

Agenda Item: 5
Source: Rapporteur (NTT DoCoMo)
Title: **Results from the RRC parameter ad-hoc group**
Document for: Status Report & Approval

1. Introduction

This contribution contains the results from the RRC Parameter ad-hoc group, which was created after the TSG RAN WG2 meeting #3. The discussion on the e-mail reflector has resulted in change requests to TS25.331, on those items where a conclusion was made.

The discussion in the RRC Parameter ad-hoc group was based on the contributions below. Since RRC Parameter ad-hoc group is closely related to RRC Procedures ad-hoc, all the RRC documents we discussed on the RAN WG2 reflector are listed.

- [1] TSGR2#3(99)247, Ericsson, "RRC messages for traffic volume measurement control and reporting"
- [2] TSGR2#3(99)250, Ericsson, "UE Measurement Concept for Intra-Frequency Measurement"
- [3] TSGR2#3(99)257, NTT DoCoMo, "Information Elements for Measurement control and reporting"
- [4] TSGR2#3(99)258, NTT DoCoMo, "Common Measurement Information"
- [5] TSGR2#3(99)259, NTT DoCoMo, "Measurement Type Dependent Information"
- [6] TSGR2#3(99)263, Nokia, "Intra-frequency Measurement Reporting Criteria"
- [7] TSGR2#3(99)215, Alcatel, "Change request to S2.31 to include a new procedure for Dynamic Resource Allocation Control of uplink DCH" (plus updates sent on the reflector)
- [8] TSGR2#3(99)227, Fujitsu, "Proposal for Cell/URA Update Procedure"
- [9] TSGR2#3(99)232, Nokia, "Procedure to release a dedicated physical channel"
- [10] TSGR2#3(99)233, Nokia, "Addition to RRC procedures related to UE capability"
- [11] TSGR2#3(99)234, Nokia, "RRC Status Procedure"
- [12] TSGR2#3(99)243, Siemens, "RRC Connection Establishment and Release for TDD"
- [13] TSGR2#3(99)244, Siemens, "Radio Access Bearer Establishment/Release for TDD"
- [14] TSGR2#3(99)248, Ericsson, "Procedures related to cell and URA update"
- [15] TSGR2#3(99)249, Ericsson, "RRC Messages for inter-system handover"
- [16] TSGR2#3(99)299, Samsung El, "RRC procedures for gated transmission of DPCH in control only substate".
- [17] TSGR2#3(99)313, Telia, "Intersystem cell reselection in the packet domain"

2. Status of documents

Based on the conclusion of the discussions we had on the reflector, the following table shows the list of change proposals by document basis to the existing TS25.331 on parameter level.

Ref		New message created	Added new parameters to the existing message	Modified or deleted existing parameters	Deleted existing message	No parameter issue raised
[1]	Traffic Measurement Measurement		O	O		
[2]	Intra-frequency Measurement		O	O		
[3]	Measurement Control & Reporting		O	O		
[4]	Common Measurement Information		O	O		
[5]	Measurement Type Dependent Info.		O	O		
[6]	Intra-frequency Measurement		O	O		
[7]	DRAC Control		O			
[8]	Cell/URA Update Procedure					O
[9]	RRC Connection Release		O			
	UE-terminated DCH Release					O
[10]	UE Capability Information	O				
	UE Capability Enquiry					O
[11]	Release one of several signalling connection	O				
	SRNC Relocation Indication		O			
[12]	RRC Conn Establishment and Rel for TDD					O
[13]	RAB Establishment and Release for TDD					O
[14]	Cell/URA Update Procedure	O	O		O	
[15]	Inter-system Handover	O	O			
[16]	Gated Transmission Control		O			
[17]	Inter-system Cell Selection in PS domain					O

3. Proposal

The proposal is that TS25.331 is updated according to the changes contained in chapter 4 of this contribution.

4. Proposed changes to TS25.331

In this chapter changes are proposed to TS25.331. References are made to those contributions that have been the basis for the proposals. Those references are not meant to be included into the specification.

10 Message and information element functional definition and content

The function of each Radio Resource Control message together with message contents as a list of Information elements is defined in subclause 10.1.

The functions of the Information elements are described in subclause 10.2.

Information elements are marked as either M- mandatory, O - Optional or C -conditional.

10.1 Radio Resource Control messages

10.1.1 RRC Connection Mobility Messages

10.1.1.1 ACTIVE SET UPDATE

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN → UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
UE information elements	Activation time		O	
Phy CH information elements	Primary CCPCH info		M	Note 1
	Downlink DPCH info		M	
				For each radio link to add
	Primary CCPCH info		M	Note 1
				For each radio link to delete
	SSDT indicator		O	

Note 1: If it is assumed that primary CCPCH downlink scrambling code is always allocated with sufficient reuse distances, primary CCPCH downlink scrambling code will be enough for designating the different radiolinks.

10.1.1.2 ACTIVE SET UPDATE COMPLETE

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE → UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
Phy CH information elements	SSDT indicator		O	

10.1.1.3 CELL UPDATE

REFERENCE [1],[2],[3],[4],[5],[6]&[14]

~~<Functional description of this message to be included here>~~ This message is used by the UE to initiate a cell update procedure.

RLC-SAP: t.b.d.
 Logical channel: t.b.d.
 Direction: UE→UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
UE information elements	S-RNTI		M	FFS whether in RRC or MAC PDU.
	SRNC identity		M	
	<u>Cell update cause</u>		<u>M</u>	
Measurement information elements	Measurement identity number			Intra-frequency measurement <u>related</u> report (necessity is FFS)
	<u>Measurement results</u>			

10.1.1.4 CELL UPDATE CONFIRM

REFERENCE [11]&[14]

~~<Functional description of this message to be included here>~~ 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: t.b.d.
 Logical channel: t.b.d.
 Direction: UTRAN→UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
UE information elements	S-RNTI		M	FFS whether in RRC or MAC PDU.
	SRNC identity		M	
	S-RNTI		O	New S-RNTI
	SRNC identity		O	New SRNC identity
	C-RNTI		O	New C-RNTI
<u>UTRAN mobility information elements</u>	<u>URA update indicator</u>		<u>O</u>	<u>When present, it instructs UE to make URA updating</u>
<u>CN information elements</u>	<u>PLMN identity</u>		<u>O</u>	<u>(Note1)</u>
	<u>CN domain identity</u>		<u>O</u>	<u>For each CN domain (Note1)</u>
	<u>NAS system info</u>		<u>O</u>	<u>For each CN domain (Note1)</u>

[Note1: It depends on the length of these information whether this message can be used to notify these information to UE.]

10.1.1.5 CELL UPDATE COMPLETE

REFERENCE [14]

The existence of this message is FFS.

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE→UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	

10.1.1.6-5 HANDOVER COMMAND

REFERENCE [16]

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN → UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
Phy CH information elements	Frequency info		M	
	UL DPCH power control info		M	
	UL DPCH info		M	Uplink radio resources
	UL timeslot info		O	
	Primary CCPCH info		M	For each radio link. Note1
DL DPCH info		M	Downlink radio resources	
DL timeslot info		O		Note 2
SSDT indicator			O	

Note1: The possibility to request the establishment of several radio links simultaneously with this message is FFS.

Note 2: It is assumed that the DL timeslot configuration is the same for all radio links, whether or not macro-diversity is supported for TDD.

10.1.1.7-6 HANDOVER COMPLETE

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE → UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
Phy CH information elements	SSDT indicator		O	

10.1.1.8 7 INTER-SYSTEM HANDOVER COMMAND

REFERENCE [15]

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

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN→UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
<u>UE information elements</u>	<u>Activation time</u>		<u>O</u>	
<u>Other information elements</u>	<u>Inter-System message</u>		<u>M</u>	

10.1.1.8 INTER-SYSTEM HANDOVER FAILURE

REFERENCE [15]

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

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE→UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	<u>Message Type</u>		<u>M</u>	
<u>UE information elements</u>	<u>Inter-System handover failure cause</u>		<u>O</u>	<u>FFS</u>
<u>Other Information elements</u>	<u>Inter-System message</u>		<u>O</u>	

10.1.1.9 URA UPDATE

REFERENCE [14]

~~<Functional description of this message to be included here>~~ This message is used by the UE to initiate a URA update procedure.

RLC-SAP: t.b.d.
 Logical channel: t.b.d.
 Direction: UE→UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
UE information elements	S-RNTI		M	FFS whether in RRC or MAC PDU.
	SRNC identity		M	
	<u>URA update cause</u>		<u>M</u>	

10.1.1.10 URA UPDATE CONFIRM

REFERENCE [11]&[14]

~~<Functional description of this message to be included here>~~ 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: t.b.d.
 Logical channel: t.b.d.
 Direction: UTRAN→UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
UE information elements	S-RNTI		M	FFS whether in RRC or MAC PDU.
	SRNC identity		M	
	S-RNTI		O	New S-RNTI
	SRNC identity		O	New SRNC identity
	<u>C-RNTI</u>		<u>O</u>	<u>New C-RNTI</u>
CN information elements	<u>PLMN identity</u>		<u>O</u>	<u>(Note1)</u>
	<u>CN domain identity</u>		<u>O</u>	<u>For each CN domain (Note1)</u>
	<u>NAS system info</u>		<u>O</u>	<u>For each CN domain (Note1)</u>

[Note1: It depends on the length of these information whether this message can be used to notify these information to UE.]

10.1.1.11 URA UPDATE COMPLETE

REFERENCE [14]

~~The existence of this message is FFS.~~
~~<Functional description of this message to be included here>~~
 RLC-SAP: t.b.d.
 Logical channel: t.b.d.
 Direction: UE→UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	

10.1.1.11 RNTI REALLOCATION

REFERENCE [11]&[14]

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: t.b.d.

Direction: UTRAN→UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
UE information elements	S-RNTI		O	FFS whether in RRC or MAC PDU.
	SRNC identity		O	
	S-RNTI		O	New S-RNTI
	SRNC identity		O	New SRNC identity
	C-RNTI		O	New C-RNTI
CN information elements	PLMN identity		O	(Note1)
	CN domain identity		O	For each CN domain (Note1)
	NAS system info		O	For each CN domain (Note1)

[Note1: It depends on the length of these information whether this message can be used to notify these information to UE.]

10.1.1.12 RNTI REALLOCATION COMPLETE

REFERENCE [14]

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

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE→UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
UE information elements	S-RNTI		O	New S-RNTI Necessity is FFS
	SRNC identity		O	New SRNC identity Necessity is FFS

10.1.2 Measurement Messages

10.1.2.1 MEASUREMENT CONTROL

REFERENCE [1],[2],[3],[4],[5],&[6]

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN→UE

Information element category	Information elements	REFERENCE	TYPE	NOTE	
	Message Type		M		
Measurement Information elements	Measurement Identity Number		M		
	Measurement Command		M		
	Measurement Type		O		
	<u>Measurement Reporting Mode</u>		<u>O</u>		
	<u>Measurement Object</u>	Intra-frequency cell info		C	If Measurement Type = Intra frequency measurement
		Inter-frequency cell info		C	If Measurement Type = Inter frequency measurement
		Inter-system cell info		C	If Measurement Type = Inter system measurement
		<u>Traffic volume measurement object</u>		<u>C</u>	<u>If Measurement Type = Traffic volume measurement</u>
		<u>Quality measurement object</u>		<u>C</u>	<u>If Measurement Type = Quality measurement</u>
	<u>Measurement Quantity (Note1)</u>	Intra-frequency measurement quantity		C	If Measurement Type = Intra frequency measurement
		Inter-frequency measurement quantity		C	If Measurement Type = Inter frequency measurement
		Inter-system measurement quantity		C	If Measurement Type = Inter system measurement
		<u>Traffic volume measurement quantity</u>		<u>C</u>	<u>If Measurement Type = Traffic volume measurement</u>
		<u>Quality measurement quantity</u>		<u>C</u>	<u>If Measurement Type = Quality measurement</u>
	<u>Reporting quantities (Note2)</u>	<u>Intra-frequency measurement reporting quantity</u>		<u>O</u>	<u>If Measurement Type = Intra frequency measurement</u>
		<u>Inter-frequency measurement reporting quantity</u>		<u>O</u>	<u>If Measurement Type = Inter frequency measurement</u>
		<u>Inter-system measurement reporting quantity</u>		<u>O</u>	<u>If Measurement Type = Inter system measurement</u>
		<u>Traffic volume measurement reporting quantity</u>		<u>O</u>	<u>If Measurement Type = Traffic volume measurement</u>
		<u>Quality measurement reporting quantity</u>		<u>O</u>	<u>If Measurement Type = Quality measurement</u>
	<u>Measurement Reporting Criteria (Note3)</u>	Intra-frequency measurement reporting criteria		C	If Measurement Type = Intra frequency measurement
		Inter-frequency measurement reporting criteria		C	If Measurement Type = Inter frequency measurement
		Inter-system measurement reporting criteria		C	If Measurement Type = Inter system measurement
		<u>Traffic volume measurement reporting quantity</u>		<u>C</u>	<u>If Measurement Type = Traffic volume measurement</u>

		<u>Quality measurement reporting quantity</u>		<u>C</u>	<u>If Measurement Type = Quality measurement</u>
		<u>Periodical reporting criteria</u>		<u>C</u>	

Note 1: Necessary only in event trigger reporting mode.

Note 2: It is FFS whether it is necessary to separate the reporting quality for each type.

Note 3: Periodical reporting criteria is used only in periodical reporting mode and others are used in event trigger mode.

10.1.2.2 MEASUREMENT REPORT

REFERENCE [1],[2],[3],[4],[5],&[6]

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE→UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE	
	Message Type		M		
Measurement Information elements	Measurement Identity Number		M	For each meas.rep. in this message (Note 1)	
	<u>Event Result</u>	<u>Intra-frequency measurement event results</u>	<u>C</u>		<u>Necessary only in event trigger reporting mode (Note 2)</u>
		<u>Inter-frequency measurement event results</u>	<u>C</u>		
		<u>Inter-system measurement event results</u>	<u>C</u>		
		<u>Traffic volume measurement event results</u>	<u>C</u>		
		<u>Quality measurement event results</u>	<u>C</u>		
		<u>Optional measurement results Measured Results</u>		<u>O</u>	<u>Necessary only when indicated optionally by Reporting Quantity in Measurement Control</u>
		<u>Intra-frequency measurement results</u>		<u>G</u>	<u>For intra-frequency measurements</u>
		<u>Inter-frequency measurement results</u>		<u>C</u>	<u>For inter-frequency measurements</u>
		<u>Inter-system measurement results</u>		<u>G</u>	<u>For inter-system measurements</u>

Note 1: If it is possible to send many measurement results that are identified by different measurement identity numbers in the same Measurement Report is FFS. An alternative solution is to admit only one measurement identity number per Measurement Report and concatenate different Measurement Reports in the RLC layer instead.

Note 2: If it is possible to send many measurement results that are identified by different events in the same Measurement Report is FFS.

10.1.3 Paging and Notification Messages

10.1.3.1 NOTIFICATION

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: PCCH

Direction: UTRAN → UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	

10.1.3.2 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: t.b.d.

Logical channel: PCCH

Direction: UTRAN → UE

Information element Category	RRC Information element	REFERENCE	TYPE	NOTE
	Message Type		M	
UE Information elements	Paging record		M	One paging record for each UE to be paged.
Other information elements	BCCH modification info		O	FFS

10.1.3.3 PAGING TYPE 2

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

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN → UE

Information element Category	RRC Information element	REFERENCE	TYPE	NOTE
	Message Type		M	
UE Information elements	CN domain identity		M	
	Paging cause		M	

10.1.3.4 PAGING RESPONSE

REFERENCE [14]

<Functional description of this message to be included here> This message is used by the UE as response to a UTRAN originated paging.

RLC-SAP: t.b.d.

Logical channel: t.b.d. DCCH

Direction: UE → UTRAN

Information element Category	RRC Information element	REFERENCE	TYPE	NOTE
	Message Type		M	
UE information elements	S-RNTI		M	FFS whether in RRC or MAC PDU.
	SRNC identity		M	

10.1.4 RRC Connection Establishment and maintenance messages

10.1.4.1 RRC CONNECTION RE-ESTABLISHMENT

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: t.b.d.

Direction: UTRAN → UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	

10.1.4.2 RRC CONNECTION RE-ESTABLISHMENT COMPLETE

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE → UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	

10.1.4.3 RRC CONNECTION RE-ESTABLISHMENT REQUEST

REFERENCE [1],[2],[3],[4],[5],&[6]

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: t.b.d.

Direction: UE → UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE	
	Message Type		M		
UE information elements	S-RNTI		M	FFS whether conveyed on RRC or MAC.	
	SRNC identity		M		
Measurement information elements	Measurement identity number		M	Refers to system information. Note 1 For each measurement report	
	Intra-frequency measurement Measured results		CM		For intra-frequency measurements

Note 1: The necessity and usage of Measurement identity number in this message is FFS.

10.1.4.4 RRC CONNECTION RELEASE

REFERENCE [9]

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN→UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
UE information elements	Release cause		M	
	<u>Number of Quick Repeat</u>		<u>M</u>	

10.1.4.5 RRC CONNECTION RELEASE COMPLETE

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE → UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	

10.1.4.6 RRC CONNECTION REQUEST

REFERENCE [1],[2],[3],[4],[5],&[6]

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

RLC-SAP: t.b.d.

Logical channel: CCCH

Direction: UE → UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
UE information elements	Initial UE identity		M	FFS whether conveyed on RRC or MAC.
	Establishment cause		M	
	Initial UE capability		O	Necessity is FFS
Measurement information elements	Measurement identity number		M	Refers to system information. Note 1
	Intra-frequency measurement Measured results		CM	For intra-frequency measurements
				For each measurement report

Note 1: The necessity and usage of Measurement identity number in this message is FFS.

10.1.4.7 RRC CONNECTION SETUP

REFERENCE [16]

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: t.b.d.

Logical channel: CCCH

Direction: UTRAN → UE

Information element category	Information elements	REFERENCE	TYPE	NOTE	
	Message Type		M		
UE information elements	Initial UE identity		M	FFS whether conveyed on RRC or MAC.	
	S-RNTI		M		
	SRNC identity		M		
	C-RNTI		O	Only if assigned to a common transport channel	
	Activation time		O		
RAB information elements	RAB identity		M	Indicates the signalling link	
	Signalling link type		M		
	RAB multiplexing info		M	For the signalling link	
TrCH information elements	TFCS		O	Uplink TFCS	
	TFCS		O	Downlink TFCS	
	TFC subset		O		
	Transport channel identity		M	For each new transport channel	Uplink transport channels
	TFS		M		
	Transport channel identity		M	For each new transport channel	Downlink transport channels
	TFS		M		
PhyCH information elements	Frequency info		O		
	Uplink DPCH power control info		O		
	Uplink DPCH info		O	Maximum one of these	Uplink radio resources
	PRACH info		O		
	Uplink timeslot info		O		
	Primary CCPCH info		O	For each radio link	Downlink radio resources
	Downlink DPCH info		O		
	Secondary CCPCH info		O		
	Downlink timeslot info		O	Note 1	
	SSDT indicator		O	Necessity is FFS	
	<u>Gated Transmission Control info</u>		<u>O</u>	<u>FFS</u>	

Note 1: It is assumed that the DL timeslot configuration is the same for all radio links, whether or not macro-diversity is supported for TDD.

10.1.4.8 RRC CONNECTION REJECT

This message is transmitted by the network when the requested RRC connection cannot be accepted.

RLC-SAP: t.b.d.

Logical channel: CCCH

Direction: UTRAN → UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
UE information elements	Initial UE identity		M	FFS whether conveyed on RRC or MAC.
	Rejection cause		M	
	Wait time		O	

10.1.4.9 RRC STATUS

REFERENCE [11]

This message is transmitted by the network when the network requests UE to release one of several signalling connections.

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN → UE

<u>Information element category</u>	<u>Information elements</u>	<u>REFERENCE</u>	<u>TYPE</u>	<u>NOTE</u>
	<u>Message Type</u>		<u>M</u>	
<u>CN information elements</u>	<u>CN domain identity</u>		<u>M</u>	

10.1.4.10 RRC STATUS ACK

REFERENCE [11]

This message is transmitted by UE as an acknowledgement for RRC STATUS message.

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE → UTRAN

<u>Information element category</u>	<u>Information elements</u>	<u>REFERENCE</u>	<u>TYPE</u>	<u>NOTE</u>
	<u>Message Type</u>		<u>M</u>	

10.1.5 Radio Access Bearer control messages

10.1.5.1 PHYSICAL CHANNEL RECONFIGURATION

REFERENCE [14]&[16]

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

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN → UE

Information element category	Information elements	REFERENCE	TYPE	NOTE	
	Message Type		M		
UE Information elements	Activation time		O		
	C-RNTI		O	Only RACH/FACH	
<u>UTRAN mobility Information elements</u>	<u>URA update indicator</u>		<u>O</u>	<u>When PCH shall be used, and when present, it instructs the UE to make URA updating</u>	
PhyCH information elements	Uplink DPCH power control info		O		
	Frequency info		O		
	Uplink DPCH info		O	Maximum one of these	
	PRACH info		O		
	Uplink time slot info		O		
	Primary CCPCH info		O	For each radio link	
	Downlink DPCH info		O		
	Secondary CCPCH info		O		For FACH
	<u>Secondary CCPCH info</u>		<u>O</u>		
	Downlink timeslot info		O		Note 1
	SSDT indicator		O	Necessity is FFS	
	<u>Gated Transmission Control info</u>		<u>O</u>	<u>FFS</u>	

Note 1: It is assumed that the DL timeslot configuration is the same for all radio links, whether or not macro-diversity is supported for TDD.

10.1.5.2 PHYSICAL CHANNEL RECONFIGURATION COMPLETE

This message is sent from the UE when a physical channel reconfiguration has been done.
 RLC-SAP: t.b.d.
 Logical channel: DCCH
 Direction: UE → UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
Phy CH information elements	SSDT indicator		O	<u>Necessity is FFS</u>

10.1.5.3 RADIO ACCESS BEARER RECONFIGURATION

REFERENCE [7]&[16]

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: t.b.d.
 Logical channel: DCCH
 Direction: UTRAN → UE

Information element category	Information elements	REFERENCE	TYPE	NOTE	
	Message Type		M		
UE Information elements	Activation time		O		
	C-RNTI			Only RACH/FACH	
RAB information elements	RAB identity		M		For each RAB affected by this message
	RLC info		O	FFS	
	RAB multiplexing info		M		
TrCH information elements	TFCS		O	for uplink DCHs	
	TFCS		O	for downlink DCHs	
	TFC subset		O	for DCHs in uplink	
	Transport channel identity		O	For each removed transport channel	Uplink transport channels
	Transport channel identity		O	For each reconfigured or added transport channel	
	TFS		O		
	<u>Dynamic Control</u>		<u>O</u>	For each reconfigured or added transport channel controlled by DRAC	
	<u>Transmission time validity</u>		<u>O</u>		
	<u>Time duration before retry</u>		<u>O</u>		
	<u>Silent period duration before release</u>		<u>O</u>		
	Transport channel identity		O	For each removed transport channel	Downlink transport channels
	Transport channel identity		O	For each reconfigured or added transport channel	
	TFS		O		
PhyCH information elements	Uplink DPCH power control info		O		
	Frequency info		O		
	Uplink DPCH info		O	Maximum one of these	Uplink radio resources
	PRACH info		O		
	Uplink timeslot info		O		
	Primary CCPCH info		O	For each radio link	Downlink radio resources
	Downlink DPCH info		O		
	Secondary CCPCH info		O		
	Downlink timeslot info		O	Note 1	
	SSDT indicator		O	Necessity is FFS	
	<u>Gated Transmission Control info</u>		<u>O</u>	<u>FFS</u>	

Note 1: It is assumed that the DL timeslot configuration is the same for all radio links, whether or not macro-diversity is supported for TDD.

10.1.5.4 RADIO ACCESS BEARER RECONFIGURATION COMPLETE

This message is sent from the UE when a RAB and signalling link reconfiguration has been done.
RLC-SAP: t.b.d.
Logical channel: DCCH
Direction: UE → UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
RAB information elements	RAB identity		M	For each reconfigured RAB
TrCH information elements	Transport channel identity		O	For each removed, reconfigured or added transport channel
Phy CH information elements	SSDT indicator		O	Necessity is FFS

10.1.5.5 RADIO ACCESS BEARER RELEASE

REFERENCE [7]

<Functional description of this message to be included here>
RLC-SAP: t.b.d.
Logical channel: DCCH
Direction: UTRAN → UE

Information element category	Information elements	REFERENCE	TYPE	NOTE	
	Message Type		M		
UE Information elements	Activation time		O		
	C-RNTI		O	Only RACH/FACH	
RAB information elements	RAB identity		M	For each released RAB	
	RAB identity		O	For each other RAB affected by this message	
	RAB multiplexing info		O		
TrCH information elements	TFCS		O	for uplink DCHs	
	TFCS		O	for downlink DCHs	
	TFC subset		O	for DCHs in uplink	
	Transport channel identity		O	For each removed transport channel	Uplink transport channels
	Transport channel identity		O	For each reconfigured or added (FFS) transport channel	
	TFS		O		
	<u>Dynamic Control</u>		O	For each reconfigured or added (FFS) transport channel, controlled by DRAC	
	<u>Transmission time validity</u>		O		
	<u>Time duration before retry</u>		O		
	<u>Silent period duration before release</u>		O		
	Transport channel identity		O	For each removed transport channel	Downlink transport channels
	Transport channel identity		O	For each reconfigured or added transport channel	
	TFS		O		
PhyCH information elements	Uplink DPCH power control info		O		
	Frequency info		O		
	Uplink DPCH info		O	Maximum one of these	Uplink radio resources
	PRACH info		O		
	Uplink timeslot info		O		
	Primary CCPCH info		O	For each radio link	Downlink radio resources
	Downlink DPCH info		O		
	Secondary CCPCH info		O		
	Downlink timeslot info		O		

Note 1: It is assumed that the DL timeslot configuration is the same for all radio links, whether or not macro-diversity is supported for TDD.

10.1.5.6 RADIO ACCESS BEARER RELEASE COMPLETE

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE → UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
RAB information elements	RAB identity		M	For each released RAB
TrCH information elements	Transport channel identity		O	For each removed, reconfigured or added transport channel

10.1.5.7 RADIO ACCESS BEARER SETUP

REFERENCE [7]&[16]

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN → UE

Information element category	Information elements	REFERENCE	TYPE	NOTE	
	Message Type		M		
CN information elements	NAS binding info		M	Transparent non access stratum info e.g. bearer identity.	
UE Information elements	Activation time		O		
	C-RNTI		O	Only RACH/FACH	
RAB information elements	RAB identity		M	For the new RAB	
	RLC info		M		
	RAB multiplexing info		M		
	RAB identity		O	For each other RAB affected by this message	
	RAB multiplexing info		O		
TrCH information elements	TFCS		O	for uplink DCHs	
	TFCS		O	for downlink DCHs	
	TFC subset		O	for DCHs in uplink	
	Transport channel identity		O	For each removed transport channel	Uplink transport channels
	Transport channel identity		O	For each reconfigured or added transport channel	
	TFS		O		
	<u>Dynamic Control</u>		<u>O</u>	<u>For each reconfigured or added transport channel, controlled by DRAC</u>	
	<u>Transmission time validity</u>		<u>O</u>		
	<u>Time duration before retry</u>		<u>O</u>		
	<u>Silent period duration before release</u>		<u>O</u>		
	Transport channel identity		O	For each removed (FFS) transport channel	Downlink transport channels
	Transport channel identity		O	For each reconfigured or added transport channel	
	TFS		O		
PhyCH information elements	Uplink DPCH power control info		O		
	Frequency info		O		
	Uplink DPCH info		O	Maximum one of these	Uplink radio resources
	PRACH info		O		
	Uplink timeslot info		O		
	Primary CCPCH info		O	For each radio link	Downlink radio resources
	Downlink DPCH info		O		
	Secondary CCPCH info		O		
	Downlink timeslot info		O	Note 1	
	SSDT indicator		O	Necessity is FFS	
	<u>Gated Transmission Control info</u>		<u>O</u>	<u>FFS</u>	

Note 1: It is assumed that the DL timeslot configuration is the same for all radio links, whether or not macro-diversity is supported for TDD.

10.1.5.8 RADIO ACCESS BEARER SETUP COMPLETE

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE → UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
RAB information elements	RAB identity		M	For each new RAB
TrCH information elements	Transport channel identity		O	For each removed, reconfigured or added transport channel
Phy CH information elements	SSDT indicator		O	<u>Necessity is FFS</u>

10.1.5.9 TRANSPORT CHANNEL RECONFIGURATION

REFERENCE [7]& [16]

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: t.b.d.

Logical channel: DCCH

Direction: UTRAN → UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
UE Information elements	Activation time		O	
	C-RNTI		O	Only RACH/FACH
	Control-only-state-timer		O	FFS
TrCH information elements	TFCS		O	for uplink DCHs
	TFCS		O	for downlink DCHs
	TFC subset		O	for DCHs in uplink
	Transport channel identity		O	For each reconfigured transport channel
	TFS		O	
	<u>Dynamic Control</u>		O	
	<u>Transmission time validity</u>		O	
	<u>Time duration before retry</u>		O	
	<u>Silent period duration before release</u>		O	For each reconfigured transport channel, controlled by DRAC
	Transport channel identity		O	For each reconfigured transport channel
	TFS		O	
PhyCH information elements	Uplink DPCH power control info		O	
	Frequency info		O	
	Uplink DPCH info		O	Maximum one of these
	PRACH info		O	
	Uplink timeslot info		O	
	Primary CCPCH info		O	For each radio link
	Downlink DPCH info		O	
	Secondary CCPCH info		O	
	Downlink timeslot info		O	
	SSDT indicator		O	Necessity is FFS
	<u>Gated Transmission Control info</u>		O	FFS

Note 1: It is assumed that the DL timeslot configuration is the same for all radio links, whether or not macro-diversity is supported for TDD.

10.1.5.10 TRANSPORT CHANNEL RECONFIGURATION COMPLETE

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

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE → UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
TrCH information elements	Transport channel identity		M	For each reconfigured transport channel
Phy CH information elements	SSDT indicator		O	<u>Necessity is FFS</u>

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

10.1.5.11 TRANSPORT FORMAT COMBINATION CONTROL

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN→UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
TrCH information elements	TFC subset		M	for DCHs in UL

10.1.6 System Information Messages

10.1.6.1 SYSTEM INFORMATION

REFERENCE [7]

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: BCCH or DCCH or CCCH

Direction: UTRAN → UE

NOTE: The division of the system information into messages is FFS.

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
CN information elements	PLMN Identity		M	
	CN domain identity		M	For each Core Network Domain. Information must be included for at least one core network domain type.
	NAS system information		M	
UTRAN mobility information elements	URA identity		M	For each URA
	Information for periodic cell and URA update		M	<i>Note: not for each URA any more</i>
	Cell identity		M	The necessity and usage of cell identity is FFS.
	Cell selection and re-selection info		M	
UE information elements	Uplink access control info		M	
	<u>Transmission probability</u>		<u>M</u>	For all UE having DCH controlled by DRAC procedure For each class of UE <u>Note2</u>
	<u>Maximum bit rate</u>		<u>M</u>	
PhyCH information elements	Frequency info		O	For each RACH
	PRACH info		M	
	Frequency info		O	For each FACH on secondary CCPCH
	Secondary CCPCH info		M	
	Frequency info		O	For each PCH on secondary CCPCH
	Secondary CCPCH info		M	
	PRACH power control info		M	

Measurement Information elements	Measurement Identity Number		M	Note 1	For each Intra-frequency measurement control	
	Intra-frequency cell info		M	For each measurement object		
	Intra-frequency measurement quantity		M			
	Intra-frequency measurement reporting criteria		M			
	Measurement Identity Number		M	Note 1		
	Inter-frequency cell info		M	For each measurement object		
		Inter-frequency measurement quantity		M		For each Inter-frequency measurement control
		Inter-frequency measurement reporting criteria		M		
		Measurement Identity Number		M	Note 1	
		Inter-system cell info		M	For each measurement object	
		Inter-system measurement quantity		M		
		Inter-system measurement reporting criteria		M		
	Measurement Identity Number		M	Note 1	For each Inter-system measurement control	
	Inter-system cell info		M	For each measurement object		
	Inter-system measurement quantity		M			
	Inter-system measurement reporting criteria		M			

Note 1: The necessity and usage of Measurement identity number in this message is FFS.

Note 2: The split of parameters into several System Information message X is FFS.

10.1.7 Other Messages

10.1.7.1 UE CAPABILITY INFORMATION

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UE → UTRAN

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
UE information elements	Power control capability		M	
	Code resource capability		M	
	UE mode capability		M	
	Transport CH support capability		O	
	Ciphering capability		M	
	Macro diversity capability		M	

Note: The WG1 and WG4 discussion should be concluded before the contents of this message can be finalized.

10.1.7.2 UE CAPABILITY INFORMATION CONFIRM

REFERENCE [10]

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN → UE

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	

10.1.7.2-3 DIRECT TRANSFER

<Functional description of this message to be included here>

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: both

Information element category	Information elements	REFERENCE	TYPE	NOTE
	Message Type		M	
CN information elements	CN domain identity		M	
	NAS message		M	

10.2 Information element functional definitions

10.2.1 CN Information elements

10.2.1.1 CN domain identity

Points out the core network domain (e.g. IP or PSTN/ISDN CN domain).

10.2.1.2 NAS binding info

A field with non-access stratum information to bind a RAB to the non-access stratum. This information is transparent to RRC.

10.2.1.3 NAS message

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

10.2.1.4 NAS system information

System information that belongs to the non-access stratum (e.g. LAC, RA code etc). This information is transparent to RRC.

10.2.1.5 PLMN identity

Parameters	REFERENCE	TYPE	NOTE
MCC, Mobile Country Code		M	
MNC, Mobile Network Code		M	

10.2.2 UTRAN mobility Information elements

10.2.2.1 Cell identity

Identity of a cell within a PLMN.

Note: The necessity and usage of this information element is FFS.

10.2.2.2 Cell selection and re-selection info

Parameters	REFERENCE	TYPE	NOTE
Standby allowed reception level (dBm)		M	The usage of these parameters needs clarification FFS.
Standby prohibited reception level (dBm)		M	
Threshold for Cell Re-selection (dB)		M	
Allowed reception SIR (dB)		M	
Radio link timeout			

10.2.2.3 Information for periodic cell and URA update

FFS.

10.2.2.4 URA identity

Identity of the UTRAN Registration Area.

10.2.2.5 URA update indicator

REFERENCE [14]

When present in a message, it instructs the UE to start to update its location on URA level.

10.2.3 UE Information elements

10.2.3.1 Uplink access control info

Parameters	REFERENCE	TYPE	NOTE
Access class		M	FFS
Dynamic persistence level		M	FFS

10.2.3.2 C-RNTI

The controlling RNC RNTI identifies an UE having a RRC connection within an controlling RNC.

10.2.3.3 S-RNTI

The serving RNC RNTI is allocated to an UE having a RRC connection and identifies the UE within its serving RNC.

10.2.3.4 SRNC identity

Identifies the serving RNC for an UE having an RRC connection.

10.2.3.5 Initial UE identity

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

Parameters	REFERENCE	TYPE	NOTE
Random UE identity		O	A random number allocated by the UE.
IMSI		O	International Mobile Subscriber Identity
TMSI		O	Temporary Mobile Subscriber Identity
P-TMSI		O	Packet Temporary Mobile Subscriber Identity
			One of these two options is used. If both or only one if them is permitted is FFS.
			One of these formats is used

Editor's note: In case of TMSI, a Location Area Code (LAC) and PLMN id, would be needed as addition, to make the UE identity unique. The addition of Routing Area Code (RAC) and PLMN id, is also proposed for P-TMSI.

10.2.3.6 Activation time

Activation Time defines the frame number (or offset to some known frame number) in which the operation/changes caused by the related message should be executed.

Current assumption is that a connection based CFN (Connection Frame Number) that is known by MS and SRNC could be used.

10.2.3.7 Wait time

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

10.2.3.8 Control-only-state timer

This IE indicates for how long the UE shall stay in the control-only-state. *Editors note: the exact usage of this IE needs some clarification.*

10.2.3.9 Paging record

Parameters	REFERENCE	TYPE	NOTE
Paging originator		M	UTRAN/CN
Paging cause		C	For CN originated pages
CN domain identity			
IMSI		O	International Mobile Subscriber Identity
TMSI		O	Temporary Mobile Subscriber Identity
P-TMSI		O	Packet Temporary Mobile Subscriber Identity
S-RNTI		O	For connected mode pages
SRNC identity			
			One of these formats is used
			For idle mode pages

10.2.3.10 Establishment cause

Cause for an RRC connection establishment request (originating call, emergency call, paging response, location update request, forward inter-system handover etc).

10.2.3.11 Release cause

Cause for release of RRC connection.

10.2.3.12 Rejection cause

Cause for rejection of RRC connection establishment request.

10.2.3.13 Paging cause

Cause for a CN originated page. *Editors note: The usage of this IE needs further clarification.*

10.2.3.14 Initial UE capability

This is the UE capability information given in the RRC connection request message. The exact type of information is FFS.

10.2.3.15 Power control capability

Parameters	REFERENCE	TYPE	NOTE
Transmission power capability		M	

Note: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalized.

10.2.3.16 Code resource capability

Parameters	REFERENCE	TYPE	NOTE
DL multi-code capability			
UL multi-code capability			
DL Spreading factor capability			
UL Spreading factor capability			

Note: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalized.

10.2.3.17 UE mode capability

Parameters	REFERENCE	TYPE	NOTE
System capability (UMTS/GSM/others)			
UMTS capability (TDD/FDD)			
Chip rate capability			
Radio Frequency capability			
Variable duplex distance capability			

Note: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalized.

10.2.3.18 Transport channel support capability

Parameters	REFERENCE	TYPE	NOTE
Maximum number of DCHs			
Support for Transport CH			

Note: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalized.

10.2.3.19 Cipherring capability

Parameters	REFERENCE	TYPE	NOTE
Cipherring Algorithm capability		M	

Note: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalized.

10.2.3.20 Macro diversity capability

Parameters	REFERENCE	TYPE	NOTE
Maximum number of RLs		M	

Note: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalized.

10.2.3.21 Cell update cause

REFERENCE [14]

Indicates the cause for s cell update. Examples of causes are cell reselection and periodic cell update.

10.2.3.22 URA update cause

REFERENCE [14]

Indicates the cause for s URA update. Examples of causes are change of URA and periodic URA update.

10.2.3.23 Number of Quick Repeat

REFERENCE [9]

Indicates the number of quick repeat for RRC Connection Release Complete message.

10.2.3.24 Inter-system handover failure cause

REFERENCE [15]

The purpose of this IE is to provide a reason for the failure of the Inter-system handover.

10.2.3.25 Transmission probability

REFERENCE [7]

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

10.2.3.26 Maximum bit rate

REFERENCE [7]

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

10.2.4 Radio Access Bearer Information elements

10.2.4.1 RAB identity

An identification number for the RAB affected by a certain message.

10.2.4.2 RLC info

Parameters	REFERENCE	TYPE	NOTE	
RLC mode		M	Indicates if the RLC entity for a certain RAB should use Acknowledged, Non Acknowledged or Transparent mode data transfer. <i>[Note: It is FFS if this parameter always is the same in both UL and DL.]</i>	Uplink RLC info
RLC in-sequence delivery		O	Indication if RLC should preserve the order of higher layer PDUs that were transmitted through RLC. <i>[Note: It is FFS if this parameter always is the same in both UL and DL.]</i>	
RLC PDU size		C	Size of RLC Protocol Data Units. See Note 1	
RLC transmission window size		O	A flow control parameter used to set the maximum number of RLC PDUs sent without getting them acknowledged	
RLC retransmission info		M	This could be the number of attempts to retransmit a RLC PDU before it is discarded, or different timer values.	
RLC mode		M		Downlink RLC info
RLC in-sequence delivery		O		
RLC PDU Size		M	Note 1	
RLC transmission window size		O		
RLC retransmission info		O	<i>Is this needed to send to the UE for downlink?</i>	

Note1: RLC PDU size may be derived from transport block size and not explicitly transferred across the radio interface.

10.2.4.3 Signalling link type

The purpose of the Signalling Link Type information element is to indicate the RLC parameters needed for the signalling link.

Each possible value of Signalling Link Type information element refers to a predefined set of parameters. Details FFS.

10.2.4.4 RAB multiplexing info

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

Parameters	REFERENCE	TYPE	NOTE		
Transport channel identity		O	This is the ID of a transport channel that this RAB could be mapped onto.	Uplink multi-plexing	For each multi-plexing option
Logical channel identity		O	This parameter is used to distinguish logical channels multiplexed by MAC on a transport channel.		
MAC logical channel priority		O	This includes both priority between different users traffic when using a common or shared channel, and between different RABs (or logical channels) traffic for a certain user. Different priorities for one users' RABs are mapped (through the MAC's T and C/T MUXes) to the TFC selection algorithm. <i>[Note: Usage and precise meaning of this is FFS.]</i>		
Transport channel identity		O		Downlink multi-plexing	
Logical channel identity		O			

Note: The necessity of dividing RAB multiplexing into in uplink and downlink is FFS.

10.2.5 Transport CH Information elements

10.2.5.1 Transport Format Combination Set

Indicates the allowed combinations of already defined Transport formats.

10.2.5.2 Transport Format Combination Subset

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

10.2.5.3 Transport channel identity

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

10.2.5.4 Transport Format Set (TFS)

Parameters	REFERENCE	TYPE	NOTE
Transport block size(s)			(dynamic)
Transport Block Set Size(s)			(dynamic)
Transmission time interval			(semi-static)
Type of channel coding			(semi-static)
Rate matching			(semi-static)

10.2.5.5 Dynamic Control

REFERENCE [7]

Indicates if this transport channel is controlled by DRAC procedure or not.

10.2.5.6 Transmission time validity

REFERENCE [7]

Indicates the duration for which permission is granted on a DCH controlled by DRAC procedure.

10.2.5.7 Time duration before retry

REFERENCE [7]

Indicates the time duration before retrying to get the transmission permission on a DCH controlled by DRAC procedure, in case permission has not been granted.

10.2.5.8 Silent period duration before release

REFERENCE [7]

Indicates the maximum silent period duration before releasing the resource. This parameter may be merged with the Fkp-b parameter defined in the 'Transmission stop and resumption control' procedure defined in [1].

(Note: [1] RAN/WG1 S1.14 document)

10.2.6 Physical CH Information elements

10.2.6.1 Frequency info

Parameters	REFERENCE	TYPE	NOTE
Frequency number		M	Designate the centerfrequency of the uplink carrier
Duplex distance		O	
Chip rate		O	
Mode		O	Designate FDD or TDD mode

10.2.6.2 Primary CCPCH info

Parameters	REFERENCE	TYPE	NOTE
DL scrambling code		M	DL scrambling code used for Primary CCPCH

10.2.6.3 Secondary CCPCH info

Parameters	REFERENCE	TYPE	NOTE
DL scrambling code		O	Only needed if different from DL scrambling code of Primary CCPCH
Channelization code		M	

10.2.6.4 PRACH info

Parameters	REFERENCE	TYPE	NOTE
Access slot		M	For each allowed access slot for the preambles
Preamble spreading code		M	For each code to use for spreading of the preamble. There is also a one to one mapping from preamble code to what scrambling code to use for the message part.
Preamble signature		M	For each allowed preamble signature.

Spreading factor		M	For each rate or SF that are allowed to use on the data part (I-branch) in the message part of the random access
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10.2.6.5 PRACH power control info

Parameters	REFERENCE	TYPE	NOTE
UL target SIR		M	The usage of these parameters needs clarification and are also dependent on the WG1 RACH discussions.
Primary CCPCH DL TX power		M	
UL interference		M	
Constant value		M	

10.2.6.6 Uplink DPCH info

Parameters	REFERENCE	TYPE	NOTE
UL scrambling code		M	What short or long uplink scrambling code a certain UE should use
DPCCH channelization code		M	SF of the channelization code for control part. <i>[The necessity of this parameter is FFS.]</i>
DPDCH channelization code		M	SF of the channelization code for data part
			For each DPDCH

10.2.6.7 Uplink DPCH power control info

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

10.2.6.8 Downlink DPCH info

Parameters	REFERENCE	TYPE	NOTE
DL scrambling code		O	Only needed if different from DL scrambling code of Primary CCPCH
DL channelization code		M	Channelization codes to be used in the downlink for DPCH
			For each DPCH

10.2.6.9 Uplink timeslot info

Parameters	REFERENCE	TYPE	NOTE
Slot number		M	Timeslot to be used in uplink (TDD only)
			For each slot

10.2.6.10 Downlink timeslot info

Parameters	REFERENCE	TYPE	NOTE
Slot number		M	Timeslot to be used in downlink (TDD only)
			For each slot

10.2.6.11 SSdT indicator

This information element indicates the status (e.g. initiated/terminated) of the Site Selection Diversity Transmit power control (SSdT). In the direction UTRAN to UE it is used to change the SSdT status. In the direction UE to UTRAN it is used to confirm the SSdT status by the UE.

10.2.6.12 Gated Transmission Control info (FFS)

REFERENCE [16]

Parameters	REFERENCE	TYPE	NOTE
Gating pattern		M	Indicates periodical or random (FFS)
Gating rate		M	Indicates no gating, 1/2 gating, 1/4 gating or 1/8 gating (FFS)
Gating activation time		M	FFS

10.2.7 Measurement Information elements

10.2.7.1 Measurement Identity Number

A reference number that is used by the UTRAN at modification and release of the measurement, and by the UE in the measurement report.

10.2.7.2 Measurement Command

One out of three different measurement commands

- Setup: Setup a new measurement.
- Modify: Modify a previously specified measurement, e.g. change the reporting criteria.
- Release: Stop a measurement and clear all information in the UE that are related to that measurement.

10.2.7.3 Measurement Type

REFERENCE [1],[2],[3],[4],[5],&[6]

One of the types from a predefined list where each type describes what the UE shall measure. The types are:

- Intra-frequency measurements
- Inter-frequency measurements
- Inter-system measurements
- Traffic volume measurements ~~(FFS)~~
- Quality measurements

10.2.7.4 Reference Time difference to cell

REFERENCE [1],[2],[3],[4],[5],&[6]

The reference time difference to cell indicates the time difference between the primary CCPCH of the current cell and the primary CCPCH of a neighbouring cell. It is notified to UE by System Information or Measurement Control message.

In case of macro-diversity the reference is the primary CCPCH of one the cells used in the active set.

Editors note: Exactly how the reference cell is pointed out in this case in the messages is FFS.

10.2.7.5 Measured time difference to cell

REFERENCE [1],[2],[3],[4],[5],&[6]

The measured time difference to cell indicates the time difference which is measured by UE between the primary CCPCH of the current cell and the primary CCPCH of a neighbouring cell. It is notified to SRNC by Measurement Report message or Measurement Information Element in other RRC messages.
In case of macro-diversity the reference is the primary CCPCH of one the cells used in the active set.

Editors note: Exactly how the reference cell is pointed out in this case in the messages is FFS.

10.2.7.6 Measurement reporting mode

REFERENCE [1],[2],[3],[4],[5],&[6]

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

Parameters	REFERENCE	TYPE	NOTE
Measurement Report Transfer Mode		M	Acknowledged / Unacknowledged
Periodical Reporting / Event Trigger Reporting Mode		M	Periodical reporting / Event trigger

10.2.7.5-7 Intra-frequency cell info

REFERENCE [1],[2],[3],[4],[5],&[6]

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

Parameters	REFERENCE	TYPE	NOTE
Primary CCPCH info		M	
Primary CCPCH DL TX power		O	
UL interference load		O	FFS
Reference T ime difference to cell		O	

10.2.7.6-8 Inter-frequency cell info

REFERENCE [1],[2],[3],[4],[5],&[6]

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

Parameters	REFERENCE	TYPE	NOTE
Frequency info		M	
Primary CCPCH info		M	
Primary CCPCH DL TX power		O	FFS
UL interference load		O	FFS
Reference T ime difference to cell		O	FFS

10.2.7.9-7 Inter-system cell info

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

Parameters	REFERENCE	TYPE	NOTE
System type		M	E.g. GSM
System specific measurement info			E.g frequency, timeslot, colour code, output power.

10.2.7.10 Traffic volume measurement object

REFERENCE [1],[2],[3],[4],[5],&[6]

Contains the measurement object information for a traffic volume measurement.

Parameters	REFERENCE	TYPE	NOTE
Target Transport CH ID		M	

10.2.7.11 Quality measurement object (FFS)

REFERENCE [1],[2],[3],[4],[5],&[6]

(Note: Only the section is made.)

10.2.7.812 Intra-frequency measurement quantity

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

Parameters	REFERENCE	TYPE	NOTE
E_c/I_0		Q	FFS
DL Path loss		Q	FFS
SIR		Q	FFS
DL path loss plus UL interference		Q	FFS
Received signal code power (RSCP)		Q	FFS
Primary CCPCH RX E_c/I_0		Q	
Primary CCPCH RX SIR (RSCP/ISCP)		Q	FFS
Primary CCPCH RX power (RSCP)		Q	FFS
Path loss		Q	FFS
Path loss plus UL load		Q	FFS

(Note: Above measurements except for E_c/I_0 are not concluded in WG1)

10.2.7.913 Inter-frequency measurement quantity

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

Parameters	REFERENCE	TYPE	NOTE
E_c/I_0		O	FFS
DL Path loss		O	FFS
SIR		O	FFS
DL path loss plus UL interference		O	FFS
Received signal code power (RSCP)		O	FFS

10.2.7.104 Inter-system measurement quantity

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

Parameters	REFERENCE	TYPE	NOTE
E_c/I_0		O	FFS
Signal strength		O	One of these is mandatory
Path loss		O	
Colour code		M	GSM only

10.2.7.15 Traffic volume measurement quantity

REFERENCE [1],[2],[3],[4],[5],&[6]

Contains the measurement quantity information for a traffic volume measurement.

Parameters	REFERENCE	TYPE	NOTE
RLC buffer payload		M	

(Note: If there is no other measurement quantity, this parameter can be removed since it can be implicitly known by UE.)

10.2.7.16 Quality measurement quantity (FFS)

REFERENCE [1],[2],[3],[4],[5],&[6]

(Note: Only the section is made.)

10.2.7.17 Report quantities Intra-frequency reporting quantity

REFERENCE [1],[2],[3],[4],[5],&[6]

The additional optional quantities the UE shall include in the report.

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

Parameters	REFERENCE	TYPE	NOTE
Primary CCPCH RX E_c/I_0		O	
Primary CCPCH RX SIR (RSCP/ISCP)		O	FFS
Primary CCPCH RX power (RSCP)		O	FFS
Path loss		O	FFS
Path loss plus UL load		O	FFS
Measured time difference to cell		O	
DL Transport CH BLER		O	
DL Transport CH BER		O	FFS
UE Transmission Power		O	
UE Position		O	
Cell ID		O	FFS

(Note: It is FFS whether the reporting quantity parameters used in different measurement types can be used commonly for all types of reporting quantity. If they can, only "Reporting Quantity" is enough instead of specifying 5 types of reporting quantity.)

10.2.7.18 Inter-frequency reporting quantity

REFERENCE [1],[2],[3],[4],[5],&[6]

(Note: Only the section is made.)

10.2.7.19 Inter-system reporting quantity

REFERENCE [1],[2],[3],[4],[5],&[6]

(Note: Only the section is made.)

10.2.7.20 Traffic volume reporting quantity

REFERENCE [1],[2],[3],[4],[5],&[6]

Contains the reporting quantity information for a traffic volume measurement.

Parameters	REFERENCE	TYPE	NOTE
RLC buffer payload for each RAB		<u>O</u>	
DL Transport CH BLER		<u>O</u>	
DL Transport CH BER		<u>O</u>	FFS
UE Transmission Power		<u>O</u>	
UE Position		<u>O</u>	
Cell ID		<u>O</u>	FFS

(Note: It is FFS whether the reporting quantity parameters used in different measurement types can be used commonly for all types of reporting quantity. If they can, only "Reporting Quantity" is enough instead of specifying 5 types of reporting quantity.

10.2.7.21 Quality reporting quantity

REFERENCE [1],[2],[3],[4],[5],&[6]

(Note: Only the section is made.)

10.2.7.4222 Intra-frequency measurement reporting criteria

REFERENCE [1],[2],[3],[4],[5],&[6]

The triggering of the ~~measurement report, e.g. periodical, event-triggered or immediate~~ reporting for an intra-frequency measurement. ~~Here is also specified if the measurement report should be transmitted using either acknowledged or unacknowledged data transfer on the DCCH.~~

All events concerning intra-frequency measurements are labeled 1x where x is a, b, c....

Event 1a: A Primary CCPCH enters the Reporting Range [Note1]

Event 1b: A Primary CCPCH leaves the Reporting Range [Note2]

Event 1c: A Non-active Primary CCPCH becomes better than an active Primary CCPCH [Note3]

Event 1d: Change of best cell [Note4, 5]

Event 1e: Other types of ranking of Primary CCPCHs (FFS)

Parameters	REFERENCE	TYPE	NOTE
Common parameter for all events		<u>M</u>	
For each event	Event ID	<u>M</u>	1a, 1b, 1c, 1d or 1e
	Reporting Range	<u>C</u>	In event 1a,1b
	Hysteresis	<u>C</u>	In event 1c,1d
	Time to trigger	<u>M</u>	

	<u>Amount of reporting</u>		<u>M</u>	<u>Measurement for the indicated Transport CH ID is "released" after the indicated amount of reporting from the UE itself</u> FFS
	<u>Reporting interval</u>		<u>M</u>	<u>FFS</u>

[Note1: whether or not PCCPCH can be active is FFS]

[Note2: whether or not PCCPCH can be non-active is FFS]

[Note3: Details are FFS: It has been suggested to divide this event into two cases; I) a non-active PCCPCH exceeds the weakest active PCCPCH, II) a non-active PCCPCH exceeds the strongest active PCCPCH]

[Note4: When best PCCPCH in active set changes, all active cells are reported.]

[Note5: Whether this event can result in the reporting of non-active cells in addition to active cells is FFS.]

<u>Parameters</u>	<u>REFERENCE</u>	<u>TYPE</u>	<u>NOTE</u>
Max no. of reporting candidate cells for RRC connection request			The possible set of reporting criteria is FFS
Initial setting of measurement control info			
Maximum number of reported cells			
Maximum size of active set			
Maximum size of RACH/FACH cell set			
Addition window			
Drop window			
Replacement threshold			
Drop timer			
Reporting range			
Hysteresis			
Time-to-trigger			

Note 1: This parameter is used to control the measuring of neighbouring cells for active set update. The applicability of these parameters to RACH/FACH cell set updates is FFS. If the RACH/FACH cell set = 1, the comparison threshold to be applied is the cell reselection threshold (FFS).

10.2.7.1323 Inter-frequency measurement reporting criteria

The triggering of the measurement report, e.g. periodical, event-triggered or immediate reporting for an inter-frequency measurement. Here is also specified if the measurement report should be transmitted using either acknowledged or unacknowledged data transfer on the DCCH.

<u>Parameters</u>	<u>REFERENCE</u>	<u>TYPE</u>	<u>NOTE</u>

10.2.7.1424 Inter-system measurement reporting criteria

The triggering of the measurement report, e.g. periodical, event-triggered or immediate reporting for an inter-system measurement. Here is also specified if the measurement report should be transmitted using either acknowledged or unacknowledged data transfer on the DCCH.

10.2.7.25 Traffic volume measurement reporting criteria

REFERENCE [1],[2],[3],[4],[5],&[6]

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

<u>Parameters</u>	<u>REFERENCE</u>	<u>TYPE</u>	<u>NOTE</u>
<u>Common parameter for all transport CH</u>			

For each transport CH	Transport CH ID		M	
	Threshold		M	
	Time to trigger		M	
	Amount of reporting		M	Measurement for the indicated Transport CH ID is “released” after the indicated amount of reporting from the UE itself FFS
	Reporting interval		M	FFS

10.2.7.26 Quality measurement reporting criteria

REFERENCE [1],[2],[3],[4],[5],&[6]

(Note: Only the section is made.)

10.2.7.27 Periodical reporting criteria

REFERENCE [1],[2],[3],[4],[5],&[6]

Contains the periodical reporting criteria information. It is necessary only in the periodical reporting mode.

Parameters	REFERENCE	TYPE	NOTE
Max number of reporting cells		Q	
Time to trigger		M	
Amount of reporting		M	Measurement is “released” after the indicated amount of reporting from the UE itself
Reporting interval		M	

10.2.7.1528 Intra-frequency measurement event results

REFERENCE [1],[2],[3],[4],[5],&[6]

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

Parameters	REFERENCE	TYPE	NOTE
Event ID		M	
Primary CCPCH info		M	
CCPCH reception SIR		Q	
Measured time difference to cell		Q	

10.2.7.1629 Inter-frequency measurement event results

REFERENCE [1],[2],[3],[4],[5],&[6]

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

The further division of this IE into parameters is FFS.

10.2.7.1730 Inter-system measurement event results

REFERENCE [1],[2],[3],[4],[5],&[6]

This IE contains the ~~mandatory~~—measurement event results that are reported to UTRAN for inter-system measurements.
The further division of this IE into parameters is FFS.

10.2.7.31 Traffic volume measurement event results

REFERENCE [1],[2],[3],[4],[5],&[6]

Contains the event result for a traffic volume measurement.

Parameters	REFERENCE	TYPE	NOTE
Transport CH ID		<u>M</u>	

10.2.7.32 Quality measurement event results

REFERENCE [1],[2],[3],[4],[5],&[6]

(Note: Only the section is made.)

10.2.7.1833 ~~Optional measurement~~Measured results

REFERENCE [1],[2],[3],[4],[5],&[6]

The additional-optional measurement results that are reported to UTRAN.
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.

Parameters	REFERENCE	TYPE	NOTE
RAB ID		<u>Q</u>	
+ RLC buffers payload			
PCCPCH Info		<u>Q</u>	
+ Primary CCPCH RX E_c/I_0			
PCCPCH Info		<u>Q</u>	FFS
+ Primary CCPCH RX SIR (RSCP/ISCP)			
PCCPCH Info		<u>Q</u>	FFS
+ Primary CCPCH RX power (RSCP)			
PCCPCH Info		<u>Q</u>	FFS
+ Path loss			
PCCPCH Info		<u>Q</u>	
+ Path loss plus UL load			
PCCPCH Info		<u>Q</u>	
+ Measured time difference to cell			
DL Transport CH BLER		<u>Q</u>	
DL Transport CH BER		<u>Q</u>	FFS
UE Transmission Power		<u>Q</u>	
UE Position		<u>Q</u>	
Cell ID		<u>Q</u>	FFS

10.2.8 Other Information elements

10.2.8.1 BCCH modification info

Indicates modification of the System Information on BCCH.

Parameters	REFERENCE	TYPE	NOTE
BCCH modification type		M	FFS
Modification time		O	FFS

10.2.8.2 Inter-system message

REFERENCE [15]

This Information Element contains one or several messages that are structured and coded according to the specification used for the system type indicated by the first parameter.

<u>Parameters</u>	<u>REFERENCE</u>	<u>TYPE</u>	<u>NOTE</u>
<u>System type</u>		<u>M</u>	<u>E.g. GSM</u>
<u>Message(s)</u>		<u>M</u>	<u>Formatted and coded according to specification for the indicated system type.</u>