		for all timeslot on which the
		<maxts></maxts>		CCTrCH is mapped on
>>>>SIR	MP		Integer(063	According to UE_SIR in [20]
)	

10.3.7.56 Quality measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Quality reporting quantity	OP		Quality reporting quantity 10.3.7.59	
CHOICE report criteria	MP			
 >Quality measurement reporting criteria >Periodical reporting criteria 			Quality measuremen t reporting criteria 10.3.7.58 Periodical reporting criteria 10.3.7.53	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement

10.3.7.57 Quality measurement event results

Information Element/Group	Need	Multi	Type and reference	Semantics description
Transport channels causing the event	OP	1 to <maxtrch ></maxtrch 		
>DL Transport channel identity	MP		Transport channel identity 10.3.5.18	transport channel type = DCH

10.3.7.58 Quality measurement reporting criteria

Event 5a: Number of bad CRCs on a certain transport channel exceeds a threshold.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters sent for each transport channel	OP	1 to <maxtrch< td=""><td></td><td></td></maxtrch<>		
>DL Transport channel identity	MP	>	Transport channel identity 10.3.5.18	transport channel type = DCH
>Total CRC	MP		Integer(151 2)	Number of CRCs
>Bad CRC	MP		Integer(151 2)	Number of CRCs
>Pending after trigger	MP		Integer(151 2)	Number of CRCs

10.3.7.59 Quality reporting quantity

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
DL Transport Channel BLER	MP		Boolean	TRUE means report requested
Transport channels for BLER reporting	CV-BLER reporting	1 to <maxtrch ></maxtrch 		The default, if no transport channel identities are present, is that the BLER is reported for all downlink transport channels
>DL Transport channel identity	MP		Transport channel identity 10.3.5.18	transport channel type = DCH
CHOICE mode	MP			
>FDD				No data
>TDD				
>>SIR measurement list	OP	1 to <maxcctr CH></maxcctr 		SIR measurements shall be reported for all listed TFCS IDs
>>>TFCS ID	MP		Integer(18)	

Condition	Explanation
BLER reporting	This information element is <u>not needed absent</u> if 'DL Transport Channel BLER' is 'False' and optional, if 'DL Transport Channel BLER' is 'True'

10.3.7.60 Reference time difference to cell

In the System Information message, the reference time difference to cell indicates the timing difference between the primary CCPCH of the current cell and the primary CCPCH of a neighbouring cell.

In the Measurement Control message, the reference time difference to cell indicates the timing difference between UE uplink transmission timing and the primary CCPCH of a neighbouring cell.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE accuracy	MP			
>40 chips				
>>Reference time difference	MP		Integer(0384 00 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		Integer(0 38400 by step of 2560)	In chips

10.3.7.61 Reporting Cell Status

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE reported cell	MP			•
>Report cells within active set				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within monitored set cells on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within active set and/or monitored set cells on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within detected set on used frequency				
>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within monitored set and/or detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report all active set cells + cells within monitored set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within monitored set and/or detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	

>Report cells within virtual active			
set			
>>Maximum number of reported	MP	Integer(16)	
cells		-	
>Report cells within monitored			
set on non-used frequency			
>>Maximum number of reported	MP	Integer(16)	
cells			
>Report cells within monitored			
and/or active set on non-used			
frequency			
>>Maximum number of reported	MP	Integer(16)	
cells			
>Report all virtual active set			
cells + cells within monitored set			
on non-used frequency			
>>Maximum number of reported	MP	Enumerated	
cells		(virtual/active set	
		cells+1,	
		virtual/active set	
		cells+2,,	
		virtual/active set	
		cells+6)	
>Report cells within active set or			
within virtual active set			
>>Maximum number of reported	MP	Integer (112)	
cells			
>Report cells within active			
and/or monitored set on used			
frequency or within active and/or			
monitored set on non-used			
frequency			
>>Maximum number of reported	MP	Integer(112)	
cells			

10.3.7.62 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	
Measurement Reporting Mode	MP		Measurement Reporting Mode 10.3.7.49	
CHOICE report criteria	MP			
>Intra-frequency measurement reporting criteria			Intra-frequency measurement reporting criteria 10.3.7.39	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.53	

10.3.7.63 SFN-SFN observed time difference

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE type	MP			
>Type 1			Integer(09830399)	According to T1_SFN- SFN_TIME in [19] and [20]
>Type 2			Integer(040961)	According to T2_SFN- SFN_TIME in [19] and [20]

10.3.7.64 Time to trigger

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Time to trigger	MP		Integer(0, 10, 20, 40, 60, 80, 100, 120, 160, 200, 240, 320, 640, 1280, 2560, 5000)	Time in ms

10.3.7.65 Timeslot ISCP info

NOTE: Only for TDD

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
Timeslot ISCP	MP		Integer (091)	According to UE_TS_ISCP_LEV in [20]

10.3.7.66 Traffic volume event identity

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Traffic volume event identity	MP		Enumerated(4a, 4b)	

10.3.7.67 Traffic volume measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Traffic volume measurement results	OP	1 to <maxrb ></maxrb 		
>RB Identity	MP		RB Identity 10.3.4.16	
>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 of 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

10.3.7.68 Traffic volume measurement

Information Element/Group	Need	Multi	Type and	Semantics description
			Troffic	
Chiest	OP		Trainic	
Object			volume	
			measuremen	
- //	0.5		10.3.7.70	
I raffic volume measurement	OP		Iraffic	
quantity			volume	
			measuremen	
			t quantity	
			10.3.7.71	
Traffic volume reporting quantity	OP		Traffic	
			volume	
			reporting	
			quantity	
			10.3.7.74	
Measurement validity	OP		Measuremen	
			t validity	
			10.3.7.51	
CHOICE report criteria	MP			
>Traffic volume measurement			Traffic	
reporting criteria			volume	
			measuremen	
			t reporting	
			criteria	
			10.3.7.72	
>Periodical reporting criteria			Periodical	
1 3			reporting	
			criteria	
			10.3.7.53	
>No reporting				(no data)
				Chosen when this
				measurement only is used as
				additional measurement to
				another measurement

10.3.7.69 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
Uplink transport channel type causing the event	MP		Enumerated(DCH,RACH, USCH)	USCH is TDD only
UL Transport Channel identity	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	
Traffic volume event identity	MP		Traffic volume event identity 10.3.7.66	

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

10.3.7.70 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 ></maxtrch 		
>Uplink transport channel type	MP		Enumerated(DCH,RACH, USCH)	USCH is TDD only
>UL Target Transport Channel ID	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	

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

10.3.7.71 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)	The use of this parameter is described in section 8.6.7.10.
Time Interval to take an average or a variance	CV-A/V		Integer(20, 40,260, by steps of 20)	In ms

Condition	Explanation
A/V	This IE is <u>mandatory</u> present when "Average RLC buffer" or "Variance of RLC buffer payload" is chosen and not needed otherwise.

10.3.7.72 Traffic volume measurement reporting criteria

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

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

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

Information Element/Group	Need	Multi	Type and reference	Semantics description
Parameters sent for each transport channel	OP	1 to <maxtrch ></maxtrch 		
>Uplink transport channel type	OP		Enumerated(DCH,RACH, USCH)	USCH is TDD only
>UL Transport Channel ID	CV-UL- DCH/USC H		Transport channel identity 10.3.5.18	
>Parameters required for each Event	OP	1 to <maxmeas perEvent></maxmeas 		
>>Traffic volume event identity	MP		Traffic volume event identity 10.3.7.66	
>>Reporting Threshold	MP		Enumerated(8,16,32,64,1 28,256,512,1 024,2K,3K,4 K,6K,8K,12K ,16K,24K,32 K,48K,64K,9 6K,128K,192 K,256K,384 K,512K,768 K)	Threshold in bytes And N Kbytes = N*1024 bytes
>>Time to trigger	OP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms
>>Pending time after trigger	OP		Integer(250, 500, 1000, 2000, 4000, 8000, 16000)	Indicates the period of time during which it is forbidden to send any new measurement reports with the same Traffic volume event identity even if the triggering condition is fulfilled. Time in milliseconds
>>Tx interruption after trigger	OP		Integer (250, 500, 1000, 2000, 4000, 8000, 16000)	Time in milliseconds. Indicates how long the UE shall block DTCH transmissions on the RACH after a measurement report is triggered.

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

10.3.7.73 Traffic volume measurement system information

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Information Element/Group name	Need	Multi	Type and reference	Semantics description
Traffic volume measurement identity	MD		Measuremen t identity 10.3.7.48	The traffic volume measurement identity has default value 4.
Traffic volume measurement object	OP		Traffic volume measuremen t object	

		10.3.7.70
Traffic volume	OP	Traffic
measurement quantity		volume
		measuremen
		t quantity
		10.3.7.71
Traffic volume reporting quantity	OP	Traffic
		volume
		reporting
		quantity
		10.3.7.74
Measurement validity	OP	Measuremen
		t validity
		10.3.7.51
Measurement Reporting Mode	MP	Measuremen
		t Reporting
		Mode
	140	10.3.7.49
CHOICE reporting criteria	MP	— <i>— —</i>
> I raffic volume measurement		
reporting criteria		volume
		measuremen
		t reporting
- Deriedical reporting criteria		Deriodical
>Penodical reporting criteria		reporting
		aritorio
		10.3.7.53

10.3.7.74 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	Need	Multi	Type and	Semantics description
name			reference	
RLC Buffer Payload for each RB	MP		Boolean	
Average of RLC Buffer Payload for each RB	MP		Boolean	
Variance of RLC Buffer Payload for each RB	MP		Boolean	

10.3.7.75 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)	

10.3.7.76 UE internal measured results

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reference	description	
CHOICE mode	MP				
>FDD					
>>UE Transmitted Power	OP		UE Transmitted Power info 10.3.7.85		
>>UE Rx-Tx report entries	OP	1 to <maxrl></maxrl>			
>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	Primary CPICH info for each cell included in the active set	
>>>UE Rx-Tx time difference type 1	MP		UE Rx-Tx time difference type 1 10.3.7.83	UE Rx-Tx time difference in chip for each RL included in the active set	
>TDD					
>>UE Transmitted Power list	OP	1 to <maxts></maxts>		UE Transmitted Power for each used uplink timeslot in ascending timeslot number order	
>>>UE Transmitted Power	MP		UE Transmitted Power info 10.3.7.85		
>>CHOICE TDD option	MP				REL-4
>>>3.84 Mcps TDD					REL-4
>>>>Applied TA	OP		Uplink Timing Advance 10.3.6.95	Uplink timing advance applied by the UE	
>>>1.28 Mcps TDD					REL-4
>>>> UpPCH _{ADV}	OP		UpPCH _{ADV} 10.3.7.112		REL-4

10.3.7.77 UE internal measurement

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
UE internal measurement	OP		UE internal	
quantity			measuremen	
			t quantity	
			10.3.7.79	
UE internal reporting quantity	OP		UE internal	
			reporting	
			quantity	
			10.3.7.82	
CHOICE report criteria	MP			
>UE internal measurement			UE internal	
reporting criteria			measuremen	
			t reporting	
			criteria	
			10.3.7.80	
>Periodical reporting criteria			Periodical	
			reporting	
			criteria	
			10.3.7.53	
>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 <i>report criteria</i> 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

10.3.7.78 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 10.3.7.75	
CHOICE mode	MP			
>FDD				
>Primary CPICH info	CV- <i>clause</i> 1		Primary CPICH info 10.3.6.60	
>TDD				(no data)

I	
5	

Condition	Explanation
Clause 1	This IE is mandatory <u>present</u> if "UE internal event identity" is set to "6f" or "6g", otherwise the IE is not needed

10.3.7.79 UE internal measurement quantity

The quantity the UE shall measure in case of UE internal measurement.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE mode	MP			
>FDD				
>>Measurement quantity	MP		Enumerated(UE Transmitted Power, UTRA Carrier RSSI, UE RSSI, UE	
			difference)	
>>Measurement quantity	MP		Enumerated(UE Transmitted Power, UTRA Carrier RSSI)	
Filter coefficient	MP		Filter coefficient 10.3.7.9	

10.3.7.80 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 UEs 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 <maxmeas Event></maxmeas 		
>UE internal event identity	MP		UE internal event identity 10.3.7.75	
>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(- 5033)	Power in dBm. In event 6a, 6b.
>UE Rx-Tx time difference threshold	CV-clause 2		Integer(768 1280)	Time difference in chip. In event 6f, 6g.

Condition	Explanation
Clause 1	The IE is mandatory <u>present</u> if UE internal event
	needed
Clause 2	The IE is mandatory <u>present</u> if "UE internal event identity" is set to "6f" or "6g", otherwise the IE is not needed

10.3.7.81 UE internal measurement system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE internal measurement identity	MD		Measuremen t identity 10.3.7.48	The UE internal measurement identity has default value 5.
UE internal measurement quantity	MP		UE internal measuremen t quantity 10.3.7.79	

10.3.7.82 UE Internal reporting quantity

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

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reference	description	
UE Transmitted Power	MP		Boolean		
CHOICE mode	MP				
>FDD					
>>UE Rx-Tx time difference	MP		Boolean		
>TDD					
>>CHOICE TDD option					REL-4
>>>3.84 Mcps TDD				(no data)	REL-4
>>Applied TA	MP		Boolean		
>>>1.28 Mcps TDD					REL-4
>>>> UpPCH _{ADV}	MP		Boolean		REL-4

10.3.7.83 UE Rx-Tx time difference type 1

The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time), 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 type 1	MP		Integer(7681280)	In chips.

10.3.7.84 UE Rx-Tx time difference type 2

The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time), of the downlink DPCH frame from the measured radio link.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE Rx-Tx time difference type 2	MP		Real(768.0 1279.9375 by step	Resolution of 1/16 of a chip.
			of 0.0625)	

10.3.7.85 UE Transmitted Power info

Information Element/Group name	Need	Multi	IE type and reference	Semantics description
UE Transmitted Power	MP		Integer (0104)	According to UE_TX_POWER in [19] and [20]

10.3.7.86 UE positioning Ciphering info

This IE contains information for the ciphering of UE positioning assistance data broadcast in System Information.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Ciphering Key Flag	MP		Bitstring(1)	See note 1
Ciphering Serial Number	MP		Integer(065	The serial number used in the
			535)	DES ciphering algorithm

- 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

10.3.7.87 UE positioning Error

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Error reason	MP		Enumerated(ER1, ER2, ER3, ER4, ER5, ER6, ER7, ER8)	Note 1
GPS Additional Assistance Data Request	OP		UE positioning GPS Additional Assistance Data Request 10.3.7.88a	

NOTE 1: The following table gives the mapping of the IE "Error reason"

Value	Indication
ER1	There were not enough cells to be received when performing mobile-based OTDOA-IPDL.
ER2	There were not enough GPS satellites to be received, when performing UE-based GPS location.
ER3	Location calculation assistance data missing.
ER4	Requested method not supported.
ER5	Undefined error.
ER6	Location request denied by the user.
ER7	Location request not processed by the user and timeout
ER8	Reference cell for GPS is not the serving cell

10.3.7.88 UE positioning GPS acquisition assistance

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

Information Element/Group	Need	Multi	Type and	Semantics description
	MD		Reference	
	MP			CDC Time of Week sounded in
>UTRAN reference time				GPS Time of Week counted in microseconds, given as GPS TOW in milliseconds and GPS TOW remainder in microseconds, UTRAN reference time = 1000 * GPS TOW msec + GPS
				TOW rem usec
>>GPS TOW msec	MP		Integer(06. 048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit)
>>GPS TOW rem usec >>CHOICE mode >>>FDD	MP		Integer(099 9)	GPS Time of Week in microseconds MOD 1000.
>>>>Primary CPICH Info	OP		Primary CPICH Info 10.3.6.60	Identifies the reference cell for the GPS TOW-SFN relationship
>>>100	0.5		0	
>>>>cell parameters id	OP		parameters id 10.3.6.9	Identifies the reference cell for the GPS TOW-SFN relationship
>>SFN	MP		Integer(040 95)	
>GPS reference time only				
>>GPS TOW msec	MP		Integer(06. 048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit).
Satellite information	MP	1 to <maxsat></maxsat>		
>SatID	MP		Integer (063)	
>Doppler (0"' order term)	MP		Real(- 512051175 by step of 2.5)	Hz
>Extra Doppler	OP			
>>Doppler (1 st order term)	MP		Real (0.9660.48 3 by step of 0.023)	Scaling factor 1/42
>>Doppler Uncertainty	MP		Enumerated (12.5,25,50, 100,200)	Hz
>Code Phase	MP		Integer(010 22)	Chips, specifies the centre of the search window
>Integer Code Phase	MP		Integer(019)	1023 chip segments
>GPS Bit number	MP		Integer(03)	Specifies GPS bit number (20 1023 chip segments)
>Code Phase Search Window	MP		Integer(1023 ,1,2,3,4,6,8,1 2,16,24,32,4 8,64,96,128, 192)	Specifies the width of the search window.
>Azimuth and Elevation	OP			
>>Azimuth	MP		Real(0348. 75 by step of 11.25)	Degrees
>>Elevation	MP		Real(078.7 5 by step of 11.25)	Degrees

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

10.3.7.88a UE positioning GPS Additional Assistance Data Request

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Almanac	MP		Boolean	TRUE means requested
UTC Model	MP		Boolean	TRUE means requested
Ionospheric model	MP		Boolean	TRUE means requested
Navigation Model	MP		Boolean	TRUE means requested
DGPS Corrections	MP		Boolean	TRUE means requested
Reference Location	MP		Boolean	TRUE means requested
Reference Time	MP		Boolean	TRUE means requested
Acquisition Assistance	MP		Boolean	TRUE means requested
Real-Time Integrity	MP		Boolean	TRUE means requested
Navigation Model Additional data	CV- Navigation Model			this IE is present only if "Navigation Model" is set to TRUE otherwise it is absent
>GPS Week	MP		Integer (01023)	
>GPS_Toe	MP		Integer (0167)	GPS time of ephemeris in hours of the latest ephemeris set contained by the UE
>T-Toe limit	MP		Integer (010)	ephemeris age tolerance of the UE to UTRAN in hours
>Satellites list related data	MP	0 to <maxsat></maxsat>		
>>SatID	MP		Integer (063)	
>>IODE	MP		Integer (0255)	Issue of Data Ephemeris for SatID

10.3.7.89 UE positioning GPS almanac

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

Information Element/Group	Need	Multi	Type and	Semantics description
name	MD		Reference	
VVINa Optollite information	MP	4.1-	Bit string(8)	
Satellite information	MP	1 to		
		<maxsal></maxsal>		0. (40)
>DataID	MP		Integer(03)	See [12]
>SatID	MP		Enumerated(063)	Satellite ID
>e	MP		Bit string(16)	Eccentricity [12]
>t _{oa}	MP		Bit string(8)	Reference Time Ephemeris [12]
>δi	MP		Bit string(16)	
>OMEGADOT	MP		Bit string(16)	Longitude of Ascending Node
				of Orbit Plane at Weekly
				Epoch (semi-circles/sec) [12]
>SV Health	MP		Bit string(8)	10
>A ^{1/2}	MP		Bit string(24)	Semi-Major Axis (meters) ^{1/2} [12]
>OMEGA ₀	MP		Bit string(24)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles) [12]
>M ₀	MP		Bit string(24)	Mean Anomaly at Reference Time (semi-circles) [12]
>00	MP		Bit string(24)	Argument of Perigee (semi- circles) [12]
>af ₀	MP		Bit string(11)	apparent clock correction [12]
>af ₁	MP		Bit string(11)	apparent clock correction [12]
SV Global Health	OP		Bit	This enables GPS time
			string(364)	recovery and possibly
				extended GPS correlation
				intervals. It is specified in page
				25 of subframes 4 and 5 [12]

10.3.7.90 UE positioning GPS assistance data

This IE contains GPS assistance data.

UE positioning GPS reference timeOPUE positioning GPS reference time 10.3.7.96UE positioning GPS reference time 10.3.7.96UE position UE position UE position GPS DGPS correctionsOPUE position GPS DGPS correctionsOPUE positioning GPS DGPS correctionsOPUE positioning GPS DGPS correctionsOPUE positioning GPS DGPS correctionsOPUE positioning GPS DGPS correctionsOPUE positioning GPS DGPS correctionsUE positioning GPS navigation modelOPUE positioning GPS navigation modelOPUE positioning GPS ionospheric modelUE positioning GPS ionospheric modelOPUE positioning GPS GPS PS UTC modelOPUE positioning GPS ionospheric modelUE positioning GPS admanac assistanceOPUE positioning GPS ionospheric modelOPUE positioning GPS ionospheric modelUE positioning GPS admanac uLe positioning GPS acquisition assistanceOPUE positioning GPS ionospheric modelUE positioning GPS acquisition assistanceOPUE positioning GPS ionospheric modelUE positioning GPS ionospheric modelUE positioning GPS acquisition assistanceOPUE positioning GPS ionospheric modelUE positioning GPS ionospheric modelUE positioning GPS real-time integrity integrityOPUE positioning GPS ionospheric model	Information Element/Group	Need	Multi	Type and Reference	Semantics description
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				10 3 7 95	

10.3.7.90a UE positioning GPS Ephemeris and Clock Correction parameters

This IE contains information for GPS ephemeris and clock correction.

Information Element/Group	Need	Multi	Type and Reference	Semantics description
C/A or P op 1 2	MD		Rit string(2)	Codo(c) on L2 Channel [12]
	MD		Bit string(2)	Lisor Papao Accuracy [12]
SV/ Health			Bit string(4)	[12]
	MD		Bit string(0)	[12] Issue of Data, Clock [12]
I 2 P Data Flag	MD		Bit string(1)	
SF 1 Reserved	MP		Bit string(1)	[12]
	MD		Bit string(8)	[12] Estimated group delay
GD	IVII		Dit Stillig(0)	differential [12]
t _{oc}	MP		Bit string(16 ⁾	apparent clock correction [12]
af ₂	MP		Bit string(8)	apparent clock correction [12]
af ₁	MP		Bit string(16)	apparent clock correction [12]
af ₀	MP		Bit string(22)	apparent clock correction [12]
C _{rs}	MP		Bit string(16)	Amplitude of the Sine Harmonic Correction Term to the Orbit Radius (meters) [12]
Δn	MP		Bit string(16)	Mean Motion Difference From Computed Value (semi- circles/sec) [12]
M ₀	MP		Bit string(32)	Mean Anomaly at Reference Time (semi-circles) [12]
C _{uc}	MP		Bit string(16)	Amplitude of the Cosine Harmonic Correction Term To The Argument Of Latitude (radians) [12]
е	MP		Bit string(32)	С
C _{us}	MP		Bit string(16)	Amplitude of the Sine Harmonic Correction Term To The Argument Of Latitude (radians) [12]
(A) ^{1/2}	MP		Bit string(32)	Semi-Major Axis (meters) ^{1/2} [12]
t _{oe}	MP		Bit string(16)	Reference Time Ephemeris [12]
Fit Interval Flag	MP		Bit string(1)	[12]
AODO	MP		Bit string(5)	Age Of Data Offset [12]
C _{ic}	MP		Bit string(16)	Amplitude of the Cosine Harmonic Correction Term To The Angle Of Inclination (radians) [12]
OMEGA ₀	MP		Bit string(32)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles) [12]
C _{is}	MP		Bit string(16)	Amplitude of the Sine Harmonic Correction Term To The Angle Of Inclination (radians) [12]
iO	MP		Bit string(32)	Inclination Angle at Reference Time (semi-circles) [12]
C _{rc}	MP		Bit string(16)	Amplitude of the Cosine Harmonic Correction Term to the Orbit Radius (meters) [12]
ω	MP		Bit string(32)	Argument of Perigee (semi- circles) [12]
OMEGAdot	MP		Bit string(24)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles/sec) [12]
ldot	MP		Bit string(14)	Rate of Inclination Angle (semi- circles/sec) [12]

10.3.7.91 UE positioning GPS DGPS corrections

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

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS TOW sec	MP		Integer(060 4799)	seconds GPS time-of-week when the DGPS corrections were calculated
Status/Health	MP		Enumerated(UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.2, UDRE scale 0.1, no data, invalid data)	
DPGS information	CV- Status/Hea Ith	1 to <maxsat></maxsat>		If the Cipher information is included these fields are ciphered.
>SatID	MP		Enumerated (063)	
>IODE	MP		Integer(025	
>UDRE	MP		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	The value in this field shall be multiplied by the UDRE Scale Factor in the IE Status/Health to determine the final UDRE estimate for the particular satellite.
>PRC	MP		Real(- 655.04655. 04 by step of 0.32)	meters (different from [13])
>RRC	MP		Real(- 4.0644.064 by step of 0.032)	meters/sec (different from [13])
>Delta PRC2	MP		Integer(- 127127)	meters
>Delta RRC2	MP		Real(- 0.2240.224 by step of 0.032)	meters/sec
>Delta PRC3	CV-DCCH		Integer(- 127127)	meters
>Delta RRC3	CV-DCCH		Real(- 0.2240.224 by step of 0.032)	meters/sec

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

10.3.7.92 UE positioning GPS ionospheric model

The IE contains fields needed to model the propagation delays of the GPS signals through the ionosphere.

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
α ₀	MP		Bit string(8)	Note 1
α ₁	MP		Bit string(8)	Note 1
α ₂	MP		Bit string(8)	Note 1
α ₃	MP		Bit string(8)	Note 1
βο	MP		Bit string(8)	Note 2
β ₁	MP		Bit string(8)	Note 2
β2	MP		Bit string(8)	Note 2
β ₃	MP		Bit string(8)	Note 2

- NOTE 1: The parameters αn are the coefficients of a cubic equation representing the amplitude of the vertical delay [12].
- NOTE 2: The parameters β n are the coefficients of a cubic equation representing the period of the ionospheric model [12].

10.3.7.93 UE positioning GPS measured results

Information Element/Group	Need	Multi	Type and Reference	Semantics description
CHOICE mode			Reference	
>FDD				
>>Primary CPICH Info	OP		Primary CPICH Info 10.3.6.60	Identifies the reference cell for the GPS TOW-SFN relationship
>TDD				
>>cell parameters id	OP		Cell parameters id 10.3.6.9	Identifies the reference cell for the GPS TOW-SFN relationship
Reference SFN	OP		Integer(040 95)	The SFN for which the location is valid
GPS TOW msec	MP		Integer(06. 048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit). 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 Time of Week in microseconds = 1000 * GPS TOW msec + GPS TOW rem usec
GPS TOW rem usec	CV- capability and request		Integer(099 9)	GPS Time of Week in microseconds MOD 1000.
Measurement Parameters	MP	1 to <maxsat></maxsat>		
>Satellite ID	MP		Enumerated(063)	
>C/N _o	MP		Integer(063)	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(- 327683276 8)	Hz, scale factor 0.2.
>Whole GPS Chips	MP		Integer(010 23)	Unit in GPS chips
>Fractional GPS Chips	MP		Integer(0(2 ¹ ⁰ -1))	Scale factor 2 ⁻¹⁰
>Multipath Indicator	MP		Enumerated(NM, low, medium, high)	See note 1
>Pseudorange RMS Error	MP		Enumerated(range index 0range index 63)	See note 2

Condition	Explanation
Capability and request	This field is <u>mandatory present included only</u> if the UE has this capability <i>and</i> if it was requested in the UE positioning reporting quantity <u>and not needed</u> <u>otherwise.</u>

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
Hiah	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
1	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

10.3.7.94 UE positioning GPS navigation model

This IE contain information required to manage the transfer of precise navigation data to the GPS-capable UE.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Satellite information	MP	1 to <maxsat ></maxsat 		
>SatID	MP		Enumerated(063)	Satellite ID
>Satellite Status	MP		Enumerated(NS_NN, ES_SN, ES_NN, REVD)	See note 1
>GPS Ephemeris and Clock Correction parameters	CV- Satellite status		UE positioning GPS Ephemeris and Clock Correction parameters 10.3.7.90a	

NOTE 1: The UE shall interpret enumerated symbols as follows.

Value	Indication
NS_NN	New satellite, new Navigation Model
ES_SN	Existing satellite, same Navigation Model
ES_NN	Existing satellite, new Navigation Model
REVD	Reserved

Condition	Explanation
Satellite status	The IE is not needed present unless IE "Satellite
	status" is ES_SN and mandatory present otherwise.

10.3.7.95 UE positioning GPS real-time integrity

This IE contains parameters that describe the real-time status of the GPS constellation.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Satellite information	MP	1 to <maxsat ></maxsat 		
>BadSatID	MP		Enumerated(063)	

10.3.7.96 UE positioning GPS reference time

Information Element/Group	Need	Multi	Type and Reference	Semantics description
GPS Week	MP		Integer(010	
GPS TOW msec	MP		Integer(06. 048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit).
GPS TOW rem usec	OP		Integer(099 9)	GPS Time of Week in microseconds MOD 1000. GPS Time of Week in microseconds = 1000 * GPS TOW msec + GPS TOW rem usec
CHOICE mode				
>FDD				
>>Primary CPICH Info	OP		Primary CPICH Info 10.3.6.60	Identifies the reference cell for the GPS TOW-SFN relationship
>TDD				
>>cell parameters id	OP		Cell parameters id 10.3.6.9	Identifies the reference cell for the GPS TOW-SFN relationship
SFN	OP		Integer(040 95)	The SFN which the GPS TOW time stamps. SFN and GPS TOW msec and GPS TOW rem usec are included if relation GPS TOW/SFN is known to at least 10 µs.
SFN-TOW Uncertainty	OP		Enumerated (lessThan10, moreThan10)	This field indicates the uncertainty of the relation GPS TOW/SFN. lessThan10 means the relation is accurate to at least 10 ms.
Node B Clock Drift	OP		Real(- 0.09375 0.09375 by step of 0.0125)	μsec/sec (ppm)
GPS TOW Assist	OP	1 to <maxsat ></maxsat 		
>SatID	MP		Enumerated(063)	
>TLM Message	MP		Bit string(14)	
>TLM Reserved	MP		Bit string(2)	
>Alert	MP		Boolean	
>Anti-Spoof	MP		Boolean	

10.3.7.97 UE positioning 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 ₁	MP		Bit string(24)	sec/sec [12]
A ₀	MP		Bit string(32)	seconds [12]
t _{ot}	MP		Bit string(8)	seconds [12]
Δt_{LS}	MP		Bit string(8)	seconds [12]
WNt	MP		Bit string(8)	weeks [12]
WN _{LSF}	MP		Bit string(8)	weeks [12]
DN	MP		Bit string(8)	days [12]
Δt_{LSF}	MP		Bit string(8)	seconds [12]

10.3.7.98 UE positioning IPDL parameters

This IE contains parameters for the IPDL mode. The use of this parameters is described in [29].

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			Reference	description	
CHOICE mode					REL-4
>FDD					REL-4
>>IP spacing	MP		Integer(5,7,1 0,15,20,30,4 0,50)	See [29]	
>>IP length	MP		Integer(5,10)	See [29]	
>>IP offset	MP		Integer(09)	Relates the BFN and SFN, should be same as T_cell defined in [10]; See [29]	
>>Seed	MP		Integer(063	See [29]	
>TDD					REL-4
>>IP spacing	MP		Integer(30,4 0,50,70,100)	See [33]	REL-4
>>IP_Start	MP		Integer(040 95)	See [33]	REL-4
>>IP_Slot	MP		Integer(014	See [33]	REL-4
>>IP_PCCPCH	CV- channel		Boolean	See [33]	REL-4
Burst mode parameters	OP				
>Burst Start	MP		Integer(015)	See [29] and [33]	
>Burst Length	MP		Integer(102 5)	See [29] and [33]	
>Burst freq	MP		Integer(116)	See [29] and [33]	

Condition	Explanation
channel	This IE is present only if the idle slot carries the
	PCCPCH

10.3.7.99 UE positioning measured results

Information Element/Group	Need	Multi	Type and	Semantics description
UE positioning OTDOA measured results	OP		UE positioning OTDOA measured results 10.3 7 105	
UE positioning Position estimate info	OP		UE positioning Position estimate info 10.3.7.109	
UE positioning GPS measured results	OP		UE positioning GPS measured results 10.3.7.93	
UE positioning error	OP		UE positioning error 10.3.7.87	Included if UE positioning error occurred

10.3.7.100 UE positioning measurement

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE positioning reporting quantity	MP		UE positioning reporting quantity 10.3.7.111	
CHOICE reporting criteria	MP			
>UE positioning reporting criteria			UE positioning reporting criteria 10.3.7.110	
>Periodical reporting criteria			Periodical reporting criteria 10.3.7.53	
>No reporting				(no data) Chosen when this measurement only is used as additional measurement to another measurement
UE positioning OTDOA assistance data	CV- OTDOA		UE positioning OTDOA assistance data 10.3.7.103	
UE positioning GPS assistance data	OP		UE positioning GPS assistance data 10.3.7.90	
Condition	Explanation			
-----------	----------------------------------------------------------------------------------------------------------------------------------------			
OTDOA	This IE is mandatory <u>present</u> if the IE "Positioning method" is set to "OTDOA" or "OTDOA or GPS" and not needed otherwise.			

10.3.7.101 UE positioning measurement event results

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

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
CHOICE Event ID	MP			
>7a				
>>UE positioning Position	MP		UE	
estimate info			positioning	
			Position	
			estimate info	
			10.3.7.109	
>7b				
>>UE positioning OTDOA	MP		UE	
measurement			positioning	
			OTDOA	
			measureme	
			nt	
			10.3.7.105	
>7c				
>>UE positioning GPS	MP		UE	
measurement			positioning	
			GPS	
			measureme	
			nt 10.3.7.93	

10.3.7.102 Void

10.3.7.103 UE positioning OTDOA assistance data

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
UE positioning OTDOA reference cell info	OP		UE positioning OTDOA reference cell info 10.3.7.108	
UE positioning OTDOA neighbour cell list	OP	1 to <maxcellm eas></maxcellm 		
>UE positioning OTDOA neighbour cell info	MP		UE positioning OTDOA neighbour cell info 10.3.7.106	

10.3.7.104 Void

10.3.7.105 UE positioning OTDOA measurement

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

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
SFN	MP		Integer(040 95)	SFN during which the last measurement was performed
CHOICE mode				
>FDD				
>>Reference cell id	MP		Primary CPICH info 10.3.6.60	
>>UE Rx-Tx time difference type 2	MP		UE Rx-Tx time difference type 2 10.3.7.84	
>TDD				(no data)
>>Reference cell id	MP		Cell parameters ID 10.3.6.9	
Neighbours	MP	0 to <maxcellm eas></maxcellm 		
>CHOICE mode	MP			
>>FDD				
>>>Neighbour Identity	MD		Primary CPICH info 10.3.6.60	Default value is the same as in the first set of multiple sets.
>>>UE Rx-Tx time difference type 2	OP		UE Rx-Tx time difference type 2 10.3.7.84	Included if the neighbour is in the active set
>>TDD				
>>>Cell and Channel ID	MD		Cell and Channel Identity info 10.3.6.8a	Default value is the same as in the first set of multiple sets.
>UE positioning OTDOA quality	MP		UE positioning OTDOA quality 10.3.7.107	Quality of the measurement from the neighbour cell.
>SFN-SFN observed time difference type 2	MP		SFN-SFN observed time difference 10.3.7.63	Gives the timing relative to the reference cell. Only type 2 is allowed.

10.3.7.106 UE positioning OTDOA neighbour cell info

This IE gives approximate cell timing in order to decrease the search window, as well as the cell locations and fine cell timing for UE based OTDOA.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
CHOICE mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary	
,			CPICH info	
			10.3.6.60	
>TDD				
>>cell and channel ID	MP		Cell and	Identifies the channel to be
			Channel	measured on.
			Identity info	
			10.3.6.8a	
Frequency info	MD		Frequency	Default value is the existing
			info	value of frequency information
			10.3.6.36	
IPDL parameters	CV-IPDLs		UE	
			positioning	
			IPDL .	
			parameters	
			10.3.7.98	
SFN offset	CV-IPDLs		Integer (0	Define Tref as the time of
			4095)	beginning of system frame
				number SFINIEL of the
				the beginning of a frame from
				the neighbour cell occurring
				immediately after the time
				Tref. Let the corresponding
				system frame number be
				SFNnc. Then SFNnc =
				SFNref-SFN offset modulo
				4096.
SFN-SFN relative time	MP		Integer(0	Gives the relative timing
difference			38399)	compared to the reference cell
				Equal to (Tnc-Tref)/(3.84*10 ⁶)
] where ()] denotes rounding
				to the nearest lower integer.
				in chips.
SFN-SFN drift	OP		Real(0,+0.33	meters/sec
			,+0.66,+1,+1	
			.33,+1.66,+2	
			,+2.5,+3,+4,	
			+0,+7,+9,+1	
			0.33 -0.66 -	
			1 -1 33 -	
			1 66 -2 -2 5 -	
			34579	
			11,-13,-15)	
Search Window Size	MP		Integer(20,	in chips. If the value is X then
			40, 80, 160,	the expected SFN-SFN
			320, 640,	observed time difference is in
			1280,	the range [RTD-X, RTD+X]
			infinity)	where RTD is the value of the
				tield SEN-SEN relative time
				aifference.
				initinity means that the
				chips
CHOICE PositioningMode	MP			onpo.
>UE based				
>>Cell Position	MD			Default is the same as previous cell
>>>Relative North	OP		Integer(-	Seconds, scale factor 0.03.
			200002000	Relative position compared to
			0)	reference cell.

>>>Relative East	OP	Integer(- 200002000 0)	Seconds, scale factor 0.03. Relative position compared to reference cell.
>>>Relative Altitude	OP	Integer(- 40004000)	Relative altitude in meters compared to ref. cell.
>>Fine SFN-SFN	MP	Real(00.93 75 in steps of 0.0625)	Gives finer resolution
>>Round Trip Time	OP	Real(876.00 2923.875) in steps of 0.0625	In chips. Included if cell is in active set.
>UE assisted			(no data)

Condition	Explanation
IPDLs	This IE is mandatory present only if IPDLs are applied
	and not needed otherwise.

10.3.7.107 UE positioning OTDOA quality

Information Element/Group	Need	Multi	Type and	Semantics description
name			Reference	
Std Resolution	MP		Bit string(2)	Std Resolution field includes the resolution used in Std of OTDOA Measurements field. Encoding on two bits as follows: '00' 10 meters '01' 20 meters '10' 30 meters '11' Reserved
Number of OTDOA Measurements	MP		Bit string(3)	Number of measurements field is used together with Std of OTDOA Measurements field to define quality of a reported OTDOA measurement. The field indicates how many OTDOA measurements have been used in the UE to define the standard deviation of the measurements. Following 3 bit encoding is used: '000' 0-4 '001' 5-9 '010' 10-14 '001' 5-9 '010' 10-14 '011' 15-24 '100' 25-34 '101' 35-44 '110' 45-54 '111' 55 or more
Std of OTDOA Measurements	MP		Bit string(5)	Std of OTDOA Measurements field includes standard deviation of OTDOA measurements. Following linear 5 bit encoding is used: '00000' 0 - (R*1-1) meters '00001' R*1 - (R*2-1) meters '00010' R*2 - (R*3-1) meters '11111' R*31 meters or more where R is the resolution defined by Std Resolution field. E.g. R=20 m corresponds to 0-19 m, 20-39 m,,620+ m.

10.3.7.108 UE positioning OTDOA reference cell info

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

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
SFN	OP		Integer (04095)	Time stamp (SFN of Reference Cell) of the SFN- SFN relative time differences and SFN-SFN drift rates. Included if any SFN-SFN drift value is included in IE UE positioning OTDOA neighbour cell info.
CHOICE mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>TDD				
>>cell and channel ID	MP		Cell and Channel Identity info 10.3.6.8a	Identifies the channel to be measured on.
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information.
CHOICE PositioningMode	MP			
>UE based				
>>CHOICE Cell Position	OP			The position of the antenna that defines the cell. Used for the UE based method.
>>>Ellipsoid				
>>>>Ellipsoid point	MP		Ellipsoid point 10.3.8.4a	
>>>Ellipsoid with altitude				
>>>>Ellipsoid point with altitude	MP		Ellipsoid point with altitude 10.3.8.4b	
>>Round Trip Time	OP		Real(876.00 2923.875) in steps of 0.0625	In chips.
>UE assisted				(no data)
IPDL parameters	OP		UE positioning IPDL parameters 10.3.7.98	If this element is not included there are no idle periods present

10.3.7.109 UE positioning position estimate info

The purpose of this IE is to provide the position 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
CHOICE mode				
>FDD				
>>Primary CPICH Info	OP		Primary CPICH Info 10.3.6.60	Identifies the reference cell for the GPS TOW-SFN relationship
>TDD				•
>>cell parameters id	OP		Cell parameters id 10.3.6.9	Identifies the reference cell for the GPS TOW-SFN relationship
Reference SFN	MP		Integer(040 95)	The SFN for which the location is valid
GPS TOW msec	CV- Capability and request		Integer(06. 048*10 ⁸ -1)	GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit). This time-stamps the beginning of the frame defined in Reference SFN GPS Time of Week in microseconds = 1000 * GPS TOW msec + GPS TOW rem usec
GPS TOW rem usec	CV- Capability and request		Integer(099 9)	GPS Time of Week in microseconds MOD 1000.
CHOICE Position estimate	MP			
>Ellipsoid Point			Ellipsoid Point; 10.3.8.4a	
>Ellipsoid point with uncertainty circle			Ellipsoid point with uncertainty circle 10.3.8.4d	
>Ellipsoid point with uncertainty ellipse			Ellipsoid point with uncertainty ellipse 10.3.8.4e	
>Ellipsoid point with altitude			Ellipsoid point with altitude 10.3.8.4b	
>Ellipsoid point with altitude and uncertainty ellipsoid			Ellipsoid point with altitude and uncertainty ellipsoid 10.3.8.4c	

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Condition	Explanation
Capability and request	This field is mandatory present included only if the UE
	has this capability and if it was requested in the UE
	positioning reporting quantity and if the method was
	UE-based GPS and not needed otherwise

10.3.7.110 UE positioning reporting criteria

The triggering of the event-triggered reporting for an UE positioning measurement.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Parameters required for each event	OP	1 to <maxmeas Event></maxmeas 		
>Amount of reporting	MP		Integer(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		Integer(5,15, 60,300,900,1 800,3600,72 00)	Indicates how often the UE should make the measurement In seconds
>CHOICE Event ID	MP			
>>7a				
>>>Threshold Position Change	MP		Integer(10,2 0,30,40,50,1 00,200,300,5 00,1000,200 0,5000,1000 0,20000,500 00,100000)	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. 5,1,2,3,4,5,1 0,20,50,100, 200,500,100 0,2000,5000)	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		Integer(1,2,3 ,5,10,20,50,1 00)	Time in ms. When the GPS TOW and SFN timer has drifted apart more than the specified value the event is triggered)

10.3.7.111 UE positioning reporting quantity

The purpose of the 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) Enumerated(
			OTDOA, GPS, OTDOA or GPS)	
Response Time	MP		Integer(1,2,4 , 8, 16, 32, 64, 128)	in seconds
Accuracy	CV- MethodTyp e		Bitstring(7)	The uncertainty is derived from the "uncertainty code" k by $r = 10^{*}(1.1^{k}-1)$
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	TRUE indicates that the UE is requested to send multiple OTDOA/GPS Measurement Information Sets. UE is expected to include the current measurement set.
Additional Assistance Data Request	MP		Boolean	TRUE indicates that the UE is requested to send the IE "Additional assistance Data Request" when the IE "UE positioning Error" is present in the UE positioning measured results.
Environment Characterisation	OP		Enumerated(possibly heavy multipath and NLOS conditions, no or light multipath and usually LOS conditions, not defined or mixed environment)	

Condition	Explanation
Method Type	The IE is optional if the IE "Method Type" is 'UE
	assisted'; otherwise it is mandatory present

10.3.7.112 UpPCH_{ADV}

NOTE: Only for 1.28Mcps TDD.

UpPCH_{ADV} indicates the difference between the Rx timing and initial Tx timing of a UE.

Information Element/group name	Need	Multi	Type and reference	Semantics description	Version
UpPCH _{ADV}	MP		Integer (0352)	In chips	REL-4

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		MIB Value tag 10.3.8.9	
BCCH modification time	OP		Integer (0 4088 in step of 8)	All SFN values in which MIB may be mapped are allowed.

10.3.8.2 BSIC

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Base transceiver Station Identity	MP			[11]
Code (BSIC)				
>Network Colour Code (NCC)	MP		bit string(3)	
>Base Station Colour Code (BCC)	MP		bit string(3)	

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 (1256)	$M_{TTI} \le N \le 4096 - K$, N multiple of M_{TTI}
CBS frame offset (K)	MP		Integer (0255)	$0 \le K \le N-1$, 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		Integer (14)	

10.3.8.4a Ellipsoid point

This IE contains the description of an ellipsoid point as in [24].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Latitude sign	MP		Enumerated (North, South)	
Degrees Of Latitude	MP		Integer (02 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{23} X/90 < N+1$ X being the latitude in degree (0° 90°)
Degrees Of Longitude	MP		Integer (- 2 ²³ 2 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{24} X/360 < N+1$ X being the longitude in degree (-180°+180°)

10.3.8.4b Ellipsoid point with Altitude

This IE contains the description of an ellipsoid point with altitude as in [24].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Latitude sign	MP		Enumerated (North, South)	
Degrees Of Latitude	MP		Integer (02 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{23} X / 90 < N+1$ X being the latitude in degree (0° 90°)
Degrees Of Longitude	MP		Integer (- 2 ²³ 2 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{24} X/360 < N+1$ X being the longitude in degree (-180°+180°)
Altitude Direction	MP		Enumerated (Height, Depth)	
Altitude	MP		Integer (02 ¹⁵ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le a < N+1$ <i>a</i> being the altitude in metres

10.3.8.4c Ellipsoid point with Altitude and uncertainty ellipsoid

This IE contains the description of an ellipsoid point with altitude and uncertainty ellipsoid as in [24].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Latitude sign	MP		Enumerated (North, South)	
Degrees Of Latitude	MP		Integer (02 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{23} X/90 < N+1$ X being the latitude in degree (0° 90°)
Degrees Of Longitude	MP		Integer (- 2 ²³ 2 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{24} X/360 < N+1$ X being the longitude in degree (-180°+180°)
Altitude Direction	MP		Enumerated (Height, Depth)	
Altitude	MP		Integer (02 ¹⁵ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le a < N+1$ <i>a</i> being the altitude in metres
Uncertainty semi-major	MP		Integer (0127)	The uncertainty <i>r</i> is derived from the "uncertainty code" <i>k</i> by $r = 10x(1.1^{k}-1)$
Uncertainty semi-minor	MP		Integer (0127)	The uncertainty <i>r</i> is derived from the "uncertainty code" <i>k</i> by $r = 10x(1.1^{k}-1)$
Orientation of major axis	MP		Integer (0179 by step of 2)	The IE value (<i>N</i>) is derived by this formula: $N \le a / 2 < N+1$ <i>a</i> being the orientation in degree (0° 360°)
Uncertainty Altitude	MP		Integer(012 7)	The uncertainty in altitude, h, expressed in metres is mapped from the IE value (<i>K</i>), with the following formula: $h = C((1 + x)^{K} - 1)$ with <i>C</i> = 45 and <i>x</i> = 0.025.
Confidence	MP		Integer (0100)	in percentage

10.3.8.4d Ellipsoid point with uncertainty Circle

This IE contains the description of an ellipsoid point with an uncertainty circle as in [24].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Latitude sign	MP		Enumerated (North, South)	
Degrees Of Latitude	MP		Integer (02 ²³ -1)	The IE value (N) is derived by this formula: $N \le 2^{23} X/90 < N+1$ X being the latitude in degree (0° 90°)
Degrees Of Longitude	MP		Integer (- 2 ²³ 2 ²³ -1)	The IE value (<i>N</i>) is derived by this formula: $N \le 2^{24} X/360 < N+1$ X being the longitude in degree (-180°+180°)
Uncertainty Code	MP		Integer (0127)	The uncertainty <i>r</i> is derived from the "uncertainty code" <i>k</i> by $r = 10x(1.1^{k}-1)$

10.3.8.4e Ellipsoid point with uncertainty Ellipse

This IE contains the description of an ellipsoid point with an uncertainty ellipse as in [24].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Latitude sign	MP		Enumerated (North, South)	
Degrees Of Latitude	MP		Integer (02 ²³ -1)	The IE value (N) is derived by this formula: $N \le 2^{23} X/90 < N+1$ X being the latitude in degree (0° 90°)
Degrees Of Longitude	MP		Integer (- 2 ²³ 2 ²³ -1)	The IE value (N) is derived by this formula: $N \le 2^{24} X/360 < N+1$ X being the longitude in degree (-180°+180°)
Uncertainty semi-major	MP		Integer (0127)	The uncertainty <i>r</i> is derived from the "uncertainty code" <i>k</i> by $r = 10x(1.1^{k}-1)$
Uncertainty semi-minor	MP		Integer (0127)	The uncertainty <i>r</i> is derived from the "uncertainty code" <i>k</i> by $r = 10x(1.1^{k}-1)$
Orientation of major axis	MP		Integer (0179 by step of 2)	The IE value (<i>N</i>) is derived by this formula: $N \le a / 2 < N+1$ <i>a</i> being the orientation in degree (0° 360°)
Confidence	MP		Integer (0100)	in percentage

10.3.8.5 Inter-RAT change failure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT change failure cause	MP		Enumerated(C onfiguration unacceptable, physical	At least 3 spare values, criticality = default, are required

		channel failure, protocol error)
Protocol error information	CV-ProtErr	Protocol error
		information
		10.3.8.12

Condition	Explanation
ProtErr	The IE is mandatory present ilf the IE "Inter-RAT handover failure cause" has the value "Protocol error" and not needed otherwise

10.3.8.6 Inter-RAT handover failure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT handover failure cause	MD		Enumerated(C onfiguration	Default value is "unspecified".
			unacceptable, physical channel failure	At least one spare value needed
			protocol error, inter-RAT	
			protocol error, unspecified)	
Protocol error information	CV-ProtErr		Protocol error	
			information	
			10.3.8.12	

Condition	Explanation
ProtErr	The IE is mandatory present ilf the IE "Inter-RAT
	handover failure cause" has the value "Protocol error"
	and not needed otherwise

10.3.8.7 Inter-RAT UE radio access capability

This Information Element contains the inter-RAT UE radio access capability that is structured and coded according to the specification used for the corresponding system type.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE system	MP			
>GSM				
>>Mobile Station Classmark 2	MP		Octet string (5)	Defined in [5]
>>Mobile Station Classmark 3	MP		Octet string (132)	Defined in [5]
>cdma2000				
>>cdma2000Message	MP	1.to. <maxl nterSysMe ssages></maxl 		
>>>MSG_TYPE(s)	MP		Bitstring (8)	Formatted and coded according to cdma2000 specifications
>>>cdma2000Messagepayload(s)	MP		Bitstring (1512)	Formatted and coded according to cdma2000 specifications

10.3.8.8 Void

10.3.8.8a Inter-RAT UE security capability

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
CHOICE system	MP			
>GSM				
>>GSM security capability	MP			The value TRUE means that the indicated ciphering algorithm is supported.
>>>A5/7 supported	MP		Boolean	
>>>A5/6 supported	MP		Boolean	
>>>A5/5 supported	MP		Boolean	
>>>A5/4 supported	MP		Boolean	
>>>A5/3 supported	MP		Boolean	
>>>A5/2 supported	MP		Boolean	
>>>A5/1 supported	MP		Boolean	

10.3.8.9 MIB Value tag

Information Element/Group name	Need	Multi	Type and reference	Semantics description
MIB Value tag	MP		Integer (18)	

10.3.8.10 PLMN Value tag

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
PLMN Value tag	MP		Integer	
			(1256)	

10.3.8.10a PNBSCH allocation

UTRAN may use this IE to provide silent periods in the cell that may be used for cell synchronisation purposes.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Number of repetitions per SFN period	MP		Integer(2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, 20, 24, 28, 32, 36, 40, 48, 56, 64, 72, 80)		REL-4

10.3.8.11 Predefined configuration identity and value tag

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Predefined configuration identity	MP		Predefined configuration identity 10.3.4.5	
Predefined configuration value tag	MP		Predefined configuration value tag 10.3.4.6	

10.3.8.12 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 10.3.3.26	

10.3.8.13 References to other system information blocks

Information element/Group	Need	Multi	Type and	Semantics description
name			reference	
References to other system	MP	1 to		System information blocks for
information blocks		<maxsib></maxsib>		which multiple occurrences are
				used, may appear more than
				once in this list
>Scheduling information	MP		Scheduling	
			information,	
			10.3.8.16	
>SIB type SIBs only	MP		SIB Type	
			SIBs only,	
			10.3.8.22	

10.3.8.14 References to other system information blocks and scheduling blocks

Information element/Group name	Need	Multi	Type and reference	Semantics description
References to other system information blocks	MP	1 to <maxsib></maxsib>		System information blocks for which multiple occurrences are used, may appear more than once in this list
>Scheduling information	MP		Scheduling information, 10.3.8.16	
>SIB type	MP		SIB Type, 10.3.8.21	

10.3.8.15 Rplmn information

Contains information to provide faster RPLMN selection in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
GSM BA Range	OP	1 to maxNumG SMFreqRa nges		GSM BA Range	
>GSM Lower Range (UARFCN)	MP		Integer(016 383)	Lower bound for range of GSM BA freqs	
>GSM Upper Range (UARFCN)	MP		Integer(016 383)	Upper bound for range of GSM BA freqs	
FDD UMTS Frequency list	OP	1 to maxNumF DDFreqs			
>UARFCN (Nlow)	MP		Integer(016 383)	[21]	
>UARFCN (Nupper)	OP		Integer(016 383)	[21] This IE is only needed when the FDD frequency list is specifying a range.	
3.84 Mcps TDD UMTS Frequency list	OP	1 to maxNumT DDFreqs			
>UARFCN	MP		Integer(016 383)	[22]	
1.28 Mcps TDD UMTS Frequency list	OP	1 to maxNumT DDFreqs			REL-4
>UARFCN	MP		Integer(016 383)	[22]	REL-4
CDMA2000 UMTS Frequency list	OP	1 to maxNumC DMA200Fr egs			
>BAND_CLASS	MP		Bitstring(5 bits)	TIA/EIA/IS-2000 The BAND_CLASS bits are numbered b0 to b4, where b0 is the least significant bit.	
>CDMA_FREQ	MP		Bitstring (11 bits)	TIA/EIA/IS-2000 The CDMA_FREQ bits are numbered b0 to b10, where b0 is the least significant bit.	

10.3.8.16 Scheduling information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE Value tag	OP			
>PLMN Value tag			PLMN Value tag 10.3.8.10	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. the SIB type does not equal system information block type 16
>Predefined configuration identity and value tag			Predefined configuration identity and value tag 10.3.8.11	This IE is included if the following conditions are fulfilled: the SIB type equals system information block type 16
>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.
>SIB occurrence identity and value tag			SIB occurrence identity and value tag 10.3.8.20b	This IE is included if the following conditions are fulfilled: the SIB type equals system information block types 15.2 and 15.3
Scheduling	MP			
>SEG_COUNT	MD		SEG COUNT 10.3.8.17	Default value is 1
>SIB_REP	MP		Integer (4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096)	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	115		see below for default value
>>SIB_OFF	MP		Integer(232 by step of 2)	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 except when MIB segment/complete MIB is
	scheduled to be transmitted in between segments
	from same SIB. In that case, SIB_OFF=4 in between
	segments which are scheduled to be transmitted at
	SFNprime = 8 *n-2 and 8*n + 2, and SIB_OFF=2 for
	the rest of the segments.

10.3.8.17 SEG COUNT

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SEG_COUNT	MP		Integer (116)	Number of segments in the system information block

10.3.8.18 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 (115)	Segments of a system information block are numbered starting with 0 for the first segment and 1 for the next segment, which can be the first subsequent segment or a last segment.

10.3.8.19 SIB data fixed

Contains the result of a master information block or a system information block after encoding and segmentation. The IE is used for segments with fixed length (segments filling an entire transport block).

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB data fixed	MP		Bit string (222)	The first bit contains the first bit of the segment.

10.3.8.20 SIB data variable

Contains either a complete system information block or a segment of a system information block. Contains the result of a master information block or a system information block after encoding and segmentation. The IE is used for segments with variable length. The system information blocks are defined in clauses10.2.48.8.1 to10.2.48.8.18.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB data variable	MP		Bit string (1214)	The first bit contains the first bit of the segment.

10.3.8.20a SIB occurrence identity

This information element identifies a SIB occurrence for System Information Block types 15.2 and 15.3. For System Information Block type 15.2, this identity is assigned to the visible satellite only. Unused identities are claimed by newly rising satellites.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB occurrence identity	MP		Integer (015)	

10.3.8.20b SIB occurrence identity and value tag

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB occurrence identity	MP		SIB	
			occurrence	
			identity	
			10.3.8.20a	
SIB occurrence value tag	MP		SIB	
-			occurrence	
			value tag	
			10.3.8.20c	

10.3.8.20c SIB occurrence value tag

This information element is used to identify different versions of SIB occurrence for System Information Block types 15.2 and 15.3.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
SIB occurrence value tag	MP		Integer(015)	

10.3.8.21 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 15.1,
- System Information Type 15.2,
- System Information Type 15.3,
- System Information Type 15.4,
- System Information Type 16,
- System Information Type 17,
- System Information Type 18,
- Scheduling Block 1,
- Scheduling Block 2.

In addition, at least one spare value, criticality: ignore, is needed.

10.3.8.22 SIB type SIBs only

The SIB type identifies a specific system information block.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB type SIBs only	MP		Enumerated, see below	

The list of values to encode is:

- 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 15.1,
- System Information Type 15.2,
- System Information Type 15.3,
- System Information Type 15.4,
- System Information Type 16,
- System Information Type 17,
- System Information Type 18.

In addition, at least one spare value, criticality: ignore, is needed.

10.3.9 ANSI-41 Information elements

10.3.9.1 ANSI 41 Core Network Information

Information element/Group	Need	Multi	Type and	Semantics description
name			reference	
P_REV	MP		P_REV	
			10.3.9.10	
MIN_P_REV	MP		MIN_P_REV	
			10.3.9.8	
SID	MP		SID	
			10.3.9.11	
NID	MP		NID 10.3.9.9	

10.3.9.2 ANSI-41 Global Service Redirection information

This Information Element contains ANSI-41 Global Service Redirection information.

Information Element/Group	Need	Multi	Type and	Semantics description
nallie			relefence	
ANSI-41 Global Service	MP		ANSI-41	Formatted and coded
Redirection information			NAS	according to the 3GPP2
			parameter,	document "G3G CDMA DS on
			10.3.9.3	ANSI-41"

10.3.9.3 ANSI-41 NAS parameter

This Information Element contains ANSI-41 User Zone Identification information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ANSI-41 NAS parameter	MP		Bit string (size	The first bit contains the first bit of the ANSI-41 information.

10.3.9.4 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		ANSI-41 NAS parameter, 10.3.9.3	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.3.9.5 ANSI-41 Private Neighbour List information

This Information Element contains ANSI-41 Private Neighbour List information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ANSI-41 Private Neighbour List information	MP		ANSI-41 NAS parameter, 10.3.9.3	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.3.9.6 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		ANSI-41 NAS parameter, 10.3.9.3	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.3.9.7 ANSI-41 User Zone Identification information

This Information Element contains ANSI-41 User Zone Identification information.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
ANSI-41 User Zone	MP		ANSI-41	Formatted and coded
Identification information			NAS	according to the 3GPP2
			parameter,	document "G3G CDMA DS on
			10.3.9.3	ANSI-41"

10.3.9.8 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		Bitstring (8)	Minimum protocol revision level. The MIN_P_REV bits are numbered b0 to b7, where b0 is the least significant bit.

10.3.9.9 NID

This Information Element contains Network identification.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
NID	MP		Bitstring (16)	Network identification. The NID bits are numbered b0 to b15, where b0 is the least significant bit.

10.3.9.10 P_REV

This Information Element contains protocol revision level.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
P_REV	MP		Bitstring (8)	Protocol revision level. The P_REV bits are numbered b0 to b7, where b0 is the least significant bit.

10.3.9.11 SID

This Information Element contains System identification.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SID	MP		Bitstring (15)	System identification. The SID bits are numbered b0 to b14, where b0 is the least significant bit.

10.3.10 Multiplicity values and type constraint values

The following table includes constants that are either used as multi bounds (name starting with "max") or as high or low value in a type specification (name starting with "lo" or "hi"). Constants are specified only for values appearing more than once in the RRC specification. In case a constant is related to one or more other constants, an expression is included in the "value" column instead of the actual value.

Constant	Explanation	Value
CN information		
maxCNdomains	Maximum number of CN domains	4
UTRAN mobility		
information		
maxRAT	Maximum number or Radio Access Technologies	maxOtherRAT + 1
maxOtherRAT	Maximum number or other Radio Access Technologies	15
maxURA	Maximum number of URAs in a cell	8
maxInterSysMessages	Maximum number of Inter System Messages	4
maxRABsetup	Maximum number of RABs to be established	16
UE information		
maxtransactions	Maximum number of parallel RRC transactions in downlink	25
maxPDCPalgoType	Maximum number of PDCP algorithm types	8
maxDRACclasses	Maximum number of UE classes which would require different DRAC parameters	8
maxFreqBandsFDD	Maximum number of frequency bands supported by the UE as defined in [21]	8
maxFreqBandsTDD	Maximum number of frequency bands supported by the UE as defined in [22]	4
maxFreqBandsGSM	Maximum number of frequency bands supported by the UE as defined in [45]	16
maxPage1	Number of UEs paged in the Paging Type 1 message	8
maxSystemCapability	Maximum number of system specific capabilities that can be requested in one message.	16
RB information		
maxPredefConfig	Maximum number of predefined configurations	16
maxRB	Maximum number of RBs	32
maxSRBsetup	Maximum number of signalling RBs to be established	8
maxRBperRAB	Maximum number of RBs per RAB	8
maxRBallRABs	Maximum number of non signalling RBs	27
maxRBMuxOptions	Maximum number of RB multiplexing options	8
maxLoCHperRLC	Maximum number of logical channels per RLC entity	2
MaxROHC-PacketSizes	Maximum number of packet sizes that are allowed to be produced by ROHC.	16
MaxROHC-Profiles	Maximum number of profiles supported by ROHC on a given RB.	8
TrCH information		
maxTrCH	Maximum number of transport channels used in one direction (UL or DL)	32
maxTrCHpreconf	Maximum number of preconfigured Transport channels, per direction	16
maxCCTrCH	Maximum number of CCTrCHs	8
maxTF	Maximum number of different transport formats that can be included in the Transport format set for one transport channel	32
maxTF-CPCH	Maximum number of TFs in a CPCH set	16
maxTFC	Maximum number of Transport Format Combinations	1024
maxTFCI-1-Combs	Maximum number of TFCI (field 1) combinations	512
maxTFCI-2-Combs	Maximum number of TFCI (field 2) combinations	512
maxCPCHsets	Maximum number of CPCH sets per cell	16
maxSIBperMsg	Maximum number of complete system information blocks per SYSTEM INFORMATION message	16
maxSIB	Maximum number of references to other system information blocks.	32
maxSIB-FACH	Maximum number of references to system information blocks on the FACH	8
PhyCH information		
maxSubCh	Maximum number of sub-channels on PRACH	12
maxPCPCH-APsubCH	Maximum number of available sub-channels for AP signature on PCPCH	12
maxPCPCH-CDsubCH	Maximum number of available sub-channels for CD signature on PCPCH	12
maxSig	Maximum number of signatures on PRACH	16
maxPCPCH-APsig	Maximum number of available signatures for AP on PCPCH	16
maxPCPCH-CDsig	Maximum number of available signatures for CD on PCPCH	16

maxAC	Maximum number of access classes	16
maxASC	Maximum number of access service classes	8
maxASCmap	Maximum number of access class to access service classes mappings	7
maxASCpersist	Maximum number of access service classes for which persistence scaling factors are specified	6
maxPRACH	Maximum number of PRACHs in a cell	16
MaxPRACH FPACH	Maximum number of PRACH / FPACH pairs in a cell (1.28	8
	Maximum manufaction (1.20 Maps TDD)	0
maxFACHPCH	Maximum number of FACHs and PCHs mapped onto one secondary CCPCHs	8
maxRL	Maximum number of radio links	8
maxSCCPCH	Maximum number of secondary CCPCHs per cell	16
maxDPDCH-UL	Maximum number of DPDCHs per cell	6
maxDPCH-DLchan	Maximum number of channelisation codes used for DL DPCH	8
maxDPCHcodesPerTS	Maximum number of codes for one timeslots (TDD)	16
maxPUSCH	Maximum number of PUSCHs	(8)
maxPDSCH	Maximum number of PDSCHs	8
maxPDSCHcodes	Maximum number of codes for PDSCH	16
maxPDSCH-TFCIgroups	Maximum number of TFCI groups for PDSCH	256
maxPDSCHcodeGroups	Maximum number of code groups for PDSCH	256
maxPCPCHs	Maximum number of PCPCH channels in a CPCH Set	64
maxPCPCH-SF	Maximum number of available SEs on PCPCH	7
maxTS	Maximum number of timeslots used in one direction (III, or	6 (1.28 Mcns TDD)
	DL)	14 (3.84 Mcps TDD)
HiPUSCHIdentities	Maximum number of PDSCH Identities	64
HiPDSCHIdentities	Maximum number of PDSCH Identities	64
Measurement information		
maxTGPS	Maximum number of transmission gap pattern sequences	6
maxAdditionalMeas	Maximum number of additional measurements for a given measurement identity	4
maxMeasEvent	Maximum number of events that can be listed in	8
	measurement reporting criteria	
maxMeasParEvent	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event	2
maxMeasParEvent maxMeasIntervals	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping	2
maxMeasParEvent maxMeasIntervals	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value	2
maxMeasParEvent maxMeasIntervals maxCellMeas	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure	2 1 32
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported	2 1 32 6
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure	2 1 32 6 8
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure	2 1 32 6 8 16
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat HiRM	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure Maximum number of satellites to measure	2 1 32 6 8 16 256
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat HiRM	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure Maximum number of satellites to measure Maximum number that could be set as rate matching attribute for a transport channel	2 1 32 6 8 16 256
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat HiRM Frequency information	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure Maximum number of satellites to measure Maximum number that could be set as rate matching attribute for a transport channel	2 1 32 6 8 16 256
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat HiRM Frequency information maxFDDFreqList	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure Maximum number of FDD carrier frequencies to be stored in USIM	2 1 32 6 8 16 256 4
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat HiRM Frequency information maxFDDFreqList maxTDDFreqList	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure Maximum number of FDD carrier frequencies to be stored in USIM Maximum number of TDD carrier frequencies to be stored in USIM	2 1 32 6 8 16 256 4 4
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat HiRM Frequency information maxFDDFreqList maxFDDFreqCellList	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure Maximum number of FDD carrier frequencies to be stored in USIM Maximum number of TDD carrier frequencies to be stored in USIM Maximum number of neighbouring FDD cells to be stored in USIM	2 1 32 6 8 16 256 4 4 32
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat HiRM Frequency information maxFDDFreqList maxTDDFreqCellList maxTDDFreqCellList	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure Maximum number of FDD carrier frequencies to be stored in USIM Maximum number of TDD carrier frequencies to be stored in USIM Maximum number of neighbouring FDD cells to be stored in USIM Maximum number of neighbouring TDD cells to be stored in USIM	2 1 32 6 8 16 256 4 4 32 32
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat HiRM Frequency information maxFDDFreqList maxTDDFreqCellList maxTDDFreqCellList maxGSMCellList	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure Maximum number of FDD carrier frequencies to be stored in USIM Maximum number of neighbouring FDD cells to be stored in USIM Maximum number of neighbouring TDD cells to be stored in USIM Maximum number of neighbouring TDD cells to be stored in USIM	2 1 32 6 8 16 256 4 4 4 32 32 32
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat HiRM Frequency information maxFDDFreqList maxTDDFreqList maxTDDFreqCellList maxTDDFreqCellList maxGSMCellList Other information	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure Maximum number of FDD carrier frequencies to be stored in USIM Maximum number of neighbouring FDD cells to be stored in USIM Maximum number of neighbouring TDD cells to be stored in USIM Maximum number of neighbouring TDD cells to be stored in USIM	2 1 32 6 8 16 256 4 4 4 32 32 32 32
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat HiRM Frequency information maxFDDFreqList maxTDDFreqList maxTDDFreqCellList maxTDDFreqCellList maxGSMCellList Other information maxNumGSMFreqRanges	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure Maximum number of satellites to measure Maximum number of satellites to measure Maximum number of FDD carrier frequencies to be stored in USIM Maximum number of neighbouring FDD cells to be stored in USIM Maximum number of GSM cells to be stored in USIM Maximum number of GSM cells to be stored in USIM Maximum number of GSM cells to be stored in USIM	2 1 32 6 8 16 256 4 4 4 32 32 32 32 32
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat HiRM Frequency information maxFDDFreqList maxTDDFreqList maxTDDFreqCellList maxTDDFreqCellList maxGSMCellList Other information maxNumGSMFreqRanges maxNumFDDFreqS	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure Maximum number of satellites to measure Maximum number of satellites to measure Maximum number of FDD carrier frequencies to be stored in USIM Maximum number of neighbouring FDD cells to be stored in USIM Maximum number of GSM cells to be stored in USIM Maximum number of GSM cells to be stored in USIM Maximum number of FDD carrier frequencies to be stored in USIM Maximum number of FDD cells to be stored in USIM	2 1 32 6 8 16 256 4 4 4 32 32 32 32 8
maxMeasParEvent maxMeasIntervals maxCellMeas maxReportedGSMCells maxFreq maxSat HiRM Frequency information maxFDDFreqList maxTDDFreqList maxTDDFreqCellList maxTDDFreqCellList maxGSMCellList Other information maxNumGSMFreqRanges maxNumFDDFreqs maxNumTDDFreqs	measurement reporting criteria Maximum number of measurement parameters (e.g. thresholds) per event Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value Maximum number of cells to measure Maximum number of GSM cells to be reported Maximum number of frequencies to measure Maximum number of satellites to measure Maximum number of satellites to measure Maximum number of satellites to measure Maximum number of FDD carrier frequencies to be stored in USIM Maximum number of neighbouring FDD cells to be stored in USIM Maximum number of GSM cells to be stored in USIM Maximum number of GSM cells to be stored in USIM Maximum number of FDD cells to be stored in USIM Maximum number of GSM cells to be stored in USIM	2 1 32 6 8 16 256 4 4 4 32 32 32 32 8 8 8

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

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

11.0 General

Some messages and/ or IEs may include one or more IEs with name "dummy" that are included only in the ASN.1. The UE should avoid sending information elements that are named "dummy" to UTRAN. Likewise, UTRAN should avoid sinding IEs with name "dummy" to the UE. If the UE anyhow receives an information element named "dummy", it shall ignore the IE and process the rest of the message as if the IE was not included.

Note An IE with name "dummy" concerns an information element that was (erroneously) included in a previous version of the specification and has been removed by replacing it with a dummy with same type.

If the abstract syntax of an IE is defined using the ASN.1 type "BIT STRING", and this IE corresponds to a functional IE definition in tabular format, in which the significance of bits is semantically defined, the following general rule shall be applied:

The bits in the ASN.1 bit string shall represent the semantics of the functional IE definition in decreasing order of bit significance;

- with the first (or leftmost) bit in the bit string representing the most significant bit; and
- with the last (or rightmost) bit in the bit string representing the least significant bit.

R2-012045

CHANGE REQUEST					
ж	25.331 CR 909 * rev r1 * Current version: 3.7.0 *				
For <u>HELP</u> on u	sing this form, see bottom of this page or look at the pop-up text over the \Re symbols.				
Proposed change	affects: # (U)SIM ME/UE X Radio Access Network X Core Network				
Title: ដ	Correction to TDD DL DPCH Common Timeslot Info				
Source: ೫	TSG-RAN WG2				
Work item code: Ж	TEI Date: 육 8-26-01				
Category: ₩	FRelease: %R99Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D tetailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5				
Reason for change	2: % Timeslot Info (frame repetition, TFCI coding, interleaving mode and puncturing limit) is specified in DL information common for all RL. These physical channel attributes need to be specified individually per DL CCTrCH as is currently specified in the UL.				
Summary of chang	ge: # Common Timeslot Information (10.3.6.10) is moved from DL info Common for all RL (10.3.6.18) to per CCTrCH info in DL DPCH info for each RL (10.3.6.21).				
Consequences if not approved:	 Each active DL CCTrCH's must have the same frame repetition, TFCI coding, interleaving and puncturing limit. Isolated Impact Analysis - Corrected functionality: TDD mode signaling for the case of multiple dedicated CCTrCH. Frame repetition, TFCI coding, interleaving mode and puncturing limit are signaled per CCTrCH. This CR affects all implementations supporting multiple dedicated CCTrCH in TDD mode. 				
Clauses affected:	策 <mark>10.3.6.18, 10.3.6.21, 11</mark>				
Other specs affected:	%Other core specifications%25.331 v4.1.0, CR 910Test specificationsO&M Specifications				
Other comments:	¥				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

10.3.6.18 Downlink DPCH info common for all RL

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timing Indication	MP		Enumerated(Initialise, Maintain)	Note 1
CFN-targetSFN frame offset	CV-TimInd		Integer(025 5)	In frame
Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.23	
CHOICE mode	MP			
>FDD				
>>Power offset P _{Pilot-DPDCH}	MP		Integer(024)	Power offset equals P _{Pilot} - P _{DPDCH} , range 06 dB, in steps of 0.25 dB
>>Downlink rate matching restriction information	OP		Downlink rate matching restriction information 10.3.6.31	If this IE is set to "absent", no Transport CH is restricted in TFI.
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	
>>Fixed or Flexible Position	MP		Enumerated (Fixed, Flexible)	
>>TFCI existence	MP		Boolean	TRUE indicates that TFCI exists
>>CHOICE SF	MP			
>>>SF = 256				
>>>>Number of bits for Pilot bits	MP		Integer (2,4,8)	In bits
>>>SF = 128				
>>>>Number of bits for Pilot bits	MP		Integer(4,8)	In bits
>>>Otherwise				(no data). In ASN.1 choice "Otherwise" is not explicitly available as all values are available, it is implied by the use of any value other than 128 or 256.
>TDD				(no data)
>>Common timeslot info	MÐ		Common Timeslot Info 10.3.6.10	Default is the current Common timeslot info

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

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

NOTE 1: Within the HANDOVER TO UTRAN COMMAND message, only value "initialise" is applicable.

10.3.6.21 Downlink DPCH info for each RL

Information Element/Group	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>EDD				
>>Primary CPICH usage for channel estimation	MP		Primary CPICH usage for channel estimation 10.3.6.62	
>>DPCH frame offset	MP		Integer(0381 44 by step of 256)	Offset (in number of chips) between the beginning of the P-CCPCH frame and the beginning of the DPCH frame This is called $\tau_{DPCH,n}$ in [26]
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.73	
>>DL channelisation code	MP	1 to <maxdpc H-DLchan></maxdpc 		For the purpose of physical channel mapping [27] the DPCHs are numbered, starting from DPCH number 1, according to the order that they are contained in this IE.
>>>Secondary scrambling code	MD		Secondary scrambling code 10.3.6.74	Default is the same scrambling code as for the Primary CPICH
>>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	Defined in CHOICE SF512- AndCodenumber with "code number" in ASN.1
>>>Code number	MP		Integer(0Spre ading factor - 1)	
>>>Scrambling code change	CH- <i>SF/</i> 2		Enumerated (code change, no code change)	Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.
>>TPC combination index	MP		TPC combination index 10.3.6.85	
>>SSDT Cell Identity	OP		SSDT Cell Identity 10.3.6.76	
>>Closed loop timing adjustment mode >TDD	CH- TxDiversity Mode		Integer(1, 2)	It is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2". Value in slots
>>DL CCTrCh List	MP	1 <maxcc TrCH></maxcc 		
>>>TFCS ID	MD		Integer(18)	Identity of this CCTrCh. Default value is 1
>>>Time info	MP		Time Info 10.3.6.83	
>>>Common timeslot info	MD		Common Timeslot Info 10.3.6.10	Default is the current Common timeslot info
>>>Downlink DPCH timeslots and codes	MD		Downlink Timeslots and Codes 10.3.6.32	Default is to use the old timeslots and codes.
>>>UL CCTrCH TPC List	MD	0 <maxcc TrCH></maxcc 		UL CCTrCH identities for TPC commands associated

}

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
				with this DL CCTrCH.
				Default is previous list or all
				defined UL CCTrCHs
>>>>UL TPC TFCS Identity	MP		Transport	
			Format	
			Combination	
			Set Identity	
			10.3.5.21	

Condition	Explanation
SF/2	The information element is mandatory if the UE has an active compressed mode pattern sequence, which is using compressed mode method "SF/2". Otherwise the IE is not needed.
TxDiversity Mode	This IE is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2". Otherwise the IE is not needed.

**********************************	* * * * * * * * * * * * * * * * * * *	
PHYSICAL CHANNEL INFORMATIO	N ELEMENTS (10.3.6)	
************************************	* * * * * * * * * * * * * * * * * * *	
DL-DPCH-InfoCommon ::=	SEQUENCE {	
cfnHandling	CHOICE {	
maintain	NULL,	
initialise	SEQUENCE {	
cfntargetsfnframeoffse	t Cfntargetsfnframeoffset	OPTIONAL
}		
},		
modeSpecificInfo	CHOICE {	
fdd	SEQUENCE {	
dl-DPCH-PowerControlIn	fo DL-DPCH-PowerControlInfo	OPTIONAL,
powerOffsetPilot-pdpdc	h PowerOffsetPilot-pdpdch	· .
dl-rate-matching-restr	iction Dl-rate-matching-restric	ction OPTIONAL,
spreadingFactorAndPilo	ot SF512-AndPilot,	-
TABULAR: The number of pilo	t bits is nested inside the spreading	factor.
positionFixedOrFlexibl	e PositionFixedOrFlexible	,
tici-Existence	BOOLEAN	
},		
	SEQUENCE {	
di-DPCH-PowerControlin	IIO DL-DPCH-POWErControllnic	5 OPTIONAL,
	COMMONITMESTOLINIO	OPTIONAL
}		
}		
}		
DL-CCTrCh ::=	SEQUENCE {	
tfcs-ID	TFCS-IdentityPlain	DEFAULT 1,
timeInfo	TimeInfo,	
commonTimeslotInfo	CommonTimeslotInfo	OPTIONAL,
dl-CCTrCH-TimeslotsCodes	DownlinkTimeslotsCodes	OPTIONAL,
ul-CCTrChTPCList	UL-CCTrChTPCList	OPTIONAL

R2-012046

CHANGE REQUEST			
æ	25.331 CR 910 # rev - # Current version: 4.1.0 #		
For <mark>HELP</mark> on L	using this form, see bottom of this page or look at the pop-up text over the \Re symbols.		
Proposed change	affects: # (U)SIM ME/UE X Radio Access Network X Core Network		
Title: ¥	Correction to TDD DL DPCH Common Timeslot Info		
Source: #	TSG-RAN WG2		
Work item code: ₩	S TEI Date: # 8-28-01		
Category: ¥	Release: % REL-4 Use one of the following categories: Use one of the following releases: F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can be found in 3GPP TR 21.900. REL-5 (Release 5)		
Reason for change	e: X Timeslot Info (frame repetition, TFCI coding, interleaving mode and puncturing limit) is specified in DL information common for all RL. These physical channel attributes need to be specified individually per DL CCTrCH as is currently specified in the UL.		
Summary of chang	ge: # Common Timeslot Information (10.3.6.10) is moved from DL info Common for all RL (10.3.6.18) to per CCTrCH info in DL DPCH info for each RL (10.3.6.21).		
Consequences if not approved:	 Each active DL CCTrCH's must have the same frame repetition, TFCI coding, interleaving and puncturing limit. Isolated Impact Analysis - Corrected functionality: TDD mode signaling for the case of multiple dedicated CCTrCH. Frame repetition, TFCI coding, interleaving mode and puncturing limit are signaled per CCTrCH. This CR affects all implementations supporting multiple dedicated CCTrCH in TDD mode. 		
Clauses affected:	# 10.3.6.18, 10.3.6.21, 11		
Other specs affected:	Conter core specifications # 25.331 v3.7.0, CR909r1 Test specifications 0&M Specifications		
Other comments:	ж		

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

10.3.6.18 Downlink DPCH info common for all RL

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timing Indication	MP		Enumerated(Initialise, Maintain)	Note 1
CFN-targetSFN frame offset	CV-TimInd		Integer(025 5)	In frame
Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.23	
CHOICE mode	MP			
>FDD				
>>Power offset P _{Pilot-DPDCH}	MP		Integer(024)	Power offset equals P _{Pilot} - P _{DPDCH} , range 06 dB, in steps of 0.25 dB
>>Downlink rate matching restriction information	OP		Downlink rate matching restriction information 10.3.6.31	If this IE is set to "absent", no Transport CH is restricted in TFI.
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	
>>Fixed or Flexible Position	MP		Enumerated (Fixed, Flexible)	
>>TFCI existence	MP		Boolean	TRUE indicates that TFCI exists
>>CHOICE SF	MP			
>>>SF = 256				
>>>>Number of bits for Pilot bits	MP		Integer (2,4,8)	In bits
>>>SF = 128				
>>>>Number of bits for Pilot bits	MP		Integer(4,8)	In bits
>>>Otherwise				(no data). In ASN.1 choice "Otherwise" is not explicitly available as all values are available, it is implied by the use of any value other than 128 or 256.
>IDD				(no data)
>>Common timeslot info	MÐ		Common Timeslot Info 10.3.6.10	Default is the current Common timeslot info

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

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

NOTE 1: Within the HANDOVER TO UTRAN COMMAND message, only value "initialise" is applicable..

10.3.6.21 Downlink DPCH info for each RL

Information Element/Group	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>EDD				
>>Primary CPICH usage for channel estimation	MP		Primary CPICH usage for channel estimation 10.3.6.62	
>>DPCH frame offset	MP		Integer(0381 44 by step of 256)	Offset (in number of chips) between the beginning of the P-CCPCH frame and the beginning of the DPCH frame This is called $\tau_{DPCH,n}$ in [26]
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.73	
>>DL channelisation code	MP	1 to <maxdpc H-DLchan></maxdpc 		For the purpose of physical channel mapping [27] the DPCHs are numbered, starting from DPCH number 1, according to the order that they are contained in this IE.
>>>Secondary scrambling code	MD		Secondary scrambling code 10.3.6.74	Default is the same scrambling code as for the Primary CPICH
>>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	Defined in CHOICE SF512- AndCodenumber with "code number" in ASN.1
>>>Code number	MP		Integer(0Spre ading factor - 1)	
>>>Scrambling code change	CH- <i>SF/</i> 2		Enumerated (code change, no code change)	Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.
>>TPC combination index	MP		TPC combination index 10.3.6.85	
>>SSDT Cell Identity	OP		SSDT Cell Identity 10.3.6.76	
>>Closed loop timing adjustment mode >TDD	CH- TxDiversity Mode		Integer(1, 2)	It is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2". Value in slots
>>DL CCTrCh List	MP	1 <maxcc TrCH></maxcc 		
>>>TFCS ID	MD		Integer(18)	Identity of this CCTrCh. Default value is 1
>>>Time info	MP		Time Info 10.3.6.83	
>>>Common timeslot info	MD		Common Timeslot Info 10.3.6.10	Default is the current Common timeslot info
>>>Downlink DPCH timeslots and codes	MD		Downlink Timeslots and Codes 10.3.6.32	Default is to use the old timeslots and codes.
>>>UL CCTrCH TPC List	MD	0 <maxcc TrCH></maxcc 		UL CCTrCH identities for TPC commands associated

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
				with this DL CCTrCH.
				Default is previous list or all
				defined UL CCTrCHs
>>>>UL TPC TFCS Identity	MP		Transport	
			Format	
			Combination	
			Set Identity	
			10.3.5.21	

Condition	Explanation
SF/2	The information element is mandatory if the UE has an active compressed mode pattern sequence, which is using compressed mode method "SF/2". Otherwise the IE is not needed.
TxDiversity Mode	This IE is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2". Otherwise the IE is not needed.

```
_ _
      PHYSICAL CHANNEL INFORMATION ELEMENTS (10.3.6)
_ _
_ _
DL-DPCH-InfoCommon ::=
                                  SEOUENCE {
                                      CHOICE {
   cfnHandling
       maintain
                                          NULL,
       initialise
                                          SEQUENCE {
           cfntargetsfnframeoffset
                                             Cfntargetsfnframeoffset
                                                                                OPTIONAL
       }
   },
   modeSpecificInfo
                                      CHOICE {
                                         SEQUENCE {
       fdd
           dl-DPCH-PowerControlInfo
                                             DL-DPCH-PowerControlInfo
                                                                                OPTIONAL.
           powerOffsetPilot-pdpdch
                                             PowerOffsetPilot-pdpdch,
           dl-rate-matching-restriction Dl-rate-matching-restriction
                                                                                OPTIONAL,
           spreadingFactorAndPilot
                                             SF512-AndPilot,
   -- TABULAR: The number of pilot bits is nested inside the spreading factor.
           positionFixedOrFlexible
                                             PositionFixedOrFlexible,
           tfci-Existence
                                             BOOLEAN
       },
       tdd
                                          SEQUENCE {
                                             DL-DPCH-PowerControlInfo
           dl-DPCH-PowerControlInfo
                                                                                OPTIONAL-
           commonTimeslotInfo
                                             CommonTimeslotInfo
                                                                                OPTIONAL
       }
   }
}
DL-CCTrCh ::=
                                  SEQUENCE {
   tfcs-ID
                                      TFCS-IdentityPlain
                                                                        DEFAULT 1,
   timeInfo
                                      TimeInfo,
                                                                         OPTIONAL,
   commonTimeslotInfo
                                      CommonTimeslotInfo
   dl-CCTrCH-TimeslotsCodes
                                      DownlinkTimeslotsCodes
                                                                         OPTIONAL,
   ul-CCTrChTPCList
                                      UL-CCTrChTPCList
                                                                         OPTIONAL
}
DL-CCTrCh-r4 ::=
                                  SEQUENCE {
   tfcs-ID
                                      TFCS-IdentityPlain
                                                                         DEFAULT 1,
   timeInfo
                                      TimeInfo,
                                      CommonTimeslotInfo
   commonTimeslotInfo
                                                                         OPTIONAL,
   tddOption
                                      CHOICE {
       tdd384
                                          SEQUENCE {
           dl-CCTrCH-TimeslotsCodes
                                             DownlinkTimeslotsCodes OPTIONAL
       },
                                          SEQUENCE {
       tdd128
           dl-CCTrCH-TimeslotsCodes
                                             DownlinkTimeslotsCodes-LCR-r4 OPTIONAL
       }
   },
```
			СНА	NGE F	REQ	UES	БТ		CR-Form-v4
æ	25	.331	CR <mark>911</mark>	ж	rev	<mark>1 ^۴</mark>	Current vers	sion: 3.7.0	ж
For <u>HELP</u> on u	ising	this for	m, see bottor	n of this p	age or	look at	the pop-up text	tover the # sy	mbols.
Proposed change	affec	ts: ೫	(U)SIM	ME/U	EX	Radio	Access Networ	k Core N	etwork
Title: ដ	TD	D syst	em informatic	n update	n Cell	DCH			
Source: ೫	TS	G-RAN	WG2						
Work item code: Ж	TE	I					Date: ೫	8-26-01	
Category: ¥	F Use Deta be fo	one of F (corr A (corr B (add C (fun D (edi illed exp bund in	the following carection) responds to a d lition of feature ctional modificat torial modificat blanations of th 3GPP <u>TR 21.9</u>	ategories: correction ii), ation of fea ion) e above ca <u>00</u> .	n an ear ture) tegories	rlier rele s can	Release: # Use <u>one</u> of 2 ease) R96 R97 R98 R99 REL-4 REL-5	R99 the following re (GSM Phase 2 (Release 1996 (Release 1997 (Release 1999 (Release 4) (Release 5)	leases:))))
Reason for change	e: Ж	In TI nece CCP	DD mode whe ssary to rece CH/FACH inf	n in Cell I ive value t ormation.	OCH ar ag SIB	d shar update	ed channels are es for PRACH/F	e assigned it is ACH and S-	
Summary of chang	уе: Ж	Rece wher	eption of BCC	H modific assigned	ation in I for sh	<mark>fo is sp</mark> ared ch	pecified in TDD nannel signalling	mode for Cell g.	DCH
Consequences if not approved:	ж	TDD s is upd Isolate inform Would imple	shared chann lated. ed impact ana nation require Correction o arr d not affect im mentations su	els will fail alysis: The d for supp to a functi biguous c plementa upporting t	when function ort for on whe r not s ions be he corr	in Cell onality i shared are the ufficien ehaving rected f	DCH and comm is Cell DCH upo channel signali specification wa tly explicit. g like indicated i functionality othe	hon channel in late of system ng in TDD mod as : n the CR, wou erwise.	formation de. Id affect
Clauses affected:	ж	8.1.1	.7.1						
Other specs affected:	X	01 Te 02	ther core specest specification & M Specificatio	cifications ons tions	ж	25.3	31 v4.1.0, CR91	12	
Other comments:	ж								

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

8.1.1.7.1 Modification of system information blocks using a value tag

Upon modifications of system information blocks using value tags, UTRAN should notify the new value tag for the master information block in the IE "BCCH modification info", transmitted in the following way:

- to reach UEs in idle mode, CELL_PCH state and URA_PCH state, the IE "BCCH modification info" is contained in a PAGING TYPE 1 message transmitted on the PCCH in all paging occasions in the cell;
- to reach UEs in CELL_FACH state or TDD UE's in CELL_DCH with S-CCPCH assigned, the IE "BCCH modification info" is contained in a SYSTEM INFORMATION CHANGE INDICATION message transmitted on the BCCH mapped on at least one FACH on every Secondary CCPCH in the cell.

Upon reception of a PAGING TYPE 1 message or a SYSTEM INFORMATION CHANGE INDICATION message containing the IE "BCCH modification info" containing the IE "MIB value tag" but not containing the IE "BCCH modification time", the UE shall perform actions as specified in subclause 8.1.1.7.3.

If the IE "BCCH modification time" is included the UE shall perform actions as specified in subclause 8.1.1.7.2.

			CH	ANGE	REC	QUE	ST	•			CR-Form-v4
ж	25	.331	CR 912	2	ж.rev	-	ж	Current ver	sion:	<mark>4.1.0</mark>	ж
For <u>HELP</u> on u	For HELP on using this form, see bottom of this page or look at the pop-up text over the # symbols.										
Proposed change	affec	ts: ¥	(U)SIM	ME	/UE X	Rad	lio Ac	ccess Netwo	rk	Core Ne	etwork
Title: #	S TD	D syste	em informa	tion updat	t <mark>e in Ce</mark>	I DCH	l				
Source: #	s <mark>TS</mark>	G-RAN	WG2								
Work item code: ₩	S TE	I						<i>Date:</i> ଖ	8 <mark>8-2</mark> 8	8-01	
Category: ₩	B A Use Deta be fo	one of f F (corr A (corr B (add C (fund D (edit ailed exp bund in	the following rection) responds to lition of featu ctional modific blanations of 3GPP <u>TR 21</u>	categories a correction rre), fication of fr ation) the above .900.	s: n in an e eature) categori	arlier re es can	elease	Release: ¥ Use <u>one</u> o 2 e) R96 R97 R98 R99 REL-4 REL-5	f the fol (GSM (Relea (Relea (Relea (Relea (Relea (Relea	4 llowing rel l Phase 2) ase 1996) ase 1998) ase 1999) ase 4) ase 5)	eases:
Reason for chang	e: #	In TE nece CCP	DD mode w ssary to rec CH/FACH i	hen in Ce ceive valu nformatio	ll DCH a e tag S n.	and sh B upd	ared ates	channels are for PRACH/F	e assig RACH	ned it is and S-	
Summary of chan	ge: ೫	Rece wher	eption of BC	CH modi <mark>Lis assign</mark>	fication ed for s	info is hared	spec char	cified in TDD nnel signallin	<mark>mode</mark> g.	for Cell E	ОСН
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Other specs affected:	£	Ot Te Ot	ther core sp est specifica &M Specific	pecification ations cations	ns	₩ 25	.331	v3.7.0, CR 9)11r1		
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If the IE "BCCH modification time" is included the UE shall perform actions as specified in subclause 8.1.1.7.2.

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Reason for chang	де: Ж	edito	rial correc	ctions							
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Clauses affected:	第 8.6.6.29, 14.10
Other specs affected:	 Conter core specifications
Other comments:	ж

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8.6.6.29 ASC setting

If the IE "ASC setting" is included, the UE shall:

- establish the available signatures for this ASC as specified in the following:
 - renumber the list of available signatures specified in the IE "Available signature" included in the IE "PRACH info" 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;
 - consider as available signatures for this ASC the signatures included in this renumbered list from the index specified by the IE "Available signature Start Index" to the index specified by the IE "Available signature End Index";
- establish the available access slot sub-channels for this ASC as specified in the following:
 - if the IE "AICH transmission timing" included in the IE "AICH Info" is set to '0';
 - ignore the leftmost (most significant) bit (bit b3) of the bitstring specified by the IE "Assigned Sub-Channel Number";
 - repeat 4 times the 3 rightmost (least significant) bits (bits b2-b0) of the bitstring specified by the IE
 "Assigned Sub-Channel Number" to form a resulting bitstring b2 b1 b0 b2 b1 b0 b2 b1 b0 b2 b1 b0 of length 12 bits, where the leftmost bit is the most significant;
 - if the IE "AICH transmission timing" included in the IE "AICH Info" is set to '1':
 - repeat 3 times the bitstring (bits b3-b0) specified by the IE "Assigned Sub-Channel Number" to form a bitstring b3 b2 b1 b0 b3 b2 b1 b0 b3 b2 b1 b0' of length 12 bits, where the leftmost bit is the most significant;
 - perform in both cases, for the resulting bitstring (that includes the repetitions) bit-wise logical AND operation with the IE "Available Sub Channel number" included in IE "PRACH info (for RACH)";
 - consider as available sub-channels for this ASC the available sub-channels indicated in the resulting bitstring, after logical AND operation i.e. each bit set to 1 or 0 indicates availability or non-availability, respectively, of sub-channel number *x*, with *x* from 0 to 11, for the respective ASC.
- NOTE 1: In FDD, 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 fewer signatures are available.
 - Example: 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

NOTE 2: In TDD, the list of available channelisation codes (defined in PRACH info) is renumbered from channelisation code index 0 to channelisation code index N-1, where N is the number of available channelisation codes, starting with the lowest available channelisation code number and continuing in sequence, in the order of increasing channelisation code numbers

List of available channelisation codes : 8 or less channelisation codes are available.

The i-th bit of the bitmap defined in the IE "Available Channelisation Code indices" defines whether the channelisation code with the available channelisation code index i is to be used for this ASC (bit set means used, bit unset means not used). Only the low N bits shall be used in the bitmap, where N is the number of available channelisation codes defined in PRACH info.

Ex : spreading factor 16, channelisation codes 16/1, 16/2, 16/5, 16/10 are available :

Channelisation code 16/1 is: available channelisation code index 0 Channelisation code 16/2 is: available channelisation code index 1 Channelisation code 16/5 is: available channelisation code index 2 Channelisation code 16/10 is: available channelisation code index 3

Available Channelisation Code indices has the value <u>'0000</u>1100' means: Channelisation Codes 16/5 and 16/10 are available for this ASC.

NOTE 3: In TDD, the subchannel description is found in [33].

14.10 Calculated Transport Format Combination

The Calculated Transport Format Combination (CTFC) is a tool for efficient signalling of transport format combinations.

Let *I* be the number of transport channels that are included in the transport format combination. Each transport channel TrCH_{*i*}, *i* = 1, 2, ..., *I*, has L_{*i*} transport formats, i.e. the transport format indicator TFI_{*i*} can take L_{*i*} values, $TFI_i \in \{0, 1, 2, ..., L_i - 1\}$.

Define
$$P_i = \prod_{j=0}^{i-1} L_j$$
, where $i = 1, 2, ..., I$, and $L_0 = 1$.

Let $TFC(TFI_1, TFI_2, ..., TFI_l)$ be the transport format combination for which $TrCH_1$ has transport format TFI_1 , $TrCH_2$ has transport format TFI_2 , etc. The corresponding $CTFC(TFI_1, TFI_2, ..., TFI_l)$ is then computed as:

$$CTFC(TFI_1, TFI_2, \dots, TFI_I) = \sum_{i=1}^{I} TFI_i \cdot P_i.$$

For FACH and PCH transport channels, " $TrCH_1$ " corresponds to the transport channel listed at the first position in IE "FACH/PCH information" in IE "Secondary CCPCH System Information", " $TrCH_2$ " corresponds to the transport channel listed at the second position in IE "FACH/PCH information" and so on.

For all other transport channels in FDD and for all configured transport channels of the same transport channel type (i.e. DCH, DSCH, USCH) in TDD, "TrCH₁" corresponds to the transport channel having the lowest transport channel identity in the transport format combination mapped to the TFCI field in FDD, and for all configured transport channels of the transport channel type (i.e. DCH, DSCH, USCH) in TDD. "TrCH₂" corresponds to the transport channel having the next lowest transport channel identity, and so on.

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CHANGE REQUEST								
x	25.331 CR 914 * rev - * Current version: 4.1.0 *							
For <u>HELP</u> on u	sing this form, see bottom of this page or look at the pop-up text over the $#$ symbols.	I						
Proposed change a	affects: # (U)SIM ME/UE X Radio Access Network X Core Network							
Title: ¥	Editorial Corrections							
Source: ೫	TSG-RAN WG2							
Work item code: ¥	TEI Date: # 8-28-01							
Category: ₩	ARelease: %REL-4Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D (editorial modification)R99D tetailed explanations of the above categories canREL-4ke found in 3GPP TR 21.900.REL-5							
Reason for change	: # editorial corrections							
Summary of chang	e: # CTFC description is clarified for TDD mode, and RACH Available Channelisation Codes Indices is modified to indicate the correct bit-string size.	on						
Consequences if not approved:	 Solated impact analysis: The functionality is the CTFC calculation and available channelisation codes in TDD mode. Correction to a function where the specification was : ambiguous or not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations the corrected functionality otherwise 	xt						

Clauses affected:	¥ 8.6.6.29, 14.10
Other specs affected:	 Conter core specifications
Other comments:	X

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

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 - if the IE "AICH transmission timing" included in the IE "AICH Info" is set to '1':
 - repeat 3 times the bitstring (bits b3-b0) specified by the IE "Assigned Sub-Channel Number" to form a bitstring b3 b2 b1 b0 b3 b2 b1 b0 b3 b2 b1 b0' of length 12 bits, where the leftmost bit is the most significant;
 - perform in both cases, for the resulting bitstring (that includes the repetitions) bit-wise logical AND operation with the IE "Available Sub Channel number" included in IE "PRACH info (for RACH)";
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 - Example: 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

NOTE 2: In TDD, the list of available channelisation codes (defined in PRACH info) is renumbered from channelisation code index 0 to channelisation code index N-1, where N is the number of available channelisation codes, starting with the lowest available channelisation code number and continuing in sequence, in the order of increasing channelisation code numbers

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Channelisation code 16/1 is: available channelisation code index 0 Channelisation code 16/2 is: available channelisation code index 1 Channelisation code 16/5 is: available channelisation code index 2 Channelisation code 16/10 is: available channelisation code index 3

Available Channelisation Code indices has the value <u>'0000</u>1100' means: Channelisation Codes 16/5 and 16/10 are available for this ASC.

NOTE 3: In TDD, the subchannel description is found in [33].

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Define
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CHANGE REQUEST							
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For <u>HELP</u> on u	sing this form, see bottom of this page or look at the pop-up text over the $#$ symbols.						
Proposed change a	ffects: # (U)SIM ME/UE X Radio Access Network X Core Network						
Title: #	UL DPCH Power Control Info in TDD						
Source: #	TSG-RAN WG2						
Work item code: ℜ	TEI Date: # 8-26-01						
Category: ₩	FRelease: %R99Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D (editorial modification)R99D tetailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5						
Posson for change	• 9 1 The LIL Physical Channel Control procedure may be used to provide LIL						
neuson for enange	 The OL Hysical Chainer Control proceedie may be used to provide OL timeslot interference on DCCH. In this case the SIR Target should not be mandatory. The SIR Target may differ significantly for individual CCTrCH's. Therefore in UL DPCH Info this needs to be specified by CCTrCH. 						
Summary of chang	e: # In UL DPCH Power Control Info SIR Target is now optional In Uplink DPCH Info SIR Target is added to the CCTrCH list						
Consequences if not approved:	 When DCCH is used to provide UL ISCP for UE Tx power calculation considerable signalling overhead is introduced with unnecessary specification of SIR Target. When more then one UL CCTrCH exists the UE may apply inappropriate UL power 						
	Isolated Impact Analysis - Corrected functionality: TDD mode signaling for UL OL PC and CCTrCH establishment. SIR Target is signaled per CCTrCH and is optional in the UL physical channel control procedure. This CR affects all implementations supporting multiple UL CCTrCH in TDD mode.						
Clauses affected:	# 10.3.6.88, 10.3.6.91, 11.3						
Other specs affected:	 Conter core specifications Test specifications O&M Specifications 						
Other comments:	ж						

How to create CRs using this form: Comprehensive information and tips about how to create CRs can be found at: <u>http://www.3gpp.org/3G_Specs/CRs.htm</u>. Below is a brief summary:

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

10.3.6.88 Uplink DPCH info

Information Element/Group	Need	Multi	Type and	Semantics description
Uplink DPCH power control info	OP		Uplink DPCH power control info	
CHOICE mode	MP		10.3.0.91	
>FDD				
>>Scrambling code type	MP		Enumerated(short, long)	
>>Scrambling code number	MP		Integer(016 777215)	
>>Number of DPDCH	MD		Integer(2m axDPDCH)	Default value is 1. Number of DPDCH is 1 in HANDOVER TO UTRAN COMMAND
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256)	Minimum allowed SF of the channelisation code for data part
>>TFCI existence	MD		Boolean	TRUE means existence. Default value is "TRUE"
>>Number of FBI bits	СН		Integer (1, 2)	In bits. Number of FBI bits is needed if SSDT or FB Mode Transmit Signalling is supported.
>>Puncturing Limit	MP		Real(0.401 by step of 0.04)	
>TDD >>Uplink Timing Advance Control	OP		Uplink Timing Advance Control 10.3.6.96	
>>UL CCTrCH List	MP	1 to <maxcctr CH></maxcctr 		
>>>TFCS ID	MD		Integer(18)	Default value is 1.
>>>UL target SIR	MP		Real (-11 20 by step of 0.5dB)	In dB
>>>Time info	MP		Time info 10.3.6.83	
>>>Common timeslot info	MD		Common timeslot info 10.3.6.10	Default is the current Common timeslot info
>>>Uplink DPCH timeslots and codes	MD		Uplink Timeslots and Codes 10.3.6.94	Default is to use the old timeslots and codes.

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

10.3.6.91 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	Need	Multi	Type and	Semantics description
CHOICE mode	MP		Tererenee	
>FDD				
>>DPCCH Power offset	MP		Integer(- 164,6 by step of 2)	In dB
>>PC Preamble	MP		Integer (07)	In number of frames
>>SRB delay	MP		Integer(07)	In number of frames
>>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		Integer (1, 2)	In dB
>TDD				
>>UL target SIR	<u>OP</u> MP		Real (-11 20 by step of 0.5dB)	In dB
>>CHOICE UL OL PC info	MP			
>>>Broadcast UL OL PC info			Null	No data
>>>Individually Signalled	OP			
>>>>Individual timeslot interference info	MP	1 to <maxts></maxts>		
>>>>Individual timeslot interference	MP		Individual timeslot interference 10.3.6.38	
>>>>DPCH Constant Value	OP		Constant Value 10.3.6.11	Quality Margin
>>>>Primary CCPCH Tx Power	OP		Primary CCPCH Tx Power 10.3.6.59	For Pathloss Calculation

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

UL-0	CCTrCH ::= tfcs-ID <u>ul-TargetSIR</u> timeInfo commonTimeslotInfo ul-CCTrCH-TimeslotsCodes	SEQUENCE {	DEFAULT 1, OPTIONAL, OPTIONAL
UL-I	DPCH-PowerControlInfo ::= fdd dpcch-PowerOffset pc-Preamble sRB-delay powerControlAlgorithm TABULAR: TPC step size n	CHOICE { SEQUENCE { DPCCH-PowerOffset, PC-Preamble, SRB-delay, PowerControlAlgorithm tested inside PowerControlAlgori	thm
	}, tdd	SEQUENCE {	
	ul-TargetSIR ——ul-OL-PC-Signalling ——broadcast-UL-OL-PC- ——handoverGroup ——individualTS-In	UL-TargetSIR CHOICE { info NULL, SEQUENCE { iterferenceList Individual	OPTIONAL, .TS-InterferenceList,

3GPP TS aa.bbb vX.Y.Z (YYYY-MM)



ConstantValue, PrimaryCCPCH-TX-Power

OPTIONAL

CHANGE REQUEST			
ж	25.331 CR 916 * rev - * Cu	urrent version: 4.1.0 [#]	
For <u>HELP</u> on u	sing this form, see bottom of this page or look at the p	op-up text over the X symbols.	
Proposed change a	affects: # (U)SIM ME/UE X Radio Acces	ss Network X Core Network	
Title: ¥	UL DPCH Power Control Info in TDD		
Source: ೫	TSG-RAN WG2		
Work item code: 郑	TEI	Date:	
Category: ₩	 A Refuse the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP <u>TR 21.900</u>. 	elease: # REL-4 Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)	
Reason for change	 2: # 1. The UL Physical Channel Control procedure timeslot interference on DCCH. In this case mandatory. 2. The SIR Target may differ significantly for in UL DPCH Info this needs to be specified by 	e may be used to provide UL the SIR Target should not be ndividual CCTrCH's. Therefore in CCTrCH.	
Summary of chang	re: # In UL DPCH Power Control Info SIR Target is no In Uplink DPCH Info SIR Target is added to the C	ow optional CCTrCH list	
Consequences if not approved:	 When DCCH is used to provide UL ISCP for UE considerable signalling overhead is introduced w SIR Target. When more then one UL CCTrCH exists the UE power. Isolated Impact Analysis - Corrected functionality PC and CCTrCH establishment. SIR Target is signational in the UL physical channel control process implementations supporting multiple UL CCTrCH 	Tx power calculation with unnecessary specification of may apply inappropriate UL y: TDD mode signaling for UL OL gnaled per CCTrCH and is edure. This CR affects all h in TDD mode.	
Clauses affected:	¥ 10.3.6.88, 10.3.6.91, 11.3		
Other specs affected:	%Other core specifications%25.331 v3.Test specifications0&M Specifications	7.0, CR 0915r1	
Other comments:	X		

How to create CRs using this form: Comprehensive information and tips about how to create CRs can be found at: <u>http://www.3gpp.org/3G_Specs/CRs.htm</u>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

10.3.6.88 Uplink DPCH info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Uplink DPCH power control info	OP		Uplink DPCH power control info 10.3.6.91	
CHOICE mode	MP			
>>Scrambling code type	MP		Enumerated(short, long)	
>>Scrambling code number	MP		Integer(016 777215)	
>>Number of DPDCH	MD		Integer(2m axDPDCH)	Default value is 1. Number of DPDCH is 1 in HANDOVER TO UTRAN COMMAND
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256)	Minimum allowed SF of the channelisation code for data part
>>TFCI existence	MD		Boolean	TRUE means existence. Default value is "TRUE"
>>Number of FBI bits	СН		Integer (1, 2)	In bits. Number of FBI bits is needed if SSDT or FB Mode Transmit Signalling is supported.
>>Puncturing Limit	MP		Real(0.401 by step of 0.04)	
>TDD >>Uplink Timing Advance Control	OP		Uplink Timing Advance	
			Control	
>>UL CCTrCH List	MP	1 to <maxcctr CH></maxcctr 		
>>>TFCS ID	MD		Integer(18)	Default value is 1.
>>>UL target SIR	<u>MP</u>		<u>Real (-11</u> 20 by step of 0.5dB)	In dB
>>>Time info	MP		Time info 10.3.6.83	
>>>Common timeslot info	MD		Common timeslot info 10.3.6.10	Default is the current Common timeslot info
>>>Uplink DPCH timeslots and codes	MD		Uplink Timeslots and Codes 10.3.6.94	Default is to use the old timeslots and codes.

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

10.3.6.91 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 1.28Mcps TDD and parameters for uplink open loop power control in 3.84Mcps TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE mode	MP				
>FDD					
>>DPCCH Power offset	MP		Integer(- 164,6 by step of 2)	In dB	
>>PC Preamble	MP		Integer (07)	In number of frames	
>>SRB delay	MP		Integer(07)	In number of frames	
>>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		Integer (1, 2)	In dB	
>TDD					
>>UL target SIR	<u>OP</u> MP		Real (-11 20 by step of 0.5dB)	In dB	
>>CHOICE UL OL PC info	MP				
>>>Broadcast UL OL PC info			Null	No data	
>>>Individually Signalled	OP				
>>>>CHOICE TDD option	MP				REL-4
>>>>3.84Mcps TDD					REL-4
>>>>>Individual timeslot interference info	MP	1 to <maxts></maxts>			
>>>>>>Individual timeslot interference	MP		Individual timeslot interference 10.3.6.38		
>>>>>DPCH Constant Value	OP		Constant Value 10.3.6.11	Quality Margin	
>>>>1.28 Mcps TDD		1			REL-4
>>>>>TPC step size	MP		Integer(1,2,3		REL-4
>>>>Primary CCPCH Tx Power	OP		Primary CCPCH Tx Power 10.3.6.59	For Pathloss Calculation	

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

_ _ PHYSICAL CHANNEL INFORMATION ELEMENTS (10.3.6) _ _ _ _ UL-CCTrCH ::= SEQUENCE { tfcs-ID TFCS-IdentityPlain DEFAULT 1, UL-TargetSIR, ul-TargetSIR TimeInfo, timeInfo OPTIONAL, commonTimeslotInfo CommonTimeslotInfo ul-CCTrCH-TimeslotsCodes UplinkTimeslotsCodes OPTIONAL } UL-CCTrCH-r4 ::= SEQUENCE { TFCS-IdentityPlain tfcs-ID DEFAULT 1, ul-TargetSIR UL-TargetSIR, timeInfo TimeInfo, commonTimeslotInfo CommonTimeslotInfo OPTIONAL, CHOICE { tddOption SEQUENCE { tdd384

1

```
ul-CCTrCH-TimeslotsCodes
                                              UplinkTimeslotsCodes
                                                                       OPTIONAL
       }.
       tdd128
                                        SEQUENCE {
           ul-CCTrCH-TimeslotsCodes
                                              UplinkTimeslotsCodes-LCR-r4 OPTIONAL
       }
   }
}
UL-DPCH-PowerControlInfo ::=
                                  CHOICE {
                                     SEQUENCE {
   fdd
                                          DPCCH-PowerOffset,
       dpcch-PowerOffset
       pc-Preamble
                                          PC-Preamble,
       sRB-delay
                                          SRB-delay,
       powerControlAlgorithm
                                          PowerControlAlgorithm
       -- TABULAR: TPC step size nested inside PowerControlAlgorithm
   },
    tdd
                                      SEQUENCE {
       ul-TargetSIR
                                         UL-TargetSIR
                                                                     OPTIONAL,
           -ul-OL-PC-Signalling
                                            CHOICE {
           -----broadcast-UL-OL-PC-info
                                                 NULL,
               -handoverGroup
                                                  SEQUENCE {
                  IndividualTS-InterferenceList,
                  -dpch-ConstantValue
                                                      ConstantValue,
                                                     PrimaryCCPCH-TX-Power
                 }
       }
                                                                     OPTIONAL
   }
}
                                 CHOICE {
UL-DPCH-PowerControlInfo-r4 ::=
                                      SEQUENCE {
   fdd
       dpcch-PowerOffset
                                          DPCCH-PowerOffset,
       pc-Preamble
                                          PC-Preamble,
       powerControlAlgorithm
                                         PowerControlAlgorithm
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
   },
   tdd
                                      SEQUENCE {
       ul-TargetSIR
                                          UL-TargetSIR
                                                                     OPTIONAL,
       ul-OL-PC-Signalling
                                          CHOICE {
           broadcast-UL-OL-PC-info
                                              NULL,
                                              SEQUENCE {
           handoverGroup
               tddOption
                                                  CHOICE {
                   tdd384
                                                      SEQUENCE {
                       individualTS-InterferenceList
                                                         IndividualTS-InterferenceList,
                       dpch-ConstantValue
                                                         ConstantValue
                   },
                   tdd128
                                                      SEQUENCE {
                                                         TPC-StepSizeTDD
                       tpc-StepSize
                   }
               },
               primaryCCPCH-TX-Power
                                                PrimaryCCPCH-TX-Power
           }
      }
   }
}
```

	CR-Form-v4
ж	25.331 CR 917 ^{# ev} r1 ^{# Current version:} 3.7.0 [#]
For <u>HELP</u> on	using this form, see bottom of this page or look at the pop-up text over the st symbols.
Proposed change	affects: # (U)SIM ME/UE X Radio Access Network X Core Network
Title:	CN-originated paging in CELL_PCH and URA_PCH state
Source: #	TSG-RAN WG2
Work item code: #	TEI Date: 策 2001-08-29
Category: ३	Release: % R99 Use one of the following categories: Use one of the following releases: F (correction) 2 A (corresponds to a correction in an earlier release) R96 B (addition of feature), R97 C (functional modification of feature) R98 D (editorial modification) R99 D tetailed explanations of the above categories can REL-4 be found in 3GPP TR 21.900. REL-5
Reason for chang	 e: # In the paging procedure, subclause 8.1.2.3 indicates that the connected mode UE shall perform a cell update procedure using the cause "paging response" even in case of CN originated paging. However, this kind of paging response is intended for UTRAN originated paging. In case of a CN originated paging, the MM layer will trigger the establishment of a signalling connection carrying the MM paging response. This establishment will, according to the Initial direct transfer procedure, cause a cell update with cause "uplink data transmission" if the UE is in CELL_PCH or URA_PCH state. This means that the specification is unclear on which cell update cause to use in this case. It should be enough to state that a cell update procedure using the cause "uplink data transmission" is enough. Whether it is a paging response or not is not relevant for the RRC layer, since the paging response is handled by upper layers on CN originated paging.
Summary of chan	 <i>ge:</i> # A modification is made in the paging procedure, subclause 8.1.2.3, so that the UE will <u>not</u> initiate a cell update with cause "paging response" in case of CN originated paging for a connected mode UE in CELL_PCH or URA_PCH state. <i>Isolated impact analysis:</i> Corrected functionality: The cause value used in the CELL UPDATE message transmitted after received CN-originated paging in CELL_PCH and URA_PCH states. Correction to a function where the specification contained some contradictions. Would not affect implementations behaving as indicated in the CR, would affect implementations which do not assume a specific cause value in the CELL UPDATE message after CN-originated paging.

Consequences if not approved:	* The UE may transmit a cell update with a different cause value that was expected by UTRAN. Possibly an unnecessary cell update procedure is performed, if the upper layers do not initiate a paging response at all.
Clauses affected: Other specs affected:	# 8.1.2.3 # Other core specifications # Test specifications # 0&M Specifications #
Other comments:	x

How to create CRs using this form:

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

8.1.2.3 Reception of a PAGING TYPE 1 message by the UE

A UE in idle mode, CELL_PCH state or URA_PCH state shall receive the paging information for all its monitored paging occasions. For an UE in idle mode, the paging occasions are specified in [4] and depend on the IE "CN domain specific DRX cycle length coefficient", as specified in subclause 8.6.3.1a. For a UE in CELL_PCH state or URA_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in subclauses 8.6.3.2 and 8.6.3.3 respectively.

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in idle mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

- if the IE "Used paging identity" is a CN identity:
 - compare the IE "UE identity" with all of its allocated CN UE identities:
 - if one match is found:
 - indicate reception of paging; and
 - forward the IE "CN domain identity", the IE "UE identity" and the IE "Paging cause" to the upper layers;
- otherwise:
 - ignore that paging record.

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

- if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:
 - if the optional IE "CN originated page to connected mode UE" is included:
 - indicate reception of paging; and
 - forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers;
 - otherwise:
 - perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2; [Note to Hans: changed indentation to B3]
 - ignore any other remaining IE "Paging record" that may be present in the message;
- otherwise:
 - ignore that paging record.

If the IE "BCCH modification info" is included, any UE in idle mode, CELL_PCH or URA_PCH state shall perform the actions as specified in subclause 8.1.1 in addition to any actions caused by the IE "Paging record" occurrences in the message as specified above.

	CR-Form-v4
ж	25.331 CR 918 * ev - * Current version: 4.1.0 *
For <u>HELP</u> on t	using this form, see bottom of this page or look at the pop-up text over the $lpha$ symbols.
Proposed change	affects: # (U)SIM ME/UE X Radio Access Network Core Network
Title: ೫	CN-originated paging in CELL_PCH and URA_PCH state
Source: ೫	TSG-RAN WG2
Work item code: #	TEI Date: 策 2001-08-29
Category: ¥	Release: % REL-4 Use one of the following categories: Use one of the following releases: F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can REL-4 (Release 4) be found in 3GPP TR 21.900. REL-5 (Release 5)
Reason for chang	 e: # In the paging procedure, subclause 8.1.2.3 indicates that the connected mode UE shall perform a cell update procedure using the cause "paging response" even in case of CN originated paging. However, this kind of paging response is intended for UTRAN originated paging. In case of a CN originated paging, the MM layer will trigger the establishment of a signalling connection carrying the MM paging response. This establishment will, according to the Initial direct transfer procedure, cause a cell update with cause "uplink data transmission" if the UE is in CELL_PCH or URA_PCH state. This means that the specification is unclear on which cell update cause to use in this case. It should be enough to state that a cell update procedure using the cause "uplink data transmission" is enough. Whether it is a paging response or not is not relevant for the RRC layer, since the paging response is handled by upper layers on CN originated paging.
Summary of chan	 ge: # A modification is made in the paging procedure, subclause 8.1.2.3, so that the UE will <u>not</u> initiate a cell update with cause "paging response" in case of CN originated paging for a connected mode UE in CELL_PCH or URA_PCH state. Isolated impact analysis: Corrected functionality: The cause value used in the CELL UPDATE message transmitted after received CN-originated paging in CELL_PCH and URA_PCH states. Correction to a function where the specification contained some contradictions. Would not affect implementations behaving as indicated in the CR, would affect implementations which do not assume a specific cause value in the CELL UPDATE message after CN-originated paging.

Consequences if not approved:	* The UE may transmit a cell update with a different cause value that was expected by UTRAN. Possibly an unnecessary cell update procedure is performed, if the upper layers do not initiate a paging response at all.
Clauses affected: Other specs affected:	# 8.1.2.3 # Other core specifications # Test specifications # 0&M Specifications #
Other comments:	x

How to create CRs using this form:

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

8.1.2.3 Reception of a PAGING TYPE 1 message by the UE

A UE in idle mode, CELL_PCH state or URA_PCH state shall receive the paging information for all its monitored paging occasions. For an UE in idle mode, the paging occasions are specified in [4] and depend on the IE "CN domain specific DRX cycle length coefficient", as specified in subclause 8.6.3.1a. For a UE in CELL_PCH state or URA_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in subclauses 8.6.3.2 and 8.6.3.3 respectively.

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in idle mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

- if the IE "Used paging identity" is a CN identity:
 - compare the IE "UE identity" with all of its allocated CN UE identities:
 - if one match is found:
 - indicate reception of paging; and
 - forward the IE "CN domain identity", the IE "UE identity" and the IE "Paging cause" to the upper layers;
- otherwise:
 - ignore that paging record.

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

- if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:
 - if the optional IE "CN originated page to connected mode UE" is included:
 - indicate reception of paging; and
 - forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers;
 - otherwise:
 - perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2; [Note to Hans: changed indentation to B3]
 - ignore any other remaining IE "Paging record" that may be present in the message;
- otherwise:
 - ignore that paging record.

If the IE "BCCH modification info" is included, any UE in idle mode, CELL_PCH or URA_PCH state shall perform the actions as specified in subclause 8.1.1 in addition to any actions caused by the IE "Paging record" occurrences in the message as specified above.

CR-Form-v4				
æ	25 331 CR 919 # ev r1 # Current version: 2 7 0 #			
	23.351 OK 313 11 3.7.0			
For <u>HELP</u> on us	sing this form, see bottom of this page or look at the pop-up text over the $#$ symbols.			
Proposed change a	affects: # (U)SIM ME/UE X Radio Access Network X Core Network			
Title: ೫	Corrections to UE variable handling			
Source: #	TSG-RAN WG2			
Work item code: %	TEI Date: # 2001-08-29			
Category: ₩	FRelease: %R99Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99Detailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5			
Reason for change	 How to set variables when entering idle mode is not specified. Some variables have relevance in idle mode so it is suggested that the setting is explicitely stated. Also, how to set variables when leaving UTRA RRC connected mode to another RAT is missing. The initialisation of variables when entering UTRA RRC connected mode is specified separately for the case when coming from idle mode and when coming from another RAT. It is proposed to specify it in a common location to avoid inconsistencies and/or missing initialisation. Some variables that have the need "MP" have no defined value in idle mode and it is suggested to change them to "OP". In the variable VALUE_TAG, there is a need to store several value tags for the system information blocks with multiple occurences. In the end of the cell update procedure, the variable ORDERED_CONFIGURATION is not set to FALSE, even if the variable was set to TRUE because the CELL UPDATE CONFIRM message contained physical channel, transport channel or radio bearer information elements. This needs to be corrected. 			
Summary of chang	 In subclause 13.4, statements are added on how to set the values of each variable upon entering and leaving UTRA RRC connected mode and in some cases also when switched off and after selecting a new PLMN. The initialisations of variables in the procedures are replaced with reference to 13.4. A reference to 13.4 is added in the sublause "Actions when entering idle mode from connected mode" to make sure variables are cleared or set to appropriate values. For some variables, the need is changed from "MP" to "OP", to allow them to be cleared. Some minor corrections in the variable definitions are made also. In the variable VALUE_TAG, the definition of the value tags for the system information blocks with multiple occurences have been corrected. Upon completion of the cell update procedure, the variable ORDERED_CONFIGURATION is set to FALSE when the CELL UPDATE 			

	CONFIRM message contained physical channel, transport channel or radio bearer information elements. Isolated impact analysis: Corrected functionality: Setting and initialisation of RRC state variables when entering and leaving UTRA RRC connected mode and the setting of the variable ORDERED_CONFIGURATION in the cell update procedure. Corrections to a function where the specification was ambiguous or not sufficiently explicit. They would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.
Consequences if # not approved:	Unlear UE behaviour. Also, when new variables are introduced in the specification, there is a risk that initialisation when entering connected mode and/or idle mode will be missing.
Clauses affected: #	8.1.3.6, 8.3.1.6, 8.3.1.7a, 8.3.1.8, 8.3.1.9, 8.3.1.9a, 8.3.1.12, 8.3.6.3, 8.3.7.4, 8.3.11.4, 8.5.2, 13.4.0, 13.4.00, 13.4.0a, 13.4.1, 13.4.2a, 13.4.3, 13.4.4, 13.4.5, 13.4.5a, 13.4.6, 13.4.7, 13.4.8, 13.4.8a, 13.4.9, 13.4.9a, 13.4.10, 13.4.11, 13.4.11a, 13.4.12, 13.4.14, 13.4.15, 13.4.16, 13.4.17, 13.4.18, 13.4.19, 13.4.20, 13.4.22, 13.4.23, 13.4.24, 13.4.25, 13.4.26, 13.4.26a, 13.4.27, 13.4.27a, 13.4.27b, 13.4.27c, 13.4.27d, 13.4.27e, 13.4.27f, 13.4.27g, 13.4.28, 13.4.29, 13.4.30, 13.4.31, 13.4.32
Other specs #	Other core specifications # 25.331 v4.1.0, CR 920 Test specifications 0&M Specifications

How to create CRs using this form:

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

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

8.1.3.6 Reception of an RRC CONNECTION SETUP message by the UE

The UE shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION SETUP message with the value of the variable INITIAL_UE_IDENTITY.

If the values are different, the UE shall:

- ignore the rest of the message;

If the values are identical, the UE shall:

- stop timer T300, and act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following;
 - if the UE will be in the CELL_FACH state at the conclusion of this procedure:
 - if the IE "Frequency info" is included:
 - select a suitable UTRA cell according to [4] on that frequency;
 - select PRACH according to subclause 8.5.17;
 - select Secondary CCPCH according to subclause 8.5.19;
- perform the physical layer synchronization procedure as specified in [29];
- enter a state according to subclause 8.6.3.3;
- submit an RRC CONNECTION SETUP COMPLETE message to the lower layers on the uplink DCCH after successful state transition per subclause 8.6.3.3, with the contents set as specified below:
 - set the IE "RRC transaction identifier" to
 - the value of "RRC transaction identifier" in the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - clear that entry.
 - if the USIM is present:
 - set the "START" for each CN domain in the IE "START list" in the RRC CONNECTION SETUP COMPLETE message with the corresponding START value that is stored in the USIM [50]; and then
 - set the START value stored in the USIM [50] for any CN domain to the value "THRESHOLD" of the variable START_THRESHOLD;
 - if the USIM is not present:
 - set the "START" for each CN domain in the IE "START list" in the RRC CONNECTION SETUP message to zero;
 - retrieve its UTRA UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and then
 - include this in IE "UE radio access capability" and IE "UE radio access capability extension", provided this IE is included in variable UE_CAPABILITY_REQUESTED;
 - retrieve its inter-RAT-specific UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and then
 - include this in IE "UE system specific capability".

When the RRC CONNECTION SETUP COMPLETE message has been submitted to lower layers for transmission the UE shall:

- if the UE has entered CELL_FACH state:

- start timer T305 using its initial value if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;
- store the contents of the variable UE_CAPABILITY_REQUESTED in the variable UE_CAPABILITY_TRANSFERRED;
- initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
- clear the variable UE_CAPABILITY_REQUESTED;
- if the IE "Transport format combination subset" was not included in the RRC CONNECTION SETUP message:
 - set the IE "Current TFC subset" in the variable TFS_SUBSET to "Full transport format combination set";
- set the "Status" in the variable CIPHERING_STATUS to "Not started";
- set the "Reconfiguration" in the variable CIPHERING_STATUS to FALSE;
- set the "Status" in the variable INTEGRITY_PROTECTION_INFO to "Not started";
- set the "Historical status" in the variable INTEGRITY_PROTECTION_INFO to "Never been active";
- set the "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE;
- set the variable CELL_UPDATE_STARTED to FALSE;
- set the variable CONFIGURATION_INCOMPLETE to FALSE;
- set the variable ORDERED_RECONFIGURATION to FALSE;
- set the variable FAILURE_INDICATOR-to FALSE;
- set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to FALSE;
- set the variable INVALID_CONFIGURATION to FALSE;
- set the variable PROTOCOL_ERROR_INDICATOR to FALSE;
- set the variable PROTOCOL_ERROR_REJECT to FALSE;
- set the variable TGSN_REPORTED to FALSE;
- set the variable UNSUPPORTED_CONFIGURATION to FALSE;
- clear all optional IEs in all variables, except those optional IEs that are set in this procedure;
- consider the procedure to be successful;

And the procedure ends.

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

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

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

the UE shall:

- stop timer T302;
- set the variable CELL_UPDATE_STARTED to FALSE;
- in case of a cell update procedure and the CELL UPDATE CONFIRM message:
 - includes "RB information elements"; and/or
 - includes "Transport channel information elements"; and/or
 - includes "Physical channel information elements"; and
 - if the variable ORDERED_RECONFIGURATION is set to FALSE:
 - set the variable ORDERED_RECONFIGURATION to TRUE;
- act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:
 - use the transport channel(s) applicable for the physical channel types that is used; and
 - if the IE "TFS" is neither included nor previously stored in the UE for that transport channel(s):
 - use the TFS given in system information.
 - if none of the TFS stored is compatible with the physical channel:
 - delete the stored TFS;
 - use the TFS given in system information.
 - perform the physical layer synchronisation procedure as specified in [29];
 - if the CELL UPDATE CONFIRM message includes the IE "RLC re-establish indicator (RB2 and RB3)":
 - re-establish the RLC entities for signalling radio bearer RB2 and signalling radio bearer RB3;
 - if the variable CIPHERING_STATUS is set to "Started":
 - set the HFN values for AM RLC entities with RB identity 2 and 3 equal to the START value included in the latest transmitted CELL UPDATE message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN;
 - if the CELL UPDATE CONFIRM message includes the IE "RLC re-establish indicator (RB>3)":
 - re-establish the AM RLC entities for RB with RB identity equal to or larger than 4;
 - if the variable CIPHERING_STATUS is set to "Started":
 - set the HFN values for AM RLC entities with RB identity equal to or larger than 4 equal to the START value included in the latest transmitted CELL UPDATE message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN;
- enter a state according to subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.
If the UE after state transition enters CELL_DCH state, it shall:

- not prohibit periodical status transmission in RLC.

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

- start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";
- select PRACH according to subclause 8.5.17;
- select Secondary CCPCH according to subclause 8.5.19;
- not prohibit periodical status transmission in RLC;
- if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - ignore that IE and stop using DRX;

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

- prohibit periodical status transmission in RLC;
- clear the variable C_RNTI;
- stop using that C_RNTI just cleared from the variable C_RNTI in MAC;
- start the timer T305 using its initial value if timer T305 is not running and periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";
- select Secondary CCPCH according to subclause 8.5.19;
- if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging Occasion and PICH Monitoring Occasion as specified in 8.6.3.2 in CELL_PCH state.

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

- the contents of the variable C_RNTI are empty;

it shall check the value of V302 and

- If V302 is equal to or smaller than N302:
 - if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message,
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or
 - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

- in case of a URA update procedure:
 - stop the URA update procedure; and
 - continue with a cell update procedure;
- set the contents of the CELL UPDATE message according to subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "cell reselection";
- submit the CELL UPDATE message for transmission on the uplink CCCH;
- increment counter V302;
- restart timer T302 when the MAC layer indicates success or failure to transmit the message;
- If V302 is greater than N302:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - in case of a cell update procedure:
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
 - in case of a URA update procedure:
 - clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
 - release all its radio resources;
 - indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - clear the variable ESTABLISHED_RABS;
 - enter idle mode;
 - other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
 - and the procedure ends.

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

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

or

the UE after the state transition moves to another state than the CELL_FACH state;

the UE shall:

- if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - include and set the IE "Radio bearer uplink ciphering activation time info" in any response message transmitted below to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Integrity protection mode info" with the IE "Integrity protection mode command" set to "Modify":

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- in case of a cell update procedure:
 - set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

value of the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

- clear that entry.
- in case of a cell update procedure:
 - set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - clear that entry;
- if the variable PDCP_SN_INFO is non-empty:
 - include the IE "RB with PDCP information list" in any response message transmitted below and set it to the value of the variable PDCP_SN_INFO;
- if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message included the IE "Downlink counter synchronisation info":
 - calculate the START value according to subclause 8.5.9;
 - include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in any response message transmitted below;
- transmit a response message as specified in subclause 8.3.1.7;
- if the IE "Integrity protection mode info" was present in the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
 - start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message;
- if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE;
- clear the variable PDCP_SN_INFO;
- if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
- if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
- in case of a cell update procedure:
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
- in case of a URA update procedure:

The procedure ends.

8.3.1.7a Physical channel failure

If the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message would cause the UE to transit to CELL_DCH state; and

- in case of a received CELL UPDATE CONFIRM message:
 - if the UE failed to establish the physical channel(s) indicated in the received CELL UPDATE CONFIRM message according to the criteria defined in subclause 8.5.4 are not fulfilled; or
 - the received CELL UPDATE CONFIRM message does not contain dedicated physical channels;
 - in case of the UE received a URA UPDATE CONFIRM message:

the UE shall:

- if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or
 - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
- if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE;
- if V302 is equal to or smaller than N302:
 - in case of a URA update procedure:
 - stop the URA update procedure; and
 - continue with a cell update procedure;
 - select a suitable UTRA cell according to [4];
 - set the contents of the CELL UPDATE message according to subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "Radio link failure";
 - submit the CELL UPDATE message for transmission on the uplink CCCH;
 - increment counter V302;
 - restart timer T302 when the MAC layer indicates success or failure to transmit the message;
- if V302 is greater than N302:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

- in case of a cell update procedure:
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
- in case of a URA update procedure:
 - clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
- release all its radio resources;
- indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
- clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
- clear the variable ESTABLISHED_RABS;
- enter idle mode.

8.3.1.8 Unsupported configuration by the UE

If the UE does not support the configuration in the CELL UPDATE CONFIRM message and/or the variable UNSUPPORTED_CONFIGURATION is set to TRUE, the UE shall:

- if V302 is equal to or smaller than N302, the UE shall:
 - if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or
 - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE;
 - set the variable FAILURE_INDICATOR to TRUE;
 - set the variable FAILURE_CAUSE to "Unsupported configuration";
 - set the content of the CELL UPDATE message according to subclause 8.3.1.3;
 - submit the CELL UPDATE message for transmission on the uplink CCCH;
 - increment counter V302;
 - restart timer T302 when the MAC layer indicates success or failure to transmit the message;

- if V302 is greater than N302, the UE shall:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - clear the variable PDCP_SN_INFO;
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
 - release all its radio resources;
 - indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - clear the variable ESTABLISHED_RABS;
 - enter idle mode;
 - Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
 - and the procedure ends.

8.3.1.9 Invalid configuration

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

- if V302 is equal to or smaller than N302:
 - if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or
 - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info";
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE;
 - in case of a cell update procedure:
 - set the variable FAILURE_INDICATOR to TRUE;
 - set the variable FAILURE_CAUSE to "Invalid configuration";

- set the contents of the CELL UPDATE message according to subclause 8.3.1.3;
- submit the CELL UPDATE message for transmission on the uplink CCCH;
- in case of a URA update procedure:
 - set the contents of the URA UPDATE message according to subclause 8.3.1.3;
 - submit the URA UPDATE message for transmission on the uplink CCCH;
- increment counter V302;
- restart timer T302 when the MAC layer indicates success or failure to transmit the message;
- if V302 is greater than N302:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - clear the variable PDCP_SN_INFO;
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
 - release all its radio resources;
 - indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - clear the variable ESTABLISHED_RABS;
 - enter idle mode;
 - Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
 - the procedure ends.

8.3.1.9a Incompatible simultaneous reconfiguration

In case of a cell update procedure and if the received CELL UPDATE CONFIRM message

- includes "RB information elements"; and/or
- includes "Transport channel information elements"; and/or
- includes "Physical channel information elements"; and
- the variable ORDERED_RECONFIGURATION is set to TRUE because of an ongoing Reconfiguration procedure;

and/or

- if the variable INCOMPATIBLE_SECURITY_RECONFIGURATION becomes set to TRUE of the received CELL UPDATE CONFIRM message:

the UE shall:

- if V302 is equal to or smaller than N302:
 - if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or

- the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
- if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE;
- set the variable FAILURE_INDICATOR to TRUE;
- set the variable FAILURE_CAUSE to "Incompatible simultaneous reconfiguration";
- set the content of the CELL UPDATE message according to subclause 8.3.1.3;
- submit the CELL UPDATE message for transmission on the uplink CCCH;
- increment counter V302;
- restart timer T302 when the MAC layer indicates success or failure to transmit the message;
- if V302 is greater than N302:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - clear the variable PDCP_SN_INFO;
 - set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to FALSE;
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
 - release all its radio resources;
 - indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - clear the variable ESTABLISHED_RABS;
 - enter idle mode;
 - Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
 - the procedure ends.

8.3.1.12 T302 expiry or cell reselection

If any or several of the following conditions are true:

- expiry of timer T302;
- reselection to another UTRA cell (including the previously serving cell) before completion of the cell update or URA update procedure;

the UE shall:

- stop T302 if it is running;
- if the UE was in CELL_DCH state prior to the initiation of the procedure; and
 - if timers T314 and T315 have elapsed while T302 was running:
 - enter idle mode.
 - indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers. Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2.
 - and the procedure ends.
 - if timer T314 has elapsed while T302 was running and,
 - if "T314 expired" in the variable RB_TIMER_INDICATOR is set to FALSE and
 - if T315 is still running:
 - release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314";
 - indicate release of those radio access bearers to upper layers;
 - delete all information about those radio access bearers from the variable ESTABLISHED_RABS;
 - set "T314 expired" in the variable RB_TIMER_INDICATOR to TRUE;
 - if timer T315 has elapsed while T302 was running and,
 - if "T315 expired" in the variable RB_TIMER_INDICATOR is set to FALSE and,
 - if T314 is still running:
 - release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315";
 - indicate release of those radio access bearers to upper layers;
 - delete all information about those radio access bearers from the variable ESTABLISHED_RABS;
 - set "T315 expired" in the variable RB_TIMER_INDICATOR to TRUE;
- check whether it is still in "in service area" (see subclause 8.5.5.2);
- if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE and/or the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":

- set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
- clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
- if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
- if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE;
- in case of a cell update procedure:
 - clear any entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS;
- in case of a URA update procedure:
 - clear any entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS;

If the UE detects "in service area" if it has not entered idle mode, and:

- if V302 is equal to or smaller than N302, the UE shall:
 - if the UE performed cell re-selection:
 - delete its C-RNTI;
 - in case of a cell update procedure:
 - set the contents of the CELL UPDATE message according to subclause 8.3.1.3;
 - submit the CELL UPDATE message for transmission on the uplink CCCH;
 - in case of a URA update procedure:
 - set the contents of the URA UPDATE message according to subclause 8.3.1.3;
 - submit the URA UPDATE message for transmission on the uplink CCCH;
 - increment counter V302;
 - restart timer T302 when the MAC layer indicates success or failure to transmit the message;
- if V302 is greater than N302, the UE shall:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - clear the variable PDCP_SN_INFO;
 - in case of a cell update procedure:
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
 - in case of a URA update procedure:
 - clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;

- release all its radio resources;
- indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
- clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
- clear the variable ESTABLISHED_RABS;
- enter idle mode;
- other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- and the procedure ends.

If the UE does not detect "in service area", it shall:

- continue searching for "in service area".

8.3.6.3 Reception of HANDOVER TO UTRAN COMMAND message by the UE

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

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

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

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

- in TDD:

Default DPCH Offset Value = (SRNTI 2 mod 7)

- handle the above Default DPCH Offset Value as if an IE with that value was included in the message, as specified in subclause 8.6.6.21;
- if IE "Specification mode" is set to "Complete specification":
 - initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements;
- perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;
- if ciphering has been activated and ongoing in the radio access technology from which inter- RAT handover is performed:
 - for the CN domain as in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup":
 - set the HFN component of the COUNT-C variable for all radio bearers and signalling radio bearers that use RLC-AM and RLC-UM to the START value as stored in the USIM for that CN domain; and
 - set the remaining LSBs of the HFN component of COUNT-C to zero;
 - set the HFN component of the COUNT-C variable for all radio bearers and signalling radio bearers that use the transparent mode of RLC to zero, while not incrementing the value of the HFN component of the COUNT-C variable at each CFN cycle; and
 - set the CFN component of the COUNT-C variable to the value of the CFN as calculated in subclause 8.5.15;
 - set the IE "Status" in the variable CIPHERING_STATUS to "Started";
 - apply the same ciphering (ciphered/unciphered, algorithm) as prior to inter-RAT handover, unless a change of algorithm is requested by means of the IE "Ciphering algorithm";
 - apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND;

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

- if the IE "Status" in the variable CIPHERING_STATUS is set to "Started" and transparent mode radio bearers have been established by this procedure:
 - include the IE "COUNT-C activation time" in the response message and specify a CFN value other than the default, "Now" for this IE;
 - at the CFN value as indicated in the response message in the IE "COUNT-C activation time":
 - set the HFN component of the COUNT-C variable to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
 - set the remaining LSBs of the HFN component of COUNT-C to zero;
 - increment the HFN component of the COUNT-C variable by one;
 - set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
 - step the COUNT-C variable, as normal, at each CFN value. The HFN component is no longer fixed in value but incremented at each CFN cycle;
- transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH, using the new ciphering configuration, only if ciphering has been started;
- when the HANDOVER TO UTRAN COMPLETE message has been submitted to lower layers for transmission,:
 - initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;

- if the IE "Transport format combination subset" was not included in the HANDOVER TO UTRAN COMMAND message or in the predefined parameters;
- set the IE "Status" in the variable CIPHERING_STATUS to "Not started";
- set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE;
- set the IE "Status" in the variable INTEGRITY_PROTECTION_INFO to "Not started";
- set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE;
- set the variable CELL_UPDATE_STARTED to FALSE;
- set the variable CONFIGURATION_INCOMPLETE to FALSE;
- set the variable ORDERED_RECONFIGURATION to FALSE;
- set the variable FAILURE_INDICATOR-to FALSE;
- set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to FALSE;
- set the variable INVALID_CONFIGURATION to FALSE;
- set the variable PROTOCOL_ERROR_INDICATOR, TFC_SUBSET to FALSE;
- set the variable PROTOCOL_ERROR_REJECT to FALSE;
- set the variable TGSN_REPORTED to FALSE;
- set the variable UNSUPPORTED_CONFIGURATION to FALSE;
- clear all optional IEs in all variables, except those optional IEs that are set in this procedure;
- and the procedure ends.

8.3.7.4 Successful completion of the inter-RAT handover

Upon successfully completing the handover, UTRAN should:

- release the radio connection; and
- remove all context information for the concerned UE.

Upon successfully completing the handover, the UE shall:

- if the USIM is present:
 - store the current START value for every CN domain in the USIM [50];
 - if the "START" stored in the USIM [50] for a CN domain is greater than the value "THRESHOLD" of the variable START_THRESHOLD:
 - delete the ciphering and integrity keys that are stored in the USIM for that CN domain;
 - inform the deletion of these keys to upper layers.

- clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4;

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

8.3.11.4 Successful completion of the cell change order

Upon successful completion of the cell change order, the UE shall:

- stop timer T309.
- clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4;

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

- release the radio connection; and
- remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

8.5.2 Actions when entering idle mode from connected mode

When entering idle mode from connected mode, the UE shall:

- clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4;
- attempt to select a suitable cell to camp on.

When leaving connected mode according to [4], the UE shall:

- perform cell selection.

While camping on a cell, the UE shall:

- acquire system information according to the system information procedure in subclause 8.1;
- perform measurements according to the measurement control procedure specified in subclause 8.4; and
- if the UE is registered:
 - be prepared to receive paging messages according to the paging procedure in subclause 8.2.

If IE "PLMN identity" within variable SELECTED_PLMN has the value "GSM-MAP", the UE shall:

- delete any NAS system information received in connected mode;
- acquire the NAS system information in system information block type 1; and
- proceed according to subclause 8.6.1.2.

When entering idle mode, the UE shall:

- if the USIM is present:
 - store the current START value for every CN domain in the USIM [50];
 - if the "START" stored in the USIM [50] for a CN domain is greater than the value "THRESHOLD" of the variable START_THRESHOLD:
 - delete the ciphering and integrity keys that are stored in the USIM for that CN domain;
 - inform the deletion of these keys to upper layers.

13.4 UE variables

1

13.4.0 CELL INFO LIST

This variable contains cell information on intra-frequency, inter-frequency and inter-RAT cells, as received in messages System Information Block Type 11, System Information Block Type 12, and MEASUREMENT CONTROL.

The first position in Intra-frequency cell info list corresponds to Intra-frequency cell id 0, the second to Intra-frequency cell id 1, etc.

The first position in Inter-frequency cell info list corresponds to Inter-frequency cell id 0, the second to Inter-frequency cell id 1, etc.

The first position in Inter-RAT cell info list corresponds to Intra-frequency cell id 0, the second to Inter-RAT cell id 1, etc.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Intra-frequency cell info	MP <u>OP</u>	1 <maxc ellMeas></maxc 		Note
>CHOICE position status	MP			
>>Occupied				
>>>Cell info	MP		Cell info 10.3.7.2	
>>Vacant				No data
Inter-frequency cell info	MP <u>OP</u>	1 <maxc ellMeas></maxc 		Note
>CHOICE position status	MP			
>>Occupied				
>>>Frequency info	MP		Frequency info 10.3.6.36	
>>>Cell info	MP		Cell info 10.3.7.2	
>>Vacant				No data
Inter-RAT cell info	MP <u>OP</u>	1 <maxc ellMeas></maxc 		Note
>CHOICE position status	MP			
>>Occupied				
>>>CHOICE Radio Access Technology				
>>>>GSM				
>>>>Cell selection and re- selection info	MP		Cell selection and re-selection info for SIB11/12 10.3.2.4	
>>>>BSIC	MP		BSIC 10.3.8.2	
>>>>BCCH ARFCN	MP		Integer (01023)	[43]
>>>>IS-2000				
>>>>System specific measurement info			enumerated (frequency, timeslot, colour code, output power, PN offset)	For IS-2000, use fields from TIA/EIA/IS-2000.5, Subclause 3. 7.3.3.2.27, <i>Candidate Frequency</i> <i>Neighbour List Message</i>
>>Vacant				No data

NOTE: This IE shall be cleared when entering UTRA RRC connected mode, when leaving UTRA RRC connected mode, when switched off as well as at selection of a new PLMN.

13.4.00 CELL_POSITION

This variable stores the CELL_POSITION for UE-based OTDOA (10.3.7.106).

All IEs in this variable shall be cleared when switched off and as well as at selection of a new PLMN and when leaving UTRA RRC connected mode to another RAT.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Relative North	OP		Integer(- 2000020000)	Seconds, scale factor 0.03. Relative position compared to reference cell.
Relative East	OP		Integer(- 2000020000)	Seconds, scale factor 0.03. Relative position compared to reference cell.
Relative Altitude	OP		Integer(- 40004000)	Relative altitude in meters compared to ref. cell.

13.4.0a CELL_UPDATE_STARTED

This variable indicates whether a cell update or URA update procedure is in progress.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell update started	MP		Boolean	TRUE means a cell or URA update procedure is in progress. <u>Set to FALSE when entering</u> <u>UTRA RRC connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected mode.</u>

13.4.1 CIPHERING_STATUS

This variable contains information about the current status of ciphering in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Status	MP		Enumerated(Not started, Started)	Set to "Not started" when entering UTRA RRC connected mode. Set to "Not started" when leaving UTRA RRC connected mode.
Reconfiguration	MP		Boolean	TRUE means an RRC procedure performing reconfiguration of ciphering is ongoing. <u>Set to FALSE when entering</u> <u>UTRA RRC connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected mode.</u>

13.4.2 Void

13.4.2a CONFIGURATION_INCOMPLETE

This variable indicates whether a received measurement control message contains invalid an incomplete measurement configuration.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Configuration incomplete	MP		Boolean	TRUE: An incomplete configuration has been detected <u>Set to FALSE when</u> <u>entering UTRA RRC</u> <u>connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected</u> <u>mode.</u>

13.4.3 C_RNTI

This variable stores the assigned C-RNTI for this UE when in CELL_FACH state.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
C-RNTI	OP		C-RNTI 10.3.3.8	Cleared when entering UTRA RRC connected mode when not otherwise stated in the procedure. Cleared when leaving UTRA RRC connected mode.

13.4.4 DOFF

This variable contains the default offset value in the UE. See [10] for details.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Default DPCH Offset Value (DOFF)	OP		Default DPCH Offset Value, 10.3.6.16	Cleared when entering UTRA RRC connected mode when not otherwise stated in the procedure. Cleared when leaving UTRA RRC connected mode.

13.4.5 ESTABLISHED_RABS

This variable is used to store information about the established radio access bearers and signalling radio bearers in the UE.

Information Element/Group	Need	Multi	Type and reference	Semantics description
RAB information	OP	1 to <maxrabse tup></maxrabse 		For each RAB established <u>Cleared when entering UTRA</u> <u>RRC connected mode when</u> <u>not otherwise stated in the</u> <u>procedure.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>
>RAB info	MP		RAB info 10.3.4.8	
>RB information	MP	1 to <maxrbper RAB></maxrbper 		For each RB belonging to the RAB
>>RB identity	MP		RB identity 10.3.4.16	
>>Subflow	MP		Integer(0< maxSubflo wcount>)	Reference to the RAB subflow implemented by this RB
>>RB started	MD		Enumerate d(stopped, started)	Default value is started
Signalling radio bearer information	OP	1 to < maxSRBset up>		In the order of RB0 and upwards <u>Cleared when <mark>leaving UTRA</mark> RRC connected mode.</u>
>RB started	MD		Enumerate d(stopped, started)	Default value is started

13.4.5a ESTABLISHED_SIGNALLING_CONNECTIONS

This variable is used to store information about established signalling connections.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Signalling connection list	OP	1 to <maxcndo mains></maxcndo 		For each established signalling connection <u>Cleared when entering UTRA</u> <u>RRC connected mode when</u> <u>not otherwise stated in the</u> <u>procedure.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>
>Signalling connection identity	MP		CN domain identity 10.3.1.1	

13.4.6 ESTABLISHMENT_CAUSE

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

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

13.4.7 FAILURE_CAUSE

This variable contains the cause for failure of a UE initiated procedure, to be reported in a retransmitted message.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Failure cause	OP		Failure cause 10.3.3.13	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.

13.4.8 FAILURE_INDICATOR

This variable indicates whether the procedure has failed for a UE initiated procedure.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Failure indicator	MP		Boolean	TRUE: Procedure has failed <u>Set to FALSE when</u> <u>entering UTRA RRC</u> <u>connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected</u> <u>mode.</u>

13.4.8a INCOMPATIBLE_SECURITY_RECONFIGURATION

This variable indicates whether an incompatible simultaneous reconfiguration of a security function has been received.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Incompatible security reconfiguration	MP		Boolean	TRUE: An incompatible simultaneous security reconfiguration has been detected <u>Set to FALSE when</u> <u>entering UTRA RRC</u> <u>connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected</u> <u>mode.</u>

13.4.9 INITIAL_UE_IDENTITY

In this variable the identity used by the UE when establishing an RRC connection is stored.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Initial UE identity	OP		Initial UE identity	Cleared when leaving UTRA RRC connected mode.

13.4.9a INTEGRITY_PROTECTION_ACTIVATION_INFO

This variable contains information to be sent to UTRAN about when a new integrity protection configuration shall be activated in the uplink for signalling radio bearers in case of modification of integrity protection.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Uplink Integrity protection activation info	OP		Integrity protection activation info 10.3.3.17	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.

13.4.10 INTEGRITY_PROTECTION_INFO

This variable contains information about the current status of the integrity protection in the UE.

Information Element/Group	Need	Multi	Type and	Semantics description
Historical status	MP		Enumerate d(Never been active, Has been active)	Set to "Never been active" when entering UTRA RRC connected mode.
Status	MP		Enumerate d(Not started, Started)	Set to "Not started" when entering UTRA RRC connected mode. Set to "Not started" when leaving UTRA RRC connected mode.
Reconfiguration	MP		Boolean	TRUE means a reconfiguration of integrity protection is ongoing. <u>Set to FALSE when entering</u> <u>UTRA RRC connected mode.</u> Set to FALSE when <u>leaving</u> <u>UTRA RRC connected mode.</u>
Signalling radio bearer specific integrity protection information	MP <u>OP</u>	1 to <maxsrbse tup></maxsrbse 		When integrity protection is started, sStatus information for RB0- RB4 in that order. <u>Cleared when entering UTRA</u> <u>RRC connected mode.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>
>Uplink RRC HFN	MP		Bitstring (28)	
>Downlink RRC HFN	MP		Bitstring (28)	
>Uplink RRC Message sequence number	MP		Integer (0 15)	
>Downlink RRC Message sequence number	OP		Integer (0 15)	

13.4.11 INVALID_CONFIGURATION

This variable indicates whether a received message contained an invalid configuration, by means of invalid values or invalid combinations of information elements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Invalid configuration	MP		Boolean	TRUE: An invalid configuration has been detected <u>Set to FALSE when</u> <u>entering UTRA RRC</u> <u>connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected</u> <u>mode.</u>

13.4.11a LATEST_CONFIGURED_CN_DOMAIN

This variable stores the CN-domain that was most recently configured to be used for ciphering and integrity protection.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Latest configured CN domain	OP		CN domain identity 10.3.1.1	Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. Cleared when leaving UTRA RRC connected mode.

13.4.12 MEASUREMENT_IDENTITY

This variable stores the measurements configured in the UE. For each configured measurement, the information below shall be stored.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
MEASUREMENT CONTROL	OP		MEASURE	Information as contained in
			MENT	these messages.
			CONTROL	Cleared when entering UTRA
			10.2.17,	RRC connected mode when
			System	not stated otherwise in the
			Information	procedure (8.4.1.8-8.4.1.9).
			Block type	Cleared when leaving UTRA
			11	RRC connected mode when
			10.2.48.8.1	not stated otherwise in the
			2, System	procedure (8.4.1.9a).
			Information	
			Block type	
			12	
			10.2.48.8.1	
			3	

13.4.13 Void

13.4.14 ORDERED_RECONFIGURATION

This variable stores information about an ongoing Reconfiguration procedure.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Ordered reconfiguration	MP		Boolean	TRUE means that a Reconfiguration procedure is ongoing. <u>Set to FALSE when entering</u> <u>UTRA RRC connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected mode.</u>

13.4.15 PDCP_SN_INFO

This variable contains PDCP receive sequence numbers for one or several radio bearers to be included in a response message to UTRAN.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
RB with PDCP information list	OP	1 to		Cleared when entering UTRA
		<maxrball< td=""><td></td><td>RRC connected mode.</td></maxrball<>		RRC connected mode.
		RABs>		Cleared when leaving UTRA
				RRC connected mode.
>RB with PDCP information	MP		RB with	
			PDCP	
			information	
			10.3.4.22	

13.4.16 PROTOCOL_ERROR_INDICATOR

This variable indicates whether there exist a protocol error that is to be reported to UTRAN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Protocol error indicator	MP		Protocol error indicator 10.3.3.27	Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode.

13.4.17 PROTOCOL_ERROR_INFORMATION

This variable contains diagnostics to be reported to UTRAN for a message that was not completely understood.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Protocol error information	OP		Protocol	Cleared when entering UTRA
			error	RRC connected mode.
			information	Cleared when leaving UTRA
			10.3.8.12	RRC connected mode.

13.4.18 PROTOCOL_ERROR_REJECT

This variable indicates whether there has occurred a severe protocol error causing the ongoing procedure to fail.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Protocol error reject	MP		Boolean	TRUE: a severe protocol error has occurred <u>Set to FALSE when</u> entering UTRA RRC connected mode. Set to FALSE when leaving <u>UTRA RRC connected</u> mode.

13.4.19 RB_TIMER_INDICATOR

This variable contains information to be sent to UTRAN if any of the timers T314 or T315 has expired when the UE sends a cell update with cause RL failure.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB timer indicator	OP		RB timer indicator 10.3.3.28	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.

13.4.20 RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO

This variable contains information to be sent to UTRAN about when a new ciphering configuration shall be activated in the uplink for radio bearers using RLC-AM or RLC-UM.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB uplink ciphering activation time info	OP		RB activation	Cleared when entering UTRA RRC connected mode.
			time info 10.3.4.13	Cleared when leaving UTRA RRC connected mode.

13.4.21 SELECTED_PLMN

This variable contains the type of and identity of the selected PLMN.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
PLMN Type	MP		PLMN Type	
			10.3.1.12	
CHOICE identity type	MP			
>PLMN identity			PLMN	
			identity	
			10.3.1.11	
>SID			SID	
			10.3.9.11	

CHOICE identity type	Condition under which the given <i>identity type</i> is chosen			
PLMN identity	PLMN Type is "GSM-MAP"			
SID	PLMN Type is "ANSI-41"			

13.4.22 START_THRESHOLD

This variable contains information about the maximum allowed value of the START for a CN domain.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
THRESHOLD	OP		Integer (01048576)	20 bits <u>Cleared when entering UTRA</u> <u>RRC connected mode when</u> <u>not stated otherwise in the</u> <u>procedure.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>

13.4.23 START_VALUE_TO_TRANSMIT

This variable contains the value of START for new radio bearer(s) to be transmitted in a response message.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
START	OP		START 10.3.3.38	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.

13.4.24 TFC_SUBSET

This variable contains information about the TFC subset currently applied.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>FDD				
>>Current TFC subset	MP		Transport Format Combination Subset 10.3.5.22	Set to "Full transport format set" when entering UTRA RRC connected mode when not stated otherwise in the procedure.
>>Duration	OP		TFC Control duration 10.3.6.80	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>>Default TFC subset	OP		Transport Format Combination Subset 10.3.5.22	The TFC subset to go back to when any temporary limitation is released <u>Cleared when entering UTRA</u> <u>RRC connected mode.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>
>TDD				
>>TFCS list	MP	1 to < maxCCTrC H >		One TFCS is created when entering UTRA RRC connected mode when not stated otherwise in the procedure.
>>>TFCS identity	MP		Transport Format Combination Set Identity 10.3.5.21	<u>"TFCS ID" is set to 1 when</u> <u>entering UTRA RRC</u> <u>connected mode when not</u> <u>stated otherwise in the</u> <u>procedure.</u> <u>"Shared channel indicator" is</u> <u>set to FALSE when entering</u> <u>UTRA RRC connected mode</u> <u>when not stated otherwise in</u> <u>the procedure.</u>
>>>Current TFC subset	MP		Transport Format Combination Subset 10.3.5.22	Set to "Full transport format set" when entering UTRA RRC connected mode when not stated otherwise in the procedure.
>>>>Duration	OP		TFC Control duration 10.3.6.80	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>>>>Default TFC subset	OP		Transport Format Combination Subset 10.3.5.22	The TFC subset to go back to when any temporary limitation is released <u>Cleared when entering UTRA</u> <u>RRC connected mode.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>

13.4.25 TGPS_IDENTITY

This variable contains the configuration parameters of a compressed mode transmission gap pattern sequence

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPS_IDENTITY	OP		DPCH compressed mode info 10.3.6.33	Information as contained in the IE group "Transmission gap pattern sequence configuration parameters". <u>Cleared when entering UTRA</u> <u>RRC connected mode.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>
TGPS Status Flag	MP		Enumerated(active, inactive)	This flag indicates the current status of the Transmission Gap Pattern Sequence

13.4.26 TGSN_REPORTED

This variable specifies whether an IE "Proposed TGSN" was reported to the UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Proposed TGSN reported	MP		Boolean	Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode.

13.4.26a TIMERS_AND_CONSTANTS

This variable contains the values for all timers and constants used in connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE Timers and constants in connected mode	MD		UE Timers and constants in connected mode 10.3.3.43	Default value means that for all timers and constants - For parameters with need MD, the defaults specified in 10.3.3.43 apply and - For parameters with need OP, the parameters are absent <u>All parameters are set to the</u> <u>default value when leaving</u> <u>UTRA RRC connected mode</u> <u>to another RAT.</u>

13.4.27 TRANSACTIONS

This variable stores the identifications of the ongoing RRC procedure transactions.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Accepted transactions	OP	1 to <maxtrans actions></maxtrans 		Cleared when leaving UTRA RRC connected mode.
>Message type	MP		Message Type	
>RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Rejected transactions	OP	1 to <maxtrans actions></maxtrans 		Cleared when leaving UTRA RRC connected mode.
>Message type	MP		Message Type	
>RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	

13.4.27aTRIGGERED_1A_EVENTS

This variable contains information about 1a events that have been triggered in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cells triggered	OP	1 to < maxCellMe as>		Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>primary CPICH	MP		Primary CPICH info 10.3.6.60	
>sent reports	MP		Integer(1Inf inity)	Number of reports sent to UTRAN in case of event triggered periodical reporting

13.4.27bTRIGGERED_1B_EVENTS

This variable contains information about 1b events that have been triggered in the UE.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Cells triggered	OP	1 to <		Cleared when entering UTRA
		maxCellMe		RRC connected mode.
		as>		Cleared when leaving UTRA
				RRC connected mode.
>primary CPICH	MP		Primary	
			CPICH info	
			10.3.6.60	

13.4.27c TRIGGERED_1C_EVENTS

This variable contains information about 1b events that have been triggered in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cells triggered	OP	1 to < maxCellMe as>		Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>primary CPICH	MP		Primary CPICH info 10.3.6.60	
>sent reports	MP		Integer(1Inf inity)	Number of reports sent to UTRAN in case of event triggered periodical reporting

13.4.27d BEST_CELL_1D_EVENT

This variable contains information about 1d events that have been triggered in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Best cell	MP <u>OP</u>		Primary CPICH info 10.3.6.60	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.

13.4.27eTRIGGERED_1E_EVENTS

This variable contains information about 1e events that have been triggered in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cells triggered	OP	1 to < maxCellMe as>		Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>primary CPICH	MP		Primary CPICH info 10.3.6.60	

13.4.27f TRIGGERED_1F_EVENTS

This variable contains information about 1f events that have been triggered in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cells triggered	OP	1 to < maxCellMe as>		Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>primary CPICH	MP		Primary CPICH info 10.3.6.60	

13.4.27g UE_CAPABILITY_REQUESTED

This variable stores information about the UE capabilities that have been requested by UTRAN but that have not yet been transferred to UTRAN.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
UE radio access capability	OP		UE radio	Cleared when entering UTRA
			access	RRC connected mode.
			capability	Cleared when leaving UTRA
			10.3.3.42	RRC connected mode.
UE radio access capability	OP		UE radio	Cleared when entering UTRA
extension			access	RRC connected mode.
			capability	<u>Cleared when leaving UTRA</u>
			extension	RRC connected mode.
			10.3.3.42a	
UE system specific capability	OP	1 to	Inter-RAT	Includes inter-RAT classmark
		<maxsyste< td=""><td>UE radio</td><td>Cleared when entering UTRA</td></maxsyste<>	UE radio	Cleared when entering UTRA
		mCapabilit	access	RRC connected mode.
		y>	capability	Cleared when leaving UTRA
			10.3.8.7	RRC connected mode.
>Inter-RAT UE radio access	MP		Inter-RAT	
capability			UE radio	
			access	
			capability	
			10.3.8.7	

13.4.28 UE_CAPABILITY_TRANSFERRED

This variable stores information about which UE capabilities that have been transferred to UTRAN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE radio access capability	OP		UE radio access capability 10.3.3.42	Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. Cleared when leaving UTRA RRC connected mode.
UE radio access capability extension	OP		UE radio access capability extension 10.3.3.42a	Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. Cleared when leaving UTRA RRC connected mode.
UE system specific capability	OP	1 to <maxsyste mCapabilit y></maxsyste 	Inter-RAT UE radio access capability 10.3.8.7	Includes inter-RAT classmark <u>Cleared when entering UTRA</u> <u>RRC connected mode when</u> <u>not stated otherwise in the</u> <u>procedure.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>
>Inter-RAT UE radio access capability	MP		Inter-RAT UE radio access capability 10.3.8.7	

13.4.29 UNSUPPORTED_CONFIGURATION

This variable indicates whether a received message contained a configuration that is not supported by the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Unsupported configuration	MP		Boolean	TRUE: An unsupported configuration has been detected <u>Set to FALSE when</u> <u>entering UTRA RRC</u> <u>connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected</u> <u>mode.</u>

13.4.30 URA_IDENTITY

This variable stores the assigned URA identity for this UE when in URA_PCH state.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
URA identity	OP		URA identity 10.3.2.6	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.

13.4.31 U_RNTI

This variable stores the assigned U-RNTI for this UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
U-RNTI	MP <u>OP</u>		U-RNTI	Cleared when leaving
			10.3.3.47	UTRA RRC connected
				mode.

13.4.32 VALUE_TAG

This variable contains information about the value tag for the last received system information block of a given type, for all system information blocks using value tags. The UE shall maintain one instance of this variable for the current selected cell. The UE may store several store several instances of this variable, one for each cell, to be used if the UE returns to these cells.

All IEs in this variable shall be cleared when switched off and as well as at selection of a new PLMN.

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Information Element/Group	Need	Multi	Type and reference	Semantics description
MIB value tag	MP <u>OP</u>		MIB value tag	Value tag for the master
SB 1 value tag	MPOP		10.3.8.9 Cell value tag	information block Value tag for the scheduling
SB 2 value tag	<u>OP</u> M P		Cell value tag 10.3.8.4	Value tag for the scheduling block type 2
SIB 1 value tag	CV-GSM		PLMN value tag	Value tag for the system
SIB 2 value tag	<u>OP</u> MP		Cell value tag	Value tag for the system
SIB 3 value tag	<u>OP</u> MP		Cell value tag	Value tag for the system
SIB 4 value tag	<u>OP</u> MP		Cell value tag	Value tag for the system
SIB 5 value tag	<u>OP</u> MP		Cell value tag	Value tag for the system
SIB 6 value tag	<u>OPMP</u>		Cell value tag	Value tag for the system
CHOICE mode	MP		10.3.8.4	
>>SIB 8 value tag	<u>OP</u> MP		Cell value tag 10.3.8.4	Value tag for the system information block type 8
>TDD SIB 11 value tag	OPMP		Cell value tag	(no data) Value tag for the system
SIB 12 value tag			10.3.8.4 Cell value tag	information block type 11 Value tag for the system
SIB 13 value tag	CV-ANSI		10.3.8.4	information block type 12 Value tag for the system
SIB 13.1 value tag	CV-ANSI		10.3.8.4	information block type 13
SIP 12 2 volue tog			10.3.8.4	information block type 13.1
SIB 13.2 value tag	CV-AIVSI		10.3.8.4	information block type 13.2
SIB 13.3 value tag	CV-ANSI		Cell value tag 10.3.8.4	Value tag for the system information block type 13.3
SIB 13.4 value tag	CV-ANSI		Cell value tag 10.3.8.4	Value tag for the system information block type 13.4
SIB 15 value tag	<u>OP</u> M P		Cell value tag 10.3.8.4	Value tag for the system information block type 15
SIB 15.1 value tag	<u>OPMP</u>		Cell value tag 10.3.8.4	Value tag for the system information block type 15.1
SIB 15.2 value tag list	<u>OP</u>	<u>1 to</u> <maxsat< td=""><td></td><td>List of value tags for all stored occurences of system</td></maxsat<>		List of value tags for all stored occurences of system
≥SIB 15.2 value tag	MP	2	Cell value tag	Value tag for the system
SIB occurrence identity and value tag	<u>MP</u>		SIB occurence identity and value tag 10.3.8.20b	
SIB 15.2 value tag list	<u>OP</u>	<u>1 to</u> <u><maxsat< u=""> ≥</maxsat<></u>		List of value tags for all stored occurences of system information block type 15.2
≥SIB 15.3 value tag	MP		PLMN value tag 10.3.8.10	Value tag for the system information block type 15.3
SIB occurrence identity and value tag	MP		SIB occurence identity and value tag 10.3.8.20b	
SIB 15.4 value tag	<u>OPMP</u>		Cell value tag 10.3.8.4	Value tag for the system information block type 15.4
SIB 16 value ta <u>g list</u>	<u>OP</u> MP	<u>1 to</u> <maxpre defConfig ></maxpre 	PLMN value tag 10.3.8.10	List of vValue tags for all stored occurences of the system information block type 16

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>Predefined configuration	MP	Predefined	
identity and value tag		configuration	
		identity and	
		value tag	
		<u>10.3.8.11</u>	
SIB 18 value tag	<u>OP</u> MP	Cell value tag	Value tag for the system
		10.3.8.4	information block type 18

Condition	Explanation
GSM	This information is only stored optional when the
	PLMN Type in the variable SELECTED_PLMN is
	"GSM-MAP" and never stored otherwise.
ANSI	This information is only stored optional when the
	PLMN Type in the variable SELECTED_PLMN is
	"ANSI-41" and never stored otherwise.

CR page 41
			CHAN	IGE R	EQI	JEST				CR-Form-v4
ж	25	.331	CR 920	ж	ev	ж	Current vers	ion:	<mark>4.1.0</mark>	ж
For HELP on using this form, see bottom of this page or look at the pop-up text over the # symbols.										
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network										
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Summary of char	nge: ¥	1. 2 1 3. / 4. 5. 6.	n subclause 13 variable upon e cases also whe The initialisation to 13.4. A reference to mode from con appropriate vali- For some varia be cleared. Sor n the variable vali- nformation bloc Jpon completic ORDERED CC	3.4, statem entering an en switchee ns of varia 13.4 is add nected mo ues. bles, the n me minor of VALUE_T cks with m on of the co	nents a d leav d off ar bles in bded in tode" to bde" to to to to to to to to to to to to to t	re addeo ing UTR ad after s the proo the subla make su changeo ions in the e definitio occuren ate proc is set to	d on how to so A RRC conne- selecting a ne- cedures are re- ause "Actions ure variables a d from "MP" to be variable de on of the valu ces have bee edure, the valu FALSE wher	et the ected n w PLN eplace when are cle o "OP" of inition e tags n corre- riable o the C	values on node an AN. ed with re- entering eared or t, to allow ns are m for the s ected.	f each d in some ference i idle set to v them to ade also. system

	CONFIRM message contained physical channel, transport channel or radio bearer information elements. Isolated impact analysis: Corrected functionality: Setting and initialisation of RRC state variables when entering and leaving UTRA RRC connected mode and the setting of the variable ORDERED_CONFIGURATION in the cell update procedure. Corrections to a function where the specification was ambiguous or not sufficiently explicit. They would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.
Consequences if % not approved:	Unlear UE behaviour. Also, when new variables are introduced in the specification, there is a risk that initialisation when entering connected mode and/or idle mode will be missing.
Clauses affected: #	8.1.3.6, 8.3.1.6, 8.3.1.7a, 8.3.1.8, 8.3.1.9, 8.3.1.9a, 8.3.1.12, 8.3.6.3, 8.3.7.4, 8.3.11.4, 8.5.2, 13.4.0, 13.4.00, 13.4.0a, 13.4.1, 13.4.2a, 13.4.3, 13.4.4, 13.4.5, 13.4.5a, 13.4.6, 13.4.7, 13.4.8, 13.4.8a, 13.4.9, 13.4.9a, 13.4.10, 13.4.11, 13.4.11a, 13.4.12, 13.4.14, 13.4.15, 13.4.16, 13.4.17, 13.4.18, 13.4.19, 13.4.20, 13.4.22, 13.4.23, 13.4.24, 13.4.25, 13.4.26, 13.4.26a, 13.4.27, 13.4.27a, 13.4.27b, 13.4.27c, 13.4.27d, 13.4.27e, 13.4.27f, 13.4.27g, 13.4.28, 13.4.29, 13.4.30, 13.4.31, 13.4.32
Other specs अ affected:	Other core specifications#25.331 v3.7.0, CR 919r1Test specifications0&M Specifications
Other comments: #	

How to create CRs using this form:

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

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

8.1.3.6 Reception of an RRC CONNECTION SETUP message by the UE

The UE shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION SETUP message with the value of the variable INITIAL_UE_IDENTITY.

If the values are different, the UE shall:

- ignore the rest of the message;

If the values are identical, the UE shall:

- stop timer T300, and act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following;
 - if the UE will be in the CELL_FACH state at the conclusion of this procedure:
 - if the IE "Frequency info" is included:
 - select a suitable UTRA cell according to [4] on that frequency;
 - select PRACH according to subclause 8.5.17;
 - select Secondary CCPCH according to subclause 8.5.19;
- perform the physical layer synchronisation procedure as specified in [29];
- enter a state according to subclause 8.6.3.3;
- submit an RRC CONNECTION SETUP COMPLETE message to the lower layers on the uplink DCCH after successful state transition per subclause 8.6.3.3, with the contents set as specified below:
 - set the IE "RRC transaction identifier" to
 - the value of "RRC transaction identifier" in the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - clear that entry.
 - if the USIM is present:
 - set the "START" for each CN domain in the IE "START list" in the RRC CONNECTION SETUP COMPLETE message with the corresponding START value that is stored in the USIM [50]; and then
 - set the START value stored in the USIM [50] for any CN domain to the value "THRESHOLD" of the variable START_THRESHOLD;
 - if the USIM is not present:
 - set the "START" for each CN domain in the IE "START list" in the RRC CONNECTION SETUP message to zero;
 - retrieve its UTRA UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and then
 - include this in IE "UE radio access capability" and IE "UE radio access capability extension", provided this IE is included in variable UE_CAPABILITY_REQUESTED;
 - retrieve its inter-RAT-specific UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and then
 - include this in IE "UE system specific capability".

When of the RRC CONNECTION SETUP COMPLETE message has been submitted to lower layers for transmission the UE shall:

- if the UE has entered CELL_FACH state:

- start timer T305 using its initial value if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;
- store the contents of the variable UE_CAPABILITY_REQUESTED into the variable UE_CAPABILITY_TRANSFERRED;
- initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
- clear the variable UE_CAPABILITY_REQUESTED;
- if the IE "Transport format combination subset" was not included in the RRC CONNECTION SETUP message:
- set the "Status" in the variable CIPHERING_STATUS to "Not started";
- set the "Reconfiguration" in the variable CIPHERING_STATUS to FALSE;
- set the "Status" in the variable INTEGRITY_PROTECTION_INFO to "Not started";
- set the "Historical status" in the variable INTEGRITY_PROTECTION_INFO to "Never been active";
- set the "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE;
- set the variable CELL_UPDATE_STARTED to FALSE;
- set the variable CONFIGURATION_INCOMPLETE to FALSE;
- set the variable ORDERED_RECONFIGURATION to FALSE;
- set the variable FAILURE_INDICATOR-to FALSE;
- set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to FALSE;
- set the variable INVALID_CONFIGURATION to FALSE;
- set the variable PROTOCOL_ERROR_INDICATOR to FALSE;
- set the variable PROTOCOL_ERROR_REJECT to FALSE;
- set the variable TGSN_REPORTED to FALSE;
- set the variable UNSUPPORTED_CONFIGURATION to FALSE;
- clear all optional IEs in all variables, except those optional IEs that are set in this procedure;
- consider the procedure to be successful;

And the procedure ends.

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

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

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

the UE shall:

- stop timer T302;
- set the variable CELL_UPDATE_STARTED to FALSE;
- in case of a cell update procedure and the CELL UPDATE CONFIRM message:
 - includes "RB information elements"; and/or
 - includes "Transport channel information elements"; and/or
 - includes "Physical channel information elements"; and
 - if the variable ORDERED_RECONFIGURATION is set to FALSE:
 - set the variable ORDERED_RECONFIGURATION to TRUE;
- act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:
 - use the transport channel(s) applicable for the physical channel types that is used; and
 - if the IE "TFS" is neither included nor previously stored in the UE for that transport channel(s):
 - use the TFS given in system information.
 - if none of the TFS stored is compatible with the physical channel:
 - delete the stored TFS;
 - use the TFS given in system information.
 - perform the physical layer synchronisation procedure as specified in [29];
 - if the CELL UPDATE CONFIRM message includes the IE "RLC re-establish indicator (RB2 and RB3)":
 - re-establish the RLC entities for signalling radio bearer RB2 and signalling radio bearer RB3;
 - if the variable CIPHERING_STATUS is set to "Started":
 - set the HFN values for AM RLC entities with RB identity 2 and 3 equal to the START value included in the latest transmitted CELL UPDATE message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN;
 - if the CELL UPDATE CONFIRM message includes the IE "RLC re-establish indicator (RB>3)":
 - re-establish the AM RLC entities for RB with RB identity equal to or larger than 4;
 - if the variable CIPHERING_STATUS is set to "Started":
 - set the HFN values for AM RLC entities with RB identity equal to or larger than 4 equal to the START value included in the latest transmitted CELL UPDATE message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN;
- enter a state according to subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.

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

- not prohibit periodical status transmission in RLC.

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

- start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";
- select PRACH according to subclause 8.5.17;
- select Secondary CCPCH according to subclause 8.5.19;
- not prohibit periodical status transmission in RLC;
- if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - ignore that IE and stop using DRX;

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

- prohibit periodical status transmission in RLC;
- clear the variable C_RNTI;
- stop using that C_RNTI just cleared from the variable C_RNTI in MAC;
- start the timer T305 using its initial value if timer T305 is not running and periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";
- select Secondary CCPCH according to subclause 8.5.19;
- if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging Occasion and PICH Monitoring Occasion as specified in 8.6.3.2 in CELL_PCH state.

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

- the contents of the variable C_RNTI are empty;

it shall check the value of V302 and

- If V302 is equal to or smaller than N302:
 - if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message,
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or
 - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

- in case of a URA update procedure:
 - stop the URA update procedure; and
 - continue with a cell update procedure;
- set the contents of the CELL UPDATE message according to subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "cell reselection";
- submit the CELL UPDATE message for transmission on the uplink CCCH;
- increment counter V302;
- restart timer T302 when the MAC layer indicates success or failure to transmit the message;
- If V302 is greater than N302:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - in case of a cell update procedure:
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
 - in case of a URA update procedure:
 - clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
 - release all its radio resources;
 - indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - clear the variable ESTABLISHED_RABS;
 - enter idle mode;
 - other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
 - and the procedure ends.

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

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

or

the UE after the state transition moves to another state than the CELL_FACH state;

the UE shall:

- if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - include and set the IE "Radio bearer uplink ciphering activation time info" in any response message transmitted below to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Integrity protection mode info" with the IE "Integrity protection mode command" set to "Modify":

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- in case of a cell update procedure:
 - set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

value of the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

- clear that entry.
- in case of a cell update procedure:
 - set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - clear that entry;
- if the variable PDCP_SN_INFO is non-empty:
 - include the IE "RB with PDCP information list" in any response message transmitted below and set it to the value of the variable PDCP_SN_INFO;
- if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message included the IE "Downlink counter synchronisation info":
 - calculate the START value according to subclause 8.5.9;
 - include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in any response message transmitted below;
- transmit a response message as specified in subclause 8.3.1.7;
- if the IE "Integrity protection mode info" was present in the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
 - start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message;
- if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE;
- clear the variable PDCP_SN_INFO;
- if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
- if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
- in case of a cell update procedure:
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
- in case of a URA update procedure:

The procedure ends.

8.3.1.7a Physical channel failure

If the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message would cause the UE to transit to CELL_DCH state; and

- in case of a received CELL UPDATE CONFIRM message:
 - if the UE failed to establish the physical channel(s) indicated in the received CELL UPDATE CONFIRM message according to the criteria defined in subclause 8.5.4 are not fulfilled; or
 - the received CELL UPDATE CONFIRM message does not contain dedicated physical channels;
 - in case of the UE received a URA UPDATE CONFIRM message:

the UE shall:

- if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or
 - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
- if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE;
- if V302 is equal to or smaller than N302:
 - in case of a URA update procedure:
 - stop the URA update procedure; and
 - continue with a cell update procedure;
 - select a suitable UTRA cell according to [4];
 - set the contents of the CELL UPDATE message according to subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "Radio link failure";
 - submit the CELL UPDATE message for transmission on the uplink CCCH;
 - increment counter V302;
 - restart timer T302 when the MAC layer indicates success or failure to transmit the message;
- if V302 is greater than N302:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

- in case of a cell update procedure:
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
- in case of a URA update procedure:
 - clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
- release all its radio resources;
- indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
- clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
- clear the variable ESTABLISHED_RABS;
- enter idle mode.

8.3.1.8 Unsupported configuration by the UE

If the UE does not support the configuration in the CELL UPDATE CONFIRM message and/or the variable UNSUPPORTED_CONFIGURATION is set to TRUE, the UE shall:

- if V302 is equal to or smaller than N302, the UE shall:
 - if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or
 - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE;
 - set the variable FAILURE_INDICATOR to TRUE;
 - set the variable FAILURE_CAUSE to "Unsupported configuration";
 - set the content of the CELL UPDATE message according to subclause 8.3.1.3;
 - submit the CELL UPDATE message for transmission on the uplink CCCH;
 - increment counter V302;
 - restart timer T302 when the MAC layer indicates success or failure to transmit the message;

- if V302 is greater than N302, the UE shall:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - clear the variable PDCP_SN_INFO;
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
 - release all its radio resources;
 - indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - clear the variable ESTABLISHED_RABS;
 - enter idle mode;
 - Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
 - and the procedure ends.

8.3.1.9 Invalid configuration

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

- if V302 is equal to or smaller than N302:
 - if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or
 - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info";
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE;
 - in case of a cell update procedure:
 - set the variable FAILURE_INDICATOR to TRUE;
 - set the variable FAILURE_CAUSE to "Invalid configuration";

- set the contents of the CELL UPDATE message according to subclause 8.3.1.3;
- submit the CELL UPDATE message for transmission on the uplink CCCH;
- in case of a URA update procedure:
 - set the contents of the URA UPDATE message according to subclause 8.3.1.3;
 - submit the URA UPDATE message for transmission on the uplink CCCH;
- increment counter V302;
- restart timer T302 when the MAC layer indicates success or failure to transmit the message;
- if V302 is greater than N302:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - clear the variable PDCP_SN_INFO;
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
 - release all its radio resources;
 - indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - clear the variable ESTABLISHED_RABS;
 - enter idle mode;
 - Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
 - the procedure ends.

8.3.1.9a Incompatible simultaneous reconfiguration

In case of a cell update procedure and if the received CELL UPDATE CONFIRM message

- includes "RB information elements"; and/or
- includes "Transport channel information elements"; and/or
- includes "Physical channel information elements"; and
- the variable ORDERED_RECONFIGURATION is set to TRUE because of an ongoing Reconfiguration procedure;

and/or

- if the variable INCOMPATIBLE_SECURITY_RECONFIGURATION becomes set to TRUE of the received CELL UPDATE CONFIRM message:

the UE shall:

- if V302 is equal to or smaller than N302:
 - if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or

- the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
- if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE;
- set the variable FAILURE_INDICATOR to TRUE;
- set the variable FAILURE_CAUSE to "Incompatible simultaneous reconfiguration";
- set the content of the CELL UPDATE message according to subclause 8.3.1.3;
- submit the CELL UPDATE message for transmission on the uplink CCCH;
- increment counter V302;
- restart timer T302 when the MAC layer indicates success or failure to transmit the message;
- if V302 is greater than N302:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - clear the variable PDCP_SN_INFO;
 - set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to FALSE;
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
 - release all its radio resources;
 - indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - clear the variable ESTABLISHED_RABS;
 - enter idle mode;
 - Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
 - the procedure ends.

8.3.1.12 T302 expiry or cell reselection

If any or several of the following conditions are true:

- expiry of timer T302;
- reselection to another UTRA cell (including the previously serving cell) before completion of the cell update or URA update procedure;

the UE shall:

- stop T302 if it is running;
- if the UE was in CELL_DCH state prior to the initiation of the procedure; and
 - if timers T314 and T315 have elapsed while T302 was running:
 - enter idle mode.
 - indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers. Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2.
 - and the procedure ends.
 - if timer T314 has elapsed while T302 was running and,
 - if "T314 expired" in the variable RB_TIMER_INDICATOR is set to FALSE and
 - if T315 is still running:
 - release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314";
 - indicate release of those radio access bearers to upper layers;
 - delete all information about those radio access bearers from the variable ESTABLISHED_RABS;
 - set "T314 expired" in the variable RB_TIMER_INDICATOR to TRUE;
 - if timer T315 has elapsed while T302 was running and,
 - if "T315 expired" in the variable RB_TIMER_INDICATOR is set to FALSE and,
 - if T314 is still running:
 - release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315";
 - indicate release of those radio access bearers to upper layers;
 - delete all information about those radio access bearers from the variable ESTABLISHED_RABS;
 - set "T315 expired" in the variable RB_TIMER_INDICATOR to TRUE;
- check whether it is still in "in service area" (see subclause 8.5.5.2);
- if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE and/or the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":

- set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
- clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
- if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
- if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE;
- in case of a cell update procedure:
 - clear any entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS;
- in case of a URA update procedure:
 - clear any entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS;

If the UE detects "in service area" if it has not entered idle mode, and:

- if V302 is equal to or smaller than N302, the UE shall:
 - if the UE performed cell re-selection:
 - delete its C-RNTI;
 - in case of a cell update procedure:
 - set the contents of the CELL UPDATE message according to subclause 8.3.1.3;
 - submit the CELL UPDATE message for transmission on the uplink CCCH;
 - in case of a URA update procedure:
 - set the contents of the URA UPDATE message according to subclause 8.3.1.3;
 - submit the URA UPDATE message for transmission on the uplink CCCH;
 - increment counter V302;
 - restart timer T302 when the MAC layer indicates success or failure to transmit the message;
- if V302 is greater than N302, the UE shall:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - clear the variable PDCP_SN_INFO;
 - in case of a cell update procedure:
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
 - in case of a URA update procedure:
 - clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;

- release all its radio resources;
- indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
- clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
- clear the variable ESTABLISHED_RABS;
- enter idle mode;
- other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- and the procedure ends.

If the UE does not detect "in service area", it shall:

- continue searching for "in service area".

8.3.6.3 Reception of HANDOVER TO UTRAN COMMAND message by the UE

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

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

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

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

- in TDD:

Default DPCH Offset Value = (SRNTI 2 mod 7)

- handle the above Default DPCH Offset Value as if an IE with that value was included in the message, as specified in subclause 8.6.6.21;
- if IE "Specification mode" is set to "Complete specification":
 - initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements;
- perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;
- if ciphering has been activated and ongoing in the radio access technology from which inter- RAT handover is performed:
 - for the CN domain as in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup":
 - set the HFN component of the COUNT-C variable for all radio bearers and signalling radio bearers that use RLC-AM and RLC-UM to the START value as stored in the USIM for that CN domain; and
 - set the remaining LSBs of the HFN component of COUNT-C to zero;
 - set the HFN component of the COUNT-C variable for all radio bearers and signalling radio bearers that use the transparent mode of RLC to zero, while not incrementing the value of the HFN component of the COUNT-C variable at each CFN cycle; and
 - set the CFN component of the COUNT-C variable to the value of the CFN as calculated in subclause 8.5.15;
 - set the IE "Status" in the variable CIPHERING_STATUS to "Started";
 - apply the same ciphering (ciphered/unciphered, algorithm) as prior to inter-RAT handover, unless a change of algorithm is requested by means of the IE "Ciphering algorithm";
 - apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND;

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

- if the IE "Status" in the variable CIPHERING_STATUS is set to "Started" and transparent mode radio bearers have been established by this procedure:
 - include the IE "COUNT-C activation time" in the response message and specify a CFN value other than the default, "Now" for this IE;
 - at the CFN value as indicated in the response message in the IE "COUNT-C activation time":
 - set the HFN component of the COUNT-C variable to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
 - set the remaining LSBs of the HFN component of COUNT-C to zero;
 - increment the HFN component of the COUNT-C variable by one;
 - set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
 - step the COUNT-C variable, as normal, at each CFN value. The HFN component is no longer fixed in value but incremented at each CFN cycle;
- transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH, using the new ciphering configuration, only if ciphering has been started;
- when the HANDOVER TO UTRAN COMPLETE message has been submitted to lower layers for transmission,:
 - initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;

- if the IE "Transport format combination subset" was not included in the HANDOVER TO UTRAN COMMAND message or in the predefined parameters;
- set the IE "Status" in the variable CIPHERING_STATUS to "Not started";
- set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE;
- set the IE "Status" in the variable INTEGRITY_PROTECTION_INFO to "Not started";
- set the IE "Historical status" in the variable INTEGRITY_PROTECTION_INFO to "Never been active";
- set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE;
- set the variable CELL_UPDATE_STARTED to FALSE;
- set the variable CONFIGURATION_INCOMPLETE to FALSE;
- set the variable ORDERED_RECONFIGURATION to FALSE;
- set the variable FAILURE_INDICATOR-to FALSE;
- set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to FALSE;
- set the variable INVALID_CONFIGURATION to FALSE;
- set the variable PROTOCOL_ERROR_INDICATOR, TFC_SUBSET to FALSE;
- set the variable PROTOCOL_ERROR_REJECT to FALSE;
- set the variable TGSN_REPORTED to FALSE;
- set the variable UNSUPPORTED_CONFIGURATION to FALSE;
- and the procedure ends.

8.3.7.4 Successful completion of the inter-RAT handover

Upon successfully completing the handover, UTRAN should:

- release the radio connection; and
- remove all context information for the concerned UE.

Upon successfully completing the handover, the UE shall:

- if the USIM is present:
 - store the current START value for every CN domain in the USIM [50];
 - if the "START" stored in the USIM [50] for a CN domain is greater than the value "THRESHOLD" of the variable START_THRESHOLD:
 - delete the ciphering and integrity keys that are stored in the USIM for that CN domain;
 - inform the deletion of these keys to upper layers.

- clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4;

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

8.3.11.4 Successful completion of the cell change order

Upon successful completion of the cell change order, the UE shall:

- stop timer T309.
- clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4;

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

- release the radio connection; and
- remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

8.5.2 Actions when entering idle mode from connected mode

When entering idle mode from connected mode, the UE shall:

- clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4;
- attempt to select a suitable cell to camp on.

When leaving connected mode according to [4], the UE shall:

- perform cell selection.

While camping on a cell, the UE shall:

- acquire system information according to the system information procedure in subclause 8.1;
- perform measurements according to the measurement control procedure specified in subclause 8.4; and
- if the UE is registered:
 - be prepared to receive paging messages according to the paging procedure in subclause 8.2.

If IE "PLMN identity" within variable SELECTED_PLMN has the value "GSM-MAP", the UE shall:

- delete any NAS system information received in connected mode;
- acquire the NAS system information in system information block type 1; and
- proceed according to subclause 8.6.1.2.

When entering idle mode, the UE shall:

- if the USIM is present:
 - store the current START value for every CN domain in the USIM [50];
 - if the "START" stored in the USIM [50] for a CN domain is greater than the value "THRESHOLD" of the variable START_THRESHOLD:
 - delete the ciphering and integrity keys that are stored in the USIM for that CN domain;
 - inform the deletion of these keys to upper layers.

13.4 UE variables

1

13.4.0 CELL INFO LIST

This variable contains cell information on intra-frequency, inter-frequency and inter-RAT cells, as received in messages System Information Block Type 11, System Information Block Type 12, and MEASUREMENT CONTROL.

The first position in Intra-frequency cell info list corresponds to Intra-frequency cell id 0, the second to Intra-frequency cell id 1, etc.

The first position in Inter-frequency cell info list corresponds to Inter-frequency cell id 0, the second to Inter-frequency cell id 1, etc.

The first position in Inter-RAT cell info list corresponds to Intra-frequency cell id 0, the second to Inter-RAT cell id 1, etc.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Intra-frequency cell info	MP <u>OP</u>	1 <maxc ellMeas></maxc 		Note
>CHOICE position status	MP			
>>Occupied				
>>>Cell info	MP		Cell info 10.3.7.2	
>>Vacant				No data
Inter-frequency cell info	MP <u>OP</u>	1 <maxc ellMeas></maxc 		Note
>CHOICE position status	MP			
>>Occupied				
>>>Frequency info	MP		Frequency info 10.3.6.36	
>>>Cell info	MP		Cell info 10.3.7.2	
>>Vacant				No data
Inter-RAT cell info	MP <u>OP</u>	1 <maxc ellMeas></maxc 		Note
>CHOICE position status	MP			
>>Occupied				
>>>CHOICE Radio Access Technology				
>>>>GSM				
>>>>Cell selection and re- selection info	MP		Cell selection and re-selection info for SIB11/12 10.3.2.4	
>>>>BSIC	MP		BSIC 10.3.8.2	
>>>>BCCH ARFCN	MP		Integer (01023)	[43]
>>>>IS-2000				
>>>>System specific measurement info			enumerated (frequency, timeslot, colour code, output power, PN offset)	For IS-2000, use fields from TIA/EIA/IS-2000.5, Subclause 3. 7.3.3.2.27, Candidate Frequency Neighbour List Message
>>Vacant				No data

NOTE: This IE shall be cleared when entering UTRA RRC connected mode, when leaving UTRA RRC connected mode, when switched off as well as at selection of a new PLMN.

13.4.00 CELL_POSITION

This variable stores the CELL_POSITION for UE-based OTDOA (10.3.7.106).

All IEs in this variable shall be cleared when switched off and as well as at selection of a new PLMN and when leaving UTRA RRC connected mode to another RAT.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Relative North	OP		Integer(- 2000020000)	Seconds, scale factor 0.03. Relative position compared to reference cell.
Relative East	OP		Integer(- 2000020000)	Seconds, scale factor 0.03. Relative position compared to reference cell.
Relative Altitude	OP		Integer(- 40004000)	Relative altitude in meters compared to ref. cell.

13.4.0a CELL_UPDATE_STARTED

This variable indicates whether a cell update or URA update procedure is in progress.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell update started	MP		Boolean	TRUE means a cell or URA update procedure is in progress. <u>Set to FALSE when entering</u> <u>UTRA RRC connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected mode.</u>

13.4.1 CIPHERING_STATUS

This variable contains information about the current status of ciphering in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Status	MP		Enumerated(Not started, Started)	Set to "Not started" when entering UTRA RRC connected mode. Set to "Not started" when leaving UTRA RRC connected mode.
Reconfiguration	MP		Boolean	TRUE means an RRC procedure performing reconfiguration of ciphering is ongoing. <u>Set to FALSE when entering</u> <u>UTRA RRC connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected mode.</u>

13.4.2 Void

13.4.2a CONFIGURATION_INCOMPLETE

This variable indicates whether a received measurement control message contains invalid an incomplete measurement configuration.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Configuration incomplete	MP		Boolean	TRUE: An incomplete configuration has been detected <u>Set to FALSE when</u> <u>entering UTRA RRC</u> <u>connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected</u> <u>mode.</u>

13.4.3 C_RNTI

This variable stores the assigned C-RNTI for this UE when in CELL_FACH state.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
C-RNTI	OP		C-RNTI 10.3.3.8	Cleared when entering UTRA RRC connected mode when not otherwise stated in the procedure. Cleared when leaving UTRA RRC connected mode.

13.4.4 DOFF

This variable contains the default offset value in the UE. See [10] for details.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Default DPCH Offset Value (DOFF)	OP		Default DPCH Offset Value, 10.3.6.16	Cleared when entering UTRA RRC connected mode when not otherwise stated in the procedure. Cleared when leaving UTRA RRC connected mode.

13.4.5 ESTABLISHED_RABS

This variable is used to store information about the established radio access bearers and signalling radio bearers in the UE.

Information Element/Group	Need	Multi	Type and reference	Semantics description
RAB information	OP	1 to <maxrabse tup></maxrabse 		For each RAB established <u>Cleared when entering UTRA</u> <u>RRC connected mode when</u> <u>not otherwise stated in the</u> <u>procedure.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>
>RAB info	MP		RAB info 10.3.4.8	
>RB information	MP	1 to <maxrbper RAB></maxrbper 		For each RB belonging to the RAB
>>RB identity	MP		RB identity 10.3.4.16	
>>Subflow	MP		Integer(0< maxSubflo wcount>)	Reference to the RAB subflow implemented by this RB
>>RB started	MD		Enumerate d(stopped, started)	Default value is started
Signalling radio bearer information	OP	1 to < maxSRBset up>		In the order of RB0 and upwards <u>Cleared when <mark>leaving UTRA</mark> RRC connected mode.</u>
>RB started	MD		Enumerate d(stopped, started)	Default value is started

13.4.5a ESTABLISHED_SIGNALLING_CONNECTIONS

This variable is used to store information about established signalling connections.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Signalling connection list	OP	1 to <maxcndo mains></maxcndo 		For each established signalling connection <u>Cleared when entering UTRA</u> <u>RRC connected mode when</u> <u>not otherwise stated in the</u> <u>procedure.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>
>Signalling connection identity	MP		CN domain identity 10.3.1.1	

13.4.6 ESTABLISHMENT_CAUSE

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

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

13.4.7 FAILURE_CAUSE

This variable contains the cause for failure of a UE initiated procedure, to be reported in a retransmitted message.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Failure cause	OP		Failure cause 10.3.3.13	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.

13.4.8 FAILURE_INDICATOR

This variable indicates whether the procedure has failed for a UE initiated procedure.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Failure indicator	MP		Boolean	TRUE: Procedure has failed <u>Set to FALSE when</u> <u>entering UTRA RRC</u> <u>connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected</u> <u>mode.</u>

13.4.8a INCOMPATIBLE_SECURITY_RECONFIGURATION

This variable indicates whether an incompatible simultaneous reconfiguration of a security function has been received.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Incompatible security reconfiguration	MP		Boolean	TRUE: An incompatible simultaneous security reconfiguration has been detected <u>Set to FALSE when</u> <u>entering UTRA RRC</u> <u>connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected</u> <u>mode.</u>

13.4.9 INITIAL_UE_IDENTITY

In this variable the identity used by the UE when establishing an RRC connection is stored.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Initial UE identity	OP		Initial UE identity	Cleared when leaving UTRA RRC connected mode.

13.4.9a INTEGRITY_PROTECTION_ACTIVATION_INFO

This variable contains information to be sent to UTRAN about when a new integrity protection configuration shall be activated in the uplink for signalling radio bearers in case of modification of integrity protection.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Uplink Integrity protection activation info	OP		Integrity protection activation info 10.3.3.17	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.

13.4.10 INTEGRITY_PROTECTION_INFO

This variable contains information about the current status of the integrity protection in the UE.

Information Element/Group	Need	Multi	Type and	Semantics description
Historical status	MP		Enumerate d(Never been active, Has been active)	Set to "Never been active" when entering UTRA RRC connected mode.
Status	MP		Enumerate d(Not started, Started)	Set to "Not started" when entering UTRA RRC connected mode. Set to "Not started" when leaving UTRA RRC connected mode.
Reconfiguration	MP		Boolean	TRUE means a reconfiguration of integrity protection is ongoing. <u>Set to FALSE when entering</u> <u>UTRA RRC connected mode.</u> Set to FALSE when <u>leaving</u> <u>UTRA RRC connected mode.</u>
Signalling radio bearer specific integrity protection information	MP <u>OP</u>	1 to <maxsrbse tup></maxsrbse 		When integrity protection is started, sStatus information for RB0- RB4 in that order. <u>Cleared when entering UTRA</u> <u>RRC connected mode.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>
>Uplink RRC HFN	MP		Bitstring (28)	
>Downlink RRC HFN	MP		Bitstring (28)	
>Uplink RRC Message sequence number	MP		Integer (0 15)	
>Downlink RRC Message sequence number	OP		Integer (0 15)	

13.4.11 INVALID_CONFIGURATION

This variable indicates whether a received message contained an invalid configuration, by means of invalid values or invalid combinations of information elements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Invalid configuration	MP		Boolean	TRUE: An invalid configuration has been detected <u>Set to FALSE when</u> <u>entering UTRA RRC</u> <u>connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected</u> <u>mode.</u>

13.4.11a LATEST_CONFIGURED_CN_DOMAIN

This variable stores the CN-domain that was most recently configured to be used for ciphering and integrity protection.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Latest configured CN domain	OP		CN domain identity 10.3.1.1	Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. Cleared when leaving UTRA RRC connected mode.

13.4.12 MEASUREMENT_IDENTITY

This variable stores the measurements configured in the UE. For each configured measurement, the information below shall be stored.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
MEASUREMENT CONTROL	OP		MEASURE	Information as contained in
			MENT	these messages.
			CONTROL	Cleared when entering UTRA
			10.2.17,	RRC connected mode when
			System	not stated otherwise in the
			Information	procedure (8.4.1.8-8.4.1.9).
			Block type	Cleared when leaving UTRA
			11	RRC connected mode when
			10.2.48.8.1	not stated otherwise in the
			2, System	procedure (8.4.1.9a).
			Information	
			Block type	
			12	
			10.2.48.8.1	
			3	

13.4.13 Void

13.4.14 ORDERED_RECONFIGURATION

This variable stores information about an ongoing Reconfiguration procedure.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Ordered reconfiguration	MP		Boolean	TRUE means that a Reconfiguration procedure is ongoing. <u>Set to FALSE when entering</u> <u>UTRA RRC connected mode.</u> <u>Set to FALSE when leaving</u> <u>UTRA RRC connected mode.</u>

13.4.15 PDCP_SN_INFO

This variable contains PDCP receive sequence numbers for one or several radio bearers to be included in a response message to UTRAN.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
RB with PDCP information list	OP	1 to		Cleared when entering UTRA
		<maxrball< td=""><td></td><td>RRC connected mode.</td></maxrball<>		RRC connected mode.
		RABs>		Cleared when leaving UTRA
				RRC connected mode.
>RB with PDCP information	MP		RB with	
			PDCP	
			information	
			10.3.4.22	

13.4.16 PROTOCOL_ERROR_INDICATOR

This variable indicates whether there exist a protocol error that is to be reported to UTRAN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Protocol error indicator	MP		Protocol error indicator 10.3.3.27	Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode.

13.4.17 PROTOCOL_ERROR_INFORMATION

This variable contains diagnostics to be reported to UTRAN for a message that was not completely understood.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Protocol error information	OP		Protocol	Cleared when entering UTRA
			error	RRC connected mode.
			information	Cleared when leaving UTRA
			10.3.8.12	RRC connected mode.

13.4.18 PROTOCOL_ERROR_REJECT

This variable indicates whether there has occurred a severe protocol error causing the ongoing procedure to fail.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Protocol error reject	MP		Boolean	TRUE: a severe protocol error has occurred <u>Set to FALSE when</u> entering UTRA RRC connected mode. Set to FALSE when leaving <u>UTRA RRC connected</u> mode.

13.4.19 RB_TIMER_INDICATOR

This variable contains information to be sent to UTRAN if any of the timers T314 or T315 has expired when the UE sends a cell update with cause RL failure.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB timer indicator	OP		RB timer indicator 10.3.3.28	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.

13.4.20 RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO

This variable contains information to be sent to UTRAN about when a new ciphering configuration shall be activated in the uplink for radio bearers using RLC-AM or RLC-UM.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB uplink ciphering activation time info	OP		RB activation	Cleared when entering UTRA RRC connected mode.
			time info 10.3.4.13	Cleared when leaving UTRA RRC connected mode.

13.4.21 SELECTED_PLMN

This variable contains the type of and identity of the selected PLMN.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
PLMN Type	MP		PLMN Type	
			10.3.1.12	
CHOICE identity type	MP			
>PLMN identity			PLMN	
			identity	
			10.3.1.11	
>SID			SID	
			10.3.9.11	

CHOICE identity type	Condition under which the given <i>identity type</i> is chosen		
PLMN identity	PLMN Type is "GSM-MAP"		
SID	PLMN Type is "ANSI-41"		

13.4.22 START_THRESHOLD

This variable contains information about the maximum allowed value of the START for a CN domain.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
THRESHOLD	OP		Integer (01048576)	20 bits <u>Cleared when entering UTRA</u> <u>RRC connected mode when</u> <u>not stated otherwise in the</u> <u>procedure.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>

13.4.23 START_VALUE_TO_TRANSMIT

This variable contains the value of START for new radio bearer(s) to be transmitted in a response message.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
START	OP		START 10.3.3.38	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.

13.4.24 TFC_SUBSET

This variable contains information about the TFC subset currently applied.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>FDD				
>>Current TFC subset	MP		Transport Format Combination Subset 10.3.5.22	Set to "Full transport format set" when entering UTRA RRC connected mode when not stated otherwise in the procedure.
>>Duration	OP		TFC Control duration 10.3.6.80	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>>Default TFC subset	OP		Transport Format Combination Subset 10.3.5.22	The TFC subset to go back to when any temporary limitation is released <u>Cleared when entering UTRA</u> <u>RRC connected mode.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>
>TDD				
>>TFCS list	MP	1 to < maxCCTrC H >		One TFCS is created when entering UTRA RRC connected mode when not stated otherwise in the procedure.
>>>TFCS identity	MP		Transport Format Combination Set Identity 10.3.5.21	<u>"TFCS ID" is set to 1 when</u> <u>entering UTRA RRC</u> <u>connected mode when not</u> <u>stated otherwise in the</u> <u>procedure.</u> <u>"Shared channel indicator" is</u> <u>set to FALSE when entering</u> <u>UTRA RRC connected mode</u> <u>when not stated otherwise in</u> <u>the procedure.</u>
>>>Current TFC subset	MP		Transport Format Combination Subset 10.3.5.22	Set to "Full transport format set" when entering UTRA RRC connected mode when not stated otherwise in the procedure.
>>>>Duration	OP		TFC Control duration 10.3.6.80	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>>>>Default TFC subset	OP		Transport Format Combination Subset 10.3.5.22	The TFC subset to go back to when any temporary limitation is released <u>Cleared when entering UTRA</u> <u>RRC connected mode.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>

13.4.25 TGPS_IDENTITY

This variable contains the configuration parameters of a compressed mode transmission gap pattern sequence

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPS_IDENTITY	OP		DPCH compressed mode info 10.3.6.33	Information as contained in the IE group "Transmission gap pattern sequence configuration parameters". <u>Cleared when entering UTRA</u> <u>RRC connected mode.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>
TGPS Status Flag	MP		Enumerated(active, inactive)	This flag indicates the current status of the Transmission Gap Pattern Sequence

13.4.26 TGSN_REPORTED

This variable specifies whether an IE "Proposed TGSN" was reported to the UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Proposed TGSN reported	MP		Boolean	Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode.

13.4.26a TIMERS_AND_CONSTANTS

This variable contains the values for all timers and constants used in connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE Timers and constants in connected mode	MD		UE Timers and constants in connected mode 10.3.3.43	Default value means that for all timers and constants - For parameters with need MD, the defaults specified in 10.3.3.43 apply and - For parameters with need OP, the parameters are absent <u>All parameters are set to the</u> <u>default value when leaving</u> <u>UTRA RRC connected mode</u> <u>to another RAT.</u>

13.4.27 TRANSACTIONS

This variable stores the identifications of the ongoing RRC procedure transactions.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Accepted transactions	OP	1 to <maxtrans actions></maxtrans 		Cleared when leaving UTRA RRC connected mode.
>Message type	MP		Message Type	
>RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Rejected transactions	OP	1 to <maxtrans actions></maxtrans 		Cleared when leaving UTRA RRC connected mode.
>Message type	MP		Message Type	
>RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	

13.4.27aTRIGGERED_1A_EVENTS

This variable contains information about 1a events that have been triggered in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cells triggered	OP	1 to < maxCellMe as>		Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>primary CPICH	MP		Primary CPICH info 10.3.6.60	
>sent reports	MP		Integer(1Inf inity)	Number of reports sent to UTRAN in case of event triggered periodical reporting

13.4.27bTRIGGERED_1B_EVENTS

This variable contains information about 1b events that have been triggered in the UE.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Cells triggered	OP	1 to <		Cleared when entering UTRA
		maxCellMe		RRC connected mode.
		as>		Cleared when leaving UTRA
				RRC connected mode.
>primary CPICH	MP		Primary	
			CPICH info	
			10.3.6.60	

13.4.27c TRIGGERED_1C_EVENTS

This variable contains information about 1b events that have been triggered in the UE.
Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cells triggered	OP	1 to < maxCellMe as>		Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>primary CPICH	MP		Primary CPICH info 10.3.6.60	
>sent reports	MP		Integer(1Inf inity)	Number of reports sent to UTRAN in case of event triggered periodical reporting

13.4.27d BEST_CELL_1D_EVENT

This variable contains information about 1d events that have been triggered in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Best cell	MP <u>OP</u>		Primary CPICH info 10.3.6.60	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.

13.4.27eTRIGGERED_1E_EVENTS

This variable contains information about 1e events that have been triggered in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cells triggered	OP	1 to < maxCellMe as>		Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>primary CPICH	MP		Primary CPICH info 10.3.6.60	

13.4.27f TRIGGERED_1F_EVENTS

This variable contains information about 1f events that have been triggered in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cells triggered	OP	1 to < maxCellMe as>		Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>primary CPICH	MP		Primary CPICH info 10.3.6.60	

13.4.27g UE_CAPABILITY_REQUESTED

This variable stores information about the UE capabilities that have been requested by UTRAN but that have not yet been transferred to UTRAN.

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
UE radio access capability	OP		UE radio	Cleared when entering UTRA
			access	RRC connected mode.
			capability	Cleared when leaving UTRA
			10.3.3.42	RRC connected mode.
UE radio access capability	OP		UE radio	Cleared when entering UTRA
extension			access	RRC connected mode.
			capability	<u>Cleared when leaving UTRA</u>
			extension	RRC connected mode.
			10.3.3.42a	
UE system specific capability	OP	1 to	Inter-RAT	Includes inter-RAT classmark
		<maxsyste< td=""><td>UE radio</td><td>Cleared when entering UTRA</td></maxsyste<>	UE radio	Cleared when entering UTRA
		mCapabilit	access	RRC connected mode.
		y>	capability	Cleared when leaving UTRA
			10.3.8.7	RRC connected mode.
>Inter-RAT UE radio access	MP		Inter-RAT	
capability			UE radio	
			access	
			capability	
			10.3.8.7	

13.4.28 UE_CAPABILITY_TRANSFERRED

This variable stores information about which UE capabilities that have been transferred to UTRAN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE radio access capability	OP		UE radio access capability 10.3.3.42	Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. Cleared when leaving UTRA RRC connected mode.
UE radio access capability extension	OP		UE radio access capability extension 10.3.3.42a	Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. Cleared when leaving UTRA RRC connected mode.
UE system specific capability	OP	1 to <maxsyste mCapabilit y></maxsyste 	Inter-RAT UE radio access capability 10.3.8.7	Includes inter-RAT classmark <u>Cleared when entering UTRA</u> <u>RRC connected mode when</u> <u>not stated otherwise in the</u> <u>procedure.</u> <u>Cleared when leaving UTRA</u> <u>RRC connected mode.</u>
>Inter-RAT UE radio access capability	MP		Inter-RAT UE radio access capability 10.3.8.7	

13.4.29 UNSUPPORTED_CONFIGURATION

This variable indicates whether a received message contained a configuration that is not supported by the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Unsupported configuration	MP		Boolean	TRUE: An unsupported configuration has been detected <u>Set to FALSE when</u> <u>entering UTRA RRC</u> <u>connected mode.</u> Set to FALSE when <u>leaving</u> <u>UTRA RRC connected</u> <u>mode.</u>

13.4.30 URA_IDENTITY

This variable stores the assigned URA identity for this UE when in URA_PCH state.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
URA identity	OP		URA identity 10.3.2.6	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.

13.4.31 U_RNTI

This variable stores the assigned U-RNTI for this UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
U-RNTI	MP <u>OP</u>		U-RNTI	Cleared when leaving
			10.3.3.47	UTRA RRC connected
				mode.

13.4.32 VALUE_TAG

This variable contains information about the value tag for the last received system information block of a given type, for all system information blocks using value tags. The UE shall maintain one instance of this variable for the current selected cell. The UE may store several store several instances of this variable, one for each cell, to be used if the UE returns to these cells.

All IEs in this variable shall be cleared when switched off and as well as at selection of a new PLMN.

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Information Element/Group	Need	Multi	Type and reference	Semantics description
MIB value tag	MP <u>OP</u>		MIB value tag	Value tag for the master
SB 1 value tag	MPOP		10.3.8.9 Cell value tag	information block Value tag for the scheduling
SB 2 value tag	<u>OP</u> M P		Cell value tag 10.3.8.4	Value tag for the scheduling block type 2
SIB 1 value tag	CV-GSM		PLMN value tag	Value tag for the system
SIB 2 value tag	<u>OP</u> MP		Cell value tag	Value tag for the system
SIB 3 value tag	<u>OP</u> MP		Cell value tag	Value tag for the system
SIB 4 value tag	<u>OP</u> MP		Cell value tag	Value tag for the system
SIB 5 value tag	<u>OP</u> MP		Cell value tag	Value tag for the system
SIB 6 value tag	<u>OPMP</u>		Cell value tag	Value tag for the system
CHOICE mode	MP		10.3.8.4	
>>SIB 8 value tag	<u>OP</u> MP		Cell value tag 10.3.8.4	Value tag for the system information block type 8
>TDD SIB 11 value tag	OPMP		Cell value tag	(no data) Value tag for the system
SIB 12 value tag			10.3.8.4 Cell value tag	information block type 11 Value tag for the system
SIB 13 value tag	CV-ANSI		10.3.8.4	information block type 12 Value tag for the system
SIB 13.1 value tag	CV-ANSI		10.3.8.4	information block type 13
SIP 12 2 volue tog			10.3.8.4	information block type 13.1
SIB 13.2 value tag	CV-AIVSI		10.3.8.4	information block type 13.2
SIB 13.3 value tag	CV-ANSI		Cell value tag 10.3.8.4	Value tag for the system information block type 13.3
SIB 13.4 value tag	CV-ANSI		Cell value tag 10.3.8.4	Value tag for the system information block type 13.4
SIB 15 value tag	<u>OP</u> M P		Cell value tag 10.3.8.4	Value tag for the system information block type 15
SIB 15.1 value tag	<u>OPMP</u>		Cell value tag 10.3.8.4	Value tag for the system information block type 15.1
SIB 15.2 value tag list	<u>OP</u>	<u>1 to</u> <maxsat< td=""><td></td><td>List of value tags for all stored occurences of system</td></maxsat<>		List of value tags for all stored occurences of system
≥SIB 15.2 value tag	MP	2	Cell value tag	Value tag for the system
SIB occurrence identity and value tag	<u>MP</u>		SIB occurence identity and value tag 10.3.8.20b	
SIB 15.2 value tag list	<u>OP</u>	<u>1 to</u> <u><maxsat< u=""> ≥</maxsat<></u>		List of value tags for all stored occurences of system information block type 15.2
≥SIB 15.3 value tag	MP		PLMN value tag 10.3.8.10	Value tag for the system information block type 15.3
SIB occurrence identity and value tag	MP		SIB occurence identity and value tag 10.3.8.20b	
SIB 15.4 value tag	<u>OPMP</u>		Cell value tag 10.3.8.4	Value tag for the system information block type 15.4
SIB 16 value ta <u>g list</u>	<u>OP</u> MP	<u>1 to</u> <maxpre defConfig ></maxpre 	PLMN value tag 10.3.8.10	List of vValue tags for all stored occurences of the system information block type 16

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>Predefined configuration	MP	Predefined	
identity and value tag		configuration	
		identity and	
		value tag	
		<u>10.3.8.11</u>	
SIB 18 value tag	<u>OP</u> MP	Cell value tag	Value tag for the system
		10.3.8.4	information block type 18

Condition	Explanation
GSM	This information is only stored optional when the
	PLMN Type in the variable SELECTED_PLMN is
	"GSM-MAP" and never stored otherwise.
ANSI	This information is only stored optional when the
	PLMN Type in the variable SELECTED_PLMN is
	"ANSI-41" and never stored otherwise.

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Tdoc R2-012057

3GPP TSG-RAN WG2 Meeting #23 Helsinki, Finland, August 27th-31th, 2001

	CHANGE REQUEST
^ж 2	5.331 CR 921 ^{# ev} r1 ^{# Current version: 3.7.0 [#]}
For <u>HELP</u> on usin	g this form, see bottom of this page or look at the pop-up text over the $#$ symbols.
Proposed change affe	ects: # (U)SIM ME/UE X Radio Access Network X Core Network
Title: ೫ II	nter-frequency measurement corrections
Source: ೫ T	SG-RAN WG2
Work item code: % T	El Date: # 2001-08-29
Category: ೫ F Us De be	Release: %R99se one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99etailed explanations of the above categories canREL-4A found in 3GPP TR 21.900.REL-5
Reason for change:	The description of the 2x events is not complete and the way the virtual active sets are initiated and updated as well as the way the virtual active set updates are reported is not specified at all. A strict description of the events and of the way the UE shall behave regarding the virtual active sets is needed in order to avoid ambiguities, and for interfrequency measurements to be usable.
Summary of change:	 # The original CR R2-011835 was merged with CR R2-011859, and updated according to the received comments. A part in section 14.2.0b was removed compared to the original version, as well as a clause in section 10.3.7.19 (to avoid a non-backward compatible change to ASN.1) and the other updated parts are marked in yellow. Changes marked in green are sections from R2-012105. 1. In section 8.6.7.9, if the choice "Report all virtual active set cells + cells within monitored set on non-used frequency" is used, it is proposed that the "Maximum number of reported cells" applies per frequency. For instance, two frequencies f1 and f2 have triggered the same event at the same time, and if the "Maximum number of reported cells" is set to 1, the report shall contain all virtual active set cells on f1, 1 monitored cells on f1 (at most), all virtual active set cells on f2 and 1 monitored cells on f2 (at most). 2. In section 8.6.7.14, if the "inter-frequency set update" is not received at measurement set-up, the UE shall set the variable CONFIGURATION_INCOMPLETE to TRUE. In case the "UE autonomous update mode" is set to "On" or "Off", only one non-used frequency is not included in the Inter frequency measurement, since the frequency is not included in the Inter frequency measurement, since the frequency is not included in the Inter frequency measurement, since the frequency is not included in the Inter frequency measurement, since the frequency is not included in the Inter frequency measurement, since the frequency is not included in the Inter frequency measurement, since the frequency is not included in the Inter frequency measurement, since the frequency is not included in the Inter frequency measurement, since the frequency is not included in the Inter frequency measurement, since the frequency is not included in the Inter frequency measurement.
	radio links.Inter-frequency measurement reporting criteria (10.3.7.19): the threshold is not

	 necessary in case event 2a is used, while W is needed. Two clauses were added to make that clear. Inter-frequency reporting quantity (10.3.7.21): it is added that for R99, the only valid value of the IE "Frequency quality estimate" in "Inter-frequency reporting quantity" is FALSE, since this cannot be reported anywhere. Intra-frequency measurement reporting criteria (10.3.7.39): it is clarified that in the case of intra-frequency events triggered for the update of virtual active sets in an event based inter-frequency measurement, only one rapport shall be sent, and no periodical reporting shall be used. The two IEs "Amount of reporting" and "Reporting interval" are thus not needed in the case this IE is included in the IE "Inter-frequency measurement". Reporting cell status (10.3.7.61): the use of the active set/virtual active set terminology is not consistent and a correction is proposed. Also, it is clarified that in certain cases, the "Maximum number of reported cells" shall apply per reported non-used frequency. Sections 13.4.xx: new variables are added that are used in the description of the 2x events. Sections 14.2.0a, 14.2.0b, 14.2.0c: the measurement quantities, frequency quality estimate and reporting quantities for inter-frequency measurements are clarified. In 14.2.0b, the "carrier j" index used has been changed to "frequency j" to make it consistent with the text that follows. Sections 14.2.1.1 to 14.2.1.6: event descriptions of the same order as the ones existing for the intra-frequency events are added. Sections 14.11: a description of the way the virtual active sets shall be initiated and updated, and of the way the updates shall be reported to UTRAN is added. Due to the fact that in the E "inter-frequency measurement" (10.3.7.6), only one of the two IEs: "inter-frequency measurement reporting criteria" and "intra-frequency measurement reporting criteria" and "intra-frequency measurement reporting criteria" and the tra-freque
	frequency shall be included in the active set. That avoids two MEASUREMENT CONTROL messages being needed to set up an event-based inter-frequency measurement.
	This CR has isolated impact on inter-frequency measurement reporting.
Consequences if # not approved:	No clear description of the way inter-frequency measurements work, which would mean that a consistent UE behaviour cannot be guaranted.
Clauses affected: #	 8.6.7.14, 10.3.7.19, 10.3.7.21, 10.3.7.22, 10.3.7.38, 10.3.7.39, 10.3.7.61, 11.3, 13.4.27f4 (new), 13.4.27f5 (new), 13.4.27f6 (new), 13.4.27f7 (new), 13.4.27f8 (new), 13.4.27f9 (new), 14.2, 14.2.0a (new), 14.2.0b (new), 14.2.0c (new), 14.2.1, 14.2.1.2, 14.2.1.3, 14.2.1.4, 14.2.1.5, 14.2.1.6, 14.11, 14.11.1 (new), 14.11.2 (new)
Other specs # affected:	Other core specifications # 25.331 v4.1.0, CR 922 Test specifications 0&M Specifications
Other comments: #	

How to create CRs using this form:

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

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

8.6.7.14 Inter-frequency measurement

If IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", but IE "Inter-frequency measurement quantity", IE "Inter-frequency reporting quantity" or "CHOICE Report criteria" is not received, the UE shall:

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

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

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

If the variable CONFIGURATION_INCOMPLETE is set to TRUE the UE shall act as described in subclause 8.4.1.4a.

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 <maxmeas Event></maxmeas 		
>Inter-frequency event identity	MP		Inter- frequency event identity 10.3.7.14	
>Threshold used frequency	CV – clause 0		Integer(- 1150)	Ranges used depend on measurement quantity. CPICH Ec/No -240dB CPICH/Primary CCPCH RSCP -11525dBm
>W used frequency	CV – clause 0 2		Real(0, 0.12.0 by step of 0.1)	
>Hysteresis	MP		Real(0, 0.514.5 by step of 0.5)	In event 2a, 2b, 2c, 2d, 2e, 2f
>Time to trigger	MP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms.
>Reporting cell status	OP		Reporting cell status 10.3.7.61	
>Parameters required for each non-used frequency	OP	1 to <maxfreq ></maxfreq 		
>>Threshold non used frequency	CV – clause 1		Integer(- 1150)	Ranges used depend on measurement quantity. CPICH Ec/No -240dB CPICH/Primary CCPCH RSCP -11525dBm This IE is not needed if "inter- frequency event identity" is set to 2a. However, it is specified to be mandatory to align with the ASN.1
>>W non-used frequency	CV-clause <mark>1</mark>		Real(0, 0.12.0 by step of 0.1)	

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Condition	Explanation
Clause 0	The IE is mandatory if "inter-frequency event identity"
	is set to 2a,2b, 2d, or 2f, otherwise the IE is not
	needed.
Clause 1	The IE is mandatory in if "interfrequency event
	identity" is set to 2a, 2b, 2c or 2e, otherwise the IE is
	not needed.
<u>Clause 2</u>	The IE is mandatory if "inter-frequency event identity"
	is set to 2a, 2b, 2d or 2f, otherwise the IE is not
	needed.

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. This parameter is not used in this release and should be set to FALSE. It shall be ignored by the UE.
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 <u>virtual</u> 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 <u>virtual</u> 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 <maxrl></maxrl>		Radio link addition information required for each RL to add
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	Note 1
>Radio link removal information	OP	1 to <maxrl></maxrl>		Radio link removal information required for each RL to remove
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	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.

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.

10.3.7.38 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(C PICH Ec/N0, CPICH RSCP, Pathloss, UTRA Carrier RSSI)	If used in Inter system measurement quantity only Ec/N0 and RSCP is <u>are</u> allowed. If used in inter-frequency measurement quantity RSSI is not allowed.
>TDD				
>>Measurement quantity list	MP	1 to 4		
>>>Measurement quantity	MP		Enumerated(Pr imary CCPCH RSCP, Pathloss, Timeslot ISCP, UTRA Carrier RSSI)	If used in inter-frequency measurement quantity RSSI is not allowed.

10.3.7.39 Intra-frequency measurement reporting criteria

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

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

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

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

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

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

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

Event 1g: Change of best cell in TDD.

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

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters required for each	OP	1 to		
event		<maxmeas Event></maxmeas 		
>Intra-frequency event identity	MP		Intra- frequency event identity 10.3.7.34	
>Triggering condition 1	CV – clause 0		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells)	Indicates which cells can trigger the event
>Triggering condition 2	CV – clause 6		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells, Detected set cells, Detected set cells and monitored set cells)	Indicates which cells can trigger the event
>Reporting Range Constant	CV – clause 2		Real(014.5 by step of 0.5)	In dB. In event 1a,1b.
>Cells forbidden to affect Reporting range	CV – clause 1	1 to <maxcellm eas></maxcellm 		In event 1a,1b
>>CHOICE mode	MP			
>>>FDD >>>>Primary CPICH info	MP		Primary CPICH info	
>>>TDD				
>>>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57	
>W	CV – clause 2		Real(0.02.0 by step of 0.1)	
>Hysteresis	MP		Real(07.5 by step of 0.5)	In dB.
>Threshold used frequency	CV-clause 3		Integer (-115165)	Range used depend on measurement quantity. CPICH RSCP -11525 dBm CPICH Ec/No -240 dB Pathloss 30165dB ISCP -11525 dBm

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

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

10.3.7.61 Reporting Cell Status

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE reported cell	MP			
>Report cells within active set				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within monitored set cells on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within active set and/or monitored set cells on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within monitored set and/or detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report all active set cells + cells within monitored set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within monitored set and/or detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	

>Report cells within virtual active set			
>>Maximum number of reported cells <u>per reported non-used</u> <u>frequency</u>	MP	Integer(16)	
>Report cells within monitored set on non-used frequency			
>>Maximum number of reported cells <u>per reported non-used</u> <u>frequency</u>	MP	Integer(16)	
>Report cells within monitored and/or <u>virtual</u> active set on non- used frequency			
>Maximum number of reported cells_per reported non-used frequency	MP	Integer(16)	
>Report all virtual active set cells + cells within monitored set on non-used frequency			
>>Maximum number of reported cells <u>per reported non-used</u> <u>frequency</u>	MP	Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report cells within active set or within virtual active set			
>>Maximum number of reported cells	MP	Integer (112)	
Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non- used frequency			
>>Maximum number of reported cells	MP	Integer(112)	

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

< *** Uneccessary Definitions Removed *** >

11.3 Information element definitions

```
-- IE "dummy" should be removed in later versions of the message including this IE
              usedFreqW
                                                                                                 W.
              hysteresis
                                                                                                 HysteresisInterFreq,
              timeToTrigger
                                                                                                 TimeToTrigger,
              reportingCellStatus
                                                                                                 ReportingCellStatus
                                                                                                                                                                                    OPTIONAL,
                                                                                                                                                                                    OPTIONAL
              nonUsedFreqParameterList
                                                                                                 NonUsedFreqParameterList
     }
    MaxNumberOfReportingCellsType1 ::= ENUMERATED {
                                                                                                 e1, e2, e3, e4, e5, e6}
    MaxNumberOfReportingCellsType2 ::= ENUMERATED {
                                                                                                 e1, e2, e3, e4, e5, e6, e7, e8, e9, e10, e11,
    e12}
    MaxNumberOfReportingCellsType3 ::= ENUMERATED {
                                                                                                 viactCellsPlus1,
                                                                                                 viactCellsPlus2,
                                                                                                 viactCellsPlus3,
                                                                                                 viactCellsPlus4,
                                                                                                 viactCellsPlus5.
                                                                                                 viactCellsPlus6 }
    NonUsedFreqParameter ::=
                                                                                        SEQUENCE {
              nonUsedFreqThreshold
                                                                                                 Threshold,
                   "nonUsedFreqThreshold" is not needed in case of event 2a
            IE
                C "nonUsedFreqThreshold" is not needed in case of event 2a
-- In case of event 2a UTRAN should include value 0 within IE "nonUsedFreqThreshold"
-- In case of event 2a, the UE shall be ignore IE "nonUsedFreqThreshold"
-- In later versions of the message including this IE, a special version of
-- IE "NonUsedFreqParameterList" may be defined for event 2a, namely a
-- version not including IE "nonUsedFreqThreshold"
              nonUsedFreqW
                                                                                                 W
     }
    ReportingCellStatus ::=
                                                                                        CHOICE {
                                                                                                 MaxNumberOfReportingCellsType1,
              withinActiveSet
              withinMonitoredSetUsedFreq
                                                                                                 MaxNumberOfReportingCellsType1,
              withinActiveAndOrMonitoredUsedFreq MaxNumberOfReportingCellsType1,
              withinDetectedSetUsedFreq
                                                                                                 MaxNumberOfReportingCellsType1,
              withinMonitoredAndOrDetectedUsedFreq
                                                                                                MaxNumberOfReportingCellsType1,
              allActiveplusMonitoredSet
                                                                                                 MaxNumberOfReportingCellsType3,
              allActivePlusDetectedSet
                                                                                                 MaxNumberOfReportingCellsType3,
              allActivePlusMonitoredAndOrDetectedSet
                                                                                                 MaxNumberOfReportingCellsType3,
              withinVirtualActSet
                                                                                       MaxNumberOfReportingCellsType1,
             withinMonitoredSetNonUsedFreq
                                                                                               MaxNumberOfReportingCellsType1,
             withinMonitoredAndOrVirtualActSetNonUsedFreq
                                                                                                 MaxNumberOfReportingCellsTvpe1,
              \verb+allVirtualActSetplusMonitoredSetNonUsedFreq+
                                                                                                 MaxNumberOfReportingCellsType3,
              withinActSetOrVirtualActSet
                                                                                                 MaxNumberOfReportingCellsType2,
              with {\tt inActSetAndOrMonitoredUsedFreqOrVirtualActSetAndOrMonitoredNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNoNUsedFreqNonUsedFreqNonUsedF
MaxNumberOfReportingCellsType2
    }
```

13.4.27f4 BEST_FREQUENCY_2A_EVENT

This variable contains information about a 2a event that has been configured in the UE. There is one such variable per 2a event configured in the UE.

Information Element/Group name	Need	<u>Multi</u>	Type and reference	Semantics description
Best frequency	MP		Frequency	
			<u>info</u>	
			<u>10.3.6.36</u>	

13.4.27f5 TRIGGERED_2B_EVENT

This variable contains information about a 2b event that has been configured in the UE. There is one such variable per 2b event configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			<u>reference</u>	
Frequency triggered	<u>OP</u>	<u>1 to <</u>		
		maxCellMe		
		<u>as></u>		
>Frequency	MP	Frequency		
		<u>info</u>		
		10.3.6.36		

13.4.27f6 TRIGGERED_2C_EVENT

This variable contains information about a 2c event that has been configured in the UE. There is one such variable per 2c event configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			reference	
Frequency triggered	OP	<u>1 to <</u>		
		maxCellMe		
		as>		
>Frequency	MP	Frequency		
		info		
		<u>10.3.6.36</u>		

13.4.27f7 TRIGGERED 2D EVENT

This variable contains information about a 2d event that has been configured in the UE. There is one such variable per 2d event configured in the UE.

Information Element/Group name	Need	<u>Multi</u>	Type and reference	Semantics description
Event triggered	<u>OP</u>		<u>Boolean</u>	

13.4.27f8 TRIGGERED_2E_EVENT

This variable contains information about a 2e event that has been configured in the UE. There is one such variable per 2e event configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			<u>reference</u>	
Frequency triggered	<u>OP</u>	<u>1 to <</u>		
		maxCellMe		
		<u>as></u>		
>Frequency	MP	Frequency		
		<u>info</u>		
		<u>10.3.6.36</u>		

13.4.27f9 TRIGGERED 2F EVENT

This variable contains information about a 2f event that have been configured in the UE. There is one such variable per 2f event configured in the UE.

Information Element/Group name	<u>Need</u>	<u>Multi</u>	Type and reference	Semantics description
Event triggered	<u>OP</u>		<u>Boolean</u>	

14.2 Inter-frequency measurements

14.2.0a Inter-frequency measurement quantities

The two first measurement quantities listed below are used by the UE to evaluate whether an interfrequency measurement event has occurred or not, through the computation of a frequency quality estimate. Which quantity to use to compute the frequency quality estimate for an inter-frequency measurement is given in the "Inter-frequency measurement quantity" stored for that measurement. In the FDD case, all three measurement quantities can be used for the update of the virtual active set of the non-used frequencies as described in section 14.11.

- 1. Downlink Ec/No
- 2. Downlink received signal code power (RSCP) after despreading.
- 3. <u>Downlink path loss.</u>

For FDD:

<u>Pathloss in dB = Primary CPICH Tx power - CPICH RSCP.</u>

For Primary CPICH Tx power the IE "Primary CPICH Tx power" shall be used. The unit is dBm.

CPICH RSCP is the result of the CPICH RSCP measurement. The unit is dBm.

A description of those values can be found in [7] and [8].

14.2.0b Frequency quality estimate

For FDD cell:

The frequency quality estimate used in events 2a, 2b, 2c, 2d, and 2e and 2f is defined as:

$$Q_{\text{frequency } j} = 10 \cdot LogM_{\text{frequency } j} = W_{j} \cdot 10 \cdot Log\left(\sum_{i=1}^{N_{A,j}} M_{i,j}\right) + (1 - W_{j}) \cdot 10 \cdot LogM_{\text{Best } j},$$

The variables in the formula are defined as follows: <u>("the virtual active set on frequency j" should be</u> understood as the active set if frequency j is the used frequency. If frequency j is a non-used frequency, the way the virtual active set is initiated and updated is described in section 14.11)

 $Q_{frequency j}$ is the estimated quality of the <u>virtual</u> active set on frequency j.

M_{frequency j} is the estimated quality of the <u>virtual</u> active set on frequency j.

M_{ij} is a measurement result of cell i in the <u>virtual</u> active set on frequency j.

 $N_{A\,j}$ is the number of cells in the <u>virtual</u> active set on frequency j.

 $M_{Best j}$ is the measurement result of the cell in the <u>virtual</u> active set on frequency j with the highest measurement result.

W_i is a parameter sent from UTRAN to UE and used for frequency j.

H is the hysteresis parameter.

If the measurement result is CPICH-Ec/No then $M_{FrequencyNew}$, M_{ij} and M_{Best} are expressed as ratios.

If the measurement result is CPICH-RSCP or PCCPCH-RSCP then $M_{FrequencyNew}$, M_{ij} and M_{Best} are expressed in [mW].

For TDD cells:

 $Q_{i, frequency} = 10 \cdot LogM_{i, frequency} + O_{i, j}$

Q_{i, frequency j} is the estimated quality of cell i on frequency j.

- M_{frequency i} is the measurement result for Primary CCPCH RSCP of cell i on frequency j expressed in [mW].
- \underline{O}_{ij} is the cell individual offset of the currently evaluated cell *i* on frequency j. \overline{O}_{ij} is set by IE " Cell individual offset"

14.2.0c Inter-frequency reporting quantities

The quantities that the UE shall report for each cell to UTRAN when the event is triggered for an interfrequency measurement is given by the "Inter-frequency reporting quantity" IE stored for this measurement and can be the following, from 1 to 8. The quantity number 9 can be reported for each frequency that triggered the report.

- 1. Cell identity
- 2. SFN-SFN observed time difference
- 3. Cell synchronisation information
- 4. Downlink Ec/No (FDD)
- 5. Downlink path loss.

For FDD:

Pathloss in dB = Primary CPICH Tx power - CPICH RSCP.

For Primary CPICH Tx power the IE "Primary CPICH Tx power" shall be used. The unit is dBm.

CPICH RSCP is the result of the CPICH RSCP measurement. The unit is dBm.

For TDD:

Pathloss in dB = Primary CCPCH TX power - Primary CCPCH RSCP.

For Primary CCPCH TX power the IE "Primary CCPCH TX Power" shall be used. The unit is dBm.

Primary CCPCH RSCP is the result of the Primary CCPCH RSCP measurement. The unit is dBm.

If necessary Pathloss shall be rounded up to the next higher integer. Results higher than 158 shall be reported as 158. Results lower than 46 shall be reported as 46.

<u>6.</u> Downlink received signal code power (RSCP) after despreading (of a primary CPICH for FDD, and of a primary CCPCH for TDD).

7. ISCP measured on Timeslot basis. (TDD)

8. Proposed TGSN (TDD)

9. UTRA carrier RSSI

A description of those values can be found in [7] and [8].

14.2.1 Inter-frequency reporting events

Within the measurement reporting criteria field in the MEASUREMENT CONTROL message UTRAN notifies the UE which events should trigger the UE to send a MEASUREMENT REPORT message. Examples of inter-frequency reporting events that would be useful for inter-frequency handover evaluation are given below. Note that normally the UEs do not need to report all these events. The listed events are the toolbox from which the UTRAN can choose the reporting events that are needed for the implemented handover evaluation function, or other radio network functions.

All events are evaluated with respect to one of the measurement quantities given in subclause

14.2.0a14.1.1. The measurement quantities are measured on the monitored primary common pilot channels (CPICH) in FDD mode and the monitored primary common control channels (PCCPCH) in TDD mode of the cell defined in the measurement object. The measurement objects are the monitored primary common pilot channels (CPICH) in FDD mode and the monitored primary common control channels (PCCPCH) in TDD mode. A "non-used frequency" is a frequency that the UE hasve been ordered to measure upon but isare not used for of the connectionactive set. A "used frequency" is a frequency that the UE hasve been ordered to measure upon and is also currently used for the connection.

14.2.1.1 Event 2a: Change of best frequency.

 When event 2a is configured in the UE within a measurement, the UE shall:

 When the measurement is initiated or resumed, store the used frequency in the variable

 BEST FREQUENCY 2A EVENT

If equation 1 below has been fulfilled during the time "Time to trigger" for a frequency included for that event and which is not stored in the variable BEST_FREQUENCY_2A_EVENT:

- Send a measurement report with IEs set as below:
 - In "inter-frequency measurement event results":

- "inter-frequency event identity" to "2a", and

"Frequency info" to the frequency that triggered the event and "Non frequency related measurement event results"

- to the "Primary CPICH info" of the best primary CPICH for FDD cells

or

"Primary CCPCH info" to the "Cells parameters ID" of the best primary CCPCH for TDD cells

on that frequency;

"measured results" and possible "additional measured results" according to 8.4.2;

- Update the variable BEST_FREQUENCY_2A_EVENT with that frequency

Equation 1:

 $Q_{NotBest} \ge Q_{Best} + H_{2a}/2$

The variables in the formula are defined as follows:

 $Q_{Not Best}$ is the quality estimate of a frequency not stored the "best frequency" in the variable BEST_FREQUENCY_2A_EVENT.

 \underline{Q}_{Best} is the quality estimate of the frequency stored in "best frequency" in the variable BEST_FREQUENCY_2A_EVENT.

 \underline{H}_{2a} is the hysteresis parameter for the event 2a in that measurement.

If any of the non-used frequencies quality estimate becomes better than the currently used frequency quality estimate, and event 2a has been ordered by UTRAN then this event shall trigger a report to be sent from the UE when the hysteresis and time to trigger conditions is fulfilled. The corresponding report contains (at least) the best primary CPICH (FDD) or primary CCPCH (TDD) on the non-used frequency that triggered the event.

14.2.1.2 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.

When an inter-frequency measurement configuring event 2b is set up, the UE shall create a variable TRIGGERED_2B_EVENT related to that measurement, which shall initially be empty. This variable shall be deleted when the measurement is released.

When event 2b is configured in the UE within a measurement, the UE shall:

- If equations 1 and 2 below have been fulfilled during the time "Time to Trigger" from the same instant, respectively for one or several non-used frequencies included for that event and for the used frequency:
 - If any of those non-used frequency is not stored in the variable TRIGGERED_2B_EVENT:

- Store the non-used frequencies that triggered the event and that were not previously stored in the variable TRIGGERED 2B EVENT into that variable;
- Send a measurement report with IEs set as below:
 - <u>In "inter-frequency measurement event results":</u>
 - "inter-frequency event identity" to "2b", and
 - for each non-used frequency that triggered the event, beginning with the best frequency "Frequency info" to that non-used frequency and "Non frequency related measurement event results"

- to the "Primary CPICH info" of the best primary CPICH for FDD cells

<u>or</u>

- <u>"Primary CCPCH info</u>" to the "Cell parameters ID" of the best primary CCPCH for TDD cells
- on that non-used frequency;
- "measured results" and possible "additional measured results" according to 8.4.2;
- If equation 3 below is fulfilled for a non-used frequency stored in the variable TRIGGERED_2B_EVENT
 - Remove that non-used frequency from the variable TRIGGERED_2B_EVENT;
- If equation 4 below is fulfilled for the used frequency:
 - Clear the variable TRIGGERED_2B_EVENT;

Triggering conditions: Equation 1:

 $Q_{\text{Nonused}} \ge T_{\text{Nonused}} + H_{2b}/2$

The variables in the formula are defined as follows:

 $\underline{Q}_{Non used}$ is the quality estimate of a non-used frequency that becomes better than an absolute <u>threshold.</u>

 $\underline{T}_{Non used 2b}$ is the absolute threshold that applies for this non-used frequency in that measurement.

 \underline{H}_{2b} is the hysteresis parameter for the event 2b.

Equation 2:

 $Q_{Used} \leq T_{Usedb} - H_{2b}/2$

The variables in the formula are defined as follows:

 \underline{Q}_{Used} is the quality estimate of the used frequency.

 $\underline{T}_{Used 2b}$ is the absolute threshold that applies for the used frequency in that measurement.

 \underline{H}_{2b} is the hysteresis parameter for the event 2b.

Leaving triggered state condition:

Equation 3:

 $Q_{\text{Nonused}} < T_{\text{Nonused}b} - H_{2b}/2$

The variables in the formula are defined as follows:

<u>*Q*_{Non used} is the quality estimate of a non-used frequency that is stored in the variable TRIGGERED_2B_EVENT.</u>

 $\underline{T}_{Non used 2b}$ is the absolute threshold that applies for this non-used frequency in that measurement.

 \underline{H}_{2b} is the hysteresis parameter for the event 2b.

Equation 4: $Q_{Used} > T_{Usedb} + H_{2b}/2$ The variables in the formula are defined as follows:

 \underline{O}_{Used} is the quality estimate of the used frequency.

 $\underline{T}_{Used 2b}$ is the absolute threshold that applies for the used frequency in that measurement.

<u> H_{2b} is the hysteresis parameter for the event 2b.</u>

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE "Threshold used frequency" and the estimated quality of a non-used frequency is above the value of the IE "Threshold non-used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH (FDD) or primary CCPCH (TDD) on the non-used frequency that triggered the event.

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

When an inter-frequency measurement configuring event 2c is set up, the UE shall create a variable TRIGGERED_2C_EVENT related to that measurement, which shall initially be empty. This variable shall be deleted when the measurement is released.

When event 2c is configured in the UE within a measurement, the UE shall:

- If equation 1 below has been fulfilled for one or several non-used frequencies included for that event during the time "Time to trigger":
 - If any of those non-used frequencies is not stored in the variable TRIGGERED_2C_EVENT:
 - Store the non-used frequencies that triggered the event and that were not previously stored in the variable TRIGGERED_2C_EVENT into that variable;
 - Send a measurement report with IEs set as below:
 - In "inter-frequency measurement event results":
 - "inter-frequency event identity" to "2c", and
 - for each non-used frequency that triggered the event, beginning with the best frequency "Frequency info" to that non-used frequency and "Non frequency related measurement event results"

to the "Primary CPICH info" of the best primary CPICH for FDD cells

or

 <u>"Primary CCPCH info" to the "Cell parameters ID" of the best primary CCPCH</u> for TDD cells

on that non-used frequency;

- If equation 2 below is fulfilled for a non-used frequency stored in the variable TRIGGERED_2C_EVENT:

Remove that non-used frequency from the variable TRIGGERED_2C_EVENT;

Triggering condition:

Equation 1:

 $Q_{Nonused} \ge T_{Nonused 2c} + H_{2c}/2$

The variables in the formula are defined as follows:

 $\underline{O}_{Non used}$ is the quality estimate of a non-used frequency that becomes better than an absolute threshold.

 $\underline{T}_{Non used 2c}$ is the absolute threshold that applies for this non-used frequency in that measurement.

<u> H_{2c} is the hysteresis parameter for the event 2c.</u>

Leaving triggered state condition: Equation 2:

 $Q_{Nonused} < T_{Nonused 2c} - H_{2c}/2$

The variables in the formula are defined as follows:

 $\underline{O}_{Non used}$ is the quality estimate of a non-used frequency stored in the variable TRIGGERED 2C EVENT.

 $\underline{T}_{Non used 2c}$ is the absolute threshold that applies for this non-used frequency in that measurement.

 \underline{H}_{2c} is the hysteresis parameter for the event 2c.

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of a non-used frequency is above the value of the IE "Threshold non-used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH (FDD) or primary CCPCH (TDD) on the non-used frequency.

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

When an inter-frequency measurement configuring event 2d is set up, the UE shall create a variable TRIGGERED_2D_EVENT related to that measurement, which shall initially be set to FALSE. This variable shall be deleted when the measurement is released.

When event 2d is configured in the UE within a measurement, the UE shall:

- If equation 1 below has been fulfilled for the used frequency during the time "Time to trigger":

- If the variable TRIGGERED_2D_EVENT is set to FALSE:

- Set the variable TRIGGERED_2D_EVENT to TRUE;

- <u>Send a measurement report with IEs set as below:</u>

- <u>In "inter-frequency event results": "inter-frequency event identity" to "2d" and no IE</u> <u>"Inter-frequency cells":</u>
- "measured results" and possible "additional measured results" according to 8.4.2;
- If the variable TRIGGERED_2D_EVENT is set to TRUE and if equation 2 is fulfilled for the used frequency:

- Set the variable TRIGGERED_2D_EVENT to FALSE;

Triggering condition: Equation 1:

 $Q_{Used} \leq T_{Used2d} - H_{2d}/2$

The variables in the formula are defined as follows:

 \underline{Q}_{Used} is the quality estimate of the used frequency.

 $\underline{T}_{Used 2d}$ is the absolute threshold that applies for the used frequency and event 2d.

 \underline{H}_{2d} is the hysteresis parameter for the event 2d.

Leaving triggered state condition:

Equation 2:

 $Q_{Used} > T_{Usedd} + H_{2d}/2$

The variables in the formula are defined as follows:

 Q_{Used} is the quality estimate of the used frequency.

 $\underline{T}_{Used 2d}$ is the absolute threshold that applies for the used frequency and event 2d.

 \underline{H}_{2d} is the hysteresis parameter for the event 2d.

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE " Threshold used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH (FDD) or primary CCPCH (TDD) on the used frequency.

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

When an inter-frequency measurement configuring event 2e is set up, the UE shall create a variable TRIGGERED_2E_EVENT related to that measurement, which shall initially be empty. This variable shall be deleted when the measurement is released.

When event 2e is configured in the UE within a measurement, the UE shall:

If equation 1 below has been fulfilled for one or several non-used frequencies included for that event during the time "Time to trigger": If any of those non-used frequencies is not stored in the variable TRIGGERED 2E EVENT: Store the non-used frequencies that triggered the event and that were not previously stored in the variable TRIGGERED 2E EVENT into that variable; Send a measurement report with IEs set as below: In "inter-frequency measurement event results": "inter-frequency event identity" to "2e", and for each non-used frequency that triggered the event, beginning with the best frequency "Frequency info" to that non-used frequency and "Non frequency related measurement event results" to the "Primary CPICH info" of the best primary CPICH for FDD cells or "Primary CCPCH info" to the "Cell parameters ID" of the best primary CCPCH for TDD cells on that non-used frequency; "measured results" and possible "additional measured results" according to 8.4.2; If equation 2 below is fulfilled for a non-used frequency stored in the variable TRIGGERED 2E EVENT: - Remove that non-used frequency from the variable TRIGGERED_2E_EVENT; Triggering condition: Equation 1: $Q_{Nonused} \leq T_{Nonusedle} - H_{2e}/2$ The variables in the formula are defined as follows: $Q_{Non used}$ is the quality estimate of a non-used frequency that becomes worse than an absolute threshold. $\underline{T}_{Non used 2e}$ is the absolute threshold that applies for that non-used frequency for that event. \underline{H}_{2e} is the hysteresis parameter for the event 2e. Leaving triggered state condition: Equation 2: $Q_{Nonusedle} > T_{Nonusedle} + H_{2e}/2$ The variables in the formula are defined as follows:

 $\underline{O}_{Non used}$ is the quality estimate of a non-used frequency stored in the variable TRIGGERED 2E EVENT.

 $\underline{T}_{Non used 2e}$ is the absolute threshold that applies for that non-used frequency for that event.

 \underline{H}_{2e} is the hysteresis parameter for the event 2e.

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of a non-used frequency is below the value of the IE "Threshold non-used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH (FDD) or primary CCPCH (TDD) on the non-used frequency.

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

When an inter-frequency measurement configuring event 2f is set up, the UE shall create a variable TRIGGERED_2F_EVENT related to that measurement, which shall initially be set to FALSE. This variable shall be deleted when the measurement is released.

When event 2f is configured in the UE within a measurement, the UE shall:

- If equation 1 below has been fulfilled for the used frequency during the time "Time to trigger":

- If the variable TRIGGERED_2F_EVENT is set to FALSE:

- Set the variable TRIGGERED_2F_EVENT to TRUE;
- Send a measurement report with IEs set as below:
 - <u>In "inter-frequency event results": "inter-frequency event identity" to "2f", and no IE</u> <u>"Inter-frequency cells";</u>
 - "measured results" and possible "additional measured results" according to 8.4.2;
- If the variable TRIGGERED_2F_EVENT is set to TRUE and if equation 2 is fulfilled for the used frequency:

- Set the variable TRIGGERED_2F_EVENT to FALSE;

Triggering condition:

Equation 1:

 $Q_{Used} \ge T_{Used} + H_{2f}/2$

The variables in the formula are defined as follows:

 \underline{Q}_{Used} is the quality estimate of the used frequency.

 $\underline{T}_{Used 2f}$ is the absolute threshold that applies for the used frequency and event 2f.

 \underline{H}_{2f} is the hysteresis parameter for the event 2f.

Leaving triggered state condition: Equation 2: $Q_{Used} < T_{Used} - H_{2f}/2$

The variables in the formula are defined as follows:

 \underline{Q}_{Used} is the quality estimate of the used frequency.

 $\underline{T}_{Used 2f}$ is the absolute threshold that applies for the used frequency and event 2f.

 \underline{H}_{2f} is the hysteresis parameter for the event 2f.

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is above the value of the IE " Threshold used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH (FDD) or primary CCPCH (TDD) on the used frequency.

14.11 UE autonomous update of <u>virtual</u> active set on nonused frequency (FDD only)

In the text that follows:

- A "non-used frequency" is a frequency that the UE has been ordered to measure upon but is not used for the connection. A "used frequency" is a frequency that the UE has been ordered to measure upon and is also currently used for the connection.
- "A non-used frequency (resp. cell) considered in an inter-frequency measurement" shall be understood as a non-used frequency (resp. cell) included in the list of cells pointed at in the IE "cells for measurement" if it was received for that measurement, or otherwise as a non-used frequency (resp. cell) included in the "Inter-frequency cell info" part of the variable CELL_INFO_LIST.

Within the measurement reporting criteria field in the MEASUREMENT CONTROL message the UTRAN notifies the UE which events should trigger a measurement report. For <u>event-triggered</u> inter frequency measurements it is possible to specify intra-frequency measurements reporting events for support of maintenance of an active set associated with a non-used frequency <u>considered in that measurement</u>, a "virtual active set" and used in the evaluation of the frequency quality estimates. The "initial virtual active set" for a frequency is the virtual active set that is associated to that frequency just after a message was received that sets up or modifies the inter-frequency measurement

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

The autonomous update is controlled by the IE "UE autonomous update mode" that can be set to the following values.

- On: Do the autonomous updates of the "virtual active set" according to the described rules below and also report the events that trigger the update of the "virtual active set".
- On with no reporting: Do the autonomous updates of the "virtual active set" according to the described rules below.
- Off: Only report the events and do no updates of the "virtual active set" unless ordered to do so by the IE " Inter-frequency set update".

If the IE "UE autonomous update mode" is set to "on" or "on with no reporting" the UE shall evaluate the following intra-frequency events and update the "virtual active set" associated with the frequency measured upon, according to the following rules:

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

14.11.1 Initial virtual active set

The way the UE shall act when a MEASUREMENT CONTROL message is received that sets up or modifies an inter-frequency measurement, and that includes the IE "Inter-frequency set update" and/or the IE "Intra-Frequency measurement reporting quantity" is described below.

- If the IE "Intra-Frequency measurement reporting criteria" is included in the MEASUREMENT CONTROL message, or if it was previously stored and if the IE "Inter-frequency set update" was included in the MEASUREMENT CONTROL message:
 - If the IE "UE autonomous update mode" received or previously stored is set to "on" or "on with no reporting":
 - For each non-used frequency F_i considered in the measurement, the initial virtual active set shall include the N_i cells that have either the greatest downlink E_c/N_0 , the greatest downlink RSCP after despreading, or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

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

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

where:

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

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

- else if event 1c is configured in the "Intra-Frequency measurement reporting criteria":

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

where:

<u>*N_{Ic}* is the "Replacement activation threshold" included in the "Intra-Frequency measurement" IE received for that inter-frequency measurement for event 1c.</u>

<u> $N_{Cells Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.</u>

- else:

 $N_i = N_{Cells Fi}$ where:

<u> $N_{Cells Fi}$ </u> is the number of cells on frequency F_i considered in that inter-frequency measurement.

- If the IE "UE autonomous update mode" received or previously stored is set to "on":

- If event 1a is configured in the "Intra-Frequency measurement reporting criteria":

- Send a MEASUREMENT REPORT with IEs set as follows:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency measurement</u> <u>event results, Intra-frequency event identity to 1a, and in "Cell measurement event</u> <u>results" the CPICH info of all the cells included in a virtual active set of the non-used</u> <u>frequency considered in the inter-frequency measurement.</u>
 - The IE "measured results" shall not be included.

- Else if event 1c is configured in the "Intra-Frequency measurement reporting criteria":

- Send a measurement report with IEs set as follows:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency measurement</u> event results, Intra-frequency event identity to 1c, and in "Cell measurement event results" the CPICH info of all the cells included in the virtual active set of the frequency considered in the inter-frequency measurement.
 - The IE "measured results" shall not be included.

If the IE "Inter-frequency set update" is included in the message and if the IE "UE autonomous update mode" is set to "Off":

If the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update set" was also "Off" and if the IE "Intra-frequency measurement reporting criteria" was not included in the message:

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

- Otherwise:

 Remove the possibly existing virtual active set of the non-used frequency considered in that measurement and set the initial virtual active set for it according to the "Inter- frequency set update" included in the message.
- If the IE "Inter-frequency set update" is not included in the message and if the IE "UE autonomous update mode" stored for the inter-frequency measurement is set to "Off":
- Remove the possibly existing virtual active set of the non-used frequency considered in that measurement, and consider the virtual active set for it as empty.
- If the IE "Intra-Frequency measurement reporting criteria" was not included in the MEASUREMENT CONTROL message, the UE shall
- If the IE "UE autonomous update mode" is set to "on" or "on with no reporting":
- For each non-used frequency F_i considered in the measurement, the initial virtual active set shall include the N_i cells that have either the greatest downlink E_c/N_0 or the greatest downlink RSCP after despreading or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:
- if event 1a is configured for the used frequency in an intra-frequency measurement:
- if the "Reporting deactivation threshold" included in the
$N_i = \min(N_{la}, N_{Cells Fi})$ if $N_{la} \neq 0$ and $N_i = N_{Cells Fi}$ otherwise.
with:
N_{1a} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity.
$\underline{N_{Cells Fi}}$ is the number of cells on frequency $\underline{F_i}$ considered in that inter-frequency measurement.
- else if event 1c is configured for the used frequency in an intra-frequency measurement:
$N_i = \min(N_{lc}, N_{Cells Fi})$ if $N_{Ic} \neq 0$ and $N_i = N_{Cells Fi}$ otherwise.
where:
N_{lc} is the "Replacement activation threshold" included in the "Intra-Frequency measurement" for the first event 1c defined in the intra-frequency measurement with the lowest identity.
$N_{Cells Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

- <u>else:</u>

 $N_i = N_{Cells Fi}$

where:

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

- If the IE "UE autonomous update mode" is set to "on":
 - If event 1a is configured for the used frequency in an intra-frequency measurement:
 - Send a measurement report with IEs set as follows:
 - <u>The Measurement identity to the identity of the inter-frequency</u> <u>measurement.</u>
 - The CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in the initial virtual active set of the non-used frequency considered in that measurement.
 - The IE "measured results" shall not be included.
 - Else if event 1c is configured for the used frequency in an intra-frequency measurement:
 - Send a measurement report with IEs set as follows:
 - <u>The Measurement identity to the identity of the inter-frequency</u> <u>measurement.</u>
 - The CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1c, and in "Cell measurement event results" the CPICH info of all the cells included in the virtual active set of the non-used frequency considered in that measurement.
 - The IE "measured results" shall not be included.
- If the IE "UE autonomous update mode" is set to "off":
 - Set the initial virtual active set of the non-used frequency considered in that interfrequency measurement according to what is included in the "Inter-frequency set update" included in the message. If that IE was not received, the initial virtual active set for the frequencies considered in that measurement shall be empty.

14.11.2 Virtual active set update during an inter-frequency measurement

- if the IE "Intra-frequency measurement reporting criteria" is stored for an inter-frequency measurement, the UE shall:

- if Event 1a is configured in that IE, shall make the UE shall, when this event is triggered (according to the criteria described in subclause 14.2.1.1) by a cell allowed to affect the

reporting range (i.e. not included in the IE "Cells forbidden to affect reporting range" if that IE is included) for a non-used frequency considered in that measurement:

- if the "Reporting deactivation threshold" is equal to 0, or if the "Reporting deactivation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is less than the "Reporting deactivation threshold":
 - if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" add the primary CPICH that enters the reporting range to the "virtual active set"_-.
 - if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement report with IEs set as below:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency</u> measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of the cell that triggered the event.
 - The IE "measured results" shall not be included.
- if Event 1b was configured, shall make the UE shall when this event is triggered (according to the criteria described in subclause 14.2.1.2) by a cell allowed to affect the reporting range (i.e. not included in the IE "Cells forbidden to affect reporting range" if that IE is included) for a non-used frequency considered in that measurement:
 - if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" and if the number of cells included in the virtual active set is greater than 1, remove the a primary CPICH that leaves the reporting range from the "virtual active set".
 - <u>if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement report</u> with IEs set as below:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency measurement event</u> results, Intra-frequency event identity to 1b, and in "Cell measurement event results" the <u>CPICH info of the cell that triggered the event.</u>
 - The IE "measured results" shall not be included.
- if Event 1c was configured, shall make the UE shall when this event is triggered by a cell for a frequency considered in that measurement (according to the criteria described in subclause 14.2.1.3):
 - if the "Reporting activation threshold" is equal to 0, or if the "Reporting activation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is greater than or equal to the "Reporting activation threshold":
 - if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" replace an active primary CPICH in the "virtual active set" with a non-active primary CPICH that hasve become better than the active primary CPICH₋
 - if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement report with IEs set as below:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - The CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1c, and in "Cell measurement event

results" the first entry as the CPICH info of the cell that triggered the event, and the rest of the entries as the cells that were in the virtual active set before the event occurred and that are worse than the cell that triggered the event, in the order of their measured value (best one first).

- The IE "measured results" shall not be included.
- If the IE "Intra-frequency measurement reporting criteria" is not stored for that inter-frequency measurement, the UE shall:
 - apply the events of type 1a, 1b and 1c that were defined for the used frequency in other stored measurements of type "intra-frequency" at the time the inter-frequency measurement was set up and update the virtual active set for the non-used frequencies considered in that measurement according to the following rules:
 - if several events of type 1a (resp. 1b,1c) were defined for the used frequency when the interfrequency measurement was set up, only the first 1a event (resp 1b, 1c) that was defined in the measurement with the lowest measurement identity shall apply to the non-used frequencies.
 - all the cells considered in the inter-frequency measurements shall be able to affect the reporting range for event 1a and 1b. (i.e. the IE "Cells forbidden to affect reporting range" possibly stored for the intra-frequency measurements on the used frequency does not apply to the non-used frequencies considered in the inter-frequency measurement).
 - The IEs "amount of reporting" and "reporting interval" that were stored for the intrafrequency measurements on the used frequency shall not be considered if reports of the virtual active set updates are needed.
 - if event 1a is applicable to the non-used frequencies considered in the inter-frequency measurement, the UE shall, when this event is triggered (according to the criteria described in subclause 14.2.1.1) by a cell for a non-used frequency considered in that measurement:
 - <u>if the "Reporting deactivation threshold" is equal to 0, or if the "Reporting deactivation</u> <u>threshold" is different from 0 and the number of cells included in the virtual active set for</u> <u>that frequency is less than the "Reporting deactivation threshold"</u>
 - <u>if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" add the</u> primary CPICH that enters the reporting range to the "virtual active set"
 - <u>if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement</u> report with IEs set as below:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency measurement</u> event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of the cell that triggered the event.
 - The IE "measured results" shall not be included.
 - if event 1b is applicable for the non-used frequencies considered in that inter-frequency measurement, the UE shall when this event is triggered (according to the criteria described in subclause 14.2.1.2) by a cell for a non-used frequency considered in that measurement:
 - if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" and if the number of cells included in the virtual active set is greater than 1, remove the primary CPICH that leaves the reporting range from the "virtual active set"

- if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement report with IEs set as below:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency measurement</u> event results, Intra-frequency event identity to 1b, and in "Cell measurement event results" the CPICH info of the cell that triggered the event.
 - <u>The IE "measured results" shall not be included.</u>
- if event 1c is applicable for the non-used frequencies considered in that inter-frequency measurement, the UE shall when this event is triggered (according to the criteria described in subclause 14.2.1.3) by a cell for a non-used frequency considered in that measurement:
 - <u>if the "Reporting activation threshold" is equal to 0, or if the "Reporting activation</u> <u>threshold" is different from 0 and the number of cells included in the virtual active set for</u> <u>that frequency is greater than or equal to the "Reporting activation threshold"</u>
 - if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" replace an active primary CPICH in the "virtual active set" with a non-active primary CPICH that has become better than the active primary CPICH
 - <u>if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement</u> report with IEs set as below:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency measurement</u> event results, Intra-frequency event identity to 1c, and in "Cell measurement event results" the first entry as the CPICH info of the cell that triggered the event, and the rest of the entries as the cells that were in the virtual active set before the event occurred and that are worse than the cell that triggered the event, in the order of their measured value (best one first).
 - The IE "measured results" shall not be included.
Tdoc R2-012177

3GPP TSG-RAN WG2 Meeting #23 Helsinki, Finland, August 27th-31th, 2001

CHANGE REQUEST					
[#] 25	5.331 CR 922 # ev _ # Current version: 4.1.0 #				
For <u>HELP</u> on using	g this form, see bottom of this page or look at the pop-up text over the $#$ symbols.				
Proposed change affect	ects: # (U)SIM ME/UE X Radio Access Network X Core Network				
Title: % Int	ter-frequency measurement corrections				
Source: % TS	SG-RAN WG2				
Work item code: # TE	El Date: 策 2001-09-03				
Category: ℜ A Use Deta be f	Release: % REL-4 e one of the following categories: Use one of the following releases: F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) stailed explanations of the above categories can REL-4 (Release 4) found in 3GPP TR 21.900. REL-5 (Release 5)				
Reason for change: #	The description of the 2x events is not complete and the way the virtual active				
	sets are initiated and updated as well as the way the virtual active set updates are reported is not specified at all. A strict description of the events and of the way the UE shall behave regarding the virtual active sets is needed in order to avoid ambiguities, and for inter- frequency measurements to be usable.				
Summary of change: ¥	 In section 8.6.7.9, if the choice "Report all virtual active set cells + cells within monitored set on non-used frequency" is used, it is proposed that the "Maximum number of reported cells" applies per frequency. For instance, two frequencies f1 and f2 have triggered the same event at the same time, and if the "Maximum number of reported cells" is set to 1, the report shall contain all virtual active set cells on f1, 1 monitored cells on f1 (at most), all virtual active set cells on f2 and 1 monitored cells on f2 (at most). In section 8.6.7.14, if the "inter-frequency set update" is not received at measurement set-up, the UE shall set the variable CONFIGURATION_INCOMPLETE to TRUE. In case the "UE autonomous update mode" is set to "On" or "Off", only one non-used frequency can be concerned by the inter-frequency measurement, since the frequency is not included in the Inter-frequency set update (10.3.7.22) for adding or removing radio links. Inter-frequency measurement reporting criteria (10.3.7.19): the threshold is not necessary in case event 2a is used, while W is needed. Two clauses were added to make that clear. Inter-frequency reporting quantity (10.3.7.21): it is added that for R99, the only valid value of the IE "Frequency quality estimate" in "Inter-frequency reporting quantity" is FALSE, since this cannot be reported anywhere. 				

	5. Intra-frequency measurement reporting criteria (10.3.7.39): it is clarified that in the
	case of intra-frequency events triggered for the update of virtual active sets in an
	event based inter-frequency measurement, only one rapport shall be sent, and no
	periodical reporting shall be used. The two IEs' Amount of reporting and Reporting
	measurement".
	6. Reporting cell status (10.3.7.61): the use of the active set/virtual active set
	terminology is not consistent and a correction is proposed. Also, it is clarified that in
	certain cases, the "Maximum number of reported cells" shall apply per reported non- used frequency.
	7. Section 11.3: the naming in ASN.1 was aligned to what exist in the tabular.
	8. Sections 13.4.xx: new variables are added that are used in the description of the 2x events
	9 Sections 14.2.0a, 14.2.0b, 14.2.0c; the measurement quantities, frequency quality
	estimate and reporting quantities for inter-frequency measurements are clarified. In
	14.2.0b, the "carrier j" index used has been changed to "frequency j" to make it
	consistent with the text that follows.
	for the intra-frequency events are added
	11. Section 14.11: a description of the way the virtual active sets shall be initiated and
	updated, and of the way the updates shall be reported to UTRAN is added. Due to the
	fact that in the IE "inter-frequency measurement" (10.3.7.16), only one of the two IEs:
	"inter-frequency measurement reporting criteria" and "intra-frequency measurement
	reporting criteria" can be included, it is proposed that the intra-frequency
	measurement reporting criteria defined in other measurements of type "intra-
	frequency" can be used. If no intra-frequency measurements are defined for the used
	frequency neither, then all the cells considered in the measurement on each non-used
	frequency shall be included in the active set. That avoids two MEASUREMENT
	CONTROL messages being needed to set up an event-based inter-irequency
	measurement.
	This CR has isolated impact on inter-frequency measurement reporting.
Consequences if #	No clear description of the way inter-frequency measurements work, which would
not approved:	mean that a consistent UE behaviour cannot be guaranted.
Clauses affected: #	8.6.7.14, 10.3.7.19, 10.3.7.21, 10.3.7.22, 10.3.7.38, 10.3.7.39, 10.3.7.61, 11.3,
	13.4.27f4 (new), 13.4.27f5 (new), 13.4.27f6 (new), 13.4.27f7 (new), 13.4.27f8
	(new), 13.4.2/19 (new), 14.2, 14.2.0a (new), 14.2.0b (new), 14.2.0c (new),
	14.2.1, 14.2.1.1, 14.2.1.2, 14.2.1.3, 14.2.1.4, 14.2.1.5, 14.2.1.6, 14.11, 14.11.1 (now) 14.11.2 (now)
	(IICW), 14.11.2 (IICW)
Other specs #	Other core specifications # 25.331 v3.7.0. CR 0921r1
affected:	Test specifications
	O&M Specifications
Other comments: #	

How to create CRs using this form: Comprehensive information and tips about how to create CRs can be found at: <u>http://www.3gpp.org/3G_Specs/CRs.htm</u>. Below is a brief summary:

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

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

8.6.7.14 Inter-frequency measurement

If IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", but IE "Inter-frequency measurement quantity", IE "Inter-frequency reporting quantity" or "CHOICE Report criteria" is not received, the UE shall:

- clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY;
- set the variable CONFIGURATION_INCOMPLETE to TRUE.
- In the case of an inter-frequency measurement for FDD:
 - If IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", if an inter-frequency event is configured that is different from event 2d or 2f, and if the IE "Inter-frequency SET UPDATE" is not received in that same message:
 - <u>set the variable CONFIGURATION_INCOMPLETE to TRUE.</u>
 - If the IE "Inter-frequency SET UPDATE" is received:
 - if the value of the IE "Autonomous Set Update" set to "Off" or "On":
 - <u>if more than one frequency is included in the list of cells pointed at in the IE "cells for</u> measurement" if also included in the same IE "Inter-frequency measurement", or <u>otherwise included in the "Inter-frequency cell info" part of the variable</u> <u>CELL_INFO_LIST:</u>
 - the UE shall set the variable INVALID_CONFIGURATION to TRUE.

If the variable CONFIGURATION_INCOMPLETE is set to TRUE the UE shall act as described in subclause 8.4.1.4a.

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 <maxmeas Event></maxmeas 		
>Inter-frequency event identity	MP		Inter- frequency event identity 10.3.7.14	
>Threshold used frequency	CV – clause 0		Integer(- 1150)	Ranges used depend on measurement quantity. CPICH Ec/No -240dB CPICH/Primary CCPCH RSCP -11525dBm
>W used frequency	CV – clause <u>92</u>		Real(0, 0.12.0 by step of 0.1)	
>Hysteresis	MP		Real(0, 0.514.5 by step of 0.5)	In event 2a, 2b, 2c, 2d, 2e, 2f
>Time to trigger	MP		Time to trigger 10.3.7.64	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms.
>Reporting cell status	OP		Reporting cell status 10.3.7.61	
>Parameters required for each non-used frequency	OP	1 to <maxfreq ></maxfreq 		
>>Threshold non used frequency	CV – clause 1		Integer(- 1150)	Ranges used depend on measurement quantity. CPICH Ec/No -240dB CPICH/Primary CCPCH RSCP -11525dBm This IE is not needed if "inter- frequency event identity" is set to 2a. However, it is specified to be mandatory to align with the ASN.1
>>W non-used frequency	CV-clause 1		Real(0, 0.12.0 by step of 0.1)	

I

Condition	Explanation
Clause 0	The IE is mandatory if "inter-frequency event identity"
	is set to 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 2e, otherwise the IE is
	not needed.
<u>Clause 2</u>	The IE is mandatory if "inter-frequency event identity"
	is set to 2a, 2b, 2d or 2f, otherwise the IE is not
	needed.

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. This parameter is not used in this release and should be set to FALSE. It shall be ignored by the UE.
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 <u>virtual</u> 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 <u>virtual</u> 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 <maxrl></maxrl>		Radio link addition information required for each RL to add
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	Note 1
>Radio link removal information	OP	1 to <maxrl></maxrl>		Radio link removal information required for each RL to remove
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	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.

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.

10.3.7.38 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(C PICH Ec/N0, CPICH RSCP, Pathloss, UTRA Carrier RSSI)	If used in Inter system measurement quantity only Ec/N0 and RSCP is <u>are</u> allowed. If used in inter-frequency measurement quantity RSSI is not allowed.
>TDD				
>>Measurement quantity list	MP	1 to 4		
>>>Measurement quantity	MP		Enumerated(Pr imary CCPCH RSCP, Pathloss, Timeslot ISCP, UTRA Carrier RSSI)	If used in inter-frequency measurement quantity RSSI is not allowed.

10.3.7.39 Intra-frequency measurement reporting criteria

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

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

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

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

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

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

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

Event 1g: Change of best cell in TDD.

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

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Parameters required for each	OP	1 to		
event		<maxmeas Event></maxmeas 		
>Intra-frequency event identity	MP		Intra- frequency event identity 10.3.7.34	
>Triggering condition 1	CV – clause 0		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells)	Indicates which cells can trigger the event
>Triggering condition 2	CV – clause 6		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells, Detected set cells, Detected set cells and monitored set cells)	Indicates which cells can trigger the event
>Reporting Range Constant	CV – clause 2		Real(014.5 by step of 0.5)	In dB. In event 1a,1b.
>Cells forbidden to affect Reporting range	CV – clause 1	1 to <maxcellm eas></maxcellm 		In event 1a,1b
>>CHOICE mode	MP			
>>>FDD >>>>Primary CPICH info	MP		Primary CPICH info	
>>>TDD				
>>>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57	
>W	CV – clause 2		Real(0.02.0 by step of 0.1)	
>Hysteresis	MP		Real(07.5 by step of 0.5)	In dB.
>Threshold used frequency	CV-clause 3		Integer (-115165)	Range used depend on measurement quantity. CPICH RSCP -11525 dBm CPICH Ec/No -240 dB Pathloss 30165dB ISCP -11525 dBm

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

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

10.3.7.61 Reporting Cell Status

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE reported cell	MP			
>Report cells within active set				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within monitored set cells on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within active set and/or monitored set cells on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within monitored set and/or detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report all active set cells + cells within monitored set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within monitored set and/or detected set on used frequency				
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	

>Report cells within virtual active set			
>>Maximum number of reported cells <u>per reported non-used</u> <u>frequency</u>	MP	Integer(16)	
>Report cells within monitored set on non-used frequency			
>>Maximum number of reported cells <u>per reported non-used</u> frequency	MP	Integer(16)	
Report cells within monitored and/or virtual active set on non- used frequency			
>>Maximum number of reported cells_per reported non-used frequency	MP	Integer(16)	
>Report all virtual active set cells + cells within monitored set on non-used frequency			
>>Maximum number of reported cells <u>per reported non-used</u> <u>frequency</u>	MP	Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report cells within active set or within virtual active set			
>>Maximum number of reported cells	MP	Integer (112)	
>Report cells within active and/or monitored set on used frequency or within <u>virtual</u> active and/or monitored set on non- used frequency			
>>Maximum number of reported cells	MP	Integer(112)	

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

< *** Uneccessary Definitions Removed *** >

11.3 Information element definitions

```
-- IE "dummy" should be removed in later versions of the message including this IE
            usedFreqW
                                                                                       W,
            hysteresis
                                                                                       HysteresisInterFreq,
             timeToTrigger
                                                                                       TimeToTrigger,
            reportingCellStatus
                                                                                       ReportingCellStatus
                                                                                                                                                                  OPTIONAL,
                                                                                                                                                                  OPTIONAL
            nonUsedFreqParameterList
                                                                                       NonUsedFreqParameterList
    }
    MaxNumberOfReportingCellsType1 ::= ENUMERATED {
                                                                                       e1, e2, e3, e4, e5, e6}
    MaxNumberOfReportingCellsType2 ::= ENUMERATED {
                                                                                       e1, e2, e3, e4, e5, e6, e7, e8, e9, e10, e11,
    e12}
    MaxNumberOfReportingCellsType3 ::= ENUMERATED {
                                                                                        viactCellsPlus1,
                                                                                        viactCellsPlus2,
                                                                                        viactCellsPlus3,
                                                                                       viactCellsPlus4,
                                                                                       viactCellsPlus5.
                                                                                       viactCellsPlus6 }
    NonUsedFreqParameter ::=
                                                                               SEQUENCE {
            nonUsedFreqThreshold
                                                                                       Threshold,
          IE "nonUsedFreqThreshold" is not needed in case of event 2a
            -- In case of event 2a UTRAN should include value 0 within IE "nonUsedFreqThreshold"
             -- In case of event 2a, the UE shall be ignore IE "nonUsedFreqThreshold"
-- In later versions of the message including this IE, a special version of
             -- IE "NonUsedFreqParameterList" may be defined for event 2a, namely a
                  version not including IE "nonUsedFreqThreshold"
             nonUsedFreqW
                                                                                        W
    }
    ReportingCellStatus ::=
                                                                               CHOICE{
                                                                                       MaxNumberOfReportingCellsType1,
            withinActiveSet
            withinMonitoredSetUsedFreq
                                                                                       MaxNumberOfReportingCellsType1,
            withinActiveAndOrMonitoredUsedFreq MaxNumberOfReportingCellsType1,
             withinDetectedSetUsedFreq
                                                                                       MaxNumberOfReportingCellsType1,
            withinMonitoredAndOrDetectedUsedFreq
                                                                                      MaxNumberOfReportingCellsType1,
                                                                                       MaxNumberOfReportingCellsType3,
            allActiveplusMonitoredSet
            allActivePlusDetectedSet
                                                                                       MaxNumberOfReportingCellsType3,
            allActivePlusMonitoredAndOrDetectedSet
                                                                                       MaxNumberOfReportingCellsType3,
            withinVirtualActSet
                                                                              MaxNumberOfReportingCellsType1,
            withinMonitoredSetNonUsedFreq
                                                                                     MaxNumberOfReportingCellsType1,
            with in {\tt Monitored} {\tt AndOr} \underline{{\tt Virtual}} {\tt ActSet} {\tt NonUsedFreq}
                                                                                       MaxNumberOfReportingCellsTvpe1,
            \verb+allVirtualActSetplusMonitoredSetNonUsedFreq+
                                                                                       MaxNumberOfReportingCellsType3,
             withinActSetOrVirtualActSet
                                                                                       MaxNumberOfReportingCellsType2,
1
            with {\tt inActSetAndOrMonitoredUsedFreqOrVirtualActSetAndOrMonitoredNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNonUsedFreqNoNUsedFreqNonUsedFreqNonUsedF
                                                                                       MaxNumberOfReportingCellsType2
    }
```

13.4. 27f4 BEST_FREQUENCY_2A_EVENT

This variable contains information about a 2a event that has been configured in the UE. There is one such variable per 2a event configured in the UE.

Information Element/Group name	Need	<u>Multi</u>	Type and reference	Semantics description
Best frequency	MP		Frequency	
			<u>info</u>	
			<u>10.3.6.36</u>	

13.4. 27f5 TRIGGERED_2B_EVENT

This variable contains information about a 2b event that has been configured in the UE. There is one such variable per 2b event configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			<u>reference</u>	
Frequency triggered	<u>OP</u>	<u>1 to <</u>		
		maxCellMe		
		<u>as></u>		
>Frequency	MP	Frequency		
		info		
		10.3.6.36		

13.4. 27f6 TRIGGERED_2C_EVENT

This variable contains information about a 2c event that has been configured in the UE. There is one such variable per 2c event configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			<u>reference</u>	
Frequency triggered	OP	<u>1 to <</u>		
		maxCellMe		
		<u>as></u>		
>Frequency	MP	Frequency		
		info		
		10.3.6.36		

13.4. 27f7 TRIGGERED 2D EVENT

This variable contains information about a 2d event that has been configured in the UE. There is one such variable per 2d event configured in the UE.

Information Element/Group name	Need	<u>Multi</u>	Type and reference	Semantics description
Event triggered	<u>OP</u>		<u>Boolean</u>	

13.4. 27f8 TRIGGERED_2E_EVENT

This variable contains information about a 2e event that has been configured in the UE. There is one such variable per 2e event configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			<u>reference</u>	
Frequency triggered	<u>OP</u>	<u>1 to <</u>		
		maxCellMe		
		<u>as></u>		
>Frequency	MP	Frequency		
		<u>info</u>		
		<u>10.3.6.36</u>		

13.4.27f9 TRIGGERED 2F EVENT

This variable contains information about a 2f event that have been configured in the UE. There is one such variable per 2f event configured in the UE.

Information Element/Group name	<u>Need</u>	<u>Multi</u>	Type and reference	Semantics description
Event triggered	<u>OP</u>		<u>Boolean</u>	

14.2 Inter-frequency measurements

14.2.0a Inter-frequency measurement quantities

The two first measurement quantities listed below are used by the UE to evaluate whether an interfrequency measurement event has occurred or not, through the computation of a frequency quality estimate. Which quantity to use to compute the frequency quality estimate for an inter-frequency measurement is given in the "Inter-frequency measurement quantity" stored for that measurement. In the FDD case, all three measurement quantities can be used for the update of the virtual active set of the non-used frequencies as described in section 14.11.

- 1. Downlink Ec/No
- 2. Downlink received signal code power (RSCP) after despreading.
- 3. <u>Downlink path loss.</u>

For FDD:

<u>Pathloss in dB = Primary CPICH Tx power - CPICH RSCP.</u>

For Primary CPICH Tx power the IE "Primary CPICH Tx power" shall be used. The unit is dBm.

CPICH RSCP is the result of the CPICH RSCP measurement. The unit is dBm.

A description of those values can be found in [7] and [8].

14.2.0b Frequency quality estimate

For FDD cell:

The frequency quality estimate used in events 2a, 2b, 2c, 2d, and 2e and 2f is defined as:

$$Q_{\text{frequency } j} = 10 \cdot LogM_{\text{frequency } j} = W_{j} \cdot 10 \cdot Log\left(\sum_{i=1}^{N_{A,j}} M_{i,j}\right) + (1 - W_{j}) \cdot 10 \cdot LogM_{\text{Best } j},$$

The variables in the formula are defined as follows: <u>("the virtual active set on frequency j" should be</u> understood as the active set if frequency j is the used frequency. If frequency j is a non-used frequency, the way the virtual active set is initiated and updated is described in section 14.11)

 $Q_{frequency j}$ is the estimated quality of the <u>virtual</u> active set on frequency j.

 $M_{\text{frequency j}}$ is the estimated quality of the <u>virtual</u> active set on frequency j.

M_{ij} is a measurement result of cell i in the <u>virtual</u> active set on frequency j.

 $N_{A\,j}$ is the number of cells in the <u>virtual</u> active set on frequency j.

 $M_{Best j}$ is the measurement result of the cell in the <u>virtual</u> active set on frequency j with the highest measurement result.

W_i is a parameter sent from UTRAN to UE and used for frequency j.

H is the hysteresis parameter.

If the measurement result is CPICH-Ec/No then $M_{FrequencyNew}$, M_{ij} and M_{Best} are expressed as ratios.

If the measurement result is CPICH-RSCP or PCCPCH-RSCP then $M_{FrequencyNew}$, M_{ij} and M_{Best} are expressed in [mW].

For TDD cells:

 $Q_{i, frequency} = 10 \cdot LogM_{i, frequency} + O_{i, j}$

<u>*Q_i*, frequency j</u> is the estimated quality of cell i on frequency j.

- $\underline{M_{frequency j}}$ is the measurement result for Primary CCPCH RSCP of cell i on frequency j expressed in [mW].
- \underline{O}_{ij} is the cell individual offset of the currently evaluated cell *i* on frequency j. O_{ij} is set by IE "Cell individual offset"

14.2.0c Inter-frequency reporting quantities

The quantities that the UE shall report for each cell to UTRAN when the event is triggered for an interfrequency measurement is given by the "Inter-frequency reporting quantity" IE stored for this measurement and can be the following, from 1 to 8. The quantity number 9 can be reported for each frequency that triggered the report.

- 1. Cell identity
- 2. SFN-SFN observed time difference
- 3. Cell synchronisation information
- 4. Downlink Ec/No (FDD)
- 5. Downlink path loss.

For FDD:

Pathloss in dB = Primary CPICH Tx power - CPICH RSCP.

For Primary CPICH Tx power the IE "Primary CPICH Tx power" shall be used. The unit is dBm.

CPICH RSCP is the result of the CPICH RSCP measurement. The unit is dBm.

For TDD:

Pathloss in dB = Primary CCPCH TX power - Primary CCPCH RSCP.

For Primary CCPCH TX power the IE "Primary CCPCH TX Power" shall be used. The unit is dBm.

Primary CCPCH RSCP is the result of the Primary CCPCH RSCP measurement. The unit is dBm.

If necessary Pathloss shall be rounded up to the next higher integer. Results higher than 158 shall be reported as 158. Results lower than 46 shall be reported as 46.

6. Downlink received signal code power (RSCP) after despreading (of a primary CPICH for FDD, and of a primary CCPCH for TDD).

7. ISCP measured on Timeslot basis. (TDD)

8. Proposed TGSN (TDD)

9. UTRA carrier RSSI

A description of those values can be found in [7] and [8].

14.2.1 Inter-frequency reporting events

Within the measurement reporting criteria field in the MEASUREMENT CONTROL message UTRAN notifies the UE which events should trigger the UE to send a MEASUREMENT REPORT message. Examples of inter-frequency reporting events that would be useful for inter-frequency handover evaluation are given below. Note that normally the UEs do not need to report all these events. The listed events are the toolbox from which the UTRAN can choose the reporting events that are needed for the implemented handover evaluation function, or other radio network functions.

All events are evaluated with respect to one of the measurement quantities given in subclause 14.2.0a14.1.1. The measurement quantities are measured on the monitored primary common pilot channels (CPICH) in FDD mode and the monitored primary common control channels (PCCPCH) in TDD mode of the cell defined in the measurement objectThe measurement objects are the monitored primary common pilot channels (PCCPCH) in FDD mode and the monitored primary common control channels (PCCPCH) in TDD mode and the monitored primary common control channels (PCCPCH) in TDD mode and the monitored primary common control channels (PCCPCH) in TDD mode. A "non-used frequency" is a frequency that the UE hasve been ordered to measure upon but isare not used for of the connectionactive set. A "used frequency" is a frequency that the UE hasve been ordered to measure upon and is also currently used for the connection.

14.2.1.1 Event 2a: Change of best frequency.

 When event 2a is configured in the UE within a measurement, the UE shall:

 When the measurement is initiated or resumed, store the used frequency in the variable

 BEST FREQUENCY 2A EVENT

If equation 1 below has been fulfilled during the time "Time to trigger" for a frequency included for that event and which is not stored in the variable BEST_FREQUENCY_2A_EVENT:

- Send a measurement report with IEs set as below:
 - In "inter-frequency measurement event results":
 - "inter-frequency event identity" to "2a", and
 - "Frequency info" to the frequency that triggered the event and "Non frequency related measurement event results"
 - to the "Primary CPICH info" of the best primary CPICH for FDD cells

or

"Primary CCPCH info" to the "Cells parameters ID" of the best primary CCPCH for TDD cells

on that frequency;

"measured results" and possible "additional measured results" according to 8.4.2;

- Update the variable BEST_FREQUENCY_2A_EVENT with that frequency

Equation 1:

 $Q_{NotBest} \ge Q_{Best} + H_{2a}/2$

The variables in the formula are defined as follows:

 $Q_{Not Best}$ is the quality estimate of a frequency not stored the "best frequency" in the variable BEST_FREQUENCY_2A_EVENT.

 \underline{O}_{Best} is the quality estimate of the frequency stored in "best frequency" in the variable BEST_FREQUENCY_2A_EVENT.

<u> H_{2a} is the hysteresis parameter for the event 2a in that measurement.</u>

If any of the non- used frequencies quality estimate becomes better than the currently used frequency quality estimate, and event 2a has been ordered by UTRAN then this event shall trigger a report to be sent from the UE when the hysteresis and time to trigger conditions is fulfilled. The corresponding report contains (at least) the best primary CPICH (FDD) or primary CCPCH (TDD) on the non-used frequency that triggered the event.

14.2.1.2 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.

When an inter-frequency measurement configuring event 2b is set up, the UE shall create a variable TRIGGERED_2B_EVENT related to that measurement, which shall initially be empty. This variable shall be deleted when the measurement is released.

When event 2b is configured in the UE within a measurement, the UE shall:

- If equations 1 and 2 below have been fulfilled during the time "Time to Trigger" from the same instant, respectively for one or several non-used frequencies included for that event and for the used frequency:
 - If any of those non-used frequency is not stored in the variable TRIGGERED_2B_EVENT:

- Store the non-used frequencies that triggered the event and that were not previously stored in the variable TRIGGERED 2B EVENT into that variable;
- Send a measurement report with IEs set as below:
 - In "inter-frequency measurement event results":
 - "inter-frequency event identity" to "2b", and
 - for each non-used frequency that triggered the event, beginning with the best frequency "Frequency info" to that non-used frequency and "Non frequency related measurement event results"

- to the "Primary CPICH info" of the best primary CPICH for FDD cells

or

- "Primary CCPCH info" to the "Cell parameters ID" of the best primary CCPCH for TDD cells
- on that non-used frequency;
- "measured results" and possible "additional measured results" according to 8.4.2;
- If equation 3 below is fulfilled for a non-used frequency stored in the variable TRIGGERED_2B_EVENT
 - Remove that non-used frequency from the variable TRIGGERED_2B_EVENT;
- If equation 4 below is fulfilled for the used frequency:
 - Clear the variable TRIGGERED_2B_EVENT;

Triggering conditions: Equation 1:

Equation 1.

 $Q_{Nonused} \ge T_{Nonusedb} + H_{2b}/2$

The variables in the formula are defined as follows:

 $\underline{Q}_{Non used}$ is the quality estimate of a non-used frequency that becomes better than an absolute <u>threshold.</u>

 $\underline{T}_{Non used 2b}$ is the absolute threshold that applies for this non-used frequency in that measurement.

 \underline{H}_{2b} is the hysteresis parameter for the event 2b.

Equation 2:

 $Q_{Used} \leq T_{Usedb} - H_{2b}/2$

The variables in the formula are defined as follows:

 \underline{Q}_{Used} is the quality estimate of the used frequency.

 $\underline{T}_{Used 2b}$ is the absolute threshold that applies for the used frequency in that measurement.

 \underline{H}_{2b} is the hysteresis parameter for the event 2b.

Leaving triggered state condition:

Equation 3:

 $Q_{\text{Nonused}} < T_{\text{Nonused}b} - H_{2b}/2$

The variables in the formula are defined as follows:

<u>*Q*_{Non used} is the quality estimate of a non-used frequency that is stored in the variable TRIGGERED_2B_EVENT.</u>

 $\underline{T}_{Non used 2b}$ is the absolute threshold that applies for this non-used frequency in that measurement.

 \underline{H}_{2b} is the hysteresis parameter for the event 2b.

Equation 4: $Q_{Used} > T_{Usedb} + H_{2b}/2$ The variables in the formula are defined as follows:

 \underline{O}_{Used} is the quality estimate of the used frequency.

 $\underline{T}_{Used 2b}$ is the absolute threshold that applies for the used frequency in that measurement.

<u> H_{2b} is the hysteresis parameter for the event 2b.</u>

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE " Threshold used frequency" and the estimated quality of a non-used frequency is above the value of the IE "Threshold non-used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH (FDD) or primary CCPCH (TDD) on the non-used frequency that triggered the event.

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

When an inter-frequency measurement configuring event 2c is set up, the UE shall create a variable TRIGGERED_2C_EVENT related to that measurement, which shall initially be empty. This variable shall be deleted when the measurement is released.

When event 2c is configured in the UE within a measurement, the UE shall:

- If equation 1 below has been fulfilled for one or several non-used frequencies included for that event during the time "Time to trigger":
 - If any of those non-used frequencies is not stored in the variable TRIGGERED_2C_EVENT:
 - Store the non-used frequencies that triggered the event and that were not previously stored in the variable TRIGGERED_2C_EVENT into that variable;
 - Send a measurement report with IEs set as below:
 - In "inter-frequency measurement event results":
 - <u>"inter-frequency event identity" to "2c", and</u>
 - for each non-used frequency that triggered the event, beginning with the best frequency "Frequency info" to that non-used frequency and "Non frequency related measurement event results"

- to the "Primary CPICH info" of the best primary CPICH for FDD cells

or

- <u>"Primary CCPCH info" to the "Cell parameters ID" of the best primary CCPCH</u> for TDD cells

on that non-used frequency;

 If equation 2 below is fulfilled for a non-used frequency stored in the variable TRIGGERED_2C_EVENT:

- Remove that non-used frequency from the variable TRIGGERED_2C_EVENT;

Triggering condition:

Equation 1:

 $Q_{\text{Nonused}} \ge T_{\text{Nonused}c} + H_{2c}/2$

The variables in the formula are defined as follows:

 $\underline{O}_{Non used}$ is the quality estimate of a non-used frequency that becomes better than an absolute threshold.

 $\underline{T}_{Non used 2c}$ is the absolute threshold that applies for this non-used frequency in that measurement.

 \underline{H}_{2c} is the hysteresis parameter for the event 2c.

Leaving triggered state condition: Equation 2:

 $Q_{Nonused} < T_{Nonused 2c} - H_{2c}/2$

The variables in the formula are defined as follows:

<u>*Q*_{Non used} is the quality estimate of a non-used frequency stored in the variable TRIGGERED 2C_EVENT.</u>

 $\underline{T}_{Non used 2c}$ is the absolute threshold that applies for this non-used frequency in that measurement.

 \underline{H}_{2c} is the hysteresis parameter for the event 2c.

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of a non-used frequency is above the value of the IE "Threshold non-used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH (FDD) or primary CCPCH (TDD) on the non-used frequency.

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

When an inter-frequency measurement configuring event 2d is set up, the UE shall create a variable TRIGGERED_2D_EVENT related to that measurement, which shall initially be set to FALSE. This variable shall be deleted when the measurement is released.

When event 2d is configured in the UE within a measurement, the UE shall:

- If equation 1 below has been fulfilled for the used frequency during the time "Time to trigger":

- If the variable TRIGGERED_2D_EVENT is set to FALSE:

- Set the variable TRIGGERED_2D_EVENT to TRUE;

- <u>Send a measurement report with IEs set as below:</u>

- <u>In "inter-frequency event results": "inter-frequency event identity" to "2d" and no IE</u> <u>"Inter-frequency cells":</u>
- "measured results" and possible "additional measured results" according to 8.4.2;
- If the variable TRIGGERED_2D_EVENT is set to TRUE and if equation 2 is fulfilled for the used frequency:

- Set the variable TRIGGERED_2D_EVENT to FALSE;

Triggering condition: Equation 1:

 $Q_{Used} \leq T_{Used2d} - H_{2d}/2$

The variables in the formula are defined as follows:

 \underline{Q}_{Used} is the quality estimate of the used frequency.

 $\underline{T}_{Used 2d}$ is the absolute threshold that applies for the used frequency and event 2d.

 \underline{H}_{2d} is the hysteresis parameter for the event 2d.

Leaving triggered state condition:

Equation 2:

 $Q_{Used} > T_{Usedd} + H_{2d}/2$

The variables in the formula are defined as follows:

 Q_{Used} is the quality estimate of the used frequency.

 $\underline{T}_{Used 2d}$ is the absolute threshold that applies for the used frequency and event 2d.

 \underline{H}_{2d} is the hysteresis parameter for the event 2d.

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE " Threshold used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH (FDD) or primary CCPCH (TDD) on the used frequency.

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

When an inter-frequency measurement configuring event 2e is set up, the UE shall create a variable TRIGGERED_2E_EVENT related to that measurement, which shall initially be empty. This variable shall be deleted when the measurement is released.

When event 2e is configured in the UE within a measurement, the UE shall:

If equation 1 below has been fulfilled for one or several non-used frequencies included for that event during the time "Time to trigger": If any of those non-used frequencies is not stored in the variable TRIGGERED 2E EVENT: Store the non-used frequencies that triggered the event and that were not previously stored in the variable TRIGGERED 2E EVENT into that variable; Send a measurement report with IEs set as below: In "inter-frequency measurement event results": "inter-frequency event identity" to "2e", and _ for each non-used frequency that triggered the event, beginning with the best frequency "Frequency info" to that non-used frequency and "Non frequency related measurement event results" to the "Primary CPICH info" of the best primary CPICH for FDD cells or "Primary CCPCH info" to the "Cell parameters ID" of the best primary CCPCH for TDD cells on that non-used frequency; "measured results" and possible "additional measured results" according to 8.4.2; If equation 2 below is fulfilled for a non-used frequency stored in the variable TRIGGERED 2E EVENT: Remove that non-used frequency from the variable TRIGGERED_2E_EVENT; Triggering condition: Equation 1: $Q_{Nonused} \leq T_{Nonusedle} - H_{2e}/2$ The variables in the formula are defined as follows: $Q_{Non used}$ is the quality estimate of a non-used frequency that becomes worse than an absolute threshold. $\underline{T}_{Non used 2e}$ is the absolute threshold that applies for that non-used frequency for that event. \underline{H}_{2e} is the hysteresis parameter for the event 2e. Leaving triggered state condition: Equation 2: $Q_{Nonusedle} > T_{Nonusedle} + H_{2e}/2$ The variables in the formula are defined as follows:

 $\underline{O}_{Non used}$ is the quality estimate of a non-used frequency stored in the variable TRIGGERED 2E EVENT.

 $\underline{T}_{Non used 2e}$ is the absolute threshold that applies for that non-used frequency for that event.

 \underline{H}_{2e} is the hysteresis parameter for the event 2e.

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of a non-used frequency is below the value of the IE "Threshold non-used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH (FDD) or primary CCPCH (TDD) on the non-used frequency.

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

When an inter-frequency measurement configuring event 2f is set up, the UE shall create a variable TRIGGERED_2F_EVENT related to that measurement, which shall initially be set to FALSE. This variable shall be deleted when the measurement is released.

When event 2f is configured in the UE within a measurement, the UE shall:

- If equation 1 below has been fulfilled for the used frequency during the time "Time to trigger":

- If the variable TRIGGERED_2F_EVENT is set to FALSE:

- Set the variable TRIGGERED_2F_EVENT to TRUE;
- Send a measurement report with IEs set as below:
 - <u>In "inter-frequency event results": "inter-frequency event identity" to "2f", and no IE</u> <u>"Inter-frequency cells";</u>
 - "measured results" and possible "additional measured results" according to 8.4.2;
- If the variable TRIGGERED_2F_EVENT is set to TRUE and if equation 2 is fulfilled for the used frequency:

- Set the variable TRIGGERED_2F_EVENT to FALSE;

Triggering condition:

Equation 1:

 $Q_{Used} \ge T_{Used} + H_{2f}/2$

The variables in the formula are defined as follows:

 \underline{Q}_{Used} is the quality estimate of the used frequency.

 $\underline{T}_{Used 2f}$ is the absolute threshold that applies for the used frequency and event 2f.

 \underline{H}_{2f} is the hysteresis parameter for the event 2f.

Leaving triggered state condition: Equation 2: $Q_{Used} < T_{Used} - H_{2f}/2$

The variables in the formula are defined as follows:

 \underline{Q}_{Used} is the quality estimate of the used frequency.

 $\underline{T}_{Used 2f}$ is the absolute threshold that applies for the used frequency and event 2f.

 \underline{H}_{2f} is the hysteresis parameter for the event 2f.

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is above the value of the IE " Threshold used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report eontains at least the best primary CPICH (FDD) or primary CCPCH (TDD) on the used frequency.

14.11 UE autonomous update of <u>virtual</u> active set on nonused frequency (FDD only)

In the text that follows:

- A "non-used frequency" is a frequency that the UE has been ordered to measure upon but is not used for the connection. A "used frequency" is a frequency that the UE has been ordered to measure upon and is also currently used for the connection.
- "A non-used frequency (resp. cell) considered in an inter-frequency measurement" shall be understood as a non-used frequency (resp. cell) included in the list of cells pointed at in the IE "cells for measurement" if it was received for that measurement, or otherwise as a non-used frequency (resp. cell) included in the "Inter-frequency cell info" part of the variable CELL_INFO_LIST.

Within the measurement reporting criteria field in the MEASUREMENT CONTROL message the UTRAN notifies the UE which events should trigger a measurement report. For <u>event-triggered</u> inter frequency measurements it is possible to specify intra-frequency measurements reporting events for support of maintenance of an active set associated with a non-used frequency <u>considered in that measurement</u>, a "virtual active set" and used in the evaluation of the frequency quality estimates. The "initial virtual active set" for a frequency is the virtual active set that is associated to that frequency just after a message was received that sets up or modifies the inter-frequency measurement

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

The autonomous update is controlled by the IE "UE autonomous update mode" that can be set to the following values.

- On: Do the autonomous updates of the "virtual active set" according to the described rules below and also report the events that trigger the update of the "virtual active set".
- On with no reporting: Do the autonomous updates of the "virtual active set" according to the described rules below.
- Off: Only report the events and do no updates of the "virtual active set" unless ordered to do so by the IE " Inter-frequency set update".

If the IE "UE autonomous update mode" is set to "on" or "on with no reporting" the UE shall evaluate the following intra-frequency events and update the "virtual active set" associated with the frequency measured upon, according to the following rules:

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

14.11.1 Initial virtual active set

The way the UE shall act when a MEASUREMENT CONTROL message is received that sets up or modifies an inter-frequency measurement, and that includes the IE "Inter-frequency set update" and/or the IE "Intra-Frequency measurement reporting quantity" is described below.

- If the IE "Intra-Frequency measurement reporting criteria" is included in the MEASUREMENT CONTROL message, or if it was previously stored and if the IE "Inter-frequency set update" was included in the MEASUREMENT CONTROL message:
 - If the IE "UE autonomous update mode" received or previously stored is set to "on" or "on with no reporting":
 - For each non-used frequency F_i considered in the measurement, the initial virtual active set shall include the N_i cells that have either the greatest downlink E_c/N_0 , the greatest downlink RSCP after despreading, or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

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

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

where:

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

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

- else if event 1c is configured in the "Intra-Frequency measurement reporting criteria":

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

where:

 $\underline{N_{lc}}$ is the "Replacement activation threshold" included in the "Intra-Frequency measurement" IE received for that inter-frequency measurement for event 1c.

<u> $N_{Cells Fi}$ </u> is the number of cells on frequency F_i considered in that inter-frequency measurement.

- else:

 $N_i = N_{Cells Fi}$ where:

<u> $N_{Cells Fi}$ </u> is the number of cells on frequency F_i considered in that inter-frequency measurement.

- If the IE "UE autonomous update mode" received or previously stored is set to "on":

- If event 1a is configured in the "Intra-Frequency measurement reporting criteria":

- Send a MEASUREMENT REPORT with IEs set as follows:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency measurement</u> <u>event results, Intra-frequency event identity to 1a, and in "Cell measurement event</u> <u>results" the CPICH info of all the cells included in a virtual active set of the non-used</u> <u>frequency considered in the inter-frequency measurement.</u>
 - The IE "measured results" shall not be included.

- Else if event 1c is configured in the "Intra-Frequency measurement reporting criteria":

- Send a measurement report with IEs set as follows:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency measurement</u> event results, Intra-frequency event identity to 1c, and in "Cell measurement event results" the CPICH info of all the cells included in the virtual active set of the frequency considered in the inter-frequency measurement.
 - The IE "measured results" shall not be included.
- If the IE "Inter-frequency set update" is included in the message and if the IE "UE autonomous update mode" is set to "Off":
- If the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update set" was also "Off" and if the IE "Intra-frequency measurement reporting criteria" was not included in the message:
 - Apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.
- Otherwise:

 Remove the possibly existing virtual active set of the non-used frequency considered in that measurement and set the initial virtual active set for it according to the "Inter- frequency set update" included in the message.
- If the IE "Inter-frequency set update" is not included in the message and if the IE "UE autonomous update mode" stored for the inter-frequency measurement is set to "Off":
- Remove the possibly existing virtual active set of the non-used frequency considered in that measurement, and consider the virtual active set for it as empty.
- If the IE "Intra-Frequency measurement reporting criteria" was not included in the MEASUREMENT CONTROL message, the UE shall
- If the IE "UE autonomous update mode" is set to "on" or "on with no reporting":
 For each non-used frequency F_i considered in the measurement, the initial virtual active set shall include the N_i cells that have either the greatest downlink E_c/N₀ or the greatest downlink RSCP after despreading or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:
- if event 1a is configured for the used frequency in an intra-frequency measurement:
- if the "Reporting deactivation threshold" included in the
$N_i = \min(N_{la}, N_{Cells Fi})$ if $N_{la} \neq 0$ and $N_i = N_{Cells Fi}$ otherwise.
with:
with: N_{1a} is the "Reporting deactivation threshold" included in the intra-frequencymeasurement for the first event 1a defined in the intra-frequency measurementwith the lowest identity.
with: N_{Ia} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity. $N_{Cells Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.
with: N _{1a} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity. N _{Cells Fi} is the number of cells on frequency F_i considered in that inter-frequency measurement. - else if event 1c is configured for the used frequency in an intra-frequency measurement:
with: N_{Ia} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity. $N_{Cells Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement. - else if event 1c is configured for the used frequency in an intra-frequency measurement: $N_i = \min(N_{lc}, N_{Cells Fi})$ if $N_{Ic} \neq 0$ and $N_i = N_{Cells Fi}$ otherwise.
with: N_{Ia} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity. $N_{Cells Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement. - else if event 1c is configured for the used frequency in an intra-frequency measurement: $N_i = \min(N_{le} \ , \ N_{Cells Fi})$ if $N_{Ic} \neq 0$ and $N_i = N_{Cells Fi}$ otherwise. where:
with: N_{La} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity. $N_{Cells Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurementelse if event 1c is configured for the used frequency in an intra-frequency measurement: $N_i = \min(N_{kc} \ , \ N_{Cells Fi})$ if $N_{Ic} \neq 0$ and $N_i = N_{Cells Fi}$ otherwise. where: N_{Ic} is the "Replacement activation threshold" included in the "Intra-Frequency measurement" for the first event 1c defined in the intra-frequency measurement with the lowest identity.

- <u>else:</u>

 $N_i = N_{Cells Fi}$

where:

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

- If the IE "UE autonomous update mode" is set to "on":
 - If event 1a is configured for the used frequency in an intra-frequency measurement:
 - Send a measurement report with IEs set as follows:
 - <u>The Measurement identity to the identity of the inter-frequency</u> <u>measurement.</u>
 - The CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in the initial virtual active set of the non-used frequency considered in that measurement.
 - The IE "measured results" shall not be included.
 - Else if event 1c is configured for the used frequency in an intra-frequency measurement:
 - Send a measurement report with IEs set as follows:
 - <u>The Measurement identity to the identity of the inter-frequency</u> <u>measurement.</u>
 - The CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1c, and in "Cell measurement event results" the CPICH info of all the cells included in the virtual active set of the non-used frequency considered in that measurement.
 - The IE "measured results" shall not be included.
- If the IE "UE autonomous update mode" is set to "off":
 - Set the initial virtual active set of the non-used frequency considered in that interfrequency measurement according to what is included in the "Inter-frequency set update" included in the message. If that IE was not received, the initial virtual active set for the frequencies considered in that measurement shall be empty.

14.11.2 Virtual active set update during an inter-frequency measurement

- if the IE "Intra-frequency measurement reporting criteria" is stored for an inter-frequency measurement, the UE shall:

- if Event 1a is configured in that IE, shall make the UE shall, when this event is triggered (according to the criteria described in subclause 14.2.1.1) by a cell allowed to affect the

reporting range (i.e. not included in the IE "Cells forbidden to affect reporting range" if that IE is included) for a non-used frequency considered in that measurement:

- if the "Reporting deactivation threshold" is equal to 0, or if the "Reporting deactivation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is less than the "Reporting deactivation threshold":
 - if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" add the primary CPICH that enters the reporting range to the "virtual active set".-
 - if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement report with IEs set as below:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency</u> measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of the cell that triggered the event.
 - The IE "measured results" shall not be included.
- if Event 1b was configured, shall make the UE shall when this event is triggered (according to the criteria described in subclause 14.2.1.2) by a cell allowed to affect the reporting range (i.e. not included in the IE "Cells forbidden to affect reporting range" if that IE is included) for a non-used frequency considered in that measurement:
 - if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" and if the number of cells included in the virtual active set is greater than 1, remove the a primary CPICH that leaves the reporting range from the "virtual active set"_-
 - <u>if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement report</u> with IEs set as below:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency measurement event</u> results, Intra-frequency event identity to 1b, and in "Cell measurement event results" the CPICH info of the cell that triggered the event.
 - The IE "measured results" shall not be included.
- if Event 1c was configured, shall make the UE shall when this event is triggered by a cell for a frequency considered in that measurement (according to the criteria described in subclause 14.2.1.3):
 - if the "Reporting activation threshold" is equal to 0, or if the "Reporting activation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is greater than or equal to the "Reporting activation threshold":
 - if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" replace an active primary CPICH in the "virtual active set" with a non-active primary CPICH that hasve become better than the active primary CPICH.
 - if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement report with IEs set as below:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - The CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1c, and in "Cell measurement event

results" the first entry as the CPICH info of the cell that triggered the event, and the rest of the entries as the cells that were in the virtual active set before the event occurred and that are worse than the cell that triggered the event, in the order of their measured value (best one first).

- The IE "measured results" shall not be included.
- If the IE "Intra-frequency measurement reporting criteria" is not stored for that inter-frequency measurement, the UE shall:
 - apply the events of type 1a, 1b and 1c that were defined for the used frequency in other stored measurements of type "intra-frequency" at the time the inter-frequency measurement was set up and update the virtual active set for the non-used frequencies considered in that measurement according to the following rules:
 - if several events of type 1a (resp. 1b,1c) were defined for the used frequency when the interfrequency measurement was set up, only the first 1a event (resp 1b, 1c) that was defined in the measurement with the lowest measurement identity shall apply to the non-used frequencies.
 - all the cells considered in the inter-frequency measurements shall be able to affect the reporting range for event 1a and 1b. (i.e. the IE "Cells forbidden to affect reporting range" possibly stored for the intra-frequency measurements on the used frequency does not apply to the non-used frequencies considered in the inter-frequency measurement).
 - The IEs "amount of reporting" and "reporting interval" that were stored for the intrafrequency measurements on the used frequency shall not be considered if reports of the virtual active set updates are needed.
 - if event 1a is applicable to the non-used frequencies considered in the inter-frequency measurement, the UE shall, when this event is triggered (according to the criteria described in subclause 14.2.1.1) by a cell for a non-used frequency considered in that measurement:
 - <u>if the "Reporting deactivation threshold" is equal to 0, or if the "Reporting deactivation</u> <u>threshold" is different from 0 and the number of cells included in the virtual active set for</u> <u>that frequency is less than the "Reporting deactivation threshold"</u>
 - <u>if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" add the</u> primary CPICH that enters the reporting range to the "virtual active set"
 - <u>if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement</u> report with IEs set as below:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency measurement</u> <u>event results, Intra-frequency event identity to 1a, and in "Cell measurement event</u> <u>results" the CPICH info of the cell that triggered the event.</u>
 - The IE "measured results" shall not be included.
 - if event 1b is applicable for the non-used frequencies considered in that inter-frequency measurement, the UE shall when this event is triggered (according to the criteria described in subclause 14.2.1.2) by a cell for a non-used frequency considered in that measurement:
 - if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" and if the number of cells included in the virtual active set is greater than 1, remove the primary CPICH that leaves the reporting range from the "virtual active set"

- if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement report with IEs set as below:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency measurement</u> event results, Intra-frequency event identity to 1b, and in "Cell measurement event results" the CPICH info of the cell that triggered the event.
 - <u>The IE "measured results" shall not be included.</u>
- if event 1c is applicable for the non-used frequencies considered in that inter-frequency measurement, the UE shall when this event is triggered (according to the criteria described in subclause 14.2.1.3) by a cell for a non-used frequency considered in that measurement:
 - <u>if the "Reporting activation threshold" is equal to 0, or if the "Reporting activation</u> <u>threshold" is different from 0 and the number of cells included in the virtual active set for</u> <u>that frequency is greater than or equal to the "Reporting activation threshold"</u>
 - if the IE "UE autonomous update mode" is set to "on" or "on with no reporting" replace an active primary CPICH in the "virtual active set" with a non-active primary CPICH that has become better than the active primary CPICH
 - <u>if the IE "UE autonomous update mode" is set to "on" or "off", send a measurement</u> report with IEs set as below:
 - The Measurement identity to the identity of the inter-frequency measurement.
 - <u>The CHOICE event result in the IE Event results to Intra-frequency measurement</u> event results, Intra-frequency event identity to 1c, and in "Cell measurement event results" the first entry as the CPICH info of the cell that triggered the event, and the rest of the entries as the cells that were in the virtual active set before the event occurred and that are worse than the cell that triggered the event, in the order of their measured value (best one first).
 - The IE "measured results" shall not be included.

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CHANGE REQUEST							
^ж 25	<mark>.331</mark> CR	923	₩ ev	<mark>r1</mark> ະ	Current versi	ion: 3.7.0	ж
For <u>HELP</u> on using	this form, see	bottom of this	s page or	look at th	ne pop-up text o	over the X sym	ibols.
Proposed change affect	: ts:	SIM ME	/UE X	Radio A	ccess Network	Core Net	twork
Title: % Int	er-RAT meas	urement correct	ctions				
Source: # TS	<mark>G-RAN WG2</mark>						
Work item code: # TE	I				Date: ೫	2001-08-29	
Category: % F Use Deta be fo	one of the folk F (correction) A (correspon B (addition of C (functional D (editorial m illed explanation bund in 3GPP	owing categories ds to a correction feature), modification of fo odification) ns of the above <u>FR 21.900</u> .	s: n in an ear eature) categories	lier releas s can	Release: % Use <u>one</u> of t 2 R96 R97 R98 R99 REL-4 REL-5	R99 (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)	ases:
Reason for change: ೫	Ambiguous	measurement	handling	need to	be corrected.		
Summary of change: ೫	A strict even behaviour a This draft CR yellow. The 3 Changes mar	nt description f and a possibilit is an update of GPP template is cod in green are	for all mea y for the r document s now used sections fr	asurement network t R2-01183 for the C rom R2-01	nts is importan o rely on meas 36. The updated R. 12105.	at for aligned UE surement report parts are marked	E :S. <mark>I in</mark>
	 8.6.7.6, 1 measuren the UE in cannot bu clarified in R99. 8.6.7.9: i inter-RA report it 10.3.7.27 "Inter-RA since the (10.3.7.2 clarified. 10.3.7.61 Status" c frequenc measuren 	0.3.7.26 and 10 nent, since the o the Inter-RAT e reported in the in 8.6.7.6 and 10 t is clarified that T measurement, ends to UTRAN and 10.3.7.30: AT measuremen re is no UTRAN 6), this cannot b and 11.3: when an be used is no y measurement" nent". For each	.3.7.32: it i output pow cell info li Inter-RAT 0.3.7.32 the when the the UE sh N. the IE "rep t" in the ca I related in the differ t really cle , "inter-fre choice, it i	is clarified er was ret st (10.3.7) I measure at the IE " IE "Repo all not inc porting cel ase of "per formation R99. The s ent possib- ar as this equency m is clarified	I that pathloss ca noved from the .23). The UTRA d results list (10 'UTRAN estima rting Cell Status clude any measu ll status'' can in p riodical reportin in the Inter-RA same thing holds le choices in the IE can be used y measurement'' and whether it appl	annot be used for information prov N estimated qua 0.3.7.26), and it wated quality" is no s" is not received the quality is no s" is not received the received the received the results in principle be inclu- ing" or "no reporti- to report in the results in the results in the s for 10.3.7.30. The e IE "Reporting Content within IEs "intra- d "inter-RAT lies to intra-	r GSM vided to lity vas thus ot used for an the uded in ng", but lts list 'hat was Cell

	 frequency/inter-frequency/inter-RAT measurements. As with the existing text, no choice applies to the inter-RAT case, and sine the number of reported cells for inter-RAT measurements is not clear (especially in the case of periodical reporting), it is proposed to allow for one of the choices to be used also in the inter-RAT case. The name of that choice is changed in ASN.1, to make it consistent. 5. 13.4.xx: Different variables were added that are used in the text that follows to describe the 3x events. 6. In chapter 14.3, an extensive description of the 3x events was added. This CR has isolated impact on inter-RAT frequency measurement reporting.
Consequences if not approved:	# Ambiguities in the way the inter-RAT measurements shall be performed, and unexpected UE behaviour.
Clauses affected:	 8.4.1.7.3, 8.6.7.6, 8.6.7.9, 10.3.7.26, 10.3.7.29, 10.3.7.32, 10.3.7.61, 11.3, 13.4.27f10 (new), 13.4.27f11 (new), 13.4.27f12 (new), 13.4.27f13 (new), 14.3, 14.3.0a (new), 14.3.0b (new), 14.3.0c (new), 14.3.1, 14.3.1.1, 14.3.1.2, 14.3.1.3, 14.3.1.4
Other specs affected:	 Conter core specifications Test specifications O&M Specifications
Other comments:	¥

How to create CRs using this form:

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

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

8.4.1.7.3 Inter-RAT measurement

Upon transition from CELL FACH to CELL DCH state, Tthe UE shall:

- stop monitoring the list of cells assigned in the IE "inter-<u>RAT</u>frequency system info <u>Cell info list</u>" in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11).

8.6.7.6 Inter-RAT reporting quantity

If the IE "Inter-RAT reporting quantity" is received by the UE, the UE shall:

- store the content of the IE to the variable MEASUREMENT_IDENTITY.

If the IE "Inter-RAT measurement quantity" is received and CHOICE system is GSM, the UE shall check each quantity in the GSM choice. The UE shall include measured results in MEASUREMENT REPORT as specified in the IE "Inter-RAT reporting quantity" with the following restrictions:

- if the UE has not confirmed the BSIC of the measured cell:
 - if no compressed mode pattern sequence specified with measurement purpose "Initial BSIC identification" is active, the UE is not required to include the "inter-RAT cell id" nor "Observed time difference to GSM cell" in the IE "Inter-RAT measured results list", when a MEASUREMENT REPORT is triggered.
- if the UE has confirmed the BSIC of the measured cell, then:
 - if no compressed mode pattern sequence specified with measurement purpose "Initial BSIC identification" nor "BSIC re-confirmation" is active, the UE is not required to include the "inter-RAT cell id" nor "Observed time difference to GSM cell" in the IE "Inter-RAT measured results", when a MEASUREMENT REPORT is triggered. If no compressed mode pattern sequence with measurement purpose "GSM carrier RSSI measurements" is active, the UE may include "inter-RAT cell id" or "Observed time difference to GSM cell" in MEASUMENT REPORT without "GSM carrier RSSI" even if it is defined in the IE "Inter-RAT reporting quantity".

if IE "Pathloss" is set to "TRUE":

set the variable CONFIGURATION_INCOMPLETE to TRUE;

- if the IE "UTRAN estimated quantity" is set to "TRUE":

ignore that IE;

- if IE "Observed time difference to GSM cell" is set to "TRUE":
 - include optional IE "Observed time difference to GSM cell" with the value set to the time difference to that GSM cell for the GSM cells that have a BSIC that is "verified", and that match any of the BCCH ARFCN and BSIC combinations in the list of inter-RAT cells that the UE has received in IE "Inter-RAT cell info list". Observed time difference to GSM cells with "nonverified" BSIC shall not be included;
- if IE "GSM Carrier RSSI" is set to "TRUE":
 - include optional IE "GSM Carrier RSSI" with a value set to the measured RXLEV to that GSM cell in IE "Inter-RAT measured results list". If no compressed mode pattern sequence specified with measurement purpose "GSM carrier RSSI measurements" is active, the UE is not required to include the "GSM carrier RSSI" in the IE " Inter-RAT measured results list ", when a MEASUREMENT REPORT is triggered;
- if the BSIC of reported GSM cell is "verified":

- set the CHOICE BSIC to "Verified BSIC" and IE "inter-RAT cell id" to the value that GSM cell had in the IE "Inter-RAT cell info list";
- if the BSIC of reported GSM cell is "non-verified":
 - set the CHOICE BSIC to "Non verified BSIC" and the IE "BCCH ARFCN" to the value of that GSM cells ARFCN;

The requirements for a cell to be considered "verified" or "non-verified" can be found in [19].

8.6.7.9 Reporting Cell Status

If the IE "Reporting Cell Status" is received, the UE shall set the IE "Measured Results" in MEASUREMENT REPORT as follows. The UE shall:

- for intra-frequency measurement and inter-frequency measurement:
 - include the IE "Cell Measured Results" for cells that satisfy the condition (such as "Report cells within active set") specified in "Reporting Cell Status", in descending order by the measurement quantity;
- the maximum number of the IE "Cell Measured Results" to be included in the IE "Measured Results" is the number specified in "Reporting Cell Status".

If the IE "Reporting Cell Status" is not received for intra-frequency, or-inter-frequency measurement, <u>or</u> inter-RAT measurement, the UE shall:

- exclude the IE "cell measured results" for any cell in MEASUREMENT REPORT.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT measurement results	OP	1 to <maxother RAT></maxother 		
>CHOICE system	MP			At least one spare value needed
>>GSM				
>>>Measured GSM cells	MP	1 to <maxrepo rtedGSMC ells></maxrepo 		
>>>>GSM carrier RSSI	OP		bit string(6)	RXLEV, [46]. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit.
>>>>Pathloss	<mark>OP</mark>		<mark>Integer(461</mark> 58)	<mark>In dB</mark>
>>>>CHOICE BSIC	MP			
>>>>Verified BSIC				
>>>>>inter-RAT cell id	MP		Integer(0< maxCellMea s>-1)	
>>>>Non verified BSIC				
>>>>BCCH ARFCN	MP		Integer (01023)	[45]
>>>>Observed time difference to GSM cell	OP		Observed time difference to GSM cell 10.3.7.52	

10.3.7.26 Inter-RAT measured results list

10.3.7.29 Inter-RAT measurement quantity

The quantity the UE shall measure in case of inter-RAT 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	OP		Intra- frequency measuremen t quantity 10.3.7.38	
CHOICE system	MP			
>>Measurement quantity	MP		Enumerated(GSM Carrier RSSI <mark>,</mark> Pathloss)	
>>Filter coefficient	MP		Filter coefficient 10.3.7.9	
>>BSIC verification required	MP		Enumerated(required, not required)	
>IS2000				
>>TADD E _o /I ₀	MP		Integer(063)	Admission criteria for neighbours, see subclause 2.6.6.2.6 of TIA/EIA/IS-2000.5
>>TCOMP E _c /I ₀	MP		Integer(015)	Admission criteria for neighbours, see subclause 2.6.6.2.5.2 of TIA/EIA/IS- 2000.5
>>SOFT SLOPE	OP		Integer(063)	Admission criteria for neighbours, see subclause 2.6.6.2.3 and 2.6.6.2.5.2 of TIA/EIA/IS-2000.5
>>ADD_INTERCEPT	OP		Integer(063)	Admission criteria for neighbours, see subclause 2.6.6.2.5.2 of TIA/EIA/IS- 2000.5

Also, this The IE "BSIC verification required" must be set to "required" if IE "Observed time difference to GSM cell" in IE "Inter-RAT reporting quantity "is set to "true".

10.3.7.32 Inter-RAT 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	This parameter is not used in this release and should be set to FALSE.
CHOICE system	MP			
>GSM				
>Pathloss	MP		Boolean	
>>Observed time difference to GSM cell	MP		Boolean	
>>GSM Carrier RSSI	MP		Boolean	

10.3.7.61 Reporting Cell Status

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE reported cell	MP			•
>Report cells within active set				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within monitored set cells on used frequency				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within active set and/or monitored set cells on used frequency				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within detected set on used frequency				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within monitored set and/or detected set on used frequency				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report all active set cells + cells within monitored set on used frequency				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within detected set on used frequency				This choice is not valid for inter-RAT measurements

>> Maximum number of reported	MD	Enun	norated	
	IVIP	Liui		
Cells		(viitu		
		cells	+1,	
		virtua	al/active set	
		cells-	+2,,	
		virtua	al/active set	
		cells-	+6)	
>Report all active set cells + cells				This choice is not valid
within monitored set and/or				for inter-RAT
detected set on used frequency				measurements
>>Maximum number of reported	MP	Enur	nerated	
	IVII	(virtu	al/active cot	
Cells		(viitu		
		cens	+1,	
		Virtua	al/active set	
		cells-	+2,,	
		virtua	al/active set	
		cells-	+6)	
>Report cells within virtual active				This choice is not valid
set				for intra-frequency or
				inter-RAT
				measurements
>>Maximum number of reported	MD	Integ	er(1, 6)	medodremento
cells	IVII	integ	01(10)	
>Report cells within monitored set				This choice is not valid
on non-used frequency				for intra-frequency or
on non used nequency				inter PAT
				measuremente
Maximum availan of son astad	MD	lute e	a = (1 C)	measurements
>>iviaximum number of reported	MP	integ	er(16)	
>Report cells within monitored				I his choice is not valid
and/or active set on non-used				for intra-frequency or
frequency				inter-RAT
				measurements
>>Maximum number of reported	MP	Integ	er(16)	
cells				
>Report all virtual active set cells				This choice is not valid
+ cells within monitored set on				for intra-frequency or
non-used frequency				inter-RAT
				measurements
>> Maximum number of reported	MD	Enun	norotod	mededremente
	IVIP	Enur (
cells		(virtu	al/active set	
		cells-	+1,	
		virtua	al/active set	
		cells-	+2,,	
		virtua	al/active set	
		cells-	+6)	
>Report cells within active set or				
within virtual active set or of the				
other RAT				
>>Maximum number of reported	MD	Intog	or (1 12)	
	IVIE	integ	er (112)	
>Report cells within active and/or				This choice is not valid
monitored set on used frequency				for inter-RAT
or within active and/or manifered				magguramente
				measurements
		In (ar(1 10)	
	IVIP	integ	⊌(11∠)	
Cells				

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

< *** Uneccessary Definitions Removed *** >

11.3 Information element definitions



withinVirtualActSet MaxNumberOfReportingCellsTypel, withinMonitoredSetNonUsedFreq MaxNumberOfReportingCellsTypel, withinMonitoredAndOrActiveSetNonUsedFreq allVirtualActSetplusMonitoredSetNonUsedFreq MaxNumberOfReportingCellsType3,

WithinActSetOrVirtualActSet_<u>InterRATcells</u> MaxNumberOfReportingCellsType2,

withinActSetAndOrMonitoredUsedFreqOrMonitoredNonUsedFreq MaxNumberOfReportingCellsType2

13.4.27f10 TRIGGERED 3A EVENT

}

This variable contains information about a 3a event that has been configured in the UE. There is one such variable per event 3a configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			<u>reference</u>	
CHOICE system	<u>OP</u>			
>GSM				
>>CHOICE BSIC	MP			
>>>Verified BSIC		<u>0 to</u>		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		eas>		
>>>Inter-RAT cell id	MP		Integer(0<	
			maxCellMea	
			<u>s>-1)</u>	
>>Non verified BSIC		<u>0 to</u>		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		<u>eas></u>		
>>>BCCH ARFCN	MP		Integer	
			<u>(01023)</u>	

13.4.27f11 TRIGGERED 3B EVENT

This variable contains information about a 3b event that has been configured in the UE. There is one such variable per event 3b configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			reference	
CHOICE system	<u>OP</u>			
<u>>GSM</u>				
>>CHOICE BSIC	MP			
>>>Verified BSIC		<u>0 to</u>		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		eas>		
>>>>Inter-RAT cell id	MP		Integer(0<	
			maxCellMea	
			<u>s>-1)</u>	
>>Non verified BSIC		<u>0 to</u>		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		<u>eas></u>		
>>>BCCH ARFCN	MP		Integer	
			(01023)	

13.4.27f12 TRIGGERED_3C_EVENT

This variable contains information about a 3c event that has been configured in the UE. There is one such variable per event 3c configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			<u>reference</u>	
CHOICE system	OP			
<u>>GSM</u>				
>>CHOICE BSIC	MP			
>>Verified BSIC		<u>0 to</u>		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		eas>		
>>>>Inter-RAT cell id	MP		Integer(0<	
			maxCellMea	
			<u>s>-1)</u>	
>>Non verified BSIC		<u>0 to</u>		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		eas>		
>>>BCCH ARFCN	MP		Integer	
			<u>(01023)</u>	

13.4.27f13 BEST_CELL_3D_EVENT

This variable contains information about a 3d event that has been configured in the UE. There is one such variable per event 3a configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			reference	
CHOICE system				
<u>>GSM</u>				
>>CHOICE BSIC	MP			
>>>Verified BSIC				
>>>>Inter-RAT cell id	MP		Integer(0<	
			maxCellMea	
			<u>s>-1)</u>	
>>Non verified BSIC				
>>>BCCH ARFCN	MP		Integer	
			(01023)	

14.3 Inter-RAT measurements

14.3.0a Inter-RAT measurement quantities

A measurement quantity is used by the UE to evaluate whether an inter-RAT measurement event has occurred or not.

The measurement quantity for UTRAN is used to compute the frequency quality estimate for the active set, as described in the next section, and can be:

1. Downlink Ec/No.

2. Downlink received signal code power (RSCP) after despreading.

The measurement quantity for GSM can be:

1. GSM Carrier RSSI

A description of those values can be found in [7] and [8].

14.3.0b Frequency quality estimate of the UTRAN frequency

The estimated quality of the active set in UTRAN in events 3a is defined as:

$$Q_{UTRAN} = 10 \cdot LogM_{UTRAN} = W \cdot 10 \cdot Log\left(\sum_{i=1}^{N_A} M_i\right) + (1 - W) \cdot 10 \cdot LogM_{Best},$$

The variables in the formula are defined as follows:

 Q_{UTRAN} is the estimated quality of the active set on the currently used UTRAN frequency.

- $M_{\rm UTRAN}$ is the estimated quality of the active set on currently used UTRAN frequency expressed in another unit.
- M_i is a<u>the</u> measurement result of cell i in the active set, according to what is indicated in the IE <u>"Measurement quantity for UTRAN quality estimate"</u>.

N_A is the number of cells in the active set.

 M_{Best} is the measurement result of the cell in the active set with the highest measurement result.

W is a parameter sent from UTRAN to UE.

If the measurement result is CPICH-Ec/No MUTRAN, Mi and MBest are expressed as ratios

If the measurement result is CPICH-RSCP or PCCPCH-RSCP, M_{UTRAN} , M_i and M_{Best} are expressed in [mW]

14.3.0c Inter-RAT reporting quantities

<u>The quantities that the UE shall report to UTRAN when the event is triggered for an inter-RAT</u> measurement are given by the "Inter-RAT reporting quantity" IE stored for that measurement, and can be the following:

- In the case the other RAT is GSM:
- For GSM:
 - 1. Observed time difference to the GSM cell
 - 2. GSM carrier RSSI

A description of those values can be found in [7] and [8].

14.3.1 Inter-RAT reporting events

Within the measurement reporting criteria field in the MEASUREMENT CONTROL message the UTRAN notifies the UE which events should trigger the UE to send a MEASUREMENT REPORT message. Examples of inter-RAT reporting events that would be useful for inter-RAT handover evaluation are given below. Note that normally the UEs do not need to report all these events. The listed events are the toolbox from which the UTRAN can choose the reporting events that are needed for the implemented handover evaluation function, or other radio network functions.

All events are measured with respect to one of the measurement quantities given in subclause 14.3.0a, and of the frequency quality estimate given in subclause 14.3.0b. For UTRAN the measurement quantities are measured on the monitored primary common pilot channels (CPICH) in FDD mode and the monitored primary common control channels (PCCPCH) in TDD mode of the cell defined in the measurement object. For other RAT the measurement quantities are system specific. The measurement objects are the monitored primary common pilot channels (CPICH) in FDD mode and the monitored primary common pilot channels (CPICH) in FDD mode and the monitored primary common control channels (CPICH) in FDD mode and the monitored primary common control channels (CPICH) in FDD mode and the monitored primary common control channels (CPICH) in FDD mode and the monitored primary common control channels (CPICH) in FDD mode and the monitored primary common control channels (CPICH) in FDD mode and the monitored primary common control channels (CPICH) in FDD mode and the monitored primary common control channels (PCCPCH) in FDD mode and the monitored primary common control channels (PCCPCH) in TDD mode for UTRAN and objects specific for other systems. A "used UTRAN frequency" is a frequency that the UE have been ordered to measure upon and is also currently used for the connection to UTRAN. "Other system" is e.g. GSM.

In the text below describing the events:

- <u>"The BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement" shall be</u> understood as the BCCH ARFCN and BSIC combinations of the inter-RAT cells pointed at in the IE "Cell for measurements" if it has been received for that inter-RAT measurement, or otherwise of the cells included in the "inter-RAT cell info" part of the variable CELL_INFO LIST.
- <u>"The BCCH ARFCNs considered in that inter-RAT measurement" shall be understood as the BCCH ARFCNs of the inter-RAT cells pointed at in the IE "Cell for measurements" if it has been received for that inter-RAT measurement, or otherwise of the cells included in the "inter-RAT cell info" part of the variable CELL_INFO LIST.</u>

14.3.1.1 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.

When an inter-RAT measurement configuring event 3a is set up, the UE shall create a variable <u>TRIGGERED_3A_EVENT</u> related to that measurement, which shall initially be empty. This variable shall be deleted when the measurement is released.

When event 3a is configured in the UE within a measurement, the UE shall:

- If the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
 - If equations 1 and 2 below have both been fulfilled during the time "Time to trigger" from the same instant, respectively for the used UTRAN frequency and for one or several GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
 - If the Inter-RAT cell id of any of those GSM cells is not stored in the variable TRIGGERED_3A_EVENT:
 - Store the Inter-RAT cell ids of the GSM cells that triggered the event and that were not previously stored in the variable TRIGGERED_3A_EVENT into that variable.
 - Send a measurement report with IEs set as below:

 In "inter-RAT measurement event result": "inter-RAT event identity" to "3a", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cells that triggered the event (best one first);
- <u>"measured results" and possible "additional measured results" according to 8.4.2;</u>
 If equation 4 is fulfilled for a GSM cell whose inter-RAT cell id is stored in the variable TRIGGERED_3A_EVENT:
- Remove the inter-RAT cell id of that GSM cell from the variable TRIGGERED_3A_EVENT
- If equation 3 is fulfilled for the used frequency in UTRAN:
- <u>Clear the variable TRIGGERED_3A_EVENT</u>
- If the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
- If equations 1 and 2 below have been fulfilled during the time "Time to trigger" from the same instant, respectively for the used UTRAN frequency and for one or several BCCH ARFCNs considered in that inter-RAT measurement:
- If any of those BCCH ARFCNs is not stored into the variable TRIGGERED_3A_EVENT:
 Store the BCCH ARFCNs that triggered the event and that were not previously stored in the variable TRIGGERED_3A_EVENT into that variable;
- Send a measurement report with IEs set as below:
 In "inter-RAT measurement event result": "inter-RAT event identity" to "3a", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to BCCH ARFCNs that triggered the event (best one first);
- <u>"measured results" and possible "additional measured results" according to</u> <u>8.4.2;</u>
 If equation 4 is fulfilled for a BCCH ARFCN that is stored in the variable TRIGGERED_3A_EVENT:
- <u>Remove that BCCH ARFCN from the variable TRIGGERED_3A_EVENT;</u>
- If equation 3 is fulfilled for the used frequency in UTRAN:
- Clear the variable TRIGGERED_3A_EVENT
$\frac{\text{Triggering conditions:}}{\text{Equation 1:}}$
$\simeq Used = Used = I = 3a' \simeq$
The variables in the formula are defined as follows:
Q_{Used} is the quality estimate of the used UTRAN frequency.

 $\underline{T}_{\underline{Used}}$ is the absolute threshold that applies for the used frequency in that measurement.

 $\underline{\underline{H}}_{\underline{3a}}$ is the hysteresis parameter for event 3a.

Equation 2:

 $M_{Other RAT} \ge T_{Other RAT} + H_{3a}/2$

The variables in the formula are defined as follows:

<u>Mother RAT</u> is the measurement quantity for the cell of the other system.

<u>**T**</u>_{Other RAT} is the absolute threshold that applies for the other system in that measurement.

 \underline{H}_{3a} is the hysteresis parameter for event 3a.

Leaving triggered state conditions:

 $\frac{\text{Equation 3:}}{Q_{Used}} + H_{3a}/2$

The variables in the formula are defined as follows:

<u>**Q**</u>_{Used} is the quality estimate of the used UTRAN frequency.

 \underline{T}_{Used} is the absolute threshold that applies for the used frequency in that measurement.

 \underline{H}_{3a} is the hysteresis parameter for event 3a.

Equation 4:

 $M_{Other RAT} < T_{Other RAT} - H_{3a}/2$

The variables in the formula are defined as follows:

 $\underline{M}_{Other RAT}$ is the measurement quantity for the cell of the other system.

<u>**T**</u>_{Other RAT} is the absolute threshold that applies for the other system in that measurement.

 \underline{H}_{3a} is the hysteresis parameter for event 3a.

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE " Threshold own system" and the hysteresis and time to trigger conditions are fulfilled and the estimated quality of the other system is above the value of the IE " Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system and the best primary CPICH (FDD) or primary CCPCH (TDD) on the used frequency.

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

When an inter-RAT measurement configuring event 3b is set up, the UE shall create a variable TRIGGERED_3B_EVENT related to that measurement, which shall initially be empty. This variable shall be deleted when the measurement is released.

 When event 3b is configured in the UE within a measurement, the UE shall: If the other RAT is GSM, and if IE "BSIC verification required" is set to "required": 	
 <u>If equation 1 below has been fulfilled during the time "time to trigger" for one or several GSN cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter- RAT measurement:</u> 	M
- If the inter-RAT cell id of any of those GSM cell is not stored in the variable TRIGGERED 3B_EVENT:	
- <u>Store the inter-RAT cell ids of the GSM cells that triggered the event and that were no</u> previously stored in the variable TRIGGERED_3B_EVENT into that variable.	<u>t</u>
- Send a measurement report with IEs set as below:	
 In "inter-RAT measurement event result": "inter-RAT event identity" to "3b", <u>"CHOICE BSIC</u>" to "verified BSIC" and "Inter-RAT cell id" to the GSM cells that triggered the event (worst one first); 	<u>at</u>
- "measured results" and possible "additional measured results" according to 8.4.2;	
 If equation 2 below is fulfilled for a GSM cell whose inter-RAT cell id is stored in the variable TRIGGERED_3B_EVENT: 	<u>le</u>
- Remove the inter-RAT cell id of that GSM cell from the variable TRIGGERED_3B_EVENT.	
- If the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":	
 If equation 1 below has been fulfilled during the time "time to trigger" for one or several of th BCCH ARFCNs considered in that inter-RAT measurement: 	<u>1e</u>
- If any of those BCCH ARFCN is not stored into the variable TRIGGERED_3B_EVENT:	
- Store the BCCH ARFCNs that triggered the event and that were not previously stored the variable TRIGGERED_3B_EVENT into that variable;	in
- Send a measurement report with IEs set as below:	
 In "inter-RAT measurement event result": "inter-RAT event identity" to "3b", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to BCCH ARFC! that triggered the event (worst one first); 	<u> </u>
- <u>"measured results" and possible "additional measured results" according to 8.4.2;</u>	
 If equation 2 below is fulfilled for a BCCH ARFCN that is stored in the variable TRIGGERED_3B_EVENT: 	
- Remove that BCCH ARFCN from the variable TRIGGERED_3B_EVENT;	
Triggering condition: Equation 1:	
$M_{OtherRAT} \leq T_{OtherRAT} - H_{3b}/2$	
The variables in the formula are defined as follows:	

<u>Mother RAT is the measurement quantity for the cell of the other system.</u>

 $\underline{T}_{Other RAT}$ is the absolute threshold that applies for the other system in that measurement.

 \underline{H}_{3b} is the hysteresis parameter for event 3b.

Leaving triggered state condition:

Equation 2:

 $M_{Other RAT} > T_{Other RAT} + H_{3b}/2$

The variables in the formula are defined as follows:

<u>*M*</u>_{Other RAT} is the measurement quantity for the cell of the other system.

<u>*T*</u>_{Other RAT} is the absolute threshold that applies for the other system in that measurement.

 $\underline{H_{3b}}$ is the hysteresis parameter for event 3b.

When this event is ordered by UTRAN in a measurement control message the UE shall send a report when the estimated quality of the other system is below the value of the IE " Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system.

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

When an inter-RAT measurement configuring event 3c is set up, the UE shall create a variable TRIGGERED_3C_EVENT related to that measurement, which shall initially be empty. This variable shall be deleted when the measurement is released.

When event 3c is configured in the UE within a measurement, the UE shall:

- If the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
 - If equation 1 below has been fulfilled during the time "time to trigger" for one or several GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
 - If the inter-RAT cell id of any of those GSM cell is not stored in the variable TRIGGERED_3C_EVENT:
 - <u>Store the Inter-RAT cell ids of the GSM cells that triggered the event and that were not</u> previously stored in the variable TRIGGERED_3C_EVENT into that variable;
 - <u>Send a measurement report with IEs set as below:</u>
 - In "inter-RAT measurement event result": "inter-RAT event identity" to "3c", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cells that triggered the event (best one first);
 - "measured results" and possible "additional measured results" according to 8.4.2;
 - If equation 2 below is fulfilled for a GSM cell whose inter-RAT cell id is stored in the variable TRIGGERED_3C_EVENT:

-	Remove the inter-RAT cell id of that GSM cell from the variable
	TRIGGERED 3C_EVENT;

- If the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
 - If equation 1 below has been fulfilled during the time "time to trigger" for one or several of the BCCH ARFCNs considered in that inter-RAT measurement:
 - If any of those BCCH ARFCN is not stored into the variable TRIGGERED_3C_EVENT:
 - <u>Store the BCCH ARFCNs that triggered the event and that were not previously stored in</u> the variable TRIGGERED_3C_EVENT into that variable;
 - Send a measurement report with IEs set as below:
 - In "inter-RAT measurement event result": "inter-RAT event identity" to "3c", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to BCCH ARFCNs that triggered the event (best one first);
 - "measured results" and possible "additional measured results" according to 8.4.2;
 - If equation 2 is fulfilled for a BCCH ARFCN that is stored in the variable TRIGGERED_3C_EVENT:
 - Remove that BCCH ARFCN from the variable TRIGGERED_3C_EVENT;

Triggering condition: Equation 1:

 $M_{Other RAT} \ge T_{Other RAT} + H_{3c}/2$

The variables in the formula are defined as follows:

Mother RAT is the measurement quantity for the cell of the other system.

<u>*T*</u>_{Other RAT} is the absolute threshold that applies for the other system in that measurement.

<u> H_{3c} is the hysteresis parameter for event 3c.</u>

Leaving triggered state condition: Equation 2:

 $M_{Other RAT} < T_{Other RAT} - H_{3c}/2$

The variables in the formula are defined as follows:

<u>Mother RAT</u> is the measurement quantity for the cell of the other system.

<u>**T**</u>_{Other RAT} is the absolute threshold that applies for the other system in that measurement.

 \underline{H}_{3c} is the hysteresis parameter for event 3c.

When this event is ordered by UTRAN in a measurement control message the UE shall send a report when the estimated quality of the other system is above the value of the IE " Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system.

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

When an inter-RAT measurement configuring event 3d is set up, the UE shall create a variable BEST_CELL_3D_EVENT related to that measurement. This variable shall be deleted when the measurement is released.

When event 3d is configured in the UE within a measurement, the UE shall:

- If the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
 - When the measurement is initiated or resumed:
 - <u>store in the variable BEST_CELL_3D_EVENT the Inter-RAT cell id of the GSM cell that</u> <u>has the best measured quantity among the GSM cells that match any of the BCCH ARFCN</u> and BSIC combinations considered in that inter-RAT measurement
 - send a measurement report with IE set as below:
 - in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cell that is stored in the variable BEST_CELL_3D_EVENT
 - "measured results" and possible "additional measured results" according to 8.4.2;
 - If equation 1 has been fulfilled during the time "time to trigger" for a GSM cell that is different from the one stored in BEST_CELL_3D_EVENT and that matches any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
 - store the Inter-RAT cell id of that GSM cell in the variable BEST_CELL_3D_EVENT;
 - send a measurement report with IEs set as below:
 - in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cell is now stored in BEST_CELL_3D_EVENT;
 - "measured results" and possible "additional measured results" according to 8.4.2;
 - If the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
 - When the measurement is initiated or resumed:
 - store in the variable BEST_CELL_3D_EVENT the BCCH ARFCN of the GSM cell that has the best measured quantity among the BCCH ARFCNs considered in that inter-RAT measurement
 - <u>send a measurement report with IE set as below:</u>
 - in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to the BCH ARFCN that is stored in the variable BEST_CELL_3D_EVENT;
 - "measured results" and possible "additional measured results" according to 8.4.2;

- If equation 1 below has been fulfilled during the time "time to trigger" for one of the BCCH
 ARFCNs considered in that inter-RAT measurement and different from the one stored in
 BEST_CELL_3D_EVENT:
 - store the BCCH ARFCN of that GSM cell in the variable BEST_CELL_3D_EVENT;
 - send a measurement report with IEs set as below:
 - in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to the BCCH ARFCN that is now stored in the variable BEST_CELL_3D_EVENT;
 - <u>"measured results" and possible "additional measured results" according to 8.4.2;</u>

Equation 1:

 $M_{New} \ge M_{Best} + H_{3d}/2$

The variables in the formula are defined as follows:

 $\underline{M}_{\underline{New}}$ is the measurement quantity for a GSM cell that is not stored in the variable <u>BEST_CELL_3D</u>.

 $\underline{M}_{\underline{Best}}$ is the measurement quantity for a GSM cell that is stored in the variable <u>BEST_CELL_3D.</u>

 \underline{H}_{3d} is the hysteresis parameter for event 3d.

If any of the quality estimates for the cells in the other system becomes better than the quality estimate for the currently best cell in the other system, and event 3d has been ordered by UTRAN then this event shall trigger a report to be sent from the UE when the hysteresis and time to trigger conditions is fulfilled. The corresponding report contains (at least) information the best cell in the other system.

Tdoc R2-012178

3GPP TSG-RAN WG2 Meeting #23 Helsinki, Finland, August 27th-31th, 2001

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	CHANGE REQUEST
ж	25.331 CR 924 [#] ev _ [#] Current version: 4.1.0 [#]
For <u>HELP</u> on	using this form, see bottom of this page or look at the pop-up text over the \Re symbols.
Proposed change	e affects: 第 (U)SIM ME/UE X Radio Access Network X Core Network
Title:	# Inter-RAT measurement corrections
Source:	# TSG-RAN WG2
Work item code:	策 TEI Date: 発 2001-09-03
Category:	A Release: % REL-4 Use one of the following categories: Use one of the following releases: 2 F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can be found in 3GPP TR 21.900. REL-4 (Release 4)
Reason for chang	ge: # Ambiguous measurement handling need to be corrected.
	A strict event description for all measurements is important for aligned UE behaviour and a possibility for the network to rely on measurement reports.
Summary of chai	 nge: # 1. 8.6.7.6, 10.3.7.26 and 10.3.7.32: it is clarified that pathloss cannot be used for GSM measurement, since the output power was removed from the information provided to the UE in the Inter-RAT cell info list (10.3.7.23). The UTRAN estimated quality cannot be reported in the Inter-RAT measured results list (10.3.7.26), and it was thus clarified in 8.6.7.6 and 10.3.7.32 that the IE "UTRAN estimated quality" is not used in R99

- 2. 8.6.7.9: it is clarified that when the IE "Reporting Cell Status" is not received for an inter-RAT measurement, the UE shall not include any measurement results in the report it sends to UTRAN.
- 3. 10.3.7.27 and 10.3.7.30: the IE "reporting cell status" can in principle be included in "Inter-RAT measurement" in the case of "periodical reporting" or "no reporting", but since there is no UTRAN related information in the Inter-RAT measured results list (10.3.7.26), this cannot be used in R99. The same thing holds for 10.3.7.30. That was clarified.
- 4. 10.3.7.61 and 11.3: when the different possible choices in the IE "Reporting Cell Status" can be used is not really clear as this IE can be used within IEs "intra-frequency measurement", "inter-frequency measurement" and "inter-RAT measurement". For each choice, it is clarified whether it applies to intra-frequency/inter-frequency/inter-RAT measurements. As with the existing text, no choice applies to the inter-RAT case, and sine the number of reported cells for inter-RAT measurements is not clear (especially in the case of periodical reporting), it is

	 proposed to allow for one of the choices to be used also in the inter-RAT case. The name of that choice is changed in ASN.1, to make it consistent. 5. 13.4.xx: Different variables were added that are used in the text that follows to describe the 3x events. 6. In chapter 14.3, an extensive description of the 3x events was added. This CR has isolated impact on inter-RAT frequency measurement reporting.
Consequences if not approved:	Ambiguities in the way the inter-RAT measurements shall be performed, and unexpected UE behaviour.
Clauses affected:	 8.4.1.7.3, 8.6.7.6, 8.6.7.9, 10.3.7.26, 10.3.7.29, 10.3.7.32, 10.3.7.61, 11.3, 13.4.27f10 (new), 13.4.27f11 (new), 13.4.27f12 (new), 13.4.27f13 (new), 14.3, 14.3.0a (new), 14.3.0b (new), 14.3.0c (new), 14.3.1, 14.3.1.1, 14.3.1.2, 14.3.1.3, 14.3.1.4
Other specs affected:	% Other core specifications % Test specifications O&M Specifications
Other comments:	¥

How to create CRs using this form:

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

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

8.4.1.7.3 Inter-RAT measurement

Upon transition from CELL FACH to CELL DCH state, Tthe UE shall:

- stop monitoring the list of cells assigned in the IE "inter-<u>RAT</u>frequency system info <u>Cell info list</u>" in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11).

8.6.7.6 Inter-RAT reporting quantity

If the IE "Inter-RAT reporting quantity" is received by the UE, the UE shall:

- store the content of the IE to the variable MEASUREMENT_IDENTITY.

If the IE "Inter-RAT measurement quantity" is received and CHOICE system is GSM, the UE shall check each quantity in the GSM choice. The UE shall include measured results in MEASUREMENT REPORT as specified in the IE "Inter-RAT reporting quantity" with the following restrictions:

- if the UE has not confirmed the BSIC of the measured cell:
 - if no compressed mode pattern sequence specified with measurement purpose "Initial BSIC identification" is active, the UE is not required to include the "inter-RAT cell id" nor "Observed time difference to GSM cell" in the IE "Inter-RAT measured results list", when a MEASUREMENT REPORT is triggered.
- if the UE has confirmed the BSIC of the measured cell, then:
 - if no compressed mode pattern sequence specified with measurement purpose "Initial BSIC identification" nor "BSIC re-confirmation" is active, the UE is not required to include the "inter-RAT cell id" nor "Observed time difference to GSM cell" in the IE "Inter-RAT measured results", when a MEASUREMENT REPORT is triggered. If no compressed mode pattern sequence with measurement purpose "GSM carrier RSSI measurements" is active, the UE may include "inter-RAT cell id" or "Observed time difference to GSM cell" in MEASUMENT REPORT without "GSM carrier RSSI" even if it is defined in the IE "Inter-RAT reporting quantity".
- if IE "Pathloss" is set to "TRUE":

- set the variable CONFIGURATION_INCOMPLETE to TRUE;

- if the IE "UTRAN estimated quantity" is set to "TRUE":
 - ignore that IE;
- if IE "Observed time difference to GSM cell" is set to "TRUE":
 - include optional IE "Observed time difference to GSM cell" with the value set to the time difference to that GSM cell for the GSM cells that have a BSIC that is "verified", and that match any of the BCCH ARFCN and BSIC combinations in the list of inter-RAT cells that the UE has received in IE "Inter-RAT cell info list". Observed time difference to GSM cells with "nonverified" BSIC shall not be included;
- if IE "GSM Carrier RSSI" is set to "TRUE":
 - include optional IE "GSM Carrier RSSI" with a value set to the measured RXLEV to that GSM cell in IE "Inter-RAT measured results list". If no compressed mode pattern sequence specified with measurement purpose "GSM carrier RSSI measurements" is active, the UE is not required to include the "GSM carrier RSSI" in the IE " Inter-RAT measured results list ", when a MEASUREMENT REPORT is triggered;
- if the BSIC of reported GSM cell is "verified":

- set the CHOICE BSIC to "Verified BSIC" and IE "inter-RAT cell id" to the value that GSM cell had in the IE "Inter-RAT cell info list";
- if the BSIC of reported GSM cell is "non-verified":
 - set the CHOICE BSIC to "Non verified BSIC" and the IE "BCCH ARFCN" to the value of that GSM cells ARFCN;

The requirements for a cell to be considered "verified" or "non-verified" can be found in [19].

8.6.7.9 Reporting Cell Status

If the IE "Reporting Cell Status" is received, the UE shall set the IE "Measured Results" in MEASUREMENT REPORT as follows. The UE shall:

- for intra-frequency measurement and inter-frequency measurement:
 - include the IE "Cell Measured Results" for cells that satisfy the condition (such as "Report cells within active set") specified in "Reporting Cell Status", in descending order by the measurement quantity;
- the maximum number of the IE "Cell Measured Results" to be included in the IE "Measured Results" is the number specified in "Reporting Cell Status".

If the IE "Reporting Cell Status" is not received for intra-frequency, or-inter-frequency measurement, <u>or</u> inter-RAT measurement, the UE shall:

- exclude the IE "cell measured results" for any cell in MEASUREMENT REPORT.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT measurement results	OP	1 to <maxother RAT></maxother 		
>CHOICE system	MP			At least one spare value needed
>>GSM				
>>>Measured GSM cells	MP	1 to <maxrepo rtedGSMC ells></maxrepo 		
>>>>GSM carrier RSSI	OP		bit string(6)	RXLEV, [46]. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit.
>>>>Pathloss	OP		Integer(461 58)	In dB
>>>>CHOICE BSIC	MP			
>>>>Verified BSIC				
>>>>>inter-RAT cell id	MP		Integer(0< maxCellMea s>-1)	
>>>>Non verified BSIC				
>>>>BCCH ARFCN	MP		Integer (01023)	[45]
>>>Observed time difference to GSM cell	OP		Observed time difference to GSM cell 10.3.7.52	

10.3.7.26 Inter-RAT measured results list

10.3.7.29 Inter-RAT measurement quantity

The quantity the UE shall measure in case of inter-RAT 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	OP		Intra- frequency measuremen t quantity 10.3.7.38	
CHOICE system	MP			
>>Measurement quantity	MP		Enumerated(GSM Carrier RSSI , Pathloss)	
>>Filter coefficient	MP		Filter coefficient 10.3.7.9	
>>BSIC verification required	MP		Enumerated(required, not required)	
>IS2000				
>>TADD E _c /I ₀	MP		Integer(063)	Admission criteria for neighbours, see subclause 2.6.6.2.6 of TIA/EIA/IS-2000.5
>>TCOMP E _c /I ₀	MP		Integer(015)	Admission criteria for neighbours, see subclause 2.6.6.2.5.2 of TIA/EIA/IS- 2000.5
>>SOFT SLOPE	OP		Integer(063)	Admission criteria for neighbours, see subclause 2.6.6.2.3 and 2.6.6.2.5.2 of TIA/EIA/IS-2000.5
>>ADD_INTERCEPT	OP		Integer(063)	Admission criteria for neighbours, see subclause 2.6.6.2.5.2 of TIA/EIA/IS- 2000.5

Also, this The IE "BSIC verification required" must be set to "required" if IE "Observed time difference to GSM cell" in IE "Inter-RAT reporting quantity "is set to "true".

10.3.7.32 Inter-RAT 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	This parameter is not used in this release and should be set to FALSE.
CHOICE system	MP			
>GSM				
>>Pathloss	MP		Boolean	
>>Observed time difference to GSM cell	MP		Boolean	
>>GSM Carrier RSSI	MP		Boolean	

10.3.7.61 Reporting Cell Status

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE reported cell	MP			•
>Report cells within active set				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within monitored set cells on used frequency				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within active set and/or monitored set cells on used frequency				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within detected set on used frequency				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report cells within monitored set and/or detected set on used frequency				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated(e1e6)	
>Report all active set cells + cells within monitored set on used frequency				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within detected set on used frequency				This choice is not valid for inter-RAT measurements

	1	1	·	1
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report all active set cells + cells within monitored set and/or detected set on used frequency				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Enumerated (virtual/active set cells+1, virtual/active set cells+2,, virtual/active set cells+6)	
>Report cells within virtual active set				This choice is not valid for intra-frequency or inter-RAT measurements
>>Maximum number of reported cells	MP		Integer(16)	
>Report cells within monitored set on non-used frequency				This choice is not valid for intra-frequency or inter-RAT measurements
>>Maximum number of reported cells	MP		Integer(16)	
>Report cells within monitored and/or active set on non-used frequency				This choice is not valid for intra-frequency or inter-RAT measurements
>>Maximum number of reported cells	MP		Integer(16)	
 Report all virtual active set cells + cells within monitored set on non-used frequency >Maximum number of reported cells 	MP		Enumerated (virtual/active set cells+1.	This choice is not valid for intra-frequency or inter-RAT measurements
			virtual/active set cells+2,, virtual/active set cells+6)	
>Report cells within active set or within virtual active set or of the other RAT				
>>Maximum number of reported cells	MP		Integer (112)	
Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency				This choice is not valid for inter-RAT measurements
>>Maximum number of reported cells	MP		Integer(112)	

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

< *** Uneccessary Definitions Removed *** >

Information element definitions 11.3

```
MEASUREMENT INFORMATION ELEMENTS (10.3.7)
  _ _
  _ _
  GSM-MeasuredResults ::=
                                     SEQUENCE {
                                        GSM-CarrierRSSI
     gsm-CarrierRSSI
                                                                             OPTIONAL.
                                         INTEGER (46..158) Pathloss
      dummy pathloss
                                                                             OPTIONAL,
      bsicReported
                                         BSICReported,
      observedTimeDifferenceToGSM
                                        ObservedTimeDifferenceToGSM
                                                                             OPTIONAL
  }
  InterRATMeasQuantity ::=
                                         SEQUENCE {
                                             IntraFreqMeasQuantity
     measQuantityUTRAN-QualityEstimate
                                                                             OPTIONAL,
                                         CHOICE {
      ratSpecificInfo
                                                 SEQUENCE {
          gsm
                                                     JENCE {
MeasurementQuantityGSM,
DEFAULT fc0,
             measurementQuantity
              filterCoefficient
             bsic-VerificationRequired
                                                     BSIC-VerificationRequired
          },
          is-2000
                                                 SEQUENCE {
             tadd-EcIo
                                                     INTEGER (0..63),
             tcomp-EcIo
                                                     INTEGER (0..15),
              softSlope
                                                     INTEGER (0..63)
                                                                             OPTIONAL.
                                                     INTEGER (0..63)
                                                                             OPTIONAL
             addIntercept
  InterRATMeasuredResults ::=
                                 CHOICE {
                                         GSM-MeasuredResultsList,
     asm
      spare
                                         NULL
  InterRATReportingQuantity ::=
                                 SEQUENCE {
     utran-EstimatedQuality
                                        BOOLEAN,
                                     CHOICE {
     ratSpecificInfo
                                             SEOUENCE {
          qsm
             dummypathloss
                                                 BOOLEAN,
observedTimeDifferenceGSM
                                                 BOOLEAN,
              gsm-Carrier-RSSI
                                                 BOOLEAN
          }
      }
  }
  MeasurementQuantityGSM ::=
                                     ENUMERATED {
                                         gsm-CarrierRSSI,
                                         dummypathloss }
  ReportingCellStatus ::=
                                     CHOICE {
     withinActiveSet
                                         MaxNumberOfReportingCellsType1,
                                         MaxNumberOfReportingCellsType1,
      withinMonitoredSetUsedFreq
     withinActiveAndOrMonitoredUsedFreq MaxNumberOfReportingCellsType1,
      withinDetectedSetUsedFreq
                                         MaxNumberOfReportingCellsType1,
      with in {\tt Monitored} {\tt And Or Detected} {\tt UsedFreq}
                               MaxNumberOfReportingCellsType1,
      allActiveplusMonitoredSet
                                         MaxNumberOfReportingCellsType3,
      allActivePlusDetectedSet
                                         MaxNumberOfReportingCellsType3,
      allActivePlusMonitoredAndOrDetectedSet
                                         MaxNumberOfReportingCellsType3,
```

withinVirtualActSet MaxNumberOfReportingCellsTypel, withinMonitoredSetNonUsedFreq MaxNumberOfReportingCellsTypel, withinMonitoredAndOrActiveSetNonUsedFreq allVirtualActSetplusMonitoredSetNonUsedFreq MaxNumberOfReportingCellsType3,

WithinActSetOrVirtualActSet<u>-InterRATcells</u> MaxNumberOfReportingCellsType2,

withinActSetAndOrMonitoredUsedFreqOrMonitoredNonUsedFreq MaxNumberOfReportingCellsType2

13.4.27f10 TRIGGERED 3A EVENT

}

This variable contains information about a 3a event that has been configured in the UE. There is one such variable per event 3a configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			<u>reference</u>	
CHOICE system	<u>OP</u>			
<u>>GSM</u>				
>>CHOICE BSIC	MP			
>>>Verified BSIC		<u>0 to</u>		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		eas>		
>>>Inter-RAT cell id	MP		Integer(0<	
			<u>maxCellMea</u>	
			<u>s>-1)</u>	
>>Non verified BSIC		<u>0 to</u>		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		<u>eas></u>		
>>>BCCH ARFCN	MP		Integer	
			<u>(01023)</u>	

13.4.27f11 TRIGGERED 3B EVENT

This variable contains information about a 3b event that has been configured in the UE. There is one such variable per event 3b configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			reference	
CHOICE system	<u>OP</u>			
<u>>GSM</u>				
>>CHOICE BSIC	MP			
>>>Verified BSIC		<u>0 to</u>		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		eas>		
>>>>Inter-RAT cell id	MP		Integer(0<	
			maxCellMea	
			<u>s>-1)</u>	
>>Non verified BSIC		<u>0 to</u>		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		<u>eas></u>		
>>>BCCH ARFCN	MP		Integer	
			(01023)	

13.4.27f12 TRIGGERED_3C_EVENT

This variable contains information about a 3c event that has been configured in the UE. There is one such variable per event 3c configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			<u>reference</u>	
CHOICE system	<u>OP</u>			
<u>>GSM</u>				
>>CHOICE BSIC	MP			
>>>Verified BSIC		<u>0 to</u>		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		eas>		
>>>>Inter-RAT cell id	MP		Integer(0<	
			maxCellMea	
			<u>s>-1)</u>	
>>Non verified BSIC		<u>0 to</u>		
		<maxcellm< td=""><td></td><td></td></maxcellm<>		
		<u>eas></u>		
>>>BCCH ARFCN	MP		Integer	
			<u>(01023)</u>	

13.4.27f13 BEST_CELL_3D_EVENT

This variable contains information about a 3d event that has been configured in the UE. There is one such variable per event 3a configured in the UE.

Information Element/Group	Need	<u>Multi</u>	Type and	Semantics description
name			reference	
CHOICE system				
<u>>GSM</u>				
>>CHOICE BSIC	MP			
>>Verified BSIC				
>>>>Inter-RAT cell id	MP		Integer(0<	
			maxCellMea	
			<u>s>-1)</u>	
>>Non verified BSIC				
>>>BCCH ARFCN	MP		Integer	
			(01023)	

14.3 Inter-RAT measurements

14.3.0a Inter-RAT measurement quantities

A measurement quantity is used by the UE to evaluate whether an inter-RAT measurement event has occurred or not.

The measurement quantity for UTRAN is used to compute the frequency quality estimate for the active set, as described in the next section, and can be:

1. Downlink Ec/No.

2. Downlink received signal code power (RSCP) after despreading.

The measurement quantity for GSM can be:

1. GSM Carrier RSSI

A description of those values can be found in [7] and [8].

14.3.0b Frequency quality estimate of the UTRAN frequency

The estimated quality of the active set in UTRAN in events 3a is defined as:

$$Q_{UTRAN} = 10 \cdot LogM_{UTRAN} = W \cdot 10 \cdot Log\left(\sum_{i=1}^{N_A} M_i\right) + (1 - W) \cdot 10 \cdot LogM_{Best},$$

The variables in the formula are defined as follows:

 Q_{UTRAN} is the estimated quality of the active set on the currently used UTRAN frequency.

- $M_{\rm UTRAN}$ is the estimated quality of the active set on currently used UTRAN frequency expressed in another unit.
- M_i is a<u>the</u> measurement result of cell i in the active set, <u>according to what is indicated in the IE</u> <u>"Measurement quantity for UTRAN quality estimate"</u>.

N_A is the number of cells in the active set.

 M_{Best} is the measurement result of the cell in the active set with the highest measurement result.

W is a parameter sent from UTRAN to UE.

If the measurement result is CPICH-Ec/No MUTRAN, Mi and MBest are expressed as ratios

If the measurement result is CPICH-RSCP or PCCPCH-RSCP, M_{UTRAN} , M_i and M_{Best} are expressed in [mW]

14.3.0c Inter-RAT reporting quantities

The quantities that the UE shall report to UTRAN when the event is triggered for an inter-RAT measurement are given by the "Inter-RAT reporting quantity" IE stored for that measurement, and can be the following:

- In the case the other RAT is GSM:
- For GSM:
 - 1. Observed time difference to the GSM cell
 - 2. GSM carrier RSSI

A description of those values can be found in [7] and [8].

14.3.1 Inter-RAT reporting events

Within the measurement reporting criteria field in the MEASUREMENT CONTROL message the UTRAN notifies the UE which events should trigger the UE to send a MEASUREMENT REPORT message. Examples of inter-RAT reporting events that would be useful for inter-RAT handover evaluation are given below. Note that normally the UEs do not need to report all these events. The listed events are the toolbox from which the UTRAN can choose the reporting events that are needed for the implemented handover evaluation function, or other radio network functions.

All events are measured with respect to one of the measurement quantities given in subclause 14.3.0a, and of the frequency quality estimate given in subclause 14.3.0b. . For UTRAN the measurement quantities are measured on the monitored primary common pilot channels (CPICH) in FDD mode and the monitored primary common control channels (PCCPCH) in TDD mode of the cell defined in the measurement object. For other RAT the measurement quantities are system specific.The measurement objects are the monitored primary common pilot channels (CPICH) in FDD mode and the monitored primary common pilot channels (CPICH) in FDD mode and the monitored primary common control channels (CPICH) in FDD mode and the monitored primary common control channels (CPICH) in FDD mode and the monitored primary common control channels (PCCPCH) in TDD mode of the context specific for other systems. A "used UTRAN frequency" is a frequency that the UE have been ordered to measure upon and is also currently used for the connection to UTRAN. "Other system" is e.g. GSM.

In the text below describing the events:

- <u>"The BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement" shall be</u> understood as the BCCH ARFCN and BSIC combinations of the inter-RAT cells pointed at in the IE "Cell for measurements" if it has been received for that inter-RAT measurement, or otherwise of the cells included in the "inter-RAT cell info" part of the variable CELL INFO LIST.
- <u>"The BCCH ARFCNs considered in that inter-RAT measurement" shall be understood as the BCCH ARFCNs of the inter-RAT cells pointed at in the IE "Cell for measurements" if it has been received for that inter-RAT measurement, or otherwise of the cells included in the "inter-RAT cell info" part of the variable CELL_INFO LIST.</u>

14.3.1.1 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.

When an inter-RAT measurement configuring event 3a is set up, the UE shall create a variable <u>TRIGGERED_3A_EVENT</u> related to that measurement, which shall initially be empty. This variable shall be deleted when the measurement is released.

When event 3a is configured in the UE within a measurement, the UE shall:

- If the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
 - If equations 1 and 2 below have both been fulfilled during the time "Time to trigger" from the same instant, respectively for the used UTRAN frequency and for one or several GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
 - If the Inter-RAT cell id of any of those GSM cells is not stored in the variable TRIGGERED_3A_EVENT:
 - Store the Inter-RAT cell ids of the GSM cells that triggered the event and that were not previously stored in the variable TRIGGERED_3A_EVENT into that variable.
 - Send a measurement report with IEs set as below:

- In "inter-RAT measurement event result": "inter-RAT event identity" to "3a", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cells that triggered the event (best one first):
- "measured results" and possible "additional measured results" according to 8.4.2.
 If equation 4 is fulfilled for a GSM cell whose inter-RAT cell id is stored in the variable TRIGGERED_3A_EVENT:
- <u>Remove the inter-RAT cell id of that GSM cell from the variable</u> <u>TRIGGERED_3A_EVENT</u>
- If equation 3 is fulfilled for the used frequency in UTRAN:
- <u>Clear the variable TRIGGERED_3A_EVENT</u>
- If the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
- If equations 1 and 2 below have been fulfilled during the time "Time to trigger" from the same instant, respectively for the used UTRAN frequency and for one or several BCCH ARFCNs considered in that inter-RAT measurement:
- If any of those BCCH ARFCNs is not stored into the variable TRIGGERED_3A_EVENT:
- Store the BCCH ARFCNs that triggered the event and that were not previously stored in the variable TRIGGERED_3A_EVENT into that variable;
- Send a measurement report with IEs set as below:
 In "inter-RAT measurement event result": "inter-RAT event identity" to "3a", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to BCCH ARFCNs that triggered the event (best one first);
- <u>"measured results" and possible "additional measured results" according to</u> <u>8.4.2;</u>
- If equation 4 is fulfilled for a BCCH ARFCN that is stored in the variable TRIGGERED_3A_EVENT:
- <u>Remove that BCCH ARFCN from the variable TRIGGERED_3A_EVENT;</u>
- If equation 3 is fulfilled for the used frequency in UTRAN:
- Clear the variable TRIGGERED_3A_EVENT
$\frac{\text{Triggering conditions:}}{\text{Equation 1:}}$ $Q_{Used} \leq T_{Used} - H_{3a}/2$
The variables in the formula are defined as follows:
Q_{Used} is the quality estimate of the used UTRAN frequency.

 $\underline{T}_{\underline{Used}}$ is the absolute threshold that applies for the used frequency in that measurement.

 $\underline{\underline{H}}_{\underline{3a}}$ is the hysteresis parameter for event 3a.

Equation 2:

 $M_{Other RAT} \ge T_{Other RAT} + H_{3a}/2$

The variables in the formula are defined as follows:

<u>Mother RAT</u> is the measurement quantity for the cell of the other system.

<u>**T**</u>_{Other RAT} is the absolute threshold that applies for the other system in that measurement.

 \underline{H}_{3a} is the hysteresis parameter for event 3a.

Leaving triggered state conditions:

 $\frac{\text{Equation 3:}}{Q_{\text{Used}}} + H_{3a}/2$

The variables in the formula are defined as follows:

<u>**Q**</u>_{Used} is the quality estimate of the used UTRAN frequency.

 \underline{T}_{Used} is the absolute threshold that applies for the used frequency in that measurement.

 \underline{H}_{3a} is the hysteresis parameter for event 3a.

Equation 4:

 $M_{Other RAT} < T_{Other RAT} - H_{3a}/2$

The variables in the formula are defined as follows:

 $\underline{M}_{Other RAT}$ is the measurement quantity for the cell of the other system.

<u>**T**</u>_{Other RAT} is the absolute threshold that applies for the other system in that measurement.

 \underline{H}_{3a} is the hysteresis parameter for event 3a.

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE " Threshold own system" and the hysteresis and time to trigger conditions are fulfilled and the estimated quality of the other system is above the value of the IE " Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system and the best primary CPICH (FDD) or primary CCPCH (TDD) on the used frequency.

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

When an inter-RAT measurement configuring event 3b is set up, the UE shall create a variable TRIGGERED_3B_EVENT related to that measurement, which shall initially be empty. This variable shall be deleted when the measurement is released.

When event 3b is configured in the UE within a measurement, the UE shall: - If the other RAT is GSM, and if IE "BSIC verification required" is set to "required":	
 If equation 1 below has been fulfilled during the time "time to trigger" for one or several GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter- RAT measurement: 	
- If the inter-RAT cell id of any of those GSM cell is not stored in the variable TRIGGERED_3B_EVENT:	
- <u>Store the inter-RAT cell ids of the GSM cells that triggered the event and that were not</u> previously stored in the variable TRIGGERED_3B_EVENT into that variable.	
- Send a measurement report with IEs set as below:	
 In "inter-RAT measurement event result": "inter-RAT event identity" to "3b", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cells that triggered the event (worst one first); 	
- <u>"measured results" and possible "additional measured results" according to 8.4.2;</u>	
 If equation 2 below is fulfilled for a GSM cell whose inter-RAT cell id is stored in the variable TRIGGERED_3B_EVENT: 	
- Remove the inter-RAT cell id of that GSM cell from the variable TRIGGERED_3B_EVENT.	
If the other DAT is CSM and if IE "DSIC varification required" is get to "not required":	
- <u>If the other KAT is Osivi, and if the BSIC verification required is set to not required</u> .	
 If equation 1 below has been fulfilled during the time to trigger for one or several of the BCCH ARFCNs considered in that inter-RAT measurement: 	2
- If any of those BCCH ARFCN is not stored into the variable TRIGGERED_3B_EVENT:	
- <u>Store the BCCH ARFCNs that triggered the event and that were not previously stored in the variable TRIGGERED_3B_EVENT into that variable;</u>	1
- Send a measurement report with IEs set as below:	
 In "inter-RAT measurement event result": "inter-RAT event identity" to "3b", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to BCCH ARFCN that triggered the event (worst one first); 	<u>s</u>
- <u>"measured results" and possible "additional measured results" according to 8.4.2;</u>	
- If equation 2 below is fulfilled for a BCCH ARFCN that is stored in the variable TRIGGERED_3B_EVENT:	
- <u>Remove that BCCH ARFCN from the variable TRIGGERED_3B_EVENT;</u>	
Triggering condition: Equation 1:	
$M_{OtherRAT} \leq T_{OtherRAT} - H_{3b}/2$	
The variables in the formula are defined as follows:	

<u>Mother RAT is the measurement quantity for the cell of the other system.</u>

 $\underline{T}_{Other RAT}$ is the absolute threshold that applies for the other system in that measurement.

 \underline{H}_{3b} is the hysteresis parameter for event 3b.

Leaving triggered state condition:

Equation 2:

 $M_{Other RAT} > T_{Other RAT} + H_{3b}/2$

The variables in the formula are defined as follows:

<u>*M*</u>_{Other RAT} is the measurement quantity for the cell of the other system.

<u>*T*</u>_{Other RAT} is the absolute threshold that applies for the other system in that measurement.

 $\underline{H_{3b}}$ is the hysteresis parameter for event 3b.

When this event is ordered by UTRAN in a measurement control message the UE shall send a report when the estimated quality of the other system is below the value of the IE " Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system.

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

When an inter-RAT measurement configuring event 3c is set up, the UE shall create a variable TRIGGERED_3C_EVENT related to that measurement, which shall initially be empty. This variable shall be deleted when the measurement is released.

When event 3c is configured in the UE within a measurement, the UE shall:

- If the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
 - If equation 1 below has been fulfilled during the time "time to trigger" for one or several GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
 - If the inter-RAT cell id of any of those GSM cell is not stored in the variable TRIGGERED_3C_EVENT:
 - <u>Store the Inter-RAT cell ids of the GSM cells that triggered the event and that were not</u> previously stored in the variable TRIGGERED_3C_EVENT into that variable;
 - <u>Send a measurement report with IEs set as below:</u>
 - In "inter-RAT measurement event result": "inter-RAT event identity" to "3c", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cells that triggered the event (best one first);
 - "measured results" and possible "additional measured results" according to 8.4.2;
 - If equation 2 below is fulfilled for a GSM cell whose inter-RAT cell id is stored in the variable TRIGGERED_3C_EVENT:

-	Remove the inter-RAT cell id of that GSM cell from the variable
	TRIGGERED 3C_EVENT;

- If the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
 - If equation 1 below has been fulfilled during the time "time to trigger" for one or several of the BCCH ARFCNs considered in that inter-RAT measurement:
 - If any of those BCCH ARFCN is not stored into the variable TRIGGERED_3C_EVENT:
 - <u>Store the BCCH ARFCNs that triggered the event and that were not previously stored in</u> the variable TRIGGERED_3C_EVENT into that variable;
 - Send a measurement report with IEs set as below:
 - In "inter-RAT measurement event result": "inter-RAT event identity" to "3c", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to BCCH ARFCNs that triggered the event (best one first);
 - "measured results" and possible "additional measured results" according to 8.4.2;
 - If equation 2 is fulfilled for a BCCH ARFCN that is stored in the variable TRIGGERED_3C_EVENT:
 - Remove that BCCH ARFCN from the variable TRIGGERED_3C_EVENT;

Triggering condition: Equation 1:

 $M_{Other RAT} \ge T_{Other RAT} + H_{3c}/2$

The variables in the formula are defined as follows:

Mother RAT is the measurement quantity for the cell of the other system.

<u>*T*</u>_{Other RAT} is the absolute threshold that applies for the other system in that measurement.

<u> H_{3c} is the hysteresis parameter for event 3c.</u>

Leaving triggered state condition: Equation 2:

 $M_{Other RAT} < T_{Other RAT} - H_{3c}/2$

The variables in the formula are defined as follows:

<u>*M*</u>_{Other RAT} is the measurement quantity for the cell of the other system.

<u>**T**</u>_{Other RAT} is the absolute threshold that applies for the other system in that measurement.

 \underline{H}_{3c} is the hysteresis parameter for event 3c.

When this event is ordered by UTRAN in a measurement control message the UE shall send a report when the estimated quality of the other system is above the value of the IE " Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system.

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

When an inter-RAT measurement configuring event 3d is set up, the UE shall create a variable BEST_CELL_3D_EVENT related to that measurement. This variable shall be deleted when the measurement is released.

When event 3d is configured in the UE within a measurement, the UE shall:

- If the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
 - When the measurement is initiated or resumed:
 - <u>store in the variable BEST_CELL_3D_EVENT the Inter-RAT cell id of the GSM cell that</u> <u>has the best measured quantity among the GSM cells that match any of the BCCH ARFCN</u> and BSIC combinations considered in that inter-RAT measurement
 - send a measurement report with IE set as below:
 - in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cell that is stored in the variable BEST_CELL_3D_EVENT
 - "measured results" and possible "additional measured results" according to 8.4.2;
 - If equation 1 has been fulfilled during the time "time to trigger" for a GSM cell that is different from the one stored in BEST_CELL_3D_EVENT and that matches any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
 - store the Inter-RAT cell id of that GSM cell in the variable BEST_CELL_3D_EVENT;
 - send a measurement report with IEs set as below:
 - in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cell is now stored in BEST_CELL_3D_EVENT;
 - "measured results" and possible "additional measured results" according to 8.4.2;
 - If the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
 - When the measurement is initiated or resumed:
 - store in the variable BEST_CELL_3D_EVENT the BCCH ARFCN of the GSM cell that has the best measured quantity among the BCCH ARFCNs considered in that inter-RAT measurement
 - <u>send a measurement report with IE set as below:</u>
 - in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to the BCH ARFCN that is stored in the variable BEST_CELL_3D_EVENT;
 - "measured results" and possible "additional measured results" according to 8.4.2;

- <u>If equation 1 below has been fulfilled during the time "time to trigger" for one of the BCCH</u>
 <u>ARFCNs considered in that inter-RAT measurement and different from the one stored in</u>
 <u>BEST_CELL_3D_EVENT:</u>
 - store the BCCH ARFCN of that GSM cell in the variable BEST_CELL_3D_EVENT;
 - send a measurement report with IEs set as below:
 - in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to the BCCH ARFCN that is now stored in the variable BEST_CELL_3D_EVENT;
 - <u>"measured results" and possible "additional measured results" according to 8.4.2;</u>

Equation 1:

 $M_{New} \ge M_{Best} + H_{3d}/2$

The variables in the formula are defined as follows:

 $\underline{M}_{\underline{New}}$ is the measurement quantity for a GSM cell that is not stored in the variable <u>BEST_CELL_3D</u>.

 $\underline{M}_{\underline{Best}}$ is the measurement quantity for a GSM cell that is stored in the variable <u>BEST_CELL_3D.</u>

 \underline{H}_{3d} is the hysteresis parameter for event 3d.

If any of the quality estimates for the cells in the other system becomes better than the quality estimate for the currently best cell in the other system, and event 3d has been ordered by UTRAN then this event shall trigger a report to be sent from the UE when the hysteresis and time to trigger conditions is fulfilled. The corresponding report contains (at least) information the best cell in the other system.