

TSG-RAN Meeting #17
Biarritz, France, 3 - 6 September 2002

RP-020557

Title: Agreed CRs (Rel-5) to TS 25.331

Source: TSG-RAN WG2

Agenda item: 7.2.5

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Versio	Versio
R2-021738	agreed	25.331	1547		Rel-5	Correction on Radio link timing	F	5.1.0	5.2.0
R2-022337	agreed	25.331	1651		Rel-5	Physical layer IEs for HSDPA	F	5.1.0	5.2.0
R2-022338	agreed	25.331	1652		Rel-5	Transport channel information elements for HSDPA	F	5.1.0	5.2.0
R2-022446	agreed	25.331	1684		Rel-5	Mandatory support for Dedicated Pilot for Channel Estimation	F	5.1.0	5.2.0

CHANGE REQUEST

⌘ **25.331 CR 1547** ⌘ rev **-** ⌘ Current version: **5.1.0** ⌘

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

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

Title:	⌘ Correction on Radio link timing		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI5	Date:	⌘ 2002-06-27
Category:	⌘ F	Release:	⌘ REL-5
	<i>Use one of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ The changes included in this CR are proposed for the following reasons: <ul style="list-style-type: none"> • The UE should consider a request from UTRAN to adjust the timing with a step exceeding 256 chips as invalid but the current text mistakenly states it should consider it to be valid
Summary of change:	⌘ The following changes are included in the original version of this CR: <ul style="list-style-type: none"> • In case UTRAN request the UE to adjust the timing with a step exceeding 256 chips it should set the invalid configuration to TRUE
Consequences if not approved:	⌘ UE may behave incorrectly i.e. accept an incorrect timing adjustment and/ or other errors causing the invalid configuration to be set to TRUE

Clauses affected:	⌘ 8.2.2.3		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

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- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

8.2.2.3 Reception of RADIO BEARER SETUP or RADIO BEARER RECONFIGURATION or RADIO BEARER RELEASE or TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION message by the UE

The UE shall be able to receive any of the following messages:

- RADIO BEARER SETUP message; or
- RADIO BEARER RECONFIGURATION message; or
- RADIO BEARER RELEASE message; or
- TRANSPORT CHANNEL RECONFIGURATION message; or
- PHYSICAL CHANNEL RECONFIGURATION message;

and perform a hard handover, even if no prior UE measurements have been performed on the target cell and/or frequency.

If the UE receives:

- a RADIO BEARER SETUP message; or
- a RADIO BEARER RECONFIGURATION message; or
- a RADIO BEARER RELEASE message; or
- a TRANSPORT CHANNEL RECONFIGURATION message; or
- a PHYSICAL CHANNEL RECONFIGURATION message;

it shall:

- 1> set the variable ORDERED_RECONFIGURATION to TRUE;
- 1> perform the physical layer synchronisation procedure as specified in [29];
- 1> act upon all received information elements as specified in subclause 8.6, unless specified in the following and perform the actions below.

The UE may:

- 1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

- 1> in FDD, if the IE "PDSCH code mapping" is included but the IE "PDSCH with SHO DCH Info" is not included and if the DCH has only one link in its active set:
 - 2> act upon the IE "PDSCH code mapping" as specified in subclause 8.6; and
 - 2> infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted.
- 1> enter a state according to subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

- 1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

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

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI.

If after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

1> stop any HS-DSCH reception procedures according to the stored HS-PDSCH configuration;

1> clear any stored HS-PDSCH configuration;

1> remove any H-RNTI stored;

1> clear the variable H_RNTI;

1> set the variable HS_DSCH_RECEPTION to FALSE.

In FDD, if after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

1> remove any DSCH-RNTI from MAC;

1> clear the variable DSCH_RNTI.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;

1> if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration;

1> if "DPCH frame offset" is included for one or more RLS in the active set:

2> use its value to determine the beginning of the DPCH frame in accordance with the following:

3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH frame offset currently used by the UE:

4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).

3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:

4> set the variable INVALID_CONFIGURATION to ~~FALSE~~ TRUE.

3> and the procedure ends.

2> adjust the radio link timing accordingly.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:

1> if the IE "Frequency info" is included in the received reconfiguration message:

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

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4].

1> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

2> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

2> when the cell update procedure completed successfully:

- 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;
- 1> select PRACH according to subclause 8.5.17;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> use the transport format set given in system information;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.
- 1> if the contents of the variable C_RNTI is empty:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.

If the UE was in CELL_FACH state upon reception of the reconfiguration message and remains in CELL_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> proceed as below.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or
- 1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:
 - 2> re-establish RB2;
 - 2> set the new uplink and downlink HFN of RB2 to MAX(uplink HFN of RB2, downlink HFN of RB2);
 - 2> increment by one the downlink and uplink HFN values for RB2;
 - 2> calculate the START value according to subclause 8.5.9;

- 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
 - 2> if the variable START_VALUE_TO_TRANSMIT is set:
 - 3> include and set the IE "START" to the value of that variable.
 - 2> if the variable START_VALUE_TO_TRANSMIT is not set and the IE "New U-RNTI" is included:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
 - 2> if the received reconfiguration message caused a change in the RLC size for any RB using RLC-AM:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for the CN domain associated with the corresponding RB identity in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
 - 2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info":
 - 2> include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- 1> if the received reconfiguration message did not contain the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info":
 - 2> if prior to this procedure there exist no transparent mode RLC radio bearers:
 - 3> if, at the conclusion of this procedure, the UE will be in CELL_DCH state; and
 - 3> if, at the conclusion of this procedure, at least one transparent mode RLC radio bearer exists:
 - 4> include the IE "COUNT-C activation time" and specify a CFN value for this IE.
 - 2> if prior to this procedure there exists at least one transparent mode RLC radio bearer:
 - 3> if, at the conclusion of this procedure, no transparent mode RLC radio bearers exist:
 - 4> include the IE "COUNT-C activation time" and specify a CFN value for this IE.
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> if the variable PDCP_SN_INFO is not empty:
 - 2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_INFO.
- 1> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):
 - 2> set the IE "Uplink Timing Advance" according to subclause 8.6.6.26.
- 1> if the IE "Integrity protection mode info" was present in the received reconfiguration message:

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

If after state transition the UE enters CELL_PCH or URA_PCH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4].
- 1> prohibit periodical status transmission in RLC;
- 1> remove any C-RNTI from MAC;
- 1> clear the variable C_RNTI;
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- 1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE enters CELL_PCH state from CELL_DCH state, and the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 2> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> the procedure ends.
- 1> if the UE enters CELL_PCH state from CELL_FACH state, and the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE:
 - 2> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 2> when the cell update procedure is successfully completed:
 - 3> the procedure ends.
- 1> if the UE enters URA_PCH state, and after cell selection the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 is fulfilled:
 - 2> initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";
 - 2> when the URA update procedure is successfully completed:
 - 3> the procedure ends.

CHANGE REQUEST

25.331 CR 1651 # rev **-** # Current version: **5.1.0**

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Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	# Physical layer IEs for HSDPA		
Source:	# TSG-RAN WG2		
Work item code:	# HSDPA-L23	Date:	# 08/08/2002
Category:	# F	Release:	# REL-5
	<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>

Reason for change:	# Alignment with physical layer, corrections for HSDPA						
<ul style="list-style-type: none"> • Summary of change: # 	<ul style="list-style-type: none"> • Clarification included that radio bearer control procedures are also used to reconfigure feedback configuration of HS-DSCH • reversion to HS-DSCH not to be done after physical channel failure • Description of HS-SICH specific open loop power control for LCR TDD • activation of new feedback configuration at activation time clarified • New IE DL capability with simultaneous HS-DSCH configuration included according to decisions at previous meeting (CR to 25.306 exists also) • IE "NAck-Ack Power Offset" is changed to the "Ack-Nack Power Offset" to align with physical layer IEs. • In order to align with physical layer IEs "delta CQI", "delta ACK" and "delta NACK" as well as "CQI repetition factor" and "Ack-Nack repetition factor" included and IE "Feedback offset, off" removed • within the IE "HS-SCCH-TDD128List" in ASN.1 false element definition <table style="width: 100%; border: none;"> <tr> <td style="padding-left: 20px;">hs-sich-configuration</td> <td style="padding-left: 20px;">HS-SICH-Configuration-TDD384</td> </tr> <tr> <td colspan="2" style="padding-left: 20px;">has been corrected to suitable</td> </tr> <tr> <td style="padding-left: 20px;">hs-sich-configuration</td> <td style="padding-left: 20px;">HS-SICH-Configuration-TDD128</td> </tr> </table> • in ASN.1 the IE "Measurement-Feedback-Info" for FDD all the IEs were in 	hs-sich-configuration	HS-SICH-Configuration-TDD384	has been corrected to suitable		hs-sich-configuration	HS-SICH-Configuration-TDD128
hs-sich-configuration	HS-SICH-Configuration-TDD384						
has been corrected to suitable							
hs-sich-configuration	HS-SICH-Configuration-TDD128						

		<p>comments. This CR correct that by moving them out of comments</p> <ul style="list-style-type: none"> Value ranges of les "Ack-Nack Power offset", "Δ_{ACK}", "Δ_{NACK}", "Δ_{CQI}" are aligned with RAN1 								
Consequences if not approved:	⌘	Inconsistency with physical layer								
Clauses affected:	⌘	8.2.2.1, 8.2.2.7, 8.3.7.5, 8.3.11.5, 8.5.7, 8.6.3.1, 10.3.3.42, 10.3.6.23a, 10.3.6.36a, 10.3.6.40a, 10.3.6.91, 10.3.6.119, 11.3								
Other specs affected:	⌘	<table border="1"> <thead> <tr> <th>Y</th> <th>N</th> </tr> </thead> <tbody> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </tbody> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N		X		X		X
Y	N									
	X									
	X									
	X									
Other comments:	⌘									

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8.2.2.1 General

Reconfiguration procedures include the following procedures:

- the radio bearer establishment procedure;
- radio bearer reconfiguration procedure;
- the radio bearer release procedure;
- the transport channel reconfiguration procedure; and
- the physical channel reconfiguration procedure.

The radio bearer establishment procedure is used to establish new radio bearer(s).

The radio bearer reconfiguration procedure is used to reconfigure parameters for a radio bearer.

The radio bearer release procedure is used to release radio bearer(s).

The transport channel reconfiguration procedure is used to reconfigure transport channel parameters.

The physical channel reconfiguration procedure is used to establish, reconfigure and release physical channels.

While performing any of the above procedures, these procedures may perform a hard handover - see subclause 8.3.5 [and/or an HS-DSCH cell change. The reconfiguration procedures are also used to change feedback configuration for HS-DSCH.](#)

8.2.2.7 Physical channel failure

A physical channel failure occurs in case the criteria defined in subclause 8.5.4 are not fulfilled.

If the received message caused the UE to be in CELL_DCH state and the UE failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

1> for HS-DSCH remove existing HS-PDSCH configurations;

1> otherwise revert to the configuration prior to the reception of the message (old configuration);

1> if the old configuration includes dedicated physical channels (CELL_DCH state) and the UE is unable to revert to the old configuration:

2> initiate a cell update procedure according to subclause 8.3.1, using the cause "radio link failure";

2> after the cell update procedure has completed successfully:

3> proceed as below.

1> if the old configuration does not include dedicated physical channels (CELL_FACH state):

2> select a suitable UTRA cell according to [4];

2> if the UE selects another cell than the cell the UE camped on upon reception of the reconfiguration message:

3> initiate a cell update procedure according to subclause 8.3.1, using the cause "Cell reselection";

3> after the cell update procedure has completed successfully:

4> proceed as below.

1> transmit a failure response message as specified in subclause 8.2.2.9, setting the information elements as specified below:

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

2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to "physical channel failure".

1> set the variable ORDERED_RECONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The procedure ends.

8.3.7.5 UE fails to complete requested handover

If the UE does not succeed in establishing the connection to the target radio access technology, it shall:

1> for HS-DSCH remove existing HS-PDSCH configurations;

1> otherwise revert back to the UTRA configuration;

1> establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND;

1> if the UE does not succeed to establish the UTRA physical channel(s):

2> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";

- 2> when the cell update procedure has completed successfully:
 - 3> proceed as below.
- 1> transmit the HANOVER FROM UTRAN FAILURE message setting the information elements as specified below:
 - 2> include the IE "RRC transaction identifier"; and
 - 2> set it to the value of "RRC transaction identifier" in the entry for the HANOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 2> clear that entry;
 - 2> set the IE "Inter-RAT handover failure" to "physical channel failure".
- 1> When the HANOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:
 - 2> the procedure ends.

8.3.11.5 Expiry of timer T309 or UE fails to complete requested cell change order

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

- 1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:
 - 2> [for HS-DSCH remove existing HS-PDSCH configurations;](#)
 - 2> [otherwise](#) revert back to the UTRA configuration;
 - 2> establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;
 - 2> if the UE does not succeed in establishing the UTRA physical channel(s):
 - 3> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";
 - 3> when the cell update procedure has completed successfully:
 - 4> proceed as below.
 - 2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:
 - 3> include the IE "RRC transaction identifier"; and
 - 3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 3> clear that entry;
 - 3> set the IE "Inter-RAT change failure" to "physical channel failure".
 - 2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.

- 1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state:
 - 2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;
 - 2> if the UE is unable to return to this cell:
 - 3> select a suitable UTRA cell according to [4];
 - 3> initiate the cell update procedure according to subclause 8.3.1 using the cause "cell re-selection";
 - 3> when the cell update procedure completed successfully:
 - 4> proceed as below.
 - 2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:
 - 3> include the IE "RRC transaction identifier"; and
 - 3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 3> clear that entry;
 - 3> set the IE "Inter-RAT change failure" to "physical channel failure".
 - 2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:
 - 3> the procedure ends.

8.5.7 Open loop power control

For FDD and prior to PRACH or PCPCH transmission the UE shall:

- 1> read the IEs "Primary CPICH Tx power" and "Constant value" in System Information Block type 6 (or System Information Block type 5, if system information block type 6 is not being broadcast) and the IE "UL interference" in System Information Block type 7;
- 1> measure the value for the CPICH_RSCP;
- 1> calculate the power for the first preamble as:

$$\text{Preamble_Initial_Power} = \text{Primary CPICH TX power} - \text{CPICH_RSCP} + \text{UL interference} + \text{Constant Value}$$

Where,

Primary CPICH TX power shall have the value of IE "Primary CPICH Tx power",

UL interference shall have the value of IE "UL interference"; and

Constant Value shall have the value of IE "Constant value".

- 1> as long as the physical layer is configured for PRACH or PCPCH transmission:
 - 2> continuously recalculate the Preamble_Initial_Power when any of the broadcast parameters used in the above formula changes; and
 - 2> resubmit to the physical layer the new calculated Preamble_Initial_Power.

For 3.84 Mcps TDD the UE shall:

- 1> if in the IE "Uplink DPCH Power Control info" the "CHOICE UL OL PC info" has the value "Broadcast UL OL PC info":

- 3> acquire Reference Power, Constant Values from System Information Block type 6 (or System Information Block type 5, according to subclause 8.1.1.6.5), and I_{BTS} for all active UL timeslots from System Information Block type 14 on the BCH.

1> otherwise:

- 2> acquire Reference Power, Constant Values and I_{BTS} for all active UL timeslots from the IE "Uplink DPCH Power Control info".

1> for PUSCH and PRACH power control:

- 2> acquire Reference Power, Constant Values and I_{BTS} for all active UL timeslots from System Information Block type 6 (or System Information Block type 5, according to subclause 8.1.1.6.5) and System Information Block type 14 on the BCH.

calculate the UL transmit power according to the following formula for the PRACH continuously while the physical channel is active:

$$P_{\text{PRACH}} = L_{\text{PCCPCH}} + I_{\text{BTS}} + \text{PRACH Constant value},$$

- 2> 3dB shall be added to RACH Constant Value in the above equation for the case where RACH Spreading Factor = 8.

1> calculate the UL transmit power according to the following formula for the DPCH continuously while the physical channel is active:

$$P_{\text{DPCH}} = \alpha L_{\text{PCCPCH}} + (1-\alpha)L_0 + I_{\text{BTS}} + \text{SIR}_{\text{TARGET}} + \text{DPCH Constant value}$$

1> calculate the UL transmit power according to the following formula for the PUSCH continuously while the physical channel is active:

$$P_{\text{PUSCH}} = \alpha L_{\text{PCCPCH}} + (1-\alpha)L_0 + I_{\text{BTS}} + \text{SIR}_{\text{TARGET}} + \text{PUSCH Constant value}$$

Where, for all the above equations for [3.84 Mcps](#) TDD the following apply:

- P_{PRACH} , P_{DPCH} , & P_{PUSCH} : Transmitter power level in dBm;
- Pathloss values:
 - L_{PCCPCH} : Measurement representing path loss in dB based on beacon channels (the reference transmit power is signalled as the value of the IE "Primary CCPCH Tx Power" on BCH in System Information Block type 6 (or System Information Block type 5, according to subclause 8.1.1.6.5), or individually signalled in the IE "Uplink DPCH Power Control info").
 - L_0 : Long term average of path loss in dB;
 - If the midamble is used in the evaluation of L_{PCCPCH} and L_0 , and the Tx diversity scheme used for the P-CCPCH involves the transmission of different midambles from the diversity antennas, the received power of the different midambles from the different antennas shall be combined prior to evaluation of the variables.
- I_{BTS} : Interference signal power level at cell's receiver in dBm. I_{BTS} shall have the value of the IE "UL Timeslot Interference" (IE "UL Timeslot Interference" is broadcast on BCH in System Information Block type 14 or individually signalled to each UE in the IE "Uplink DPCH Power Control info" for each active uplink timeslot).
- α : α is a weighting parameter, which represents the quality of path loss measurements. α may be a function of the time delay between the uplink time slot and the most recent down link PCCPCH time slot. α is calculated at the UE. α shall be smaller or equal to the value of the IE "Alpha". If the IE "Alpha" is not explicitly signalled to the UE α shall be set to 1. If UE is capable of estimating its position by using the OTDOA IPDL method, the UE shall use the IPDL- α parameter.
- $\text{SIR}_{\text{TARGET}}$: Target SNR in dB. This value is individually signalled to UEs in IE "UL target SIR" in IE "Uplink DPCH Power Control Info" or in IE "PUSCH Power Control Info" respectively.

- PRACH Constant value: PRACH Constant value shall have the value of the IE "PRACH Constant value".
- DPCH Constant value: DPCH Constant value shall have the value of the IE "DPCH Constant value".
- PUSCH Constant value: PUSCH Constant value shall have the value of the IE "PUSCH Constant value".
- Values received by dedicated signalling shall take precedence over broadcast values.
- If IPDLs are applied, the UE may increase UL Tx power by the value given in the IE "Max power increase". This power increase is only allowed in the slots between an idle slot and the next beacon slot.

For 1.28 Mcps TDD the UE shall:

- 1> calculate the UL transmit power according to the following formula for each UpPCH code transmission:

$$P_{\text{UpPCH}} = L_{\text{PCCPCH}} + \text{PRX}_{\text{UpPCHdes}} + (i-1) * P_{\text{wramp}}$$

NOTE: When i equals 1, the initial signature power "Signature_Initial_Power" defined in [33] corresponds to P_{UpPCH} with i set to 1.

- 1> calculate the UL transmit power according to the following formula for each PRACH transmission:

$$P_{\text{PRACH}} = L_{\text{PCCPCH}} + \text{PRX}_{\text{PRACHdes}} + (i_{\text{UpPCH}}-1) * P_{\text{wramp}}$$

- 1> calculate the initial UL transmit power according to the following formula for the PUSCH. Once the UE receives TPC bits relating to the PUSCH then it transitions to closed loop power control. If successive PUSCH resource allocations are contiguous then no return is made to open loop power control at the beginning of the succeeding resource allocation.

$$P_{\text{USCH}} = \text{PRX}_{\text{PUSCHdes}} + L_{\text{PCCPCH}}$$

- 1> calculate the initial UL transmit power according to the following formula for HS-SICH.

$$P_{\text{HS-SICH}} = \text{PRX}_{\text{HS-SICH}} + L_{\text{PCCPCH}}$$

- 1> when transmitting a Negative Acknowledgement, and

$$P_{\text{HS-SICH}} = \text{PRX}_{\text{HS-SICH}} + L_{\text{PCCPCH}} + \text{Ack-Nack Power Offset}$$

- 1> when transmitting an Acknowledgement. Once the UE receives TPC bits relating to the HS-SICH then it transitions to closed loop power control. If no TPC command for the HS-SICH is detected between successive HS-SICH transmissions, then the UE should revert to open loop power control until the next TPC command is detected.

- 1> calculate the initial UL transmit power according to the following formula for the DPCH. Once the UE receives TPC bits relating to the uplink DPCH then it transitions to closed loop power control.

$$P_{\text{DPCH}} = \text{PRX}_{\text{DPCHdes}} + L_{\text{PCCPCH}}$$

Where:

- P_{UpPCH} , P_{PRACH} , P_{DPCH} , $P_{\text{HS-SICH}}$ & P_{USCH} : Transmitter power level in dBm.
- L_{PCCPCH} : Measurement representing path loss in dB (reference transmit power "Primary CCPCH Tx Power" is broadcast on BCH in System Information Block type 5 and System Information Block type 6, or individually signalled to each UE in the IE "Uplink DPCH Power Control info").
- i is the number of transmission attempts on UpPCH, $i=1 \dots M_{\text{max}}$.
- i_{UpPCH} is the final value of i .
- $\text{PRX}_{\text{PRACHdes}}$: Desired PRACH RX power at the cell's receiver in dBm signalled to the UE by the network in the FPACH response to the UE's successful SYNC_UL transmission.
- $\text{PRX}_{\text{UpPCHdes}}$: Desired UpPCH RX power at the cell's receiver in dBm. The value is broadcast in "PRX_{UpPCHdes}" in IE "SYNC_UL info" on BCH and shall be read on System Information Block type 5 and

System Information Block type 6. It can also be signalled directly to the UE in a protocol message triggering a hard handover.

- $PRX_{PUSCH_{des}}$: Desired PUSCH RX power at the cell's receiver in dBm signalled to the UE in IE "PUSCH Power Control Info".
- $PRX_{PDPCH_{des}}$: Desired PDPCH RX power at the cell's receiver in dBm signalled to the UE in IE "Uplink DPCH Power Control Info".
- Pwr_{ramp} : The UE shall increase its transmission power by the value of the IE "Power Ramp step" by every UpPCH transmission.
- $PRX_{HS-SICH}$: Desired HS-SICH RX power at the cell's receiver in dBm signalled to the UE in IE "Downlink HS-PDSCH Information".
- Ack-Nack Power Offset: Difference in the desired RX power between HS-SICH transmissions conveying an acknowledgement and transmissions conveying a negative acknowledgement signalled to the UE in IE "HS-SCCH Info".

8.6.3.1 Activation time

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:

- 1> if the frame boundary immediately before the frame with the CFN (Connection Frame Number) value indicated by the IE "Activation Time" is at the TTI boundary common to all the transport channels that are multiplexed onto the same CCTrCh including any transport channel which is added, reconfigured or has been removed:
 - 2> select that frame boundary as the activation time T.
- 1> else:
 - 2> select the next TTI boundary, which is common to all the transport channels that are multiplexed onto the same CCTrCh including any transport channel which is added, reconfigured or has been removed, after the frame with the CFN (Connection Frame Number) value indicated by the IE "Activation Time", as the activation time T.
- 1> at the activation time T:
 - 2> for a physical channel reconfiguration caused by the received message:
 - 3> release the physical channel configuration, which was present before T;
 - 3> initiate the establishment of the physical channel configuration as specified for the physical channel information elements in the received message as specified elsewhere.
 - 2> for actions, other than a physical channel reconfiguration, caused by the received message:
 - 3> perform the actions for the information elements in the received message as specified elsewhere.

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is the default value "Now", the UE shall:

- 1> choose an activation time T as soon as possible after the reception of the message, respecting the performance requirements in subclause 13.5;
- 1> at the activation time T:
 - 2> perform the actions for the information elements in the received message as specified elsewhere.

If the UE receives a message that includes the configuration or reconfiguration of an HS-DSCH transport channel, the IE "Activation time" indicates the frame boundary at which the UE shall:

- 1> start or stop monitoring the assigned HS-SCCH(s) according to the new configuration received in this message.
- [1> apply the new feedback configuration for measurements and acknowledgements](#)

10.3.3.42 UE radio access capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Access stratum release indicator	MP		Enumerated(R99)	Indicates the release of the UE according to [35]. The IE also indicates the release of the RRC transfer syntax supported by the UE..	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
	CV- <i>not_rrc_connectionSetupComplete</i>		Enumerated(REL-4)	15 spare values are needed.	REL-4
DL capability with simultaneous HS-DSCH configuration	OP		Enumerated(32kbps, 64kbps, 128kbps, 384kbps)		REL-5
PDCP capability	MP		PDCP capability 10.3.3.24		
RLC capability	MP		RLC capability 10.3.3.34		
MAC-hs capability	OP		MAC-hs capability 10.3.3.19a		REL-5
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	One "TDD RF capability" entity shall be included for every Chip rate capability supported.	
		1 to 2			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- <i>fdd_req_sup</i>		Measurement capability 10.3.3.21		

Condition	Explanation
<i>fdd_req_sup</i>	The IE is mandatory present if the 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.
<i>not_rrc_connectionSetupComplete</i>	The IE is not needed in the RRC CONNECTION SETUP COMPLETE message. Otherwise the IE is mandatory present.

10.3.6.23a Downlink HS-PDSCH Information

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
HS-SCCH Info	OP		HS-SCCH Info 10.3.6.36a		REL-5
CHOICE mode	MP				REL-5
>FDD					REL-5
>>Measurement Feedback Info	OP		Measurement Feedback Info 10.3.6.40a		REL-5
>TDD				(no data)	REL-5

10.3.6.36a HS-SCCH Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE mode	MP				REL-5
>FDD					REL-5
>>HS-SCCH Channelisation Code Information	MP	<1 to maxHSSC CHcodes>			REL-5
>>>HS-SCCH Channelisation Code	MP		Integer (0..127)		REL-5
>TDD					REL-5
>>CHOICE <i>TDD option</i>	MP				REL-5
>>>3.84 Mcps					REL-5
>>>>HS-SCCH Set Configuration	MP	1 to <maxHS-SCCHs>			REL-5
>>>>>Timeslot number	MP		Integer (0..14)		REL-5
>>>>>Channelisation code	MP		Enumerated ((16/1)..(16/16))		REL-5
>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, Common midamble)	HS-SCCH always uses burst type 1.	REL-5
>>>>>Midamble configuration	MP		Integer (4, 8, 16)		REL-5
>>>>>BLER target	MP		Real (-3.15..0 by step of 0.05)	Signalled value is Log10(HS-SCCH BLER quality target)	REL-5
>>>>>HS-SICH configuration					REL-5
>>>>>>Timeslot number	MP		Integer (0..14)		REL-5
>>>>>>Channelisation code	MP		Enumerated ((16/1)..(16/16))		REL-5
>>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, UE specific midamble)		REL-5
>>>>>>Midamble configuration	MP		Integer (4, 8, 16)		REL-5
>>>>>>Midamble Shift	CV-UE		Integer (0..15)		REL-5
>>>>>> Ack-Nack Power Offset NACK-Ack Power-Offset	MP		Integer (-7 0 .87 by step of 1)	dB	REL-5
>>>>>>UL target SIR	MP		Real (-11..20 by step of 0.5)	dB	REL-5
>>>1.28 Mcps					REL-5
>>>>HS-SCCH Set Configuration	MP	1 to <maxHS-SCCHs>			REL-5
>>>>>Timeslot number	MP		Integer (0..6)		REL-5
>>>>>First Channelisation code	MP		Enumerated ((16/1)..(16/16))		REL-5
>>>>>Second Channelisation code	MP		Enumerated ((16/1)..(16/16))		REL-5
>>>>>Midamble Allocation	MP		Enumerated		REL-5

mode			(Default midamble, Common midamble)		
>>>>>Midamble configuration	MP		Integer (2, 4, 6, 8, 10, 12, 14, 16)		REL-5
>>>>>BLER target	MP		Real (-3.15..0 by step of 0.05)	Signalled value is Log10(HS-SCCH BLER quality target)	REL-5
>>>>>HS-SICH configuration					REL-5
>>>>>>Timeslot number	MP		Integer (0..6)		REL-5
>>>>>>Channelisation code	MP		Enumerated ((16/1) ..(16/16))		REL-5
>>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, UE specific midamble)		REL-5
>>>>>>Midamble configuration	MP		Integer (2, 4, 6, 8, 10, 12, 14, 16)		REL-5
>>>>>>Midamble Shift	CV-UE		Integer (0..15)		REL-5
>>>>>> Ack-Nack Power Offset NAck-Ack Power Offset	MP		Integer (0 ..87 by step of 1)	dB.	REL-5
>>>>>>PRX _{HS-SICH}	MP		Integer (-120..-58 by step of 1)	dBm. Desired power level for HS-SICH.	REL-5
>>>>>>TPC step size	MP		Integer (1, 2, 3)	dB.	REL-5

Condition	Explanation
UE	This IE is mandatory present when the value of the IE "Midamble Allocation Mode" is "UE specific midamble" and not needed otherwise.

10.3.6.40a Measurement Feedback Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
BLER threshold	MP		FFS		REL-5
CHOICE mode	MP				REL-5
>FDD					REL-5
>>POHsdsch	MP		Integer (-x..0) FFS	Default Power offset between HS-PDSCH and P-CPICH/S-CPICH. In dB.	REL-5
>>Feedback cycle k	MP		Integer ([0, 1, 5, 10, 20, 40, 80])	Multiples of 2 ms intervals. Value 10 corresponds to 20 ms.	REL-5
>>Feedback offset, off	MP		Integer (1..5)	Exact definition is FFS	REL-5
>> CQI repetition factor	MP		Integer(1..4)		REL-5
>> Δ_{CQI}	OP		Integer (-10..+6 by step of 2)	In dB.	REL-5
>TDD				(no data)	REL-5

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 1.28 Mcps TDD and parameters for uplink open loop power control in 3.84 Mcps 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 (0..7)	In number of frames	
>>SRB delay	MP		Integer(0..7)	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	
>>DPCCH-2 Power offset	OP		Integer ([-164..-6])	In dB.	REL-5
>> Δ_{ACK}	OP		Integer (-10..+6 by step of 2)	In dB.	REL-5
>> Δ_{NACK}	OP		Integer (-10..+6 by step of 2)	In dB.	REL-5
>>Ack-NAKack repetition factor	OP		Integer(1..4)		REL-5
>TDD					
>>CHOICE TDD option					REL-4
>>>3.84 Mcps TDD					REL-4
>>>>UL target SIR	OP		Real (-11 .. 20 by step of 0.5dB)	In dB	
>>>1.28 Mcps TDD					REL-4
>>>> PRXPDPCHdes	OP		Integer(-	in dBm	REL-4

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			120...-58 by step of 1)		
>>CHOICE <i>UL OL PC info</i>	MP				
>>>Broadcast <i>UL OL PC info</i>			Null	No data	
>>>Individually Signalled	OP				
>>>>CHOICE <i>TDD option</i>	MP				REL-4
>>>>>3.84 Mcps TDD					REL-4
>>>>>>Individual timeslot interference info	MP	1 to <maxTS>			
>>>>>>>Individual timeslot interference	MP		Individual timeslot interference 10.3.6.38		
>>>>>>>DPCH Constant Value	OP		Constant Value TDD 10.3.6.11a	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
<i>algo</i>	The IE is mandatory present if the IE "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is not needed

10.3.6.11a Constant value TDD

NOTE: Only for 3.84 Mcps TDD.

3.84 Mcps 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
TDD Constant value	MP		Integer (-35..+10)	In dB

11.1 General message structure

Class-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

```

ActiveSetUpdate,
ActiveSetUpdateComplete,
ActiveSetUpdateFailure,
AssistanceDataDelivery,
CellChangeOrderFromUTRAN,
    
```



```

CellChangeOrderFromUTRANFailure,
CellUpdate,
CellUpdateConfirm-CCCH,
CellUpdateConfirm,
CounterCheck,
CounterCheckResponse,
DownlinkDirectTransfer,
HandoverToUTRANComplete,
InitialDirectTransfer,
HandoverFromUTRANCommand-GSM,
HandoverFromUTRANCommand-CDMA2000,
HandoverFromUTRANFailure,
MeasurementControl,
MeasurementControlFailure,
MeasurementReport,
PagingType1,
PagingType2,
PhysicalChannelReconfiguration,
PhysicalChannelReconfigurationComplete,
PhysicalChannelReconfigurationFailure,
PhysicalSharedChannelAllocation,
PUSCHCapacityRequest,
RadioBearerReconfiguration,
RadioBearerReconfigurationComplete,
RadioBearerReconfigurationFailure,
RadioBearerRelease,
RadioBearerReleaseComplete,
RadioBearerReleaseFailure,
RadioBearerSetup,
RadioBearerSetupComplete,
RadioBearerSetupFailure,
RRCConnectionReject,
RRCConnectionRelease,
RRCConnectionRelease-CCCH,
RRCConnectionReleaseComplete,
RRCConnectionRequest,
RRCConnectionSetup,
RRCConnectionSetupComplete,
RRCStatus,
SecurityModeCommand,
SecurityModeComplete,
SecurityModeFailure,
SignallingConnectionRelease,
SignallingConnectionReleaseIndication,
SystemInformation-BCH,
SystemInformation-FACH,
SystemInformationChangeIndication,
TransportChannelReconfiguration,
TransportChannelReconfigurationComplete,
TransportChannelReconfigurationFailure,
TransportFormatCombinationControl,
TransportFormatCombinationControlFailure,
UECapabilityEnquiry,
UECapabilityInformation,
UECapabilityInformationConfirm,
UplinkDirectTransfer,
UplinkPhysicalChannelControl,
URAUpdate,
URAUpdateConfirm,
URAUpdateConfirm-CCCH,
UTRANMobilityInformation,
UTRANMobilityInformationConfirm,
UTRANMobilityInformationFailure
FROM PDU-definitions

-- User Equipment IEs :
  IntegrityCheckInfo
FROM InformationElements;

--*****
--
-- Downlink DCCH messages
--
--*****

DL-DCCH-Message ::= SEQUENCE {
  integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
  message                 DL-DCCH-MessageType

```

```

}

DL-DCCH-MessageType ::= CHOICE {
    activeSetUpdate           ActiveSetUpdate,
    assistanceDataDelivery    AssistanceDataDelivery,
    cellChangeOrderFromUTRAN CellChangeOrderFromUTRAN,
    cellUpdateConfirm         CellUpdateConfirm,
    counterCheck              CounterCheck,
    downlinkDirectTransfer    DownlinkDirectTransfer,
    handoverFromUTRANCommand-GSM HandoverFromUTRANCommand-GSM,
    handoverFromUTRANCommand-CDMA2000 HandoverFromUTRANCommand-CDMA2000,
    measurementControl        MeasurementControl,
    pagingType2               PagingType2,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    physicalSharedChannelAllocation PhysicalSharedChannelAllocation,
    radioBearerReconfiguration RadioBearerReconfiguration,
    radioBearerRelease        RadioBearerRelease,
    radioBearerSetup          RadioBearerSetup,
    rrcConnectionRelease      RRCConnectionRelease,
    securityModeCommand       SecurityModeCommand,
    signallingConnectionRelease SignallingConnectionRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,
    transportFormatCombinationControl TransportFormatCombinationControl,
    ueCapabilityEnquiry       UECapabilityEnquiry,
    ueCapabilityInformationConfirm UECapabilityInformationConfirm,
    uplinkPhysicalChannelControl UplinkPhysicalChannelControl,
    uraUpdateConfirm          URAUpdateConfirm,
    utranMobilityInformation  UTRANMobilityInformation,
    spare7                    NULL,
    spare6                    NULL,
    spare5                    NULL,
    spare4                    NULL,
    spare3                    NULL,
    spare2                    NULL,
    spare1                    NULL
}

--*****
--
-- Uplink DCCH messages
--
--*****

UL-DCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                  UL-DCCH-MessageType
}

UL-DCCH-MessageType ::= CHOICE {
    activeSetUpdateComplete      ActiveSetUpdateComplete,
    activeSetUpdateFailure       ActiveSetUpdateFailure,
    cellChangeOrderFromUTRANFailure CellChangeOrderFromUTRANFailure,
    counterCheckResponse         CounterCheckResponse,
    handoverToUTRANComplete      HandoverToUTRANComplete,
    initialDirectTransfer        InitialDirectTransfer,
    handoverFromUTRANFailure     HandoverFromUTRANFailure,
    measurementControlFailure    MeasurementControlFailure,
    measurementReport            MeasurementReport,
    physicalChannelReconfigurationComplete PhysicalChannelReconfigurationComplete,
    physicalChannelReconfigurationFailure PhysicalChannelReconfigurationFailure,
    radioBearerReconfigurationComplete RadioBearerReconfigurationComplete,
    radioBearerReconfigurationFailure RadioBearerReconfigurationFailure,
    radioBearerReleaseComplete   RadioBearerReleaseComplete,
    radioBearerReleaseFailure    RadioBearerReleaseFailure,
    radioBearerSetupComplete     RadioBearerSetupComplete,
    radioBearerSetupFailure      RadioBearerSetupFailure,
    rrcConnectionReleaseComplete RRCConnectionReleaseComplete,
    rrcConnectionSetupComplete   RRCConnectionSetupComplete,
    rrcStatus                     RRCStatus,
    securityModeComplete         SecurityModeComplete,
    securityModeFailure          SecurityModeFailure,
    signallingConnectionReleaseIndication SignallingConnectionReleaseIndication,
    transportChannelReconfigurationComplete TransportChannelReconfigurationComplete,
    transportChannelReconfigurationFailure TransportChannelReconfigurationFailure
}

```

```

        TransportChannelReconfigurationFailure,
transportFormatCombinationControlFailure
ueCapabilityInformation      UECapabilityInformation,
uplinkDirectTransfer        UplinkDirectTransfer,
utranMobilityInformationConfirm UTRANMobilityInformationConfirm,
utranMobilityInformationFailure UTRANMobilityInformationFailure,
spare2                       NULL,
spare1                       NULL
}

```

```

--*****
--
-- Downlink CCCH messages
--
--*****

```

```

DL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                  DL-CCCH-MessageType
}

```

```

DL-CCCH-MessageType ::= CHOICE {
    cellUpdateConfirm        CellUpdateConfirm-CCCH,
    rrcConnectionReject     RRCConnectionReject,
    rrcConnectionRelease    RRCConnectionRelease-CCCH,
    rrcConnectionSetup      RRCConnectionSetup,
    uraUpdateConfirm        URAUpdateConfirm-CCCH,
    spare3                  NULL,
    spare2                  NULL,
    spare1                  NULL
}

```

```

--*****
--
-- Uplink CCCH messages
--
--*****

```

```

UL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                  UL-CCCH-MessageType
}

```

```

UL-CCCH-MessageType ::= CHOICE {
    cellUpdate              CellUpdate,
    rrcConnectionRequest   RRCConnectionRequest,
    uraUpdate               URAUpdate,
    spare1                  NULL
}

```

```

--*****
--
-- PCCH messages
--
--*****

```

```

PCCH-Message ::= SEQUENCE {
    message                  PCCH-MessageType
}

```

```

PCCH-MessageType ::= CHOICE {
    pagingType1             PagingType1,
    spare                   NULL
}

```

```

--*****
--
-- Downlink SHCCH messages
--
--*****

```

```

DL-SHCCH-Message ::= SEQUENCE {
    message                  DL-SHCCH-MessageType
}

```

```

DL-SHCCH-MessageType ::= CHOICE {
    physicalSharedChannelAllocation PhysicalSharedChannelAllocation,

```

```

    extension                                NULL
}
--*****
--
-- Uplink SHCCH messages
--
--*****

UL-SHCCH-Message ::= SEQUENCE {
    message                                UL-SHCCH-MessageType
}

UL-SHCCH-MessageType ::= CHOICE {
    puschCapacityRequest                    PUSCHCapacityRequest,
    spare                                    NULL
}

--*****
--
-- BCCH messages sent on FACH
--
--*****

BCCH-FACH-Message ::= SEQUENCE {
    message                                BCCH-FACH-MessageType
}

BCCH-FACH-MessageType ::= CHOICE {
    systemInformation                        SystemInformation-FACH,
    systemInformationChangeIndication        SystemInformationChangeIndication,
    spare2                                    NULL,
    spare1                                    NULL
}

--*****
--
-- BCCH messages sent on BCH
--
--*****

BCCH-BCH-Message ::= SEQUENCE {
    message                                SystemInformation-BCH
}

END

```

11.2 PDU definitions

```

--*****
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*****

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

--*****
--
-- IE parameter types from other modules
--
--*****

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    CN-InformationInfoFull,
    NAS-Message,
    PagingRecordTypeID,

```

```
-- UTRAN Mobility IEs :
  CellIdentity,
  CellIdentity-PerRL-List,
  URA-Identity,
-- User Equipment IEs :
  ActivationTime,
  C-RNTI,
  CapabilityUpdateRequirement,
  CapabilityUpdateRequirement-r4,
  CapabilityUpdateRequirement-r4-ext,
  CellUpdateCause,
  CipheringAlgorithm,
  CipheringModeInfo,
  DSCH-RNTI,
  EstablishmentCause,
  FailureCauseWithProtErr,
  FailureCauseWithProtErrTrId,
  H-RNTI,
  InitialUE-Identity,
  IntegrityProtActivationInfo,
  IntegrityProtectionModeInfo,
  N-308,
  PagingCause,
  PagingRecordList,
  ProtocolErrorIndicator,
  ProtocolErrorIndicatorWithMoreInfo,
  Rb-timer-indicator,
  RedirectionInfo,
  RejectionCause,
  ReleaseCause,
  RRC-StateIndicator,
  RRC-TransactionIdentifier,
  SecurityCapability,
  START-Value,
  STARTList,
  U-RNTI,
  U-RNTI-Short,
  UE-RadioAccessCapability,
  UE-RadioAccessCapability-r4-ext,
  UE-RadioAccessCapability-r5-ext,
  UE-RadioAccessCapability-v370ext,
  UE-RadioAccessCapability-v380ext,
  UE-RadioAccessCapability-v3a0ext,
  UE-RadioAccessCapability-v4xyext,
  DL-PhysChCapabilityFDD-v380ext,
  UE-ConnTimersAndConstants,
  UE-ConnTimersAndConstants-v3a0ext,
  UE-SecurityInformation,
  URA-UpdateCause,
  UTRAN-DRX-CycleLengthCoefficient,
  WaitTime,
-- Radio Bearer IEs :
  DefaultConfigIdentity,
  DefaultConfigMode,
  DL-CounterSynchronisationInfo,
  PredefinedConfigIdentity,
  PredefinedConfigStatusList,
  RAB-Info,
  RAB-Info-Post,
  RAB-InformationList,
  RAB-InformationReconfigList,
  RAB-InformationSetupList,
  RAB-InformationSetupList-r4,
  RB-ActivationTimeInfoList,
  RB-COUNT-C-InformationList,
  RB-COUNT-C-MSB-InformationList,
  RB-IdentityList,
  RB-InformationAffectedList,
  RB-InformationAffectedList-r5,
  RB-InformationReconfigList,
  RB-InformationReconfigList-r4,
  RB-InformationReconfigList-r5,
  RB-InformationReleaseList,
  RB-WithPDCP-InfoList,  SRB-InformationSetupList,
  SRB-InformationSetupList2,
  UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
  CPCH-SetID,
```

```

DL-AddReconfTransChInfo2List,
DL-AddReconfTransChInfoList,
DL-AddReconfTransChInfoList-r4,
DL-AddReconfTransChInfoList-r5,
DL-CommonTransChInfo,
DL-CommonTransChInfo-r4,
DL-DeletedTransChInfoList,
DL-DeletedTransChInfoList-r5,
DRAC-StaticInformationList,
TFC-Subset,
TFCS-Identity,
UL-AddReconfTransChInfoList,
UL-CommonTransChInfo,
UL-CommonTransChInfo-r4,
UL-DeletedTransChInfoList,
-- Physical Channel IEs :
Alpha,
CCTrCH-PowerControlInfo,
CCTrCH-PowerControlInfo-r4,
ConstantValue,
ConstantValueTdd,
CPCH-SetInfo,
DL-CommonInformation,
DL-CommonInformation-r4,
DL-CommonInformationPost,
DL-HSPDSCH-Information,
DL-InformationPerRL,
DL-InformationPerRL-List,
DL-InformationPerRL-List-r4,
DL-InformationPerRL-List-r5,
DL-InformationPerRL-ListPostFDD,
DL-InformationPerRL-PostTDD,
DL-InformationPerRL-PostTDD-LCR-r4,
DL-PDSCH-Information,
DPCH-CompressedModeStatusInfo,
FrequencyInfo,
FrequencyInfoFDD,
FrequencyInfoTDD,
MaxAllowedUL-TX-Power,
OpenLoopPowerControl-IPDL-TDD-r4,
PDSCH-CapacityAllocationInfo,
PDSCH-CapacityAllocationInfo-r4,
PDSCH-Identity,
PrimaryCCPCH-TX-Power,
PUSCH-CapacityAllocationInfo,
PUSCH-CapacityAllocationInfo-r4,
PUSCH-Identity,
RL-AdditionInformationList,
RL-RemovalInformationList,
SpecialBurstScheduling,
SSDT-Information,
TFC-ControlDuration,
SSDT-UL-r4,
TimeslotList,
TimeslotList-r4,
TX-DiversityMode,
UL-ChannelRequirement,
UL-ChannelRequirement-r4,
UL-ChannelRequirement-r5,
UL-ChannelRequirementWithCPCH-SetID,
UL-ChannelRequirementWithCPCH-SetID-r4,
UL-ChannelRequirementWithCPCH-SetID-r5,
UL-DPCH-Info,
UL-DPCH-Info-r4,
UL-DPCH-InfoPostFDD,
UL-DPCH-InfoPostTDD,
UL-DPCH-InfoPostTDD-LCR-r4,
UL-SynchronisationParameters-r4,
UL-TimingAdvance,
UL-TimingAdvanceControl,
UL-TimingAdvanceControl-r4,
-- Measurement IEs :
AdditionalMeasurementID-List,
Frequency-Band,
EventResults,
InterFreqEventResults-LCR-r4-ext,
InterRAT-TargetCellDescription,
MeasuredResults,
MeasuredResults-v390ext,

```

```

MeasuredResultsList,
MeasuredResultsList-LCR-r4-ext,
MeasuredResultsOnRACH,
MeasurementCommand,
MeasurementCommand-r4,
MeasurementIdentity,
MeasurementReportingMode,
PrimaryCCPCH-RSCP,
SFN-Offset-Validity,
TimeslotListWithISCP,
TrafficVolumeMeasuredResultsList,
UE-Positioning-GPS-AssistanceData,
UE-Positioning-Measurement-v390ext,
UE-Positioning-OTDOA-AssistanceData,
UE-Positioning-OTDOA-AssistanceData-r4ext,
UE-Positioning-OTDOA-AssistanceData-UEB,
UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
  BCCH-ModificationInfo,
  CDMA2000-MessageList,
  GSM-MessageList,
  InterRAT-ChangeFailureCause,
  InterRAT-HO-FailureCause,
  InterRAT-UE-RadioAccessCapabilityList,
  InterRAT-UE-SecurityCapList,
  IntraDomainNasNodeSelector,
  ProtocolErrorMoreInformation,
  Rplmn-Information,
  Rplmn-Information-r4,
  SegCount,
  SegmentIndex,
  SFN-Prime,
  SIB-Data-fixed,
  SIB-Data-variable,
  SIB-Type
FROM InformationElements

  maxSIBperMsg
FROM Constant-definitions;

-- *****
--
-- ACTIVE SET UPDATE (FDD only)
--
-- *****

ActiveSetUpdate ::= CHOICE {
  r3
    activeSetUpdate-r3          SEQUENCE {
      activeSetUpdate-r3-IEs,
      v4xyNonCriticalExtensions SEQUENCE {
        activeSetUpdate-v4xyext SEQUENCE {
          nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
      }
    },
  later-than-r3
    rrc-TransactionIdentifier SEQUENCE {
      RRC-TransactionIdentifier,
      criticalExtensions       SEQUENCE {}
    }
}

ActiveSetUpdate-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
  cipheringModeInfo        CipheringModeInfo          OPTIONAL,
  activationTime            ActivationTime              OPTIONAL,
  newU-RNTI                 U-RNTI                    OPTIONAL,
  -- Core network IEs
  cn-InformationInfo        CN-InformationInfo          OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
  -- Physical channel IEs
  maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power     OPTIONAL,
  rl-AdditionInformationList  RL-AdditionInformationList  OPTIONAL,
  rl-RemovalInformationList   RL-RemovalInformationList   OPTIONAL,
  tx-DiversityMode           TX-DiversityMode           OPTIONAL,
  ssdt-Information           SSDT-Information           OPTIONAL
}

```

```

ActiveSetUpdate-v4xyext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- ssdt-UL extends SSDT-Information. FDD only.
  ssdt-UL                               SSDT-UL-r4                               OPTIONAL,
  -- The order of the RLs in IE cell-id-PerRL-List is the same as
  -- in IE RL-AdditionInformationList included in this message
  cell-id-PerRL-List                     CellIdentity-PerRL-List                     OPTIONAL
}

-- *****
--
-- ACTIVE SET UPDATE COMPLETE (FDD only)
--
-- *****

ActiveSetUpdateComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier               RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo              IntegrityProtActivationInfo           OPTIONAL,
  -- Radio bearer IEs
  rb-UL-CiphActivationTimeInfo           RB-ActivationTimeInfoList           OPTIONAL,
  ul-CounterSynchronisationInfo          UL-CounterSynchronisationInfo       OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions                   SEQUENCE {} OPTIONAL
}

-- *****
--
-- ACTIVE SET UPDATE FAILURE (FDD only)
--
-- *****

ActiveSetUpdateFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier               RRC-TransactionIdentifier,
  failureCause                            FailureCauseWithProtErr,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions                   SEQUENCE {} OPTIONAL
}

-- *****
--
-- Assistance Data Delivery
--
-- *****

AssistanceDataDelivery ::= CHOICE {
  r3                                       SEQUENCE {
    assistanceDataDelivery-r3             AssistanceDataDelivery-r3-IEs,
    v3aoNonCriticalExetensions            SEQUENCE {
      assistanceDataDelivery-v3a0ext      AssistanceDataDelivery-v3a0ext,
      v4xyNonCriticalExtensions           SEQUENCE {
        assistanceDataDelivery-v4xyext
      }
      nonCriticalExtensions                SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  later-than-r3                            SEQUENCE {
    rrc-TransactionIdentifier              RRC-TransactionIdentifier,
    criticalExtensions                     SEQUENCE {}
  }
}

AssistanceDataDelivery-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier               RRC-TransactionIdentifier,
  -- Measurement Information Elements
  ue-positioning-GPS-AssistanceData      UE-Positioning-GPS-AssistanceData
  OPTIONAL,
  ue-positioning-OTDOA-AssistanceData-UEB UE-Positioning-OTDOA-AssistanceData-UEB
  OPTIONAL
}

AssistanceDataDelivery-v3a0ext ::= SEQUENCE {
  sfm-Offset-Validity                     SFN-Offset-Validity                 OPTIONAL
}

```



```

AssistanceDataDelivery-v4xyext-IEs ::= SEQUENCE {
    ue-Positioning-OTDOA-AssistanceData-r4ext    UE-Positioning-OTDOA-AssistanceData-r4ext    OPTIONAL
}

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

CellChangeOrderFromUTRAN ::= CHOICE {
    r3                SEQUENCE {
        cellChangeOrderFromUTRAN-IEs        CellChangeOrderFromUTRAN-r3-IEs,
        nonCriticalExtensions                SEQUENCE {} OPTIONAL
    },
    later-than-r3    SEQUENCE {
        rrc-TransactionIdentifier            RRC-TransactionIdentifier,
        criticalExtensions                    SEQUENCE {}
    }
}

CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier            RRC-TransactionIdentifier,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy                                IntegrityProtectionModeInfo        OPTIONAL,
    activationTime                        ActivationTime                    OPTIONAL,
    rab-InformationList                    RAB-InformationList              OPTIONAL,
    interRAT-TargetCellDescription        InterRAT-TargetCellDescription
}

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

CellChangeOrderFromUTRANFailure ::= CHOICE {
    r3                SEQUENCE {
        cellChangeOrderFromUTRANFailure-r3
        nonCriticalExtensions                SEQUENCE {} OPTIONAL
    },
    -- dummy is not used in this version of the specification and it
    -- should be ignored.
    dummy                SEQUENCE {
        rrc-TransactionIdentifier            RRC-TransactionIdentifier,
        criticalExtensions                    SEQUENCE {}
    }
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier            RRC-TransactionIdentifier,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy                                IntegrityProtectionModeInfo        OPTIONAL,
    interRAT-ChangeFailureCause          InterRAT-ChangeFailureCause
}

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

CellUpdate ::= SEQUENCE {
    -- User equipment IEs
    u-RNTI                                U-RNTI,
    startList                               STARTList,
    am-RLC-ErrorIndicationRb2-3or4        BOOLEAN,
    am-RLC-ErrorIndicationRb5orAbove      BOOLEAN,
    cellUpdateCause                        CellUpdateCause,
    -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
    failureCause                            FailureCauseWithProtErrTrId        OPTIONAL,
    rb-timer-indicator                      Rb-timer-indicator,
}

```

```

-- Measurement IEs
  measuredResultsOnRACH          MeasuredResultsOnRACH          OPTIONAL,
-- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {} OPTIONAL
}

-- *****
--
-- CELL UPDATE CONFIRM
--
-- *****

CellUpdateConfirm ::= CHOICE {
  r3                               SEQUENCE {
    cellUpdateConfirm-r3          CellUpdateConfirm-r3-IEs,
    v3a0NonCriticalExtensions     SEQUENCE {
      cellUpdateConfirm-v3a0ext   CellUpdateConfirm-v3a0ext,
      v4xyNonCriticalExtensions   SEQUENCE {
        cellUpdateConfirm-v4xyext CellUpdateConfirm-v4xyext-IEs,
        nonCriticalExtensions     SEQUENCE {} OPTIONAL
      }
    } OPTIONAL
  },
  later-than-r3                   SEQUENCE {
    rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    criticalExtensions            CHOICE {
      r4                           SEQUENCE {
        cellUpdateConfirm-r4      CellUpdateConfirm-r4-IEs,
        nonCriticalExtensions     SEQUENCE {} OPTIONAL
      },
      r5                           SEQUENCE {
        cellUpdateConfirm-r5      CellUpdateConfirm-r5-IEs,
        nonCriticalExtensions     SEQUENCE {} OPTIONAL
      },
      criticalExtensions           SEQUENCE {}
    }
  }
}

CellUpdateConfirm-r3-IEs ::= SEQUENCE {
-- User equipment IEs
  rrc-TransactionIdentifier       RRC-TransactionIdentifier,
  integrityProtectionModeInfo     IntegrityProtectionModeInfo   OPTIONAL,
  cipheringModeInfo              CipheringModeInfo                 OPTIONAL,
  activationTime                  ActivationTime                     OPTIONAL,
  new-U-RNTI                      U-RNTI                          OPTIONAL,
  new-C-RNTI                      C-RNTI                          OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  rlc-Re-establishIndicatorRb2-3or4  BOOLEAN,
  rlc-Re-establishIndicatorRb5orAbove  BOOLEAN,
-- CN information elements
  cn-InformationInfo              CN-InformationInfo                 OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                     URA-Identity                     OPTIONAL,
-- Radio bearer IEs
  rb-InformationReleaseList        RB-InformationReleaseList     OPTIONAL,
  rb-InformationReconfigList       RB-InformationReconfigList    OPTIONAL,
  rb-InformationAffectedList       RB-InformationAffectedList    OPTIONAL,
  dl-CounterSynchronisationInfo    DL-CounterSynchronisationInfo  OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo             UL-CommonTransChInfo          OPTIONAL,
  ul-deletedTransChInfoList        UL-DeletedTransChInfoList     OPTIONAL,
  ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList   OPTIONAL,
  modeSpecificTransChInfo          CHOICE {
    fdd                             SEQUENCE {
      cpch-SetID                    CPCH-SetID                    OPTIONAL,
      addReconfTransChDRAC-Info      DRAC-StaticInformationList  OPTIONAL
    },
    tdd                             NULL
  },
  dl-CommonTransChInfo             DL-CommonTransChInfo          OPTIONAL,
  dl-DeletedTransChInfoList        DL-DeletedTransChInfoList     OPTIONAL,
  dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList   OPTIONAL,
-- Physical channel IEs
  frequencyInfo                    FrequencyInfo                    OPTIONAL,

```

```

maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power          OPTIONAL,
ul-ChannelRequirement          UL-ChannelRequirement          OPTIONAL,
modeSpecificPhysChInfo        CHOICE {
    fdd                          SEQUENCE {
        dl-PDSCH-Information      DL-PDSCH-Information          OPTIONAL
    },
    tdd                          NULL
},
dl-CommonInformation          DL-CommonInformation          OPTIONAL,
dl-InformationPerRL-List      DL-InformationPerRL-List      OPTIONAL
}

CellUpdateConfirm-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI              DSCH-RNTI                      OPTIONAL
}

CellUpdateConfirm-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- ssdt-UL extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                    SSdT-UL-r4                      OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List         CellIdentity-PerRL-List          OPTIONAL
}

CellUpdateConfirm-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo          CipheringModeInfo              OPTIONAL,
    activationTime              ActivationTime                    OPTIONAL,
    new-U-RNTI                  U-RNTI                        OPTIONAL,
    new-C-RNTI                  C-RNTI                        OPTIONAL,
    new-DSCH-RNTI              DSCH-RNTI                      OPTIONAL,
    rrc-StateIndicator          RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    rlc-ResetIndicatorC-Plane   BOOLEAN,
    rlc-ResetIndicatorU-Plane   BOOLEAN,
    -- CN information elements
    cn-InformationInfo          CN-InformationInfo            OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                URA-Identity                    OPTIONAL,
    -- Radio bearer IEs
    rb-InformationReleaseList    RB-InformationReleaseList      OPTIONAL,
    rb-InformationReconfigList   RB-InformationReconfigList-r4  OPTIONAL,
    rb-InformationAffectedList   RB-InformationAffectedList     OPTIONAL,
    rb-WithPDCP-InfoList        RB-WithPDCP-InfoList          OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo        UL-CommonTransChInfo-r4       OPTIONAL,
    ul-deletedTransChInfoList    UL-DeletedTransChInfoList     OPTIONAL,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList   OPTIONAL,
    modeSpecificTransChInfo      CHOICE {
        fdd                      SEQUENCE {
            cpch-SetID            CPCH-SetID                    OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList  OPTIONAL
        },
        tdd                      NULL
    },
    dl-CommonTransChInfo        DL-CommonTransChInfo-r4       OPTIONAL,
    dl-DeletedTransChInfoList    DL-DeletedTransChInfoList     OPTIONAL,
    dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4 OPTIONAL,
    -- Physical channel IEs
    frequencyInfo               FrequencyInfo                    OPTIONAL,
    maxAllowedUL-TX-Power        MaxAllowedUL-TX-Power          OPTIONAL,
    ul-ChannelRequirement        UL-ChannelRequirement-r4      OPTIONAL,
    modeSpecificPhysChInfo      CHOICE {
        fdd                      SEQUENCE {
            dl-PDSCH-Information  DL-PDSCH-Information          OPTIONAL
        },
        tdd                      NULL
    },
    dl-CommonInformation        DL-CommonInformation-r4       OPTIONAL,
    dl-InformationPerRL-List     DL-InformationPerRL-List-r4   OPTIONAL
}

CellUpdateConfirm-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo IntegrityProtectionModeInfo    OPTIONAL,

```

```

    cipheringModeInfo          CipheringModeInfo          OPTIONAL,
    activationTime             ActivationTime         OPTIONAL,
    new-U-RNTI                 U-RNTI              OPTIONAL,
    new-C-RNTI                 C-RNTI              OPTIONAL,
    new-DSCH-RNTI             DSCH-RNTI           OPTIONAL,
    new-H-RNTI                 H-RNTI              OPTIONAL,
    rrc-StateIndicator         RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    rlc-ResetIndicatorC-Plane  BOOLEAN,
    rlc-ResetIndicatorU-Plane  BOOLEAN,
-- CN information elements
  cn-InformationInfo          CN-InformationInfo  OPTIONAL,
-- UTRAN mobility IES
  ura-Identity                URA-Identity        OPTIONAL,
-- Radio bearer IES
  rb-InformationReleaseList    RB-InformationReleaseList OPTIONAL,
  rb-InformationReconfigList   RB-InformationReconfigList-r5     OPTIONAL,
  rb-InformationAffectedList    RB-InformationAffectedList-r5     OPTIONAL,
  rb-WithPDCP-InfoList         RB-WithPDCP-InfoList  OPTIONAL,
-- Transport channel IES
  ul-CommonTransChInfo         UL-CommonTransChInfo-r4          OPTIONAL,
  ul-deletedTransChInfoList     UL-DeletedTransChInfoList        OPTIONAL,
  ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList      OPTIONAL,
  modeSpecificTransChInfo       CHOICE {
    fdd                          SEQUENCE {
      cpch-SetID                 CPCH-SetID                       OPTIONAL,
      addReconfTransChDRAC-Info  DRAC-StaticInformationList       OPTIONAL
    },
    tdd                          NULL
  },
  dl-CommonTransChInfo         DL-CommonTransChInfo-r4          OPTIONAL,
  dl-DeletedTransChInfoList     DL-DeletedTransChInfoList-r5     OPTIONAL,
  dl-AddReconfTransChInfoList   DL-AddReconfTransChInfoList-r5   OPTIONAL,
-- Physical channel IES
  frequencyInfo                FrequencyInfo             OPTIONAL,
  maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power     OPTIONAL,
  ul-ChannelRequirement         UL-ChannelRequirement-r5    OPTIONAL,
  modeSpecificPhysChInfo       CHOICE {
    fdd                          SEQUENCE {
      dl-PDSCH-Information       DL-PDSCH-Information             OPTIONAL
    },
    tdd                          NULL
  },
  dl-HSPDSCH-Information        DL-HSPDSCH-Information        OPTIONAL,
  dl-CommonInformation          DL-CommonInformation-r4       OPTIONAL,
  dl-InformationPerRL-List      DL-InformationPerRL-List-r5   OPTIONAL
}

-- *****
--
-- CELL UPDATE CONFIRM for CCCH
--
-- *****

CellUpdateConfirm-CCCH ::= CHOICE {
  r3                          SEQUENCE {
    -- User equipment IES
    u-RNTI                     U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
    cellUpdateConfirm-r3       CellUpdateConfirm-r3-IEs,
    v4xyNonCriticalExtensions  SEQUENCE {
      cellUpdateConfirm-v4xyext CellUpdateConfirm-v4xyext-IEs,
      nonCriticalExtensions     SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  later-than-r3               SEQUENCE {
    u-RNTI                     U-RNTI,
    rrc-TransactionIdentifier   RRC-TransactionIdentifier,
    criticalExtensions          CHOICE {
      r4                        SEQUENCE {
        -- The rest of the message is identical to the one sent on DCCH.
        cellUpdateConfirm-r4     CellUpdateConfirm-r4-IEs,
        nonCriticalExtensions     SEQUENCE {} OPTIONAL
      },
      criticalExtensions        SEQUENCE {}
    }
  }
}

```

```

-- *****
--
-- COUNTER CHECK
--
-- *****

CounterCheck ::= CHOICE {
  r3
    counterCheck-r3          SEQUENCE {
      counterCheck-r3-IEs,
      nonCriticalExtensions  SEQUENCE {} OPTIONAL
    },
  later-than-r3
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions        SEQUENCE {}
  }
}

CounterCheck-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  -- Radio bearer IEs
  rb-COUNT-C-MSB-InformationList RB-COUNT-C-MSB-InformationList
}

-- *****
--
-- COUNTER CHECK RESPONSE
--
-- *****

CounterCheckResponse ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  -- Radio bearer IEs
  rb-COUNT-C-InformationList RB-COUNT-C-InformationList OPTIONAL,
  -- Extension mechanism for non-release99 information
  nonCriticalExtensions      SEQUENCE {} OPTIONAL
}

-- *****
--
-- DOWNLINK DIRECT TRANSFER
--
-- *****

DownlinkDirectTransfer ::= CHOICE {
  r3
    downlinkDirectTransfer-r3 SEQUENCE {
      downlinkDirectTransfer-r3-IEs,
      nonCriticalExtensions        SEQUENCE {} OPTIONAL
    },
  later-than-r3
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions        SEQUENCE {}
  }
}

DownlinkDirectTransfer-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  -- Core network IEs
  cn-DomainIdentity        CN-DomainIdentity,
  nas-Message               NAS-Message
}

-- *****
--
-- HANDOVER TO UTRAN COMMAND
--
-- *****

HandoverToUTRANCommand ::= CHOICE {
  r3
    handoverToUTRANCommand-r3 SEQUENCE {
      handoverToUTRANCommand-r3-IEs,
      v4xyNonCriticalExtensions SEQUENCE {
        handoverToUTRANCommand-v4xyext HandoverToUTRANCommand-v4xyext-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
      }
    }
}

```

```

    } OPTIONAL
  },
  criticalExtensions CHOICE {
    r4 SEQUENCE {
      handoverToUTRANCommand-r4 HandoverToUTRANCommand-r4-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
  }
}

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  new-U-RNTI U-RNTI-Short,
  -- dummy is not used in this version of specification, it should
  -- not be sent and if received it should be ignored.
  dummy ActivationTime OPTIONAL,
  cipheringAlgorithm CipheringAlgorithm OPTIONAL,
  -- Radio bearer IEs
  -- Specification mode information
  specificationMode CHOICE {
    complete SEQUENCE {
      srb-InformationSetupList SRB-InformationSetupList,
      rab-InformationSetupList RAB-InformationSetupList OPTIONAL,
      ul-CommonTransChInfo UL-CommonTransChInfo,
      ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
      dl-CommonTransChInfo DL-CommonTransChInfo,
      dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList,
      ul-DPCH-Info UL-DPCH-Info,
      modeSpecificInfo CHOICE {
        fdd SEQUENCE {
          dl-PDSCH-Information DL-PDSCH-Information OPTIONAL,
          cpch-SetInfo CPCH-SetInfo OPTIONAL
        },
        tdd NULL
      },
      dl-CommonInformation DL-CommonInformation,
      dl-InformationPerRL-List DL-InformationPerRL-List,
      frequencyInfo FrequencyInfo
    },
    preconfiguration SEQUENCE {
      -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
      -- one for the FDD only elements and one for the TDD only elements, so that one
      -- FDD/TDD choice in this level is sufficient.
      preConfigMode CHOICE {
        predefinedConfigIdentity PredefinedConfigIdentity,
        defaultConfig SEQUENCE {
          defaultConfigMode DefaultConfigMode,
          defaultConfigIdentity DefaultConfigIdentity
        }
      },
      rab-Info RAB-Info-Post OPTIONAL,
      modeSpecificInfo CHOICE {
        fdd SEQUENCE {
          ul-DPCH-Info UL-DPCH-InfoPostFDD,
          dl-CommonInformationPost DL-CommonInformationPost,
          dl-InformationPerRL-List DL-InformationPerRL-ListPostFDD,
          frequencyInfo FrequencyInfoFDD
        },
        tdd SEQUENCE {
          ul-DPCH-Info UL-DPCH-InfoPostTDD,
          dl-CommonInformationPost DL-CommonInformationPost,
          dl-InformationPerRL-List DL-InformationPerRL-ListPostTDD,
          frequencyInfo FrequencyInfoTDD,
          primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
        }
      }
    }
  },
  -- Physical channel IEs
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power
}

HandoverToUTRANCommand-v4xyext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- ssdt-UL extends SSdT-Information, which is included in
  -- DL-CommonInformation. FDD only.

```

```

    ssdt-UL                SSdT-UL-r4                OPTIONAL,
    cell-id                CellIdentity              OPTIONAL
}

HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
-- User equipment IEs
  new-U-RNTI              U-RNTI-Short,
  cipheringAlgorithm      CipheringAlgorithm      OPTIONAL,
-- Radio bearer IEs
  rab-Info                RAB-Info-Post,
-- Specification mode information
  specificationMode       CHOICE {
    complete              SEQUENCE {
      srb-InformationSetupList  SRB-InformationSetupList,
      rab-InformationSetupList  RAB-InformationSetupList-r4      OPTIONAL,
      ul-CommonTransChInfo     UL-CommonTransChInfo,
      ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList,
      dl-CommonTransChInfo     DL-CommonTransChInfo,
      dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList,
      ul-DPCH-Info             UL-DPCH-Info-r4,
      modeSpecificInfo         CHOICE {
        fdd                   SEQUENCE {
          dl-PDSCH-Information  DL-PDSCH-Information OPTIONAL,
          cpch-SetInfo         CPCH-SetInfo      OPTIONAL
        },
        tdd                   NULL
      },
      dl-CommonInformation     DL-CommonInformation-r4,
      dl-InformationPerRL-List  DL-InformationPerRL-List-r4,
      frequencyInfo            FrequencyInfo
    },
    predefinedConfigIdentity  PredefinedConfigIdentity,
    rab-Info                  RAB-Info-Post      OPTIONAL,
    modeSpecificInfo          CHOICE {
      fdd                     SEQUENCE {
        ul-DPCH-Info          UL-DPCH-InfoPostFDD,
        dl-CommonInformationPost  DL-CommonInformationPost,
        dl-InformationPerRL-List  DL-InformationPerRL-ListPostFDD,
        frequencyInfo          FrequencyInfoFDD
      },
      tdd                     CHOICE {
        tdd384                SEQUENCE {
          ul-DPCH-Info          UL-DPCH-InfoPostTDD,
          dl-InformationPerRL    DL-InformationPerRL-PostTDD,
          frequencyInfo          FrequencyInfoTDD,
          primaryCCPCH-TX-Power  PrimaryCCPCH-TX-Power
        },
        tdd128                SEQUENCE {
          ul-DPCH-Info          UL-DPCH-InfoPostTDD-LCR-r4,
          dl-InformationPerRL    DL-InformationPerRL-PostTDD-LCR-r4,
          frequencyInfo          FrequencyInfoTDD,
          primaryCCPCH-TX-Power  PrimaryCCPCH-TX-Power
        }
      }
    }
  },
  preconfiguration        SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
  }
},
  Physical channel IEs
  maxAllowedUL-TX-Power    MaxAllowedUL-TX-Power
}

-- *****
--
-- HANDOVER TO UTRAN COMPLETE
--
-- *****

HandoverToUTRANComplete ::= SEQUENCE {
--TABULAR: Integrity protection shall not be performed on this message.
-- User equipment IEs
-- TABULAR: startList is conditional on history.
  startList                STARTList              OPTIONAL,
-- Radio bearer IEs
  count-C-ActivationTime    ActivationTime      OPTIONAL,

```

```

-- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}          OPTIONAL
}
-- *****
--
-- INITIAL DIRECT TRANSFER
--
-- *****

InitialDirectTransfer ::= SEQUENCE {
  -- Core network IEs
  cn-DomainIdentity              CN-DomainIdentity,
  intraDomainNasNodeSelector     IntraDomainNasNodeSelector,
  nas-Message                    NAS-Message,
  -- Measurement IEs
  measuredResultsOnRACH          MeasuredResultsOnRACH          OPTIONAL,
  v3a0NonCriticalExtensions      SEQUENCE {
  initialDirectTransfer-v3a0ext  InitialDirectTransfer-v3a0ext,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}          OPTIONAL
  }
  OPTIONAL
}

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

-- *****
--
-- HANDOVER FROM UTRAN COMMAND
--
-- *****

HandoverFromUTRANCommand-GSM ::= CHOICE {
  r3                              SEQUENCE {
    handoverFromUTRANCommand-GSM-r3
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
  },
  later-than-r3                  SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions            SEQUENCE {}
  }
}

HandoverFromUTRANCommand-GSM-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  activationTime                 ActivationTime          OPTIONAL,
  -- Radio bearer IEs
  toHandover-Info               RAB-Info                OPTIONAL,
  -- Measurement IEs
  frequency-band                 Frequency-Band,
  -- Other IEs
  gsm-message                    CHOICE {
    -- In the single-GSM-Message case, what follows the basic production is a variable
    -- length bit string with no length field, containing the GSM message including GSM
    -- padding up to end of container, to be analysed according to GSM specifications
    single-GSM-Message            SEQUENCE {},
    gsm-MessageList               SEQUENCE {
      gsm-Messages                GSM-MessageList
    }
  }
}

HandoverFromUTRANCommand-CDMA2000 ::= CHOICE {
  r3                              SEQUENCE {
    handoverFromUTRANCommand-CDMA2000-r3
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
  },
  later-than-r3                  SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions            SEQUENCE {}
  }
}

```



```

}

HandoverFromUTRANCommand-CDMA2000-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  activationTime                  ActivationTime                OPTIONAL,
  -- Radio bearer IEs
  toHandover-Info                RAB-Info                  OPTIONAL,
  -- Other IEs
  cdma2000-MessageList           CDMA2000-MessageList
}

-- *****
--
-- HANDOVER FROM UTRAN FAILURE
--
-- *****

HandoverFromUTRANFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- Other IEs
  interRAT-HO-FailureCause       InterRAT-HO-FailureCause    OPTIONAL,
  interRATMessage                CHOICE {
    gsm                           SEQUENCE {
      gsm-MessageList             GSM-MessageList
    },
    cdma2000                       SEQUENCE {
      cdma2000-MessageList        CDMA2000-MessageList
    }
  } OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

-- *****
--
-- INTER RAT HANDOVER INFO
--
-- *****

InterRATHandoverInfo ::= SEQUENCE {
  -- This structure is defined for historical reasons, backward compatibility with 04.18
  predefinedConfigStatusList     CHOICE {
    absent                         NULL,
    present                        PredefinedConfigStatusList
  },
  ue-SecurityInformation         CHOICE {
    absent                         NULL,
    present                        UE-SecurityInformation
  },
  ue-CapabilityContainer         CHOICE {
    absent                         NULL,
    -- present is an octet aligned string containing IE UE-RadioAccessCapabilityInfo
    present                        OCTET STRING (SIZE (0..63))
  },
  -- Non critical extensions
  v390NonCriticalExtensions      CHOICE {
    absent                         NULL,
    present                        SEQUENCE {
      interRATHandoverInfo-v390ext InterRATHandoverInfo-v390ext-IEs,
      v3a0NonCriticalExtensions    SEQUENCE {
        interRATHandoverInfo-v3a0ext InterRATHandoverInfo-v3a0ext,
        v4xyNonCriticalExtensions   SEQUENCE {
          interRATHandoverInfo-v4xyext InterRATHandoverInfo-v4xyext-IEs,
          -- Reserved for future non critical extension
          nonCriticalExtensions     SEQUENCE {} OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  }
}

InterRATHandoverInfo-v390ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v380ext UE-RadioAccessCapability-v380ext    OPTIONAL,
  dl-PhysChCapabilityFDD-v380ext   DL-PhysChCapabilityFDD-v380ext
}

```

```

InterRATHandoverInfo-v3a0ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v3a0ext    UE-RadioAccessCapability-v3a0ext    OPTIONAL
}

InterRATHandoverInfo-v4xyext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}

-- *****
--
-- MEASUREMENT CONTROL
--
-- *****

MeasurementControl ::= CHOICE {
  r3
    SEQUENCE {
      measurementControl-r3            MeasurementControl-r3-IEs,
      v390nonCriticalExtensions        SEQUENCE {
        measurementControl-v390ext    MeasurementControl-v390ext,
        v3a0NonCriticalExtensions     SEQUENCE {
          measurementControl-v3a0ext  MeasurementControl-v3a0ext,
          v4xyNonCriticalExtensions   SEQUENCE {
            measurementControl-v4xyext MeasurementControl-v4xyext-IEs,
            nonCriticalExtensions     SEQUENCE {}          OPTIONAL
          }
        }
      }
    },
  later-than-r3
    SEQUENCE {
      rrc-TransactionIdentifier        RRC-TransactionIdentifier,
      criticalExtensions              CHOICE {
        r4
          SEQUENCE {
            measurementControl-r4    MeasurementControl-r4-IEs,
            nonCriticalExtensions     SEQUENCE {}          OPTIONAL
          }
        },
      criticalExtensions              SEQUENCE {}
    }
}

MeasurementControl-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier          RRC-TransactionIdentifier,
  -- Measurement IEs
  measurementIdentity               MeasurementIdentity,
  -- TABULAR: The measurement type is included in MeasurementCommand.
  measurementCommand                MeasurementCommand,
  measurementReportingMode           MeasurementReportingMode    OPTIONAL,
  additionalMeasurementList          AdditionalMeasurementID-List  OPTIONAL,
  -- Physical channel IEs
  dpch-CompressedModeStatusInfo     DPCH-CompressedModeStatusInfo  OPTIONAL
}

MeasurementControl-v4xyext-IEs ::= SEQUENCE {
  ue-Positioning-OTDOA-AssistanceData-r4ext  UE-Positioning-OTDOA-AssistanceData-r4ext  OPTIONAL
}

MeasurementControl-v390ext ::= SEQUENCE {
  ue-Positioning-Measurement-v390ext  UE-Positioning-Measurement-v390ext  OPTIONAL
}

MeasurementControl-v3a0ext ::= SEQUENCE {
  sfn-Offset-Validity                SFN-Offset-Validity    OPTIONAL
}

MeasurementControl-r4-IEs ::= SEQUENCE {
  -- Measurement IEs
  measurementIdentity               MeasurementIdentity,
  -- TABULAR: The measurement type is included in measurementCommand.
  measurementCommand                MeasurementCommand-r4,
  measurementReportingMode           MeasurementReportingMode    OPTIONAL,
  additionalMeasurementList          AdditionalMeasurementID-List  OPTIONAL,
  -- Physical channel IEs
  dpch-CompressedModeStatusInfo     DPCH-CompressedModeStatusInfo  OPTIONAL
}

```

```

-- *****
--
-- MEASUREMENT CONTROL FAILURE
--
-- *****

MeasurementControlFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}          OPTIONAL
}

-- *****
--
-- MEASUREMENT REPORT
--
-- *****

MeasurementReport ::= SEQUENCE {
  -- Measurement IEs
  measurementIdentity            MeasurementIdentity,
  measuredResults                MeasuredResults          OPTIONAL,
  measuredResultsOnRACH          MeasuredResultsOnRACH    OPTIONAL,
  additionalMeasuredResults      MeasuredResultsList     OPTIONAL,
  eventResults                   EventResults            OPTIONAL,
  -- Non-critical extensions
  v390nonCriticalExtensions      SEQUENCE {
    measurementReport-v390ext    MeasurementReport-v390ext,
    v4xyNonCriticalExtensions    SEQUENCE {
      measurementReport-v4xyext  MeasurementReport-v4xyext-IEs,
      -- Extension mechanism for non-Rel4 information
      nonCriticalExtensions      SEQUENCE {}          OPTIONAL
    }
  }
}

MeasurementReport-v390ext ::= SEQUENCE {
  measuredResults-v390ext        MeasuredResults-v390ext          OPTIONAL
}

MeasurementReport-v4xyext-IEs ::= SEQUENCE {
  interFreqEventResults-LCR      InterFreqEventResults-LCR-r4-ext  OPTIONAL,
  additionalMeasuredResults-LCR  MeasuredResultsList-LCR-r4-ext  OPTIONAL
}

-- *****
--
-- PAGING TYPE 1
--
-- *****

PagingType1 ::= SEQUENCE {
  -- User equipment IEs
  pagingRecordList              PagingRecordList          OPTIONAL,
  -- Other IEs
  bcch-ModificationInfo        BCCH-ModificationInfo     OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}          OPTIONAL
}

-- *****
--
-- PAGING TYPE 2
--
-- *****

PagingType2 ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  pagingCause                    PagingCause,
  -- Core network IEs
  cn-DomainIdentity             CN-DomainIdentity,
  pagingRecordTypeID            PagingRecordTypeID,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}          OPTIONAL
}

```

```

}
-- *****
--
-- PHYSICAL CHANNEL RECONFIGURATION
-- *****

PhysicalChannelReconfiguration ::= CHOICE {
  r3
    SEQUENCE {
      physicalChannelReconfiguration-r3
        PhysicalChannelReconfiguration-r3-IEs,
      v3a0NonCriticalExtensions
        SEQUENCE {
          physicalChannelReconfiguration-v3a0ext
            PhysicalChannelReconfiguration-v3a0ext,
          v4xyNonCriticalExtensions
            SEQUENCE {
              physicalChannelReconfiguration-v4xyext
                PhysicalChannelReconfiguration-v4xyext-IEs,
              nonCriticalExtensions
                SEQUENCE {} OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
  later-than-r3
    SEQUENCE {
      rrc-TransactionIdentifier
        RRC-TransactionIdentifier,
      criticalExtensions
        CHOICE {
          r4
            SEQUENCE {
              physicalChannelReconfiguration-r4
                PhysicalChannelReconfiguration-r4-IEs,
              nonCriticalExtensions
                SEQUENCE {} OPTIONAL
            },
          criticalExtensions
            CHOICE {
              r5
                SEQUENCE {
                  physicalChannelReconfiguration-r5
                    PhysicalChannelReconfiguration-r5-IEs,
                  nonCriticalExtensions
                    SEQUENCE {} OPTIONAL
                },
              criticalExtensions
                SEQUENCE {}
            }
        }
    }
}

PhysicalChannelReconfiguration-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo             CipheringModeInfo             OPTIONAL,
  activationTime                 ActivationTime                 OPTIONAL,
  new-U-RNTI                     U-RNTI                     OPTIONAL,
  new-C-RNTI                     C-RNTI                     OPTIONAL,
  rrc-StateIndicator            RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- Core network IEs
  cn-InformationInfo            CN-InformationInfo            OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                  URA-Identity                  OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo  OPTIONAL,
  -- Physical channel IEs
  frequencyInfo                 FrequencyInfo                 OPTIONAL,
  maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power          OPTIONAL,
  -- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
  -- between UL DPCH info, CPCH SET info and CPCH set ID.
  ul-ChannelRequirement         UL-ChannelRequirementWithCPCH-SetID  OPTIONAL,
  modeSpecificInfo              CHOICE {
    fdd
      SEQUENCE {
        dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
      },
    tdd
      NULL
  },
  dl-CommonInformation          DL-CommonInformation          OPTIONAL,
  dl-InformationPerRL-List      DL-InformationPerRL-List      OPTIONAL
}

PhysicalChannelReconfiguration-v3a0ext ::= SEQUENCE {
  new-DSCH-RNTI                 DSCH-RNTI                 OPTIONAL
}

PhysicalChannelReconfiguration-v4xyext-IEs ::= SEQUENCE {

```

```

-- Physical channel IEs
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
ssdt-UL                SSdT-UL-r4                OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
cell-id-PerRL-List     CellIdentity-PerRL-List    OPTIONAL
}

```

```

PhysicalChannelReconfiguration-r4-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo              OPTIONAL,
  activationTime                  ActivationTime                  OPTIONAL,
  new-U-RNTI                      U-RNTI                        OPTIONAL,
  new-C-RNTI                      C-RNTI                        OPTIONAL,
  new-DSCH-RNTI                  DSCH-RNTI                     OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
  cn-InformationInfo              CN-InformationInfo            OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                    URA-Identity                  OPTIONAL,
-- Radio bearer IEs
  rb-WithPDCP-InfoList           RB-WithPDCP-InfoList         OPTIONAL,
-- Physical channel IEs
  frequencyInfo                  FrequencyInfo                  OPTIONAL,
  maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power         OPTIONAL,
-- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r4 contains the choice
-- between UL DPCH info, CPCH SET info and CPCH set ID.
  ul-ChannelRequirement           UL-ChannelRequirementWithCPCH-SetID-r4  OPTIONAL,
  modeSpecificInfo               CHOICE {
    fdd                           SEQUENCE {
      dl-PDSCH-Information        DL-PDSCH-Information          OPTIONAL
    },
    tdd                           NULL
  },
  dl-CommonInformation            DL-CommonInformation-r4       OPTIONAL,
  dl-InformationPerRL-List        DL-InformationPerRL-List-r4   OPTIONAL
}

```

```

PhysicalChannelReconfiguration-r5-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo              OPTIONAL,
  activationTime                  ActivationTime                  OPTIONAL,
  new-U-RNTI                      U-RNTI                        OPTIONAL,
  new-C-RNTI                      C-RNTI                        OPTIONAL,
  new-DSCH-RNTI                  DSCH-RNTI                     OPTIONAL,
  new-H-RNTI                      H-RNTI                        OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
  cn-InformationInfo              CN-InformationInfo            OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                    URA-Identity                  OPTIONAL,
-- Radio bearer IEs
  rb-WithPDCP-InfoList           RB-WithPDCP-InfoList         OPTIONAL,
-- Physical channel IEs
  frequencyInfo                  FrequencyInfo                  OPTIONAL,
  maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power         OPTIONAL,
-- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r4 contains the choice
-- between UL DPCH info, CPCH SET info and CPCH set ID.
  ul-ChannelRequirement           UL-ChannelRequirementWithCPCH-SetID-r5  OPTIONAL,
  modeSpecificInfo               CHOICE {
    fdd                           SEQUENCE {
      dl-PDSCH-Information        DL-PDSCH-Information          OPTIONAL
    },
    tdd                           NULL
  },
  dl-HSPDSCH-Information          DL-HSPDSCH-Information        OPTIONAL,
  dl-CommonInformation            DL-CommonInformation-r4       OPTIONAL,
  dl-InformationPerRL-List        DL-InformationPerRL-List-r5   OPTIONAL
}

```

```

-- *****
--
-- PHYSICAL CHANNEL RECONFIGURATION COMPLETE

```

```

--
-- *****
PhysicalChannelReconfigurationComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo      IntegrityProtActivationInfo      OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance                UL-TimingAdvance                OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime          ActivationTime                OPTIONAL,
  rb-UL-CiphActivationTimeInfo     RB-ActivationTimeInfoList      OPTIONAL,
  ul-CounterSynchronisationInfo    UL-CounterSynchronisationInfo  OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions            SEQUENCE {}                OPTIONAL
}

-- *****
--
-- PHYSICAL CHANNEL RECONFIGURATION FAILURE
--
-- *****

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier      OPTIONAL,
  failureCause                  FailureCauseWithProtErr,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}                OPTIONAL
}

-- *****
--
-- PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)
--
-- *****

PhysicalSharedChannelAllocation ::= CHOICE {
  r3                             SEQUENCE {
    physicalSharedChannelAllocation-r3
    PhysicalSharedChannelAllocation-r3-IEs,
    nonCriticalExtensions        SEQUENCE {}                OPTIONAL
  },
  later-than-r3                  SEQUENCE {
    dsch-RNTI                    DSCH-RNTI                    OPTIONAL,
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions            CHOICE {
      r4                          SEQUENCE {
        physicalSharedChannelAllocation-r4
        PhysicalSharedChannelAllocation-r4-IEs,
        nonCriticalExtensions      SEQUENCE {}                OPTIONAL
      },
      criticalExtensions          SEQUENCE {}
    }
  }
}

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  dsch-RNTI                      DSCH-RNTI                      OPTIONAL,
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- Physical channel IEs
  ul-TimingAdvance                UL-TimingAdvanceControl        OPTIONAL,
  pusch-CapacityAllocationInfo    PUSCH-CapacityAllocationInfo    OPTIONAL,
  pdsch-CapacityAllocationInfo    PDSCH-CapacityAllocationInfo    OPTIONAL,
  -- TABULAR: If the above value is not present, the default value "No Confirm"
  -- shall be used as specified in 10.2.25.
  confirmRequest                  ENUMERATED {
    confirmPDSCH, confirmPUSCH }  OPTIONAL,
  trafficVolumeReportRequest      INTEGER (0..255)                OPTIONAL,
  iscpTimeslotList                TimeslotList                    OPTIONAL,
  requestPCCPCHRSCP              BOOLEAN
}

PhysicalSharedChannelAllocation-r4-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- Physical channel IEs

```

```

    ul-TimingAdvance          UL-TimingAdvanceControl-r4          OPTIONAL,
    pusch-CapacityAllocationInfo PUSCH-CapacityAllocationInfo-r4    OPTIONAL,
    pdsch-CapacityAllocationInfo PDSCH-CapacityAllocationInfo-r4  OPTIONAL,
    -- TABULAR: If confirmRequest is not present, the default value "No Confirm"
    -- shall be used as specified in 10.2.25.
    confirmRequest            ENUMERATED {
                                confirmPDSCH, confirmPUSCH }    OPTIONAL,
    iscpTimeslotList          TimeslotList-r4                      OPTIONAL,
    requestPCCPCHRSCP         BOOLEAN
}

-- *****
--
-- PUSCH CAPACITY REQUEST (TDD only)
--
-- *****

PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
    dsch-RNTI                DSCH-RNTI                          OPTIONAL,
    -- Measurement IEs
    trafficVolume             TrafficVolumeMeasuredResultsList,
    timeslotListWithISCP     TimeslotListWithISCP              OPTIONAL,
    primaryCCPCH-RSCP        PrimaryCCPCH-RSCP                  OPTIONAL,
    allocationConfirmation    CHOICE {
        pdschConfirmation     PDSCH-Identity,
        puschConfirmation     PUSCH-Identity
    }                      OPTIONAL,
    protocolErrorIndicator    ProtocolErrorIndicatorWithMoreInfo,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions     SEQUENCE {} OPTIONAL
}

-- *****
--
-- RADIO BEARER RECONFIGURATION
--
-- *****

RadioBearerReconfiguration ::= CHOICE {
    r3                        SEQUENCE {
        radioBearerReconfiguration-r3 RadioBearerReconfiguration-r3-IEs,
        v3a0NonCriticalExtensions SEQUENCE {
            radioBearerReconfiguration-v3a0ext RadioBearerReconfiguration-v3a0ext,
            v4xyNonCriticalExtensions SEQUENCE {
                radioBearerReconfiguration-v4xyext
                RadioBearerReconfiguration-v4xyext-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3            SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions       CHOICE {
            r4                    SEQUENCE {
                radioBearerReconfiguration-r4 RadioBearerReconfiguration-r4-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            },
            criticalExtensions    CHOICE {
                r5                SEQUENCE {
                    radioBearerReconfiguration-r5 RadioBearerReconfiguration-r5-IEs,
                    nonCriticalExtensions SEQUENCE {} OPTIONAL
                },
                criticalExtensions SEQUENCE {}
            }
        }
    }
}

RadioBearerReconfiguration-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    integrityProtectionModeInfo IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo        CipheringModeInfo                OPTIONAL,
    activationTime           ActivationTime                    OPTIONAL,
    new-U-RNTI               U-RNTI                          OPTIONAL,
    new-C-RNTI               C-RNTI                          OPTIONAL,
    rrc-StateIndicator       RRC-StateIndicator,

```

```

    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
  cn-InformationInfo                CN-InformationInfo                OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                       URA-Identity                       OPTIONAL,
-- Radio bearer IEs
  rab-InformationReconfigList        RAB-InformationReconfigList        OPTIONAL,
-- NOTE: IE rb-InformationReconfigList should be optional in later versions
-- of this message
  rb-InformationReconfigList          RB-InformationReconfigList,
  rb-InformationAffectedList          RB-InformationAffectedList          OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo               UL-CommonTransChInfo               OPTIONAL,
  ul-deletedTransChInfoList           UL-DeletedTransChInfoList           OPTIONAL,
  ul-AddReconfTransChInfoList         UL-AddReconfTransChInfoList         OPTIONAL,
  modeSpecificTransChInfo             CHOICE {
    fdd                                SEQUENCE {
      cpch-SetID                       CPCH-SetID                         OPTIONAL,
      addReconfTransChDRAC-Info         DRAC-StaticInformationList         OPTIONAL
    },
    tdd                                NULL
  }
  dl-CommonTransChInfo               DL-CommonTransChInfo               OPTIONAL,
  dl-DeletedTransChInfoList           DL-DeletedTransChInfoList           OPTIONAL,
  dl-AddReconfTransChInfoList         DL-AddReconfTransChInfo2List        OPTIONAL,
-- Physical channel IEs
  frequencyInfo                      FrequencyInfo                       OPTIONAL,
  maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power               OPTIONAL,
  ul-ChannelRequirement               UL-ChannelRequirement               OPTIONAL,
  modeSpecificPhysChInfo              CHOICE {
    fdd                                SEQUENCE {
      dl-PDSCH-Information              DL-PDSCH-Information               OPTIONAL
    },
    tdd                                NULL
  },
  dl-CommonInformation                DL-CommonInformation                OPTIONAL,
-- NOTE: IE dl-InformationPerRL-List should be optional in later versions
-- of this message
  dl-InformationPerRL-List             DL-InformationPerRL-List
}

RadioBearerReconfiguration-v3a0ext ::= SEQUENCE {
  new-DSCH-RNTI                       DSCH-RNTI                           OPTIONAL
}

RadioBearerReconfiguration-v4xyext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
  ssdt-UL                             SSdT-UL-r4                           OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
  cell-id-PerRL-List                   CellIdentity-PerRL-List               OPTIONAL
}

RadioBearerReconfiguration-r4-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo          IntegrityProtectionModeInfo           OPTIONAL,
  cipheringModeInfo                    CipheringModeInfo                     OPTIONAL,
  activationTime                        ActivationTime                          OPTIONAL,
  new-U-RNTI                            U-RNTI                                OPTIONAL,
  new-C-RNTI                            C-RNTI                                OPTIONAL,
  new-DSCH-RNTI                         DSCH-RNTI                             OPTIONAL,
  rrc-StateIndicator                    RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff            UTRAN-DRX-CycleLengthCoefficient      OPTIONAL,
-- Core network IEs
  cn-InformationInfo                    CN-InformationInfo                    OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                          URA-Identity                          OPTIONAL,
-- Radio bearer IEs
  rab-InformationReconfigList            RAB-InformationReconfigList           OPTIONAL,
  rb-InformationReconfigList-r4          RB-InformationReconfigList-r4         OPTIONAL,
  rb-InformationAffectedList             RB-InformationAffectedList            OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo-r4               UL-CommonTransChInfo-r4               OPTIONAL,
  ul-deletedTransChInfoList              UL-DeletedTransChInfoList             OPTIONAL,
  ul-AddReconfTransChInfoList            UL-AddReconfTransChInfoList           OPTIONAL,
  modeSpecificTransChInfo                CHOICE {

```



```

        fdd                SEQUENCE {
            cpch-SetID      CPCH-SetID                OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
        },
        tdd                NULL
    }
    dl-CommonTransChInfo  DL-CommonTransChInfo-r4        OPTIONAL,
    dl-DeletedTransChInfoList  DL-DeletedTransChInfoList  OPTIONAL,
    dl-AddReconfTransChInfoList  DL-AddReconfTransChInfo2List  OPTIONAL,
-- Physical channel IEs
    frequencyInfo        FrequencyInfo                OPTIONAL,
    maxAllowedUL-TX-Power  MaxAllowedUL-TX-Power        OPTIONAL,
    ul-ChannelRequirement  UL-ChannelRequirement-r4     OPTIONAL,
    modeSpecificPhysChInfo CHOICE {
        fdd                SEQUENCE {
            dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL
        },
        tdd                NULL
    },
    dl-CommonInformation  DL-CommonInformation-r4        OPTIONAL,
    dl-InformationPerRL-List  DL-InformationPerRL-List-r4  OPTIONAL
}

RadioBearerReconfiguration-r5-IEs ::= SEQUENCE {
-- User equipment IEs
    integrityProtectionModeInfo  IntegrityProtectionModeInfo  OPTIONAL,
    cipheringModeInfo            CipheringModeInfo        OPTIONAL,
    activationTime                ActivationTime              OPTIONAL,
    new-U-RNTI                    U-RNTI                      OPTIONAL,
    new-C-RNTI                    C-RNTI                      OPTIONAL,
    new-DSCH-RNTI                DSCH-RNTI                OPTIONAL,
    new-H-RNTI                    H-RNTI                      OPTIONAL,
    rrc-StateIndicator            RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
    cn-InformationInfo            CN-InformationInfo        OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                  URA-Identity          OPTIONAL,
-- Radio bearer IEs
    rab-InformationReconfigList   RAB-InformationReconfigList  OPTIONAL,
    rb-InformationReconfigList    RB-InformationReconfigList-r5  OPTIONAL,
    rb-InformationAffectedList    RB-InformationAffectedList-r5  OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo        UL-CommonTransChInfo-r4    OPTIONAL,
    ul-deletedTransChInfoList    UL-DeletedTransChInfoList  OPTIONAL,
    ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList  OPTIONAL,
    modeSpecificTransChInfo      CHOICE {
        fdd                SEQUENCE {
            cpch-SetID      CPCH-SetID                OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
        },
        tdd                NULL
    }
    dl-CommonTransChInfo        DL-CommonTransChInfo-r4    OPTIONAL,
    dl-DeletedTransChInfoList    DL-DeletedTransChInfoList-r5  OPTIONAL,
    dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList-r5  OPTIONAL,
-- Physical channel IEs
    frequencyInfo                FrequencyInfo            OPTIONAL,
    maxAllowedUL-TX-Power        MaxAllowedUL-TX-Power  OPTIONAL,
    ul-ChannelRequirement        UL-ChannelRequirement-r5  OPTIONAL,
    modeSpecificPhysChInfo      CHOICE {
        fdd                SEQUENCE {
            dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL
        },
        tdd                NULL
    },
    dl-HSPDSCH-Information      DL-HSPDSCH-Information  OPTIONAL,
    dl-CommonInformation        DL-CommonInformation-r4  OPTIONAL,
    dl-InformationPerRL-List    DL-InformationPerRL-List-r5  OPTIONAL
}

-- *****
--
-- RADIO BEARER RECONFIGURATION COMPLETE
--
-- *****

```

```
RadioBearerReconfigurationComplete ::= SEQUENCE {
```

```

-- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo     IntegrityProtActivationInfo      OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance              UL-TimingAdvance                      OPTIONAL,
-- Radio bearer IEs
  count-C-ActivationTime        ActivationTime                      OPTIONAL,
  rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList        OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo    OPTIONAL,
-- Extension mechanism for non- release99 information
  nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

-- *****
--
-- RADIO BEARER RECONFIGURATION FAILURE
--
-- *****

RadioBearerReconfigurationFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  -- Radio bearer IEs
  potentiallySuccessfulBearerList RB-IdentityList                  OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

-- *****
--
-- RADIO BEARER RELEASE
--
-- *****

RadioBearerRelease ::= CHOICE {
  r3
    SEQUENCE {
      radioBearerRelease-r3      RadioBearerRelease-r3-IEs,
      v3a0NonCriticalExtensions  SEQUENCE {
        radioBearerRelease-v3a0ext  RadioBearerRelease-v3a0ext,
        v4xyNonCriticalExtensions  SEQUENCE {
          radioBearerRelease-v4xyext  RadioBearerRelease-v4xyext-IEs,
          nonCriticalExtensions      SEQUENCE {} OPTIONAL
        } OPTIONAL
      } OPTIONAL
    },
  later-than-r3
    SEQUENCE {
      rrc-TransactionIdentifier  RRC-TransactionIdentifier,
      criticalExtensions         CHOICE {
        r4
          SEQUENCE {
            radioBearerRelease-r4  RadioBearerRelease-r4-IEs,
            nonCriticalExtensions  SEQUENCE {} OPTIONAL
          },
        r5
          SEQUENCE {
            radioBearerRelease-r5  RadioBearerRelease-r5-IEs,
            nonCriticalExtensions  SEQUENCE {} OPTIONAL
          },
        criticalExtensions      SEQUENCE {}
      }
    }
}

RadioBearerRelease-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo   IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo             CipheringModeInfo              OPTIONAL,
  activationTime                ActivationTime                      OPTIONAL,
  new-U-RNTI                    U-RNTI                          OPTIONAL,
  new-C-RNTI                    C-RNTI                          OPTIONAL,
  rrc-StateIndicator            RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
  cn-InformationInfo            CN-InformationInfo                  OPTIONAL,
  signallingConnectionRelIndication  CN-DomainIdentity          OPTIONAL,
-- UTRAN mobility IEs

```

```

ura-Identity                URA-Identity                OPTIONAL,
-- Radio bearer IEs
rab-InformationReconfigList  RAB-InformationReconfigList  OPTIONAL,
rb-InformationReleaseList    RB-InformationReleaseList,
rb-InformationAffectedList    RB-InformationAffectedList    OPTIONAL,
dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
-- Transport channel IEs
ul-CommonTransChInfo         UL-CommonTransChInfo         OPTIONAL,
ul-deletedTransChInfoList     UL-DeletedTransChInfoList     OPTIONAL,
ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList   OPTIONAL,
modeSpecificTransChInfo       CHOICE {
    fdd                        SEQUENCE {
        cpch-SetID            CPCH-SetID            OPTIONAL,
        addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd                        NULL
}
dl-CommonTransChInfo         DL-CommonTransChInfo         OPTIONAL,
dl-DeletedTransChInfoList     DL-DeletedTransChInfoList     OPTIONAL,
dl-AddReconfTransChInfoList   DL-AddReconfTransChInfo2List   OPTIONAL,
-- Physical channel IEs
frequencyInfo                FrequencyInfo                OPTIONAL,
maxAllowedUL-TX-Power        MaxAllowedUL-TX-Power        OPTIONAL,
ul-ChannelRequirement        UL-ChannelRequirement        OPTIONAL,
modeSpecificPhysChInfo       CHOICE {
    fdd                        SEQUENCE {
        dl-PDSCH-Information   DL-PDSCH-Information   OPTIONAL
    },
    tdd                        NULL
},
dl-CommonInformation         DL-CommonInformation         OPTIONAL,
dl-InformationPerRL-List     DL-InformationPerRL-List     OPTIONAL
}

RadioBearerRelease-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI              DSCH-RNTI                    OPTIONAL
}

RadioBearerRelease-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- IE ssdt-UL extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                    SSdT-UL-r4                        OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List         CellIdentity-PerRL-List       OPTIONAL
}

RadioBearerRelease-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo          CipheringModeInfo              OPTIONAL,
    activationTime              ActivationTime                  OPTIONAL,
    new-U-RNTI                  U-RNTI                        OPTIONAL,
    new-C-RNTI                  C-RNTI                        OPTIONAL,
    new-DSCH-RNTI              DSCH-RNTI                    OPTIONAL,
    rrc-StateIndicator          RRC-StateIndicator,          OPTIONAL,
    utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- Core network IEs
    cn-InformationInfo          CN-InformationInfo              OPTIONAL,
    signallingConnectionRelIndication CN-DomainIdentity          OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                URA-Identity                OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList  RAB-InformationReconfigList  OPTIONAL,
    rb-InformationReleaseList    RB-InformationReleaseList,
    rb-InformationAffectedList    RB-InformationAffectedList    OPTIONAL,
    rb-WithPDCP-InfoList        RB-WithPDCP-InfoList         OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo         UL-CommonTransChInfo-r4       OPTIONAL,
    ul-deletedTransChInfoList     UL-DeletedTransChInfoList     OPTIONAL,
    ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList   OPTIONAL,
    modeSpecificTransChInfo       CHOICE {
        fdd                        SEQUENCE {
            cpch-SetID            CPCH-SetID            OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
        },
        tdd                        NULL
    }
}

```

```

    }
    dl-CommonTransChInfo          DL-CommonTransChInfo-r4          OPTIONAL,
    dl-DeletedTransChInfoList     DL-DeletedTransChInfoList     OPTIONAL,
    dl-AddReconfTransChInfoList   DL-AddReconfTransChInfo2List   OPTIONAL,
-- Physical channel IEs
    frequencyInfo                 FrequencyInfo                 OPTIONAL,
    maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power         OPTIONAL,
    ul-ChannelRequirement         UL-ChannelRequirement-r4     OPTIONAL,
    modeSpecificPhysChInfo        CHOICE {
        fdd                       SEQUENCE {
            dl-PDSCH-Information   DL-PDSCH-Information         OPTIONAL
        },
        tdd                       NULL
    },
    dl-CommonInformation          DL-CommonInformation-r4     OPTIONAL,
    dl-InformationPerRL-List      DL-InformationPerRL-List-r4  OPTIONAL
}

RadioBearerRelease-r5-IEs ::= SEQUENCE {
-- User equipment IEs
    integrityProtectionModeInfo   IntegrityProtectionModeInfo   OPTIONAL,
    cipheringModeInfo             CipheringModeInfo             OPTIONAL,
    activationTime                 ActivationTime                 OPTIONAL,
    new-U-RNTI                     U-RNTI                       OPTIONAL,
    new-C-RNTI                     C-RNTI                       OPTIONAL,
    new-DSCH-RNTI                 DSCH-RNTI                   OPTIONAL,
    new-H-RNTI                     H-RNTI                       OPTIONAL,
    rrc-StateIndicator            RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
    cn-InformationInfo            CN-InformationInfo           OPTIONAL,
    signallingConnectionRelIndication  CN-DomainIdentity           OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                  URA-Identity                 OPTIONAL,
-- Radio bearer IEs
    rab-InformationReconfigList    RAB-InformationReconfigList   OPTIONAL,
    rb-InformationReleaseList      RB-InformationReleaseList,
    rb-InformationAffectedList     RB-InformationAffectedList-r5  OPTIONAL,
    rb-WithPDCP-InfoList          RB-WithPDCP-InfoList         OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo          UL-CommonTransChInfo-r4     OPTIONAL,
    ul-deletedTransChInfoList     UL-DeletedTransChInfoList    OPTIONAL,
    ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList  OPTIONAL,
    modeSpecificTransChInfo        CHOICE {
        fdd                       SEQUENCE {
            cpch-SetID            CPCH-SetID                 OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
        },
        tdd                       NULL
    }
    dl-CommonTransChInfo          DL-CommonTransChInfo-r4     OPTIONAL,
    dl-DeletedTransChInfoList     DL-DeletedTransChInfoList-r5  OPTIONAL,
    dl-AddReconfTransChInfoList   DL-AddReconfTransChInfoList-r5  OPTIONAL,
-- Physical channel IEs
    frequencyInfo                 FrequencyInfo                 OPTIONAL,
    maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power         OPTIONAL,
    ul-ChannelRequirement         UL-ChannelRequirement-r5     OPTIONAL,
    modeSpecificPhysChInfo        CHOICE {
        fdd                       SEQUENCE {
            dl-PDSCH-Information   DL-PDSCH-Information         OPTIONAL
        },
        tdd                       NULL
    },
    dl-HSPDSCH-Information        DL-HSPDSCH-Information       OPTIONAL,
    dl-CommonInformation          DL-CommonInformation-r4     OPTIONAL,
    dl-InformationPerRL-List      DL-InformationPerRL-List-r5  OPTIONAL
}

```

```

-- *****
--
-- RADIO BEARER RELEASE COMPLETE
--
-- *****

```

```

RadioBearerReleaseComplete ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,

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        ul-IntegProtActivationInfo      IntegrityProtActivationInfo      OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance                UL-TimingAdvance                OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                  OPTIONAL,
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList      OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo  OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                    OPTIONAL
    }

-- *****
--
-- RADIO BEARER RELEASE FAILURE
--
-- *****

RadioBearerReleaseFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    failureCause                       FailureCauseWithProtErr,
    -- Radio bearer IEs
    potentiallySuccessfulBearerList    RB-IdentityList                OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}                    OPTIONAL
}

-- *****
--
-- RADIO BEARER SETUP
--
-- *****

RadioBearerSetup ::= CHOICE {
    r3                                  SEQUENCE {
        radioBearerSetup-r3            RadioBearerSetup-r3-IEs,
        v3a0NonCriticalExtensions      SEQUENCE {
            radioBearerSetup-v3a0ext   RadioBearerSetup-v3a0ext,
            v4xyNonCriticalExtensions  SEQUENCE {
                radioBearerSetup-v4xyext RadioBearerSetup-v4xyext-IEs,
                nonCriticalExtensions  SEQUENCE {} OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                       SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                          SEQUENCE {
                radioBearerSetup-r4     RadioBearerSetup-r4-IEs,
                nonCriticalExtensions   SEQUENCE {} OPTIONAL
            },
            criticalExtensions          CHOICE {
                r5                      SEQUENCE {
                    radioBearerSetup-r5 RadioBearerSetup-r5-IEs,
                    nonCriticalExtensions SEQUENCE {} OPTIONAL
                },
                criticalExtensions      SEQUENCE {}
            }
        }
    }
}

RadioBearerSetup-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    integrityProtectionModeInfo       IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo                 CipheringModeInfo              OPTIONAL,
    activationTime                     ActivationTime                   OPTIONAL,
    new-U-RNTI                         U-RNTI                         OPTIONAL,
    new-C-RNTI                         C-RNTI                         OPTIONAL,
    rrc-StateIndicator                 RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff        UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                       URA-Identity                   OPTIONAL,
    -- Core network IEs
    cn-InformationInfo                 CN-InformationInfo             OPTIONAL,
    -- Radio bearer IEs
    srb-InformationSetupList           SRB-InformationSetupList      OPTIONAL,

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```

    rab-InformationSetupList      RAB-InformationSetupList      OPTIONAL,
    rb-InformationAffectedList    RB-InformationAffectedList    OPTIONAL,
    dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo        UL-CommonTransChInfo          OPTIONAL,
    ul-deletedTransChInfoList    UL-DeletedTransChInfoList     OPTIONAL,
    ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList   OPTIONAL,
    modeSpecificTransChInfo      CHOICE {
        fdd                      SEQUENCE {
            cpch-SetID           CPCH-SetID                    OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
        },
        tdd                      NULL
    }
    dl-CommonTransChInfo        DL-CommonTransChInfo          OPTIONAL,
    dl-DeletedTransChInfoList    DL-DeletedTransChInfoList     OPTIONAL,
    dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList   OPTIONAL,
-- Physical channel IEs
    frequencyInfo               FrequencyInfo                  OPTIONAL,
    maxAllowedUL-TX-Power        MaxAllowedUL-TX-Power         OPTIONAL,
    ul-ChannelRequirement        UL-ChannelRequirement         OPTIONAL,
    modeSpecificPhysChInfo      CHOICE {
        fdd                      SEQUENCE {
            dl-PDSCH-Information DL-PDSCH-Information         OPTIONAL
        },
        tdd                      NULL
    },
    dl-CommonInformation        DL-CommonInformation          OPTIONAL,
    dl-InformationPerRL-List     DL-InformationPerRL-List      OPTIONAL
}

RadioBearerSetup-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI                DSCH-RNTI                    OPTIONAL
}

RadioBearerSetup-v4xyext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL                      SSdT-UL-r4                    OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List           CellIdentity-PerRL-List      OPTIONAL
}

RadioBearerSetup-r4-IEs ::= SEQUENCE {
-- User equipment IEs
    integrityProtectionModeInfo  IntegrityProtectionModeInfo  OPTIONAL,
    cipheringModeInfo            CipheringModeInfo             OPTIONAL,
    activationTime                ActivationTime                 OPTIONAL,
    new-U-RNTI                    U-RNTI                       OPTIONAL,
    new-C-RNTI                    C-RNTI                       OPTIONAL,
    new-DSCH-RNTI                DSCH-RNTI                    OPTIONAL,
    rrc-StateIndicator           RRC-StateIndicator,         OPTIONAL,
    utran-DRX-CycleLengthCoeff   UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                  URA-Identity                 OPTIONAL,
-- Core network IEs
    cn-InformationInfo           CN-InformationInfo           OPTIONAL,
-- Radio bearer IEs
    srb-InformationSetupList      SRB-InformationSetupList     OPTIONAL,
    rab-InformationSetupList      RAB-InformationSetupList-r4  OPTIONAL,
    rb-InformationAffectedList    RB-InformationAffectedList   OPTIONAL,
    rb-WithPDCP-InfoList         RB-WithPDCP-InfoList        OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo-r4      UL-CommonTransChInfo-r4     OPTIONAL,
    ul-deletedTransChInfoList-r4 UL-DeletedTransChInfoList-r4 OPTIONAL,
    ul-AddReconfTransChInfoList-r4 UL-AddReconfTransChInfoList-r4 OPTIONAL,
    modeSpecificTransChInfo-r4   CHOICE {
        fdd                      SEQUENCE {
            cpch-SetID           CPCH-SetID                    OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
        },
        tdd                      NULL
    }
    dl-CommonTransChInfo-r4      DL-CommonTransChInfo-r4     OPTIONAL,
    dl-DeletedTransChInfoList-r4 DL-DeletedTransChInfoList-r4 OPTIONAL,
    dl-AddReconfTransChInfoList-r4 DL-AddReconfTransChInfoList-r4 OPTIONAL,
}

```

```

-- Physical channel IEs
frequencyInfo          FrequencyInfo          OPTIONAL,
maxAllowedUL-TX-Power  MaxAllowedUL-TX-Power  OPTIONAL,
ul-ChannelRequirement  UL-ChannelRequirement-r4  OPTIONAL,
modeSpecificPhysChInfo CHOICE {
    fdd                 SEQUENCE {
        dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL
    },
    tdd                 NULL
},
dl-CommonInformation  DL-CommonInformation-r4  OPTIONAL,
dl-InformationPerRL-List  DL-InformationPerRL-List-r4  OPTIONAL
}

RadioBearerSetup-r5-IEs ::= SEQUENCE {
-- User equipment IEs
integrityProtectionModeInfo  IntegrityProtectionModeInfo  OPTIONAL,
cipheringModeInfo            CipheringModeInfo            OPTIONAL,
activationTime               ActivationTime               OPTIONAL,
new-U-RNTI                   U-RNTI                     OPTIONAL,
new-C-RNTI                   C-RNTI                     OPTIONAL,
new-DSCH-RNTI               DSCH-RNTI                 OPTIONAL,
new-H-RNTI                   H-RNTI                     OPTIONAL,
rrc-StateIndicator          RRC-StateIndicator,
utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- UTRAN mobility IEs
ura-Identity                 URA-Identity               OPTIONAL,
-- Core network IEs
cn-InformationInfo          CN-InformationInfo         OPTIONAL,
-- Radio bearer IEs
srb-InformationSetupList    SRB-InformationSetupList    OPTIONAL,
rab-InformationSetupList    RAB-InformationSetupList-r4  OPTIONAL,
rb-InformationAffectedList  RB-InformationAffectedList-r5  OPTIONAL,
rb-WithPDCP-InfoList       RB-WithPDCP-InfoList       OPTIONAL,
-- Transport channel IEs
ul-CommonTransChInfo        UL-CommonTransChInfo-r4     OPTIONAL,
ul-deletedTransChInfoList   UL-DeletedTransChInfoList   OPTIONAL,
ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList  OPTIONAL,
modeSpecificTransChInfo     CHOICE {
    fdd                 SEQUENCE {
        cpch-SetID      CPCH-SetID          OPTIONAL,
        addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
    },
    tdd                 NULL
},
dl-CommonTransChInfo        DL-CommonTransChInfo-r4     OPTIONAL,
dl-DeletedTransChInfoList   DL-DeletedTransChInfoList-r5  OPTIONAL,
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5  OPTIONAL,
-- Physical channel IEs
frequencyInfo          FrequencyInfo          OPTIONAL,
maxAllowedUL-TX-Power  MaxAllowedUL-TX-Power  OPTIONAL,
ul-ChannelRequirement  UL-ChannelRequirement-r5  OPTIONAL,
modeSpecificPhysChInfo CHOICE {
    fdd                 SEQUENCE {
        dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL
    },
    tdd                 NULL
},
dl-HSPDSCH-Information  DL-HSPDSCH-Information  OPTIONAL,
dl-CommonInformation    DL-CommonInformation-r4  OPTIONAL,
dl-InformationPerRL-List  DL-InformationPerRL-List-r5  OPTIONAL
}

-- *****
--
-- RADIO BEARER SETUP COMPLETE
--
-- *****

RadioBearerSetupComplete ::= SEQUENCE {
-- User equipment IEs
rrc-TransactionIdentifier  RRC-TransactionIdentifier,
ul-IntegProtActivationInfo  IntegrityProtActivationInfo  OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
ul-TimingAdvance          UL-TimingAdvance          OPTIONAL,
start-Value               START-Value               OPTIONAL,
-- Radio bearer IEs
count-C-ActivationTime    ActivationTime            OPTIONAL,

```

```

        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList    OPTIONAL,
        ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo  OPTIONAL,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }
-- *****
--
-- RADIO BEARER SETUP FAILURE
--
-- *****

RadioBearerSetupFailure ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    failureCause                       FailureCauseWithProtErr,
-- Radio bearer IEs
    potentiallySuccessfulBearerList    RB-IdentityList                OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}          OPTIONAL
}
-- *****
--
-- RRC CONNECTION REJECT
--
-- *****

RRCConnectionReject ::= CHOICE {
    r3                                  SEQUENCE {
        rrcConnectionReject-r3        RRCConnectionReject-r3-IEs,
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    },
    later-than-r3                      SEQUENCE {
        initialUE-Identity             InitialUE-Identity,
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
}

RRCConnectionReject-r3-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall not be performed on this message.
-- User equipment IEs
    initialUE-Identity                 InitialUE-Identity,
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    rejectionCause                     RejectionCause,
    waitTime                           WaitTime,
    redirectionInfo                    RedirectionInfo        OPTIONAL
}
-- *****
--
-- RRC CONNECTION RELEASE
--
-- *****

RRCConnectionRelease ::= CHOICE {
    r3                                  SEQUENCE {
        rrcConnectionRelease-r3        RRCConnectionRelease-r3-IEs,
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    },
    later-than-r3                      SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                          SEQUENCE {
                rrcConnectionRelease-r4  RRCConnectionRelease-r4-IEs,
                nonCriticalExtensions    SEQUENCE {}          OPTIONAL
            },
            criticalExtensions          SEQUENCE {}
        }
    }
}

RRCConnectionRelease-r3-IEs ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
-- n-308 is conditional on the UE state
    n-308                             N-308                OPTIONAL,
}

```



```

        releaseCause          ReleaseCause,
        rplmn-information      Rplmn-Information          OPTIONAL
    }

RRCConnectionRelease-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    -- n-308 is conditional on the UE state.
    n-308                      N-308                    OPTIONAL,
    releaseCause                ReleaseCause,
    rplmn-information           Rplmn-Information-r4      OPTIONAL
}

-- *****
--
-- RRC CONNECTION RELEASE for CCCH
--
-- *****

RRCConnectionRelease-CCCH ::= CHOICE {
    r3                          SEQUENCE {
        rrcConnectionRelease-CCCH-r3  RRCConnectionRelease-CCCH-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    later-than-r3                SEQUENCE {
        u-RNTI                      U-RNTI,
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            CHOICE {
            r4                      SEQUENCE {
                rrcConnectionRelease-CCCH-r4  RRCConnectionRelease-CCCH-r4-IEs,
                nonCriticalExtensions          SEQUENCE {} OPTIONAL
            },
            criticalExtensions            SEQUENCE {}
        }
    }
}

RRCConnectionRelease-CCCH-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    u-RNTI                      U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
    rrcConnectionRelease        RRCConnectionRelease-r3-IEs
}

RRCConnectionRelease-CCCH-r4-IEs ::= SEQUENCE {
    -- The rest of the message is identical to the one sent on DCCH.
    rrcConnectionRelease        RRCConnectionRelease-r4-IEs
}

-- *****
--
-- RRC CONNECTION RELEASE COMPLETE
--
-- *****

RRCConnectionReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    errorIndication               FailureCauseWithProtErr          OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

-- *****
--
-- RRC CONNECTION REQUEST
--
-- *****

RRCConnectionRequest ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    initialUE-Identity            InitialUE-Identity,
    establishmentCause            EstablishmentCause,
    -- protocolErrorIndictator is MD, but for compactness reasons no default value
    -- has been assigned to it.
    protocolErrorIndicator        ProtocolErrorIndicator,
    -- Measurement IEs
    measuredResultsOnRACH         MeasuredResultsOnRACH          OPTIONAL,
}

```

```

v4xyNonCriticalExtensions          SEQUENCE {
  rrcConnectionRequest-v4xyext      RRCConnectionRequest-v4xyext-IEs,
  -- Reserved for future non critical extension
  nonCriticalExtensions              SEQUENCE {}          OPTIONAL
}
}

RRCConnectionRequest-v4xyext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v4xyext   UE-RadioAccessCapability-v4xyext
}

-- *****
--
-- RRC CONNECTION SETUP
--
-- *****

RRCConnectionSetup ::= CHOICE {
  r3                                 SEQUENCE {
    rrcConnectionSetup-r3            RRCConnectionSetup-r3-IEs,
    v4xyNonCriticalExtensions        SEQUENCE {
      rrcConnectionSetup-v4xyext     RRCConnectionSetup-v4xyext-IEs,
      -- Extension mechanism for non-release99 information
      nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    } OPTIONAL
  },
  later-than-r3                      SEQUENCE {
    initialUE-Identity               InitialUE-Identity,
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    criticalExtensions               CHOICE {
      r4                              SEQUENCE {
        rrcConnectionSetup-r4        RRCConnectionSetup-r4-IEs,
        nonCriticalExtensions        SEQUENCE {}          OPTIONAL
      },
      criticalExtensions              SEQUENCE {}
    }
  }
}

RRCConnectionSetup-r3-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  initialUE-Identity                 InitialUE-Identity,
  rrc-TransactionIdentifier           RRC-TransactionIdentifier,
  activationTime                     ActivationTime          OPTIONAL,
  new-U-RNTI                         U-RNTI,
  new-c-RNTI                         C-RNTI              OPTIONAL,
  rrc-StateIndicator                 RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff         UTRAN-DRX-CycleLengthCoefficient,
  -- TABULAR: If capacityUpdateRequest is not present, the default value
  -- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement        CapabilityUpdateRequirement OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList           SRB-InformationSetupList2,
  -- Transport channel IEs
  ul-CommonTransChInfo              UL-CommonTransChInfo  OPTIONAL,
  -- NOTE: ul-AddReconfTransChInfoList should be optional in later versions of
  -- this message
  ul-AddReconfTransChInfoList       UL-AddReconfTransChInfoList,
  dl-CommonTransChInfo              DL-CommonTransChInfo  OPTIONAL,
  -- NOTE: dl-AddReconfTransChInfoList should be optional in later versions
  -- of this message
  dl-AddReconfTransChInfoList       DL-AddReconfTransChInfoList,
  -- Physical channel IEs
  frequencyInfo                     FrequencyInfo          OPTIONAL,
  maxAllowedUL-TX-Power              MaxAllowedUL-TX-Power  OPTIONAL,
  ul-ChannelRequirement              UL-ChannelRequirement  OPTIONAL,
  dl-CommonInformation               DL-CommonInformation  OPTIONAL,
  dl-InformationPerRL-List           DL-InformationPerRL-List  OPTIONAL
}

RRCConnectionSetup-v4xyext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4-ext  CapabilityUpdateRequirement-r4-ext  OPTIONAL,
  -- Physical channel IEs
  -- ssdt-UL extends SSDT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL                            SSDT-UL-r4              OPTIONAL,

```

```

-- The order of the RLS in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
cell-id-PerRL-List          CellIdentity-PerRL-List          OPTIONAL
}

RRCConnectionSetup-r4-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  activationTime             ActivationTime                 OPTIONAL,
  new-U-RNTI                 U-RNTI,
  new-c-RNTI                 C-RNTI                 OPTIONAL,
  rrc-StateIndicator         RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient,
  -- TABULAR: If capabilityUpdateRequirements is not present, the default value
  -- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement CapabilityUpdateRequirement-r4  OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList   SRB-InformationSetupList2,
  -- Transport channel IEs
  ul-CommonTransChInfo      UL-CommonTransChInfo          OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList    OPTIONAL,
  dl-CommonTransChInfo      DL-CommonTransChInfo-r4        OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList    OPTIONAL,
  -- Physical channel IEs
  frequencyInfo              FrequencyInfo                OPTIONAL,
  maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power          OPTIONAL,
  ul-ChannelRequirement      UL-ChannelRequirement-r4      OPTIONAL,
  dl-CommonInformation        DL-CommonInformation-r4        OPTIONAL,
  dl-InformationPerRL-List   DL-InformationPerRL-List-r4   OPTIONAL
}

-- *****
--
-- RRC CONNECTION SETUP COMPLETE
--
-- *****

RRCConnectionSetupComplete ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  rrc-TransactionIdentifier   RRC-TransactionIdentifier,
  startList                   STARTList,
  ue-RadioAccessCapability    UE-RadioAccessCapability      OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability     InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
  -- Non critical extensions
  v370NonCriticalExtensions   SEQUENCE {
    rrcConnectionSetupComplete-v370ext RRCConnectionSetupComplete-v370ext,
    v380NonCriticalExtensions         SEQUENCE {
      rrcConnectionSetupComplete-v380ext RRCConnectionSetupComplete-v380ext-IEs,
      -- Reserved for future non critical extension
      v3a0NonCriticalExtensions         SEQUENCE {
        rrcConnectionSetupComplete-v3a0ext RRCConnectionSetupComplete-v3a0ext,
        v4xyNonCriticalExtensions         SEQUENCE {
          rrcConnectionSetupComplete-v4xyext RRCConnectionSetupComplete-v4xyext-IEs,
          nonCriticalExtensions           SEQUENCE {}          OPTIONAL
        }
      }
    }
  }
}

RRCConnectionSetupComplete-v370ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v370ext UE-RadioAccessCapability-v370ext  OPTIONAL
}

RRCConnectionSetupComplete-v380ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v380ext UE-RadioAccessCapability-v380ext  OPTIONAL,
  dl-PhysChCapabilityFDD-v380ext    DL-PhysChCapabilityFDD-v380ext
}

RRCConnectionSetupComplete-v3a0ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v3a0ext UE-RadioAccessCapability-v3a0ext  OPTIONAL
}

RRCConnectionSetupComplete-v4xyext-IEs ::= SEQUENCE {

```

```

-- User equipment IEs
  ue-RadioAccessCapability-r4-ext      UE-RadioAccessCapability-r4-ext      OPTIONAL
}
-- *****
--
-- RRC FAILURE INFO
-- *****

RRC-FailureInfo ::= CHOICE {
  r3                               SEQUENCE {
    rRC-FailureInfo-r3              RRC-FailureInfo-r3-IEs,
    nonCriticalExtensions            SEQUENCE {} OPTIONAL
  },
  criticalExtensions                SEQUENCE {}
}

RRC-FailureInfo-r3-IEs ::= SEQUENCE {
  -- Non-RRC IEs
  failureCauseWithProtErr          FailureCauseWithProtErr
}
-- *****
--
-- RRC STATUS
-- *****

RRCStatus ::= SEQUENCE {
  -- Other IEs
  -- TABULAR: Identification of received message is nested in
  -- ProtocolErrorMoreInformation
  protocolErrorInformation          ProtocolErrorMoreInformation,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions             SEQUENCE {} OPTIONAL
}
-- *****
--
-- SECURITY MODE COMMAND
-- *****

SecurityModeCommand ::= CHOICE {
  r3                               SEQUENCE {
    securityModeCommand-r3          SecurityModeCommand-r3-IEs,
    nonCriticalExtensions            SEQUENCE {} OPTIONAL
  },
  later-than-r3                     SEQUENCE {
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    criticalExtensions               SEQUENCE {}
  }
}

SecurityModeCommand-r3-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
  -- User equipment IEs
  rrc-TransactionIdentifier          RRC-TransactionIdentifier,
  securityCapability                 SecurityCapability,
  cipheringModeInfo                 CipheringModeInfo                OPTIONAL,
  integrityProtectionModeInfo        IntegrityProtectionModeInfo        OPTIONAL,
  -- Core network IEs
  cn-DomainIdentity                 CN-DomainIdentity,
  -- Other IEs
  ue-SystemSpecificSecurityCap       InterRAT-UE-SecurityCapList        OPTIONAL
}
-- *****
--
-- SECURITY MODE COMPLETE
-- *****

SecurityModeComplete ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
  -- User equipment IEs

```

```

    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo     IntegrityProtActivationInfo      OPTIONAL,
-- Radio bearer IEs
    rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList      OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions         SEQUENCE {}          OPTIONAL
}
-- *****
--
-- SECURITY MODE FAILURE
-- *****

SecurityModeFailure ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    failureCause                  FailureCauseWithProtErr,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions         SEQUENCE {}          OPTIONAL
}
-- *****
--
-- SIGNALLING CONNECTION RELEASE
-- *****

SignallingConnectionRelease ::= CHOICE {
    r3                             SEQUENCE {
        signallingConnectionRelease-r3 SignallingConnectionRelease-r3-IEs,
        nonCriticalExtensions         SEQUENCE {}          OPTIONAL
    },
    later-than-r3                 SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions             SEQUENCE {}
    }
}

SignallingConnectionRelease-r3-IEs ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
-- Core network IEs
    cn-DomainIdentity             CN-DomainIdentity
}
-- *****
--
-- SIGNALLING CONNECTION RELEASE INDICATION
-- *****

SignallingConnectionReleaseIndication ::= SEQUENCE {
-- Core network IEs
    cn-DomainIdentity             CN-DomainIdentity,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions         SEQUENCE {}          OPTIONAL
}
-- *****
--
-- SYSTEM INFORMATION for BCH
-- *****

SystemInformation-BCH ::= SEQUENCE {
-- Other information elements
    sfm-Prime                     SFM-Prime,
    payload                       CHOICE {
        noSegment                  NULL,
        firstSegment              FirstSegment,
        subsequentSegment         SubsequentSegment,
        lastSegmentShort          LastSegmentShort,
        lastAndFirst              SEQUENCE {
            lastSegmentShort      LastSegmentShort,
            firstSegment          FirstSegmentShort
        },
        lastAndComplete          SEQUENCE {

```

```

        lastSegmentShort      LastSegmentShort,
        completeSIB-List      CompleteSIB-List
    },
    lastAndCompleteAndFirst    SEQUENCE {
        lastSegmentShort      LastSegmentShort,
        completeSIB-List      CompleteSIB-List,
        firstSegment          FirstSegmentShort
    },
    completeSIB-List          CompleteSIB-List,
    completeAndFirst          SEQUENCE {
        completeSIB-List      CompleteSIB-List,
        firstSegment          FirstSegmentShort
    },
    completeSIB                CompleteSIB,
    lastSegment                LastSegment,
    spare5                      NULL,
    spare4                      NULL,
    spare3                      NULL,
    spare2                      NULL,
    spare1                      NULL
}

```

```

-- *****
--
-- SYSTEM INFORMATION for FACH
--
-- *****

```

```

SystemInformation-FACH ::= SEQUENCE {
    -- Other information elements
    payload                CHOICE {
        noSegment          NULL,
        firstSegment       FirstSegment,
        subsequentSegment  SubsequentSegment,
        lastSegmentShort   LastSegmentShort,
        lastAndFirst       SEQUENCE {
            lastSegmentShort LastSegmentShort,
            firstSegment      FirstSegmentShort
        },
        lastAndComplete    SEQUENCE {
            lastSegmentShort LastSegmentShort,
            completeSIB-List  CompleteSIB-List
        },
        lastAndCompleteAndFirst SEQUENCE {
            lastSegmentShort LastSegmentShort,
            completeSIB-List  CompleteSIB-List,
            firstSegment      FirstSegmentShort
        },
        completeSIB-List   CompleteSIB-List,
        completeAndFirst   SEQUENCE {
            completeSIB-List CompleteSIB-List,
            firstSegment     FirstSegmentShort
        },
        completeSIB        CompleteSIB,
        lastSegment         LastSegment,
        spare5              NULL,
        spare4              NULL,
        spare3              NULL,
        spare2              NULL,
        spare1              NULL
    }
}

```

```

-- *****
--
-- First segment
--
-- *****

```

```

FirstSegment ::= SEQUENCE {
    -- Other information elements
    sib-Type          SIB-Type,
    seg-Count         SegCount,
    sib-Data-fixed    SIB-Data-fixed
}

```

```

-- *****

```

```

--
-- First segment (short)
--
-- *****
FirstSegmentShort ::=          SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    seg-Count                SegCount,
    sib-Data-variable        SIB-Data-variable
}
-- *****
--
-- Subsequent segment
--
-- *****
SubsequentSegment ::=          SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    segmentIndex            SegmentIndex,
    sib-Data-fixed          SIB-Data-fixed
}
-- *****
--
-- Last segment
--
-- *****
LastSegment ::=                SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    segmentIndex            SegmentIndex,
    -- For sib-Data-fixed, 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
    sib-Data-fixed          SIB-Data-fixed
}
-- *****
LastSegmentShort ::=          SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    segmentIndex            SegmentIndex,
    sib-Data-variable        SIB-Data-variable
}
-- *****
--
-- Complete SIB
--
-- *****
CompleteSIB-List ::=          SEQUENCE (SIZE (1..maxSIBperMsg)) OF
    CompleteSIBshort
CompleteSIB ::=                SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    -- For sib-Data-fixed, 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
    sib-Data-fixed          BIT STRING (SIZE (226))
}
CompleteSIBshort ::=          SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    sib-Data-variable        SIB-Data-variable
}
-- *****
--
-- SYSTEM INFORMATION CHANGE INDICATION
--
-- *****
SystemInformationChangeIndication ::= SEQUENCE {
    -- Other IEs

```

```

    bcch-ModificationInfo          BCCH-ModificationInfo,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {} OPTIONAL
}

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION
--
-- *****

TransportChannelReconfiguration ::= CHOICE {
    r3                               SEQUENCE {
        transportChannelReconfiguration-r3
        v3a0NonCriticalExtensions    SEQUENCE {
            transportChannelReconfiguration-v3a0ext
            v4xyNonCriticalExtensions SEQUENCE {
                transportChannelReconfiguration-v4xyext
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            } OPTIONAL
        }
    },
    later-than-r3                    SEQUENCE {
        rrc-TransactionIdentifier    RRC-TransactionIdentifier,
        criticalExtensions            CHOICE {
            r4                        SEQUENCE {
                transportChannelReconfiguration-r4
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            },
            r5                        SEQUENCE {
                transportChannelReconfiguration-r5
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            },
            criticalExtensions        SEQUENCE {}
        }
    }
}

TransportChannelReconfiguration-r3-IEs ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    integrityProtectionModeInfo  IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo            CipheringModeInfo                    OPTIONAL,
    activationTime                ActivationTime                      OPTIONAL,
    new-U-RNTI                    U-RNTI                            OPTIONAL,
    new-C-RNTI                    C-RNTI                            OPTIONAL,
    rrc-StateIndicator            RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
    cn-InformationInfo            CN-InformationInfo                OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                  URA-Identity                            OPTIONAL,
-- Radio bearer IEs
    dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo    OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo          UL-CommonTransChInfo                OPTIONAL,
    ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList          OPTIONAL,
    modeSpecificTransChInfo       CHOICE {
        fdd                        SEQUENCE {
            cpch-SetID              CPCH-SetID                        OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList  OPTIONAL
        },
        tdd                        NULL
    }
    dl-CommonTransChInfo          DL-CommonTransChInfo                OPTIONAL,
    dl-AddReconfTransChInfoList   DL-AddReconfTransChInfoList          OPTIONAL,
-- Physical channel IEs
    frequencyInfo                 FrequencyInfo                        OPTIONAL,
    maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power                OPTIONAL,
    ul-ChannelRequirement         UL-ChannelRequirement                OPTIONAL,
    modeSpecificPhysChInfo        CHOICE {

```



```

        fdd                SEQUENCE {
            dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
        },
        tdd                NULL
    },
    dl-CommonInformation    DL-CommonInformation    OPTIONAL,
    dl-InformationPerRL-List    DL-InformationPerRL-List    OPTIONAL
}

TransportChannelReconfiguration-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI            DSCH-RNTI                OPTIONAL
}

TransportChannelReconfiguration-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- ssdt-UL extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                SSdT-UL-r4                OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List     CellIdentity-PerRL-List    OPTIONAL
}

TransportChannelReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo              CipheringModeInfo                OPTIONAL,
    activationTime                  ActivationTime                    OPTIONAL,
    new-U-RNTI                      U-RNTI                          OPTIONAL,
    new-C-RNTI                      C-RNTI                          OPTIONAL,
    new-DSCH-RNTI                  DSCH-RNTI                        OPTIONAL,
    rrc-StateIndicator              RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IEs
    cn-InformationInfo              CN-InformationInfo                OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                    URA-Identity                      OPTIONAL,
    -- Radio bearer IEs
    rb-WithPDCP-InfoList           RB-WithPDCP-InfoList             OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo           UL-CommonTransChInfo-r4         OPTIONAL,
    ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList    OPTIONAL,
    modeSpecificTransChInfo        CHOICE {
        fdd                SEQUENCE {
            cpch-SetID      CPCH-SetID                OPTIONAL,
            addReconfTransChDRAC-Info    DRAC-StaticInformationList    OPTIONAL
        },
        tdd                NULL
    }
    dl-CommonTransChInfo           DL-CommonTransChInfo-r4         OPTIONAL,
    dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList-r4  OPTIONAL,
    -- Physical channel IEs
    frequencyInfo                  FrequencyInfo                    OPTIONAL,
    maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power           OPTIONAL,
    ul-ChannelRequirement           UL-ChannelRequirement-r4        OPTIONAL,
    modeSpecificPhysChInfo         CHOICE {
        fdd                SEQUENCE {
            dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
        },
        tdd                NULL
    },
    dl-CommonInformation           DL-CommonInformation-r4         OPTIONAL,
    dl-InformationPerRL-List       DL-InformationPerRL-List-r4    OPTIONAL
}

TransportChannelReconfiguration-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo              CipheringModeInfo                OPTIONAL,
    activationTime                  ActivationTime                    OPTIONAL,
    new-U-RNTI                      U-RNTI                          OPTIONAL,
    new-C-RNTI                      C-RNTI                          OPTIONAL,
    new-DSCH-RNTI                  DSCH-RNTI                        OPTIONAL,
    new-H-RNTI                      H-RNTI                          OPTIONAL,
    rrc-StateIndicator              RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IEs
    cn-InformationInfo              CN-InformationInfo                OPTIONAL,

```

```

-- UTRAN mobility IEs
  ura-Identity          URA-Identity          OPTIONAL,
-- Radio bearer IEs
  rb-WithPDCP-InfoList RB-WithPDCP-InfoList  OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo UL-CommonTransChInfo-r4          OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList  OPTIONAL,
  modeSpecificTransChInfo CHOICE {
    fdd SEQUENCE {
      cpch-SetID          CPCH-SetID          OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList  OPTIONAL
    },
    tdd NULL
  }
  dl-CommonTransChInfo DL-CommonTransChInfo-r4          OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5  OPTIONAL,
-- Physical channel IEs
  frequencyInfo        FrequencyInfo          OPTIONAL,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power          OPTIONAL,
  ul-ChannelRequirement UL-ChannelRequirement-r5  OPTIONAL,
  modeSpecificPhysChInfo CHOICE {
    fdd SEQUENCE {
      dl-PDSCH-Information DL-PDSCH-Information  OPTIONAL
    },
    tdd NULL
  },
  dl-HSPDSCH-Information DL-HSPDSCH-Information  OPTIONAL,
  dl-CommonInformation DL-CommonInformation-r4    OPTIONAL,
  dl-InformationPerRL-List DL-InformationPerRL-List-r5  OPTIONAL
}

```

```

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION COMPLETE
--
-- *****

```

```

TransportChannelReconfigurationComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo IntegrityProtActivationInfo  OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance          UL-TimingAdvance          OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime    ActivationTime          OPTIONAL,
  rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfoList  OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo  OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions      SEQUENCE {}            OPTIONAL
}

```

```

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION FAILURE
--
-- *****

```

```

TransportChannelReconfigurationFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  failureCause              FailureCauseWithProtErr,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions      SEQUENCE {}            OPTIONAL
}

```

```

-- *****
--
-- TRANSPORT FORMAT COMBINATION CONTROL in AM or UM RLC mode
--
-- *****

```

```

TransportFormatCombinationControl ::= SEQUENCE {
  -- rrc-TransactionIdentifier is always included in this message
  rrc-TransactionIdentifier RRC-TransactionIdentifier  OPTIONAL,
  modeSpecificInfo          CHOICE {
    fdd NULL,
    tdd SEQUENCE {
      tfcs-ID          TFCS-Identity  OPTIONAL
    }
  }
}

```

```

    }
  },
  dpch-TFCS-InUplink          TFC-Subset,
  activationTimeForTFCSubset  ActivationTime          OPTIONAL,
  tfc-ControlDuration         TFC-ControlDuration     OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions       SEQUENCE {}            OPTIONAL
}

-- *****
--
-- TRANSPORT FORMAT COMBINATION CONTROL FAILURE
--
-- *****

TransportFormatCombinationControlFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  failureCause                 FailureCauseWithProtErr,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions        SEQUENCE {}            OPTIONAL
}

-- *****
--
-- UE CAPABILITY ENQUIRY
--
-- *****

UECapabilityEnquiry ::= CHOICE {
  r3                            SEQUENCE {
    ueCapabilityEnquiry-r3      UECapabilityEnquiry-r3-IEs,
    v4xyNonCriticalExtensions   SEQUENCE {
      ueCapabilityEnquiry-v4xyext UECapabilityEnquiry-v4xyext-IEs,
      nonCriticalExtensions      SEQUENCE {}            OPTIONAL
    }
  },
  later-than-r3                 SEQUENCE {
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    criticalExtensions           SEQUENCE {}
  }
}

UECapabilityEnquiry-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  capabilityUpdateRequirement    CapabilityUpdateRequirement
}

UECapabilityEnquiry-v4xyext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4-ext CapabilityUpdateRequirement-r4-ext
}

-- *****
--
-- UE CAPABILITY INFORMATION
--
-- *****

UECapabilityInformation ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier          OPTIONAL,
  ue-RadioAccessCapability       UE-RadioAccessCapability          OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList
  OPTIONAL,
  v370NonCriticalExtensions       SEQUENCE {
    ueCapabilityInformation-v370ext UECapabilityInformation-v370ext,
    v380NonCriticalExtensions      SEQUENCE {
      ueCapabilityInformation-v380ext UECapabilityInformation-v380ext-IEs,
      v3a0NonCriticalExtensions      SEQUENCE {
        ueCapabilityInformation-v3a0ext UECapabilityInformation-v3a0ext,
        -- Reserved for future non critical extension
        v4xyNonCriticalExtensions     SEQUENCE {
          ueCapabilityInformation-v4xyext UECapabilityInformation-v4xyext,
          v5xyNonCriticalExtensions    SEQUENCE {
            ueCapabilityInformation-v5xyext UECapabilityInformation-v5xyext,
            nonCriticalExtensions      SEQUENCE {}            OPTIONAL
          }
        }
      }
    }
  }
}

```

```

    }
  }
}

UECapabilityInformation-v370ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v370ext      UE-RadioAccessCapability-v370ext      OPTIONAL
}

UECapabilityInformation-v380ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v380ext      UE-RadioAccessCapability-v380ext
  OPTIONAL,
  dl-PhysChCapabilityFDD-v380ext        DL-PhysChCapabilityFDD-v380ext
}

UECapabilityInformation-v3a0ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v3a0ext      UE-RadioAccessCapability-v3a0ext      OPTIONAL
}

UECapabilityInformation-v4xyext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-r4-ext        UE-RadioAccessCapability-r4-ext      OPTIONAL,
  ue-RadioAccessCapability-v4xyext      UE-RadioAccessCapability-v4xyext
}

UECapabilityInformation-v5xyext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-r5-ext        UE-RadioAccessCapability-r5-ext      OPTIONAL
}

-- *****
--
-- UE CAPABILITY INFORMATION CONFIRM
--
-- *****

UECapabilityInformationConfirm ::= CHOICE {
  r3          SEQUENCE {
    ueCapabilityInformationConfirm-r3
    nonCriticalExtensions      UECapabilityInformationConfirm-r3-IEs,
                               SEQUENCE {}      OPTIONAL
  },
  later-than-r3      SEQUENCE {
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    criticalExtensions          SEQUENCE {}
  }
}

UECapabilityInformationConfirm-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier
}

-- *****
--
-- UPLINK DIRECT TRANSFER
--
-- *****

UplinkDirectTransfer ::= SEQUENCE {
  -- Core network IEs
  cn-DomainIdentity              CN-DomainIdentity,
  nas-Message                     NAS-Message,
  -- Measurement IEs
  measuredResultsOnRACH          MeasuredResultsOnRACH      OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}      OPTIONAL
}

-- *****
--
-- UPLINK PHYSICAL CHANNEL CONTROL
--

```

```

-- *****
UplinkPhysicalChannelControl ::= CHOICE {
  r3                               SEQUENCE {
    uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
    v4xyNonCriticalExtensions        SEQUENCE {
      uplinkPhysicalChannelControl-v4xyext UplinkPhysicalChannelControl-v4xyext-IEs,
      -- Extension mechanism for non- release4 information
      noncriticalExtensions          SEQUENCE {}          OPTIONAL
    }
  } OPTIONAL
},
  later-than-r3                    SEQUENCE {
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    criticalExtensions               CHOICE {
      r4                             SEQUENCE {
        uplinkPhysicalChannelControl-r4 UplinkPhysicalChannelControl-r4-IEs,
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
      },
      criticalExtensions              SEQUENCE {}
    }
  }
}

UplinkPhysicalChannelControl-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier        RRC-TransactionIdentifier,
  -- Physical channel IEs
  ccTrCH-PowerControlInfo         CCTrCH-PowerControlInfo          OPTIONAL,
  timingAdvance                   UL-TimingAdvanceControl          OPTIONAL,
  alpha                            Alpha                          OPTIONAL,
  specialBurstScheduling           SpecialBurstScheduling          OPTIONAL,
  prach-ConstantValue              ConstantValueTdd                OPTIONAL,
  pusch-ConstantValue              ConstantValueTdd                OPTIONAL
}

UplinkPhysicalChannelControl-v4xyext-IEs ::= SEQUENCE {
  -- In case of TDD, openLoopPowerControl-IPDL-TDD is included instead of IE
  -- up-IPDL-Parameters in up-OTDOA-AssistanceData
  openLoopPowerControl-IPDL-TDD    OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL
}

UplinkPhysicalChannelControl-r4-IEs ::= SEQUENCE {
  -- Physical channel IEs
  ccTrCH-PowerControlInfo         CCTrCH-PowerControlInfo-r4    OPTIONAL,
  tddOption                       CHOICE {
    tdd384                         SEQUENCE {
      timingAdvance                 UL-TimingAdvanceControl-r4  OPTIONAL,
      alpha                          Alpha                          OPTIONAL,
      prach-ConstantValue            ConstantValueTdd            OPTIONAL,
      pusch-ConstantValue            ConstantValueTdd            OPTIONAL,
      openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL
    },
    tdd128                          SEQUENCE {
      ul-SynchronisationParameters  UL-SynchronisationParameters-r4  OPTIONAL
    }
  }
}

-- *****
--
-- URA UPDATE
--
-- *****

URAUUpdate ::= SEQUENCE {
  -- User equipment IEs
  u-RNTI                           U-RNTI,
  ura-UpdateCause                   URA-UpdateCause,
  protocolErrorIndicator             ProtocolErrorIndicatorWithMoreInfo,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions              SEQUENCE {}          OPTIONAL
}

-- *****
--
-- URA UPDATE CONFIRM
--
-- *****

```

```

URAUpdateConfirm ::= CHOICE {
  r3
    uraUpdateConfirm-r3
    nonCriticalExtensions
  },
  later-than-r3
    rrc-TransactionIdentifier
    criticalExtensions
}

URAUpdateConfirm-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo    IntegrityProtectionModeInfo      OPTIONAL,
  cipheringModeInfo              CipheringModeInfo                    OPTIONAL,
  new-U-RNTI                     U-RNTI                                OPTIONAL,
  new-C-RNTI                     C-RNTI                                OPTIONAL,
  rrc-StateIndicator             RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- CN information elements
  cn-InformationInfo             CN-InformationInfo                OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                   URA-Identity                        OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo    OPTIONAL
}

-- *****
--
-- URA UPDATE CONFIRM for CCCH
--
-- *****

URAUpdateConfirm-CCCH ::= CHOICE {
  r3
    uraUpdateConfirm-CCCH-r3
    nonCriticalExtensions
  },
  later-than-r3
    u-RNTI
    rrc-TransactionIdentifier
    criticalExtensions
}

URAUpdateConfirm-CCCH-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  u-RNTI                        U-RNTI,
  -- The rest of the message is identical to the one sent on DCCH.
  uraUpdateConfirm              URAUpdateConfirm-r3-IEs
}

-- *****
--
-- UTRAN MOBILITY INFORMATION
--
-- *****

UTRANMobilityInformation ::= CHOICE {
  r3
    uranMobilityInformation-r3
    v3a0NonCriticalExtensions
    uranMobilityInformation-v3a0ext
    nonCriticalExtensions
  },
  later-than-r3
    rrc-TransactionIdentifier
    criticalExtensions
}

UTRANMobilityInformation-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo    IntegrityProtectionModeInfo      OPTIONAL,
}

```

```

        cipheringModeInfo          CipheringModeInfo          OPTIONAL,
        new-U-RNTI                  U-RNTI                  OPTIONAL,
        new-C-RNTI                  C-RNTI                  OPTIONAL,
        ue-ConnTimersAndConstants    UE-ConnTimersAndConstants  OPTIONAL,
-- CN information elements
        cn-InformationInfo          CN-InformationInfoFull    OPTIONAL,
-- UTRAN mobility IEs
        ura-Identity                URA-Identity             OPTIONAL,
-- Radio bearer IEs
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo  OPTIONAL,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions        SEQUENCE {}              OPTIONAL
    }
}

UTRANMobilityInformation-v3a0ext-IEs ::= SEQUENCE {
    ue-ConnTimersAndConstants-v3a0ext    UE-ConnTimersAndConstants-v3a0ext
}

-- *****
--
-- UTRAN MOBILITY INFORMATION CONFIRM
--
-- *****

UTRANMobilityInformationConfirm ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo          IntegrityProtActivationInfo    OPTIONAL,
-- Radio bearer IEs
    count-C-ActivationTime              ActivationTime                  OPTIONAL,
    rb-UL-CiphActivationTimeInfo        RB-ActivationTimeInfoList     OPTIONAL,
    ul-CounterSynchronisationInfo      UL-CounterSynchronisationInfo  OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions                SEQUENCE {}                    OPTIONAL
}

-- *****
--
-- UTRAN MOBILITY INFORMATION FAILURE
--
-- *****

UTRANMobilityInformationFailure ::= SEQUENCE {
-- UE information elements
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    failureCause                       FailureCauseWithProtErr,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions                SEQUENCE {}                    OPTIONAL
}
}

END

```

11.3 Information element definitions

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

```

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

```

```
BEGIN
```

```
IMPORTS
```

```

    hiPDSCHIdentities,
    hiPUSCHIdentities,
    hiRM,
    maxAC,
    maxAdditionalMeas,
    maxASC,
    maxASCmap,
    maxASCpersist,
    maxCCTrCH,
    maxCellMeas,
    maxCellMeas-1,

```

```

maxCNdomains,
maxCPCHsets,
maxDPCH-DLchan,
maxDPDCH-UL,
maxDRACclasses,
maxFACHPCH,
maxFreq,
maxFreqBandsFDD,
maxFreqBandsTDD,
maxFreqBandsGSM,
maxHProcesses,
maxHSDSCHTBIndex,
maxHSDSCHTBIndex-tdd384,
maxHSSCCHs,
maxInterSysMessages,
maxLoCHperRLC,
maxMAC-d-PDU sizes,
maxMeasEvent,
maxMeasIntervals,
maxMeasParEvent,
maxNumCDMA2000Freqs,
maxNumFDDFreqs,
maxNumGSMFreqRanges,
maxNumTDDFreqs,
maxOtherRAT,
maxOtherRAT-16,
maxPage1,
maxPCPCH-APsig,
maxPCPCH-APsubCh,
maxPCPCH-CDSig,
maxPCPCH-CDSUBch,
maxPCPCH-SF,
maxPCPCHs,
maxPDCPAlgoType,
maxPDSCH,
maxPDSCH-TFCIgroups,
maxPRACH,
maxPRACH-FPACH,
maxPredefConfig,
maxPUSCH,
maxQueueIDs,
maxRABsetup,
maxRAT,
maxRB,
maxRBallRABs,
maxRBMuxOptions,
maxRBperRAB,
maxReportedGSMCells,
maxSRBsetup,
maxRL,
maxRL-1,
maxROHC-PacketSizes-r4,
maxROHC-Profile-r4,
maxSCCPCH,
maxSat,
maxSIB,
maxSIB-FACH,
maxSystemCapability,
maxTF,
maxTF-CPCH,
maxTFC,
maxTFCsub,
maxTFCI-2-Combs,
maxTGPS,
maxTrCH,
maxTrCHpreconf,
maxTS,
maxTS-1,
maxTS-LCR,
maxTS-LCR-1,
maxURA
FROM Constant-definitions;

```

```
Ansi-41-IDNNS ::= BIT STRING (SIZE (14))
```

```
CN-DomainIdentity ::= ENUMERATED {
    cs-domain,
    ps-domain }

```



```

CN-DomainInformation ::=
  cn-DomainIdentity
  cn-DomainSpecificNAS-Info
}
SEQUENCE {
  CN-DomainIdentity,
  NAS-SystemInformationGSM-MAP
}

CN-DomainInformationFull ::=
  cn-DomainIdentity
  cn-DomainSpecificNAS-Info
  cn-DRX-CycleLengthCoeff
}
SEQUENCE {
  CN-DomainIdentity,
  NAS-SystemInformationGSM-MAP,
  CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList ::=
SEQUENCE (SIZE (1..maxCNdomains)) OF
  CN-DomainInformation

CN-DomainInformationListFull ::=
SEQUENCE (SIZE (1..maxCNdomains)) OF
  CN-DomainInformationFull

CN-DomainSysInfo ::=
  cn-DomainIdentity
  cn-Type
    gsm-MAP
    ansi-41
  },
  cn-DRX-CycleLengthCoeff
}
SEQUENCE {
  CN-DomainIdentity,
  CHOICE {
    NAS-SystemInformationGSM-MAP,
    NAS-SystemInformationANSI-41
  },
  CN-DRX-CycleLengthCoefficient
}

CN-DomainSysInfoList ::=
SEQUENCE (SIZE (1..maxCNdomains)) OF
  CN-DomainSysInfo

CN-InformationInfo ::=
  plmn-Identity
  cn-CommonGSM-MAP-NAS-SysInfo
  cn-DomainInformationList
}
SEQUENCE {
  PLMN-Identity
  NAS-SystemInformationGSM-MAP
  CN-DomainInformationList
  OPTIONAL,
  OPTIONAL,
  OPTIONAL
}

CN-InformationInfoFull ::=
  plmn-Identity
  cn-CommonGSM-MAP-NAS-SysInfo
  cn-DomainInformationListFull
}
SEQUENCE {
  PLMN-Identity
  NAS-SystemInformationGSM-MAP
  CN-DomainInformationListFull
  OPTIONAL,
  OPTIONAL,
  OPTIONAL
}

Digit ::=
INTEGER (0..9)

Gsm-map-IDNNS ::=
  routingbasis
    localPTMSI
      routingparameter
    },
    tMSIofsamePLMN
      routingparameter
    },
    tMSIofdifferentPLMN
      routingparameter
    },
    iMSIresponsetopaging
      routingparameter
    },
    iMSIUEinitiatedEvent
      routingparameter
    },
    iMEI
      routingparameter
    },
    spare1
      routingparameter
    },
    spare2
      routingparameter
  },
  enteredparameter
}
SEQUENCE {
  CHOICE {
    SEQUENCE {
      RoutingParameter
    },
    SEQUENCE {
      RoutingParameter
    },
    SEQUENCE {
      RoutingParameter
    },
    SEQUENCE {
      RoutingParameter
    },
    SEQUENCE {
      RoutingParameter
    },
    SEQUENCE {
      RoutingParameter
    },
    SEQUENCE {
      RoutingParameter
    }
  },
  BOOLEAN
}

IMEI ::=
SEQUENCE (SIZE (15)) OF
  IMEI-Digit

IMEI-Digit ::=
INTEGER (0..15)

```

```

IMSI-GSM-MAP ::=                               SEQUENCE (SIZE (6..15)) OF
                                                Digit

IntraDomainNasNodeSelector ::=                SEQUENCE {
  version                                       CHOICE {
    release99                                  SEQUENCE {
      cn-Type                                  CHOICE {
        gsm-Map-IDNNS                         Gsm-map-IDNNS,
        ansi-41-IDNNS                         Ansi-41-IDNNS
      }
    },
    later                                       SEQUENCE {
      futurecoding                             BIT STRING (SIZE (15))
    }
  }
}

LAI ::=                                        SEQUENCE {
  plmn-Identity                               PLMN-Identity,
  lac                                          BIT STRING (SIZE (16))
}

MCC ::=                                       SEQUENCE (SIZE (3)) OF
                                                Digit

MNC ::=                                       SEQUENCE (SIZE (2..3)) OF
                                                Digit

NAS-Message ::=                               OCTET STRING (SIZE (1..4095))

NAS-Synchronisation-Indicator ::=            BIT STRING(SIZE(4))

NAS-SystemInformationGSM-MAP ::=            OCTET STRING (SIZE (1..8))

P-TMSI-GSM-MAP ::=                           BIT STRING (SIZE (32))

PagingRecordTypeID ::=                       ENUMERATED {
  imsi-GSM-MAP,
  tmsi-GSM-MAP-P-TMSI,
  imsi-DS-41,
  tmsi-DS-41 }

PLMN-Identity ::=                            SEQUENCE {
  mcc                                          MCC,
  mnc                                          MNC
}

PLMN-Type ::=                                CHOICE {
  gsm-MAP                                     SEQUENCE {
    plmn-Identity                             PLMN-Identity
  },
  ansi-41                                     SEQUENCE {
    p-REV                                     P-REV,
    min-P-REV                               Min-P-REV,
    sid                                     SID,
    nid                                     NID
  },
  gsm-MAP-and-ANSI-41                       SEQUENCE {
    plmn-Identity                             PLMN-Identity,
    p-REV                                     P-REV,
    min-P-REV                               Min-P-REV,
    sid                                     SID,
    nid                                     NID
  },
  spare                                       NULL
}

RAB-Identity ::=                             CHOICE {
  gsm-MAP-RAB-Identity                       BIT STRING (SIZE (8)),
  ansi-41-RAB-Identity                       BIT STRING (SIZE (8))
}

RAI ::=                                       SEQUENCE {
  lai                                          LAI,
  rac                                          RoutingAreaCode
}

RoutingAreaCode ::=                          BIT STRING (SIZE (8))

```

```

RoutingParameter ::=                               BIT STRING (SIZE (10))

TMSI-GSM-MAP ::=                                  BIT STRING (SIZE (32))

-- *****
--
--     UTRAN MOBILITY INFORMATION ELEMENTS (10.3.2)
--
-- *****

AccessClassBarred ::=                             ENUMERATED {
    barred, notBarred }

AccessClassBarredList ::=                         SEQUENCE (SIZE (maxAC)) OF
    AccessClassBarred

AllowedIndicator ::=                              ENUMERATED {
    allowed, notAllowed }

CellAccessRestriction ::=                        SEQUENCE {
    cellBarred                                CellBarred,
    cellReservedForOperatorUse                ReservedIndicator,
    cellReservationExtension                  ReservedIndicator,
    accessClassBarredList                    AccessClassBarredList           OPTIONAL
}

CellBarred ::=                                   CHOICE {
    barred                                     SEQUENCE {
        intraFreqCellReselectionInd        AllowedIndicator,
        t-Barred                             T-Barred
    },
    notBarred                                NULL
}

CellIdentity ::=                                 BIT STRING (SIZE (28))

CellIdentity-PerRL-List ::=                     SEQUENCE (SIZE (1..maxRL)) OF CellIdentity

CellSelectReselectInfoSIB-3-4 ::=              SEQUENCE {
    mappingInfo                               MappingInfo           OPTIONAL,
    cellSelectQualityMeasure                  CHOICE {
        cpich-Ec-N0                          SEQUENCE {
            -- Default value for q-HYST-2-S is q-HYST-1-S
            q-HYST-2-S                          Q-Hyst-S           OPTIONAL
            -- Default value for q-HYST-2-S is q-HYST-1-S
        },
        cpich-RSCP                            NULL
    },
    modeSpecificInfo                          CHOICE {
        fdd                                    SEQUENCE {
            s-Intrasearch                      S-SearchQual      OPTIONAL,
            s-Intersearch                      S-SearchQual      OPTIONAL,
            s-SearchHCS                        S-SearchRXLEV     OPTIONAL,
            rat-List                           RAT-FDD-InfoList  OPTIONAL,
            q-QualMin                          Q-QualMin,
            q-RxlevMin                         Q-RxlevMin
        },
        tdd                                    SEQUENCE {
            s-Intrasearch                      S-SearchRXLEV     OPTIONAL,
            s-Intersearch                      S-SearchRXLEV     OPTIONAL,
            s-SearchHCS                        S-SearchRXLEV     OPTIONAL,
            rat-List                           RAT-TDD-InfoList  OPTIONAL,
            q-RxlevMin                         Q-RxlevMin
        }
    },
    q-Hyst-1-S                                Q-Hyst-S,
    t-Reselection-S                          T-Reselection-S,
    hcs-ServingCellInformation                HCS-ServingCellInformation  OPTIONAL,
    maxAllowedUL-TX-Power                     MaxAllowedUL-TX-Power
}

MapParameter ::=                                INTEGER (0..99)

Mapping ::=                                      SEQUENCE {
    rat                                        RAT,
    mappingFunctionParameterList              MappingFunctionParameterList
}

```

```

Mapping-LCR-r4 ::= SEQUENCE {
    mappingFunctionParameterList MappingFunctionParameterList
}

MappingFunctionParameter ::= SEQUENCE {
    functionType MappingFunctionType,
    mapParameter1 MapParameter OPTIONAL,
    mapParameter2 MapParameter,
    -- The presence of upperLimit is conditional on the number of repetition
    upperLimit UpperLimit OPTIONAL
}

MappingFunctionParameterList ::= SEQUENCE (SIZE (1..maxMeasIntervals)) OF
    MappingFunctionParameter

MappingFunctionType ::= ENUMERATED {
    linear,
    functionType2,
    functionType3,
    functionType4 }

-- In MappingInfo list, mapping for FDD and 3.84Mcps TDD is defined.
-- For 1.28Mcps TDD, Mapping-LCR-r4 is used instead.
MappingInfo ::= SEQUENCE (SIZE (1..maxRAT)) OF
    Mapping

-- Actual value Q-Hyst-S = IE value * 2
Q-Hyst-S ::= INTEGER (0..20)

RAT ::= ENUMERATED {
    ultra-FDD,
    ultra-TDD,
    gsm,
    cdma2000 }

RAT-FDD-Info ::= SEQUENCE {
    rat-Identifier RAT-Identifier,
    s-SearchRAT S-SearchQual,
    s-HCS-RAT S-SearchRXLEV OPTIONAL,
    s-Limit-SearchRAT S-SearchQual
}

RAT-FDD-InfoList ::= SEQUENCE (SIZE (1..maxOtherRAT)) OF
    RAT-FDD-Info

RAT-Identifier ::= ENUMERATED {
    gsm, cdma2000 }

RAT-TDD-Info ::= SEQUENCE {
    rat-Identifier RAT-Identifier,
    s-SearchRAT S-SearchRXLEV,
    s-HCS-RAT S-SearchRXLEV OPTIONAL,
    s-Limit-SearchRAT S-SearchRXLEV
}

RAT-TDD-InfoList ::= SEQUENCE (SIZE (1..maxOtherRAT)) OF
    RAT-TDD-Info

ReservedIndicator ::= ENUMERATED {
    reserved,
    notReserved }

-- Actual value S-SearchedQual = IE value * 2
S-SearchQual ::= INTEGER (-16..10)

-- Actual value S-SearchRXLEV = (IE value * 2) + 1
S-SearchRXLEV ::= INTEGER (-53..45)

T-Barred ::= ENUMERATED {
    s10, s20, s40, s80,
    s160, s320, s640, s1280 }

T-Reselection-S ::= INTEGER (0..31)

-- For UpperLimit, the used range depends on the RAT used.
UpperLimit ::= INTEGER (1..91)

```

```

URA-Identity ::=                               BIT STRING (SIZE (16))

URA-IdentityList ::=                           SEQUENCE (SIZE (1..maxURA)) OF
                                                URA-Identity

-- *****
--
--     USER EQUIPMENT INFORMATION ELEMENTS (10.3.3)
--
-- *****

AccessStratumReleaseIndicator ::=              ENUMERATED {
                                                rel-4, spare15, spare14, spare13,
                                                spare12, spare11, spare10, spare9, spare8,
                                                spare7, spare6, spare5, spare4, spare3,
                                                spare2, spare1 }

-- TABULAR : for ActivationTime, value 'now' always appear as default, and is encoded
-- by absence of the field
ActivationTime ::=                             INTEGER (0..255)

BackoffControlParams ::=                       SEQUENCE {
  n-AP-RetransMax                               N-AP-RetransMax,
  n-AccessFails                                 N-AccessFails,
  nf-BO-NoAICH                                  NF-BO-NoAICH,
  ns-BO-Busy                                    NS-BO-Busy,
  nf-BO-AllBusy                                 NF-BO-AllBusy,
  nf-BO-Mismatch                                NF-BO-Mismatch,
  t-CPCH                                         T-CPCH
}

C-RNTI ::=                                     BIT STRING (SIZE (16))

CapabilityUpdateRequirement ::=                SEQUENCE {
  ue-RadioCapabilityFDDUpdateRequirement-FDD    BOOLEAN,
  -- ue-RadioCapabilityTDDUpdateRequirement-TDD is for 3.84Mcps TDD update requirement
  ue-RadioCapabilityTDDUpdateRequirement-TDD    BOOLEAN,
  systemSpecificCapUpdateReqList               SystemSpecificCapUpdateReqList    OPTIONAL
}

CapabilityUpdateRequirement-r4-ext ::=        SEQUENCE {
  ue-RadioCapabilityUpdateRequirement-TDD128    BOOLEAN
}

CapabilityUpdateRequirement-r4 ::=            SEQUENCE {
  ue-RadioCapabilityFDDUpdateRequirement-FDD    BOOLEAN,
  ue-RadioCapabilityTDDUpdateRequirement-TDD384  BOOLEAN,
  ue-RadioCapabilityTDDUpdateRequirement-TDD128  BOOLEAN,
  systemSpecificCapUpdateReqList               SystemSpecificCapUpdateReqList    OPTIONAL
}

CellUpdateCause ::=                           ENUMERATED {
  cellReselection,
  periodicalCellUpdate,
  uplinkDataTransmission,
  utran-pagingResponse,
  re-enteredServiceArea,
  radiolinkFailure,
  rlc-unrecoverableError,
  spare1 }

ChipRateCapability ::=                         ENUMERATED {
  mcps3-84, mcps1-28 }

CipheringAlgorithm ::=                         ENUMERATED {
  uea0, uea1 }

CipheringModeCommand ::=                       CHOICE {
  startRestart                                  CipheringAlgorithm,
  stopCiphering                                  NULL
}

CipheringModeInfo ::=                          SEQUENCE {
  -- TABULAR: The ciphering algorithm is included in the CipheringModeCommand.
  cipheringModeCommand                         CipheringModeCommand,
  activationTimeForDPCH                        ActivationTime                      OPTIONAL,
  rb-DL-CiphActivationTimeInfo                RB-ActivationTimeInfoList         OPTIONAL
}

```

```

CN-DRX-CycleLengthCoefficient ::= INTEGER (6..9)

CN-PagedUE-Identity ::= CHOICE {
    imsi-GSM-MAP          IMSI-GSM-MAP,
    tmsi-GSM-MAP          TMSI-GSM-MAP,
    p-TMSI-GSM-MAP        P-TMSI-GSM-MAP,
    imsi-DS-41            IMSI-DS-41,
    tmsi-DS-41            TMSI-DS-41,
    spare3                 NULL,
    spare2                 NULL,
    spare1                 NULL
}

CompressedModeMeasCapability ::= SEQUENCE {
    fdd-Measurements      BOOLEAN,
    -- TABULAR: The IEs tdd-Measurements, gsm-Measurements and multiCarrierMeasurements
    -- are made optional since they are conditional based on another information element.
    -- Their absence corresponds to the case where the condition is not true.
    tdd-Measurements      BOOLEAN OPTIONAL,
    gsm-Measurements      GSM-Measurements OPTIONAL,
    multiCarrierMeasurements BOOLEAN OPTIONAL
}

CompressedModeMeasCapability-LCR-r4 ::= SEQUENCE {
    tdd128-Measurements   BOOLEAN OPTIONAL
}

CompressedModeMeasCapabFDDList ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    CompressedModeMeasCapabFDD

CompressedModeMeasCapabFDD ::= SEQUENCE {
    radioFrequencyBandFDD RadioFrequencyBandFDD OPTIONAL,
    dl-MeasurementsFDD     BOOLEAN,
    ul-MeasurementsFDD     BOOLEAN
}

CompressedModeMeasCapabTDDList ::= SEQUENCE (SIZE (1..maxFreqBandsTDD)) OF
    CompressedModeMeasCapabTDD

CompressedModeMeasCapabTDD ::= SEQUENCE {
    radioFrequencyBandTDD RadioFrequencyBandTDD,
    dl-MeasurementsTDD     BOOLEAN,
    ul-MeasurementsTDD     BOOLEAN
}

CompressedModeMeasCapabGSMList ::= SEQUENCE (SIZE (1..maxFreqBandsGSM)) OF
    CompressedModeMeasCapabGSM

CompressedModeMeasCapabGSM ::= SEQUENCE {
    radioFrequencyBandGSM RadioFrequencyBandGSM,
    dl-MeasurementsGSM     BOOLEAN,
    ul-MeasurementsGSM     BOOLEAN
}

CompressedModeMeasCapabMC ::= SEQUENCE {
    dl-MeasurementsMC      BOOLEAN,
    ul-MeasurementsMC      BOOLEAN
}

CPCH-Parameters ::= SEQUENCE {
    initialPriorityDelayList InitialPriorityDelayList OPTIONAL,
    backoffControlParams     BackoffControlParams,
    -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    powerControlAlgorithm    PowerControlAlgorithm,
    dl-DPCCH-BER             DL-DPCCH-BER
}

DL-CapabilityWithSimultaneousHS-DSCHConfig ::= ENUMERATED{kbps32, kbps64, kbps128, kbps384}

DL-DPCCH-BER ::= INTEGER (0..63)

DL-PhysChCapabilityFDD ::= SEQUENCE {
    maxNoDPCH-PDSCH-Codes      INTEGER (1..8),
    maxNoPhysChBitsReceived    MaxNoPhysChBitsReceived,
    supportForSF-512           BOOLEAN,
    supportOfPDSCH             BOOLEAN,
    simultaneousSCCPCH-DPCH-Reception SimultaneousSCCPCH-DPCH-Reception
}

```

```

}

DL-PhysChCapabilityFDD-v380ext ::= SEQUENCE {
    supportOfDedicatedPilotsForChEstimation SupportOfDedicatedPilotsForChEstimation OPTIONAL
}

SupportOfDedicatedPilotsForChEstimation ::= ENUMERATED { true }

DL-PhysChCapabilityTDD ::= SEQUENCE {
    maxTS-PerFrame MaxTS-PerFrame,
    maxPhysChPerFrame MaxPhysChPerFrame,
    minimumSF MinimumSF-DL,
    supportOfPDSCH BOOLEAN,
    maxPhysChPerTS MaxPhysChPerTS
}

DL-PhysChCapabilityTDD-LCR-r4 ::= SEQUENCE {
    maxTS-PerSubFrame MaxTS-PerSubFrame-r4,
    maxPhysChPerSubFrame MaxPhysChPerSubFrame-r4,
    minimumSF MinimumSF-DL,
    supportOfPDSCH BOOLEAN,
    maxPhysChPerTS MaxPhysChPerTS,
    supportOf8PSK BOOLEAN
}

DL-TransChCapability ::= SEQUENCE {
    maxNoBitsReceived MaxNoBits,
    maxConvCodeBitsReceived MaxNoBits,
    turboDecodingSupport TurboSupport,
    maxSimultaneousTransChs MaxSimultaneousTransChsDL,
    maxSimultaneousCCTrCH-Count MaxSimultaneousCCTrCH-Count,
    maxReceivedTransportBlocks MaxTransportBlocksDL,
    maxNumberOfTFC MaxNumberOfTFC-DL,
    maxNumberOfTF MaxNumberOfTF
}

DRAC-SysInfo ::= SEQUENCE {
    transmissionProbability TransmissionProbability,
    maximumBitRate MaximumBitRate
}

DRAC-SysInfoList ::= SEQUENCE (SIZE (1..maxDRACclasses)) OF
    DRAC-SysInfo

DSCH-RNTI ::= BIT STRING (SIZE (16))

ESN-DS-41 ::= BIT STRING (SIZE (32))

EstablishmentCause ::= ENUMERATED {
    originatingConversationalCall,
    originatingStreamingCall,
    originatingInteractiveCall,
    originatingBackgroundCall,
    originatingSubscribedTrafficCall,
    terminatingConversationalCall,
    terminatingStreamingCall,
    terminatingInteractiveCall,
    terminatingBackgroundCall,
    emergencyCall,
    interRAT-CellReselection,
    interRAT-CellChangeOrder,
    registration,
    detach,
    originatingHighPrioritySignalling,
    originatingLowPrioritySignalling,
    callRe-establishment,
    terminatingHighPrioritySignalling,
    terminatingLowPrioritySignalling,
    terminatingCauseUnknown,
    spare12,
    spare11,
    spare10,
    spare9,
    spare8,
    spare7,
    spare6,
    spare5,
    spare4,
}

```

```

        spare3,
        spare2,
        spare1 }

FailureCauseWithProtErr ::= CHOICE {
    configurationUnsupported          NULL,
    physicalChannelFailure            NULL,
    incompatibleSimultaneousReconfiguration
                                     NULL,
    compressedModeRuntimeError        TGPSI,
    protocolError                     ProtocolErrorInformation,
    cellUpdateOccurred                NULL,
    invalidConfiguration              NULL,
    configurationIncomplete            NULL,
    unsupportedMeasurement             NULL,
    spare7                             NULL,
    spare6                             NULL,
    spare5                             NULL,
    spare4                             NULL,
    spare3                             NULL,
    spare2                             NULL,
    spare1                             NULL
}

FailureCauseWithProtErrTrId ::= SEQUENCE {
    rrc-TransactionIdentifier         RRC-TransactionIdentifier,
    failureCause                      FailureCauseWithProtErr
}

GSM-Measurements ::= SEQUENCE {
    gsm900                            BOOLEAN,
    dcs1800                           BOOLEAN,
    gsm1900                           BOOLEAN
}

H-RNTI ::= BIT STRING (SIZE (16))

HSDSCH-capability-class ::= INTEGER (0..63)

IMSI-and-ESN-DS-41 ::= SEQUENCE {
    imsi-DS-41                        IMSI-DS-41,
    esn-DS-41                          ESN-DS-41
}

IMSI-DS-41 ::= OCTET STRING (SIZE (5..7))

InitialPriorityDelayList ::= SEQUENCE (SIZE (1..maxASC)) OF
    NS-IP

InitialUE-Identity ::= CHOICE {
    imsi                               IMSI-GSM-MAP,
    tmsi-and-LAI                       TMSI-and-LAI-GSM-MAP,
    p-TMSI-and-RAI                     P-TMSI-and-RAI-GSM-MAP,
    imei                                IMEI,
    esn-DS-41                          ESN-DS-41,
    imsi-DS-41                          IMSI-DS-41,
    imsi-and-ESN-DS-41                 IMSI-and-ESN-DS-41,
    tmsi-DS-41                          TMSI-DS-41
}

IntegrityCheckInfo ::= SEQUENCE {
    messageAuthenticationCode          MessageAuthenticationCode,
    rrc-MessageSequenceNumber          RRC-MessageSequenceNumber
}

IntegrityProtActivationInfo ::= SEQUENCE {
    rrc-MessageSequenceNumberList      RRC-MessageSequenceNumberList
}

IntegrityProtectionAlgorithm ::= ENUMERATED {
    uia1 }

IntegrityProtectionModeCommand ::= CHOICE {
    startIntegrityProtection           SEQUENCE {
        integrityProtInitNumber        IntegrityProtInitNumber
    },
    modify                             SEQUENCE {

```



```

    dl-IntegrityProtActivationInfo      IntegrityProtActivationInfo
  }
}

IntegrityProtectionModeInfo ::= SEQUENCE {
  -- TABULAR: DL integrity protection activation info and Integrity
  -- protection intialisation number have been nested inside
  -- IntegrityProtectionModeCommand.
  integrityProtectionModeCommand      IntegrityProtectionModeCommand,
  integrityProtectionAlgorithm         IntegrityProtectionAlgorithm      OPTIONAL
}

IntegrityProtInitNumber ::= BIT STRING (SIZE (32))

MAC-hs-Capability ::= SEQUENCE {
  totalBufferSize                     TotalBufferSize
}

MaxHcContextSpace ::= ENUMERATED {
  by512, by1024, by2048, by4096,
  by8192 }

MaxROHC-ContextSessions-r4 ::= ENUMERATED {
  s2, s4, s8, s12, s16, s24, s32, s48,
  s64, s128, s256, s512, s1024, s16384 }

MaximumAM-EntityNumberRLC-Cap ::= ENUMERATED {
  am3, am4, am5, am6,
  am8, am16, am30 }

-- Actual value MaximumBitRate = IE value * 16
MaximumBitRate ::= INTEGER (0..32)

MaximumRLC-WindowSize ::= ENUMERATED { mws2047, mws4095 }

MaxNoDPDCH-BitsTransmitted ::= ENUMERATED {
  b600, b1200, b2400, b4800,
  b9600, b19200, b28800, b38400,
  b48000, b57600 }

MaxNoBits ::= ENUMERATED {
  b640, b1280, b2560, b3840, b5120,
  b6400, b7680, b8960, b10240,
  b20480, b40960, b81920, b163840 }

MaxNoPhysChBitsReceived ::= ENUMERATED {
  b600, b1200, b2400, b3600,
  b4800, b7200, b9600, b14400,
  b19200, b28800, b38400, b48000,
  b57600, b67200, b76800 }

MaxNoSCCPCH-RL ::= ENUMERATED {
  r11 }

MaxNumberOfTF ::= ENUMERATED {
  tf32, tf64, tf128, tf256,
  tf512, tf1024 }

MaxNumberOfTFC-DL ::= ENUMERATED {
  tfc16, tfc32, tfc48, tfc64, tfc96,
  tfc128, tfc256, tfc512, tfc1024 }

MaxNumberOfTFC-UL ::= ENUMERATED {
  tfc4, tfc8, tfc16, tfc32, tfc48, tfc64,
  tfc96, tfc128, tfc256, tfc512, tfc1024 }

MaxPhysChPerFrame ::= INTEGER (1..224)

MaxPhysChPerSubFrame-r4 ::= INTEGER (1..96)

MaxPhysChPerTimeslot ::= ENUMERATED {
  ts1, ts2 }

MaxPhysChPerTS ::= INTEGER (1..16)

MaxSimultaneousCCTrCH-Count ::= INTEGER (1..8)

```

```

MaxSimultaneousTransChsDL ::=      ENUMERATED {
                                        e4, e8, e16, e32 }

MaxSimultaneousTransChsUL ::=      ENUMERATED {
                                        e2, e4, e8, e16, e32 }

MaxTransportBlocksDL ::=           ENUMERATED {
                                        tb4, tb8, tb16, tb32, tb48,
                                        tb64, tb96, tb128, tb256, tb512 }

MaxTransportBlocksUL ::=           ENUMERATED {
                                        tb2, tb4, tb8, tb16, tb32, tb48,
                                        tb64, tb96, tb128, tb256, tb512 }

MaxTS-PerFrame ::=                 INTEGER (1..14)

MaxTS-PerSubFrame-r4 ::=           INTEGER (1..6)

-- TABULAR: MeasurementCapability contains dependencies to UE-MultiModeRAT-Capability,
-- the conditional fields have been left mandatory for now.
MeasurementCapability ::=          SEQUENCE {
    downlinkCompressedMode          CompressedModeMeasCapability,
    uplinkCompressedMode            CompressedModeMeasCapability
}

MeasurementCapability-v370 ::=     SEQUENCE{
    compressedModeMeasCapabFDDList  CompressedModeMeasCapabFDDList,
    compressedModeMeasCapabTDDList  CompressedModeMeasCapabTDDList  OPTIONAL,
    compressedModeMeasCapabGSMList  CompressedModeMeasCapabGSMList  OPTIONAL,
    compressedModeMeasCapabMC       CompressedModeMeasCapabMC       OPTIONAL
}

MeasurementCapability-r4-ext ::=   SEQUENCE {
    downlinkCompressedMode-LCR       CompressedModeMeasCapability-LCR-r4,
    uplinkCompressedMode-LCR        CompressedModeMeasCapability-LCR-r4
}

MessageAuthenticationCode ::=     BIT STRING (SIZE (32))

MinimumSF-DL ::=                   ENUMERATED {
                                        sf1, sf16 }

MinimumSF-UL ::=                   ENUMERATED {
                                        sf1, sf2, sf4, sf8, sf16 }

MultiModeCapability ::=            ENUMERATED {
                                        tdd, fdd, fdd-tdd }

MultiRAT-Capability ::=           SEQUENCE {
    supportOfGSM                     BOOLEAN,
    supportOfMulticarrier             BOOLEAN
}

N-300 ::=                          INTEGER (0..7)

N-301 ::=                          INTEGER (0..7)

N-302 ::=                          INTEGER (0..7)

N-304 ::=                          INTEGER (0..7)

N-308 ::=                          INTEGER (1..8)

N-310 ::=                          INTEGER (0..7)

N-312 ::=                          ENUMERATED {
                                        s1, s50, s100, s200, s400,
                                        s600, s800, s1000 }

N-312ext ::=                       ENUMERATED {
                                        s2, s4, s10, s20 }

N-313 ::=                          ENUMERATED {
                                        s1, s2, s4, s10, s20,
                                        s50, s100, s200 }

N-315 ::=                          ENUMERATED {
                                        s1, s50, s100, s200, s400,

```

```

        s600, s800, s1000 }

N-315ext ::=
    ENUMERATED {
        s2, s4, s10, s20 }

N-AccessFails ::=
    INTEGER (1..64)

N-AP-RetransMax ::=
    INTEGER (1..64)

NetworkAssistedGPS-Supported ::=
    ENUMERATED {
        networkBased,
        ue-Based,
        bothNetworkAndUE-Based,
        noNetworkAssistedGPS }

NF-BO-AllBusy ::=
    INTEGER (0..31)

NF-BO-NoAICH ::=
    INTEGER (0..31)

NF-BO-Mismatch ::=
    INTEGER (0..127)

NS-BO-Busy ::=
    INTEGER (0..63)

NS-IP ::=
    INTEGER (0..28)

P-TMSI-and-RAI-GSM-MAP ::=
    SEQUENCE {
        p-TMSI
        rai
    }

PagingCause ::=
    ENUMERATED {
        terminatingConversationalCall,
        terminatingStreamingCall,
        terminatingInteractiveCall,
        terminatingBackgroundCall,
        terminatingHighPrioritySignalling,
        terminatingLowPrioritySignalling,
        terminatingCauseUnknown,
        spare
    }

PagingRecord ::=
    CHOICE {
        cn-Identity
            SEQUENCE {
                pagingCause
                cn-DomainIdentity
                cn-pagedUE-Identity
            },
        utran-Identity
            SEQUENCE {
                u-RNTI
                cn-OriginatedPage-connectedMode-UE
                pagingCause
                cn-DomainIdentity
                pagingRecordTypeID
            }
    }
    OPTIONAL

PagingRecordList ::=
    SEQUENCE (SIZE (1..maxPage1)) OF
        PagingRecord

PDCP-Capability ::=
    SEQUENCE {
        losslessSRNS-RelocationSupport
            BOOLEAN,
        supportForRfc2507
            CHOICE {
                notSupported
                supported
            },
        supported
            MaxHcContextSpace
    }

PDCP-Capability-r4-ext ::=
    SEQUENCE {
        supportForRfc3095
            CHOICE {
                notSupported
                supported
            },
        maxROHC-ContextSessions
            SEQUENCE {
                reverseCompressionDepth
                MaxROHC-ContextSessions-r4
            }
    }
    DEFAULT s16,
    DEFAULT 0

```

```

PhysicalChannelCapability ::=          SEQUENCE {
    fddPhysChCapability                SEQUENCE {
        downlinkPhysChCapability      DL-PhysChCapabilityFDD,
        uplinkPhysChCapability        UL-PhysChCapabilityFDD
    }
    -- tddPhysChCapability describes the 3.84Mcps TDD physical channel capability
    tddPhysChCapability                SEQUENCE {
        downlinkPhysChCapability      DL-PhysChCapabilityTDD,
        uplinkPhysChCapability        UL-PhysChCapabilityTDD
    }
}

-- PhysicalChannelCapability-LCR-r4 describes the 1.28Mcps TDD physical channel capability
PhysicalChannelCapability-LCR-r4 ::=  SEQUENCE {
    tdd128-PhysChCapability            SEQUENCE {
        downlinkPhysChCapability      DL-PhysChCapabilityTDD-LCR-r4,
        uplinkPhysChCapability        UL-PhysChCapabilityTDD-LCR-r4
    }
}

-- PhysicalChannelCapability-hspdsch-r5 describes the HS-PDSCH physical channel capability
PhysicalChannelCapability-hspdsch-r5 ::= SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            hspdsch-supported          CHOICE {
                supported              HSDSCH-capability-class,
                notsupported            NULL
            }
        },
        tdd384                          SEQUENCE {
            hspdsch-supported          CHOICE {
                supported              HSDSCH-capability-class,
                notsupported            NULL
            }
        },
        tdd128                          SEQUENCE {
            hspdsch-supported          CHOICE {
                supported              HSDSCH-capability-class,
                notsupported            NULL
            }
        }
    }
}

PNBSCH-Allocation-r4 ::=              SEQUENCE {
    numberOfRepetitionsPerSFNPeriod    ENUMERATED {
        c2, c3, c4, c5, c6, c7, c8, c9, c10,
        c12, c14, c16, c18, c20, c24, c28, c32,
        c36, c40, c48, c56, c64, c72, c80 }
}

ProtocolErrorCause ::=                ENUMERATED {
    asn1-ViolationOrEncodingError,
    messageTypeNonexistent,
    messageNotCompatibleWithReceiverState,
    ie-ValueNotComprehended,
    informationElementMissing,
    messageExtensionNotComprehended,
    spare2, spare1 }

ProtocolErrorIndicator ::=            ENUMERATED {
    noError, errorOccurred }

ProtocolErrorIndicatorWithMoreInfo ::= CHOICE {
    noError                            NULL,
    errorOccurred                      SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        protocolErrorInformation       ProtocolErrorInformation
    }
}

ProtocolErrorMoreInformation ::=      SEQUENCE {
    diagnosticsType                    CHOICE {
        type1                          CHOICE {
            asn1-ViolationOrEncodingError    NULL,
            messageTypeNonexistent          NULL,
            messageNotCompatibleWithReceiverState
        }
    }
}

```

```

        ie-ValueNotComprehended      IdentificationOfReceivedMessage,
        conditionalInformationElementError IdentificationOfReceivedMessage,
        messageExtensionNotComprehended IdentificationOfReceivedMessage,
        spare1                        NULL,
        spare2                        NULL
    },
    spare                            NULL
}
}

RadioFrequencyBandFDD ::=          ENUMERATED {
    fdd2100,
    fdd1900,
    spare6, spare5, spare4, spare3, spare2, spare1 }

RadioFrequencyBandTDDList ::=     ENUMERATED {
    a, b, c, ab, ac, bc, abc, spare }

RadioFrequencyBandTDD ::=         ENUMERATED {a, b, c, spare}

RadioFrequencyBandGSM ::=         ENUMERATED {
    gsm450,
    gsm480,
    gsm850,
    gsm900P,
    gsm900E,
    gsm1800,
    gsm1900,
    spare9, spare8, spare7, spare6, spare5,
    spare4, spare3, spare2, spare1}

Rb-timer-indicator ::=           SEQUENCE {
    t314-expired                    BOOLEAN,
    t315-expired                    BOOLEAN }

Re-EstablishmentTimer ::=        ENUMERATED {
    useT314, useT315
}

RedirectionInfo ::=             CHOICE {
    frequencyInfo                  FrequencyInfo,
    interRATInfo                   InterRATInfo
}

RejectionCause ::=              ENUMERATED {
    congestion,
    unspecified }

ReleaseCause ::=                 ENUMERATED {
    normalEvent,
    unspecified,
    pre-emptiveRelease,
    congestion,
    re-establishmentReject,
    directedsignallingconnectionre-establishment,
    userInactivity,
    spare }

RF-Capability ::=                SEQUENCE {
    fddRF-Capability                SEQUENCE {
        ue-PowerClass              UE-PowerClass,
        txRxFrequencySeparation    TxRxFrequencySeparation
    }
    tddRF-Capability                SEQUENCE {
        ue-PowerClass              UE-PowerClass,
        radioFrequencyBandTDDList  RadioFrequencyBandTDDList,
        chipRateCapability          ChipRateCapability
    }
    OPTIONAL
}

RF-Capability-r4-ext ::=         SEQUENCE {
    tddRF-Capability                SEQUENCE {
        ue-PowerClass              UE-PowerClass,
        radioFrequencyBandTDDList  RadioFrequencyBandTDDList,
        chipRateCapability          ChipRateCapability
    }
    OPTIONAL
}

```

```

}

RLC-Capability ::=
    totalRLC-AM-BufferSize
    maximumRLC-WindowSize
    maximumAM-EntityNumber
}

SEQUENCE {
    TotalRLC-AM-BufferSize,
    MaximumRLC-WindowSize,
    MaximumAM-EntityNumberRLC-Cap
}

RRC-MessageSequenceNumber ::=
    INTEGER (0..15)

RRC-MessageSequenceNumberList ::=
    SEQUENCE (SIZE (4..5)) OF
        RRC-MessageSequenceNumber

RRC-StateIndicator ::=
    ENUMERATED {
        cell-DCH, cell-FACH, cell-PCH, ura-PCH }

RRC-TransactionIdentifier ::=
    INTEGER (0..3)

S-RNTI ::=
    BIT STRING (SIZE (20))

S-RNTI-2 ::=
    BIT STRING (SIZE (10))

SecurityCapability ::=
    cipheringAlgorithmCap
    integrityProtectionAlgorithmCap
}

SEQUENCE {
    BIT STRING {
        spare15(0),
        spare14(1),
        spare13(2),
        spare12(3),
        spare11(4),
        spare10(5),
        spare9(6),
        spare8(7),
        spare7(8),
        spare6(9),
        spare5(10),
        spare4(11),
        spare3(12),
        spare2(13),
        uea1(14),
        uea0(15)
    } (SIZE (16)),
    BIT STRING {
        spare15(0),
        spare14(1),
        spare13(2),
        spare12(3),
        spare11(4),
        spare10(5),
        spare9(6),
        spare8(7),
        spare7(8),
        spare6(9),
        spare5(10),
        spare4(11),
        spare3(12),
        spare2(13),
        uia1(14),
        spare0(15)
    } (SIZE (16))
}

SimultaneousSCCPCH-DPCH-Reception ::= CHOICE {
    notSupported
    supported
    maxNoSCCPCH-RL
    -- simultaneousSCCPCH-DPCH-DPDCH-Reception is applicable only if
    -- the IE Support of PDSCH = TRUE
    simultaneousSCCPCH-DPCH-DPDCH-Reception
}

SEQUENCE {
    NULL,
    SEQUENCE {
        MaxNoSCCPCH-RL,
        BOOLEAN
    }
}

SRNC-Identity ::=
    BIT STRING (SIZE (12))

START-Value ::=
    BIT STRING (SIZE (20))

STARTList ::=
    SEQUENCE (SIZE (1..maxCNdomains)) OF

```

```

STARTSingle
STARTSingle ::=
  cn-DomainIdentity
  start-Value
}
SystemSpecificCapUpdateReq ::= ENUMERATED {
  gsm }
SystemSpecificCapUpdateReqList ::= SEQUENCE (SIZE (1..maxSystemCapability)) OF
  SystemSpecificCapUpdateReq
T-300 ::=
  ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,
    ms1800, ms2000, ms3000, ms4000,
    ms6000, ms8000 }
T-301 ::=
  ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,
    ms1800, ms2000, ms3000, ms4000,
    ms6000, ms8000, spare }
T-302 ::=
  ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,
    ms1800, ms2000, ms3000, ms4000,
    ms6000, ms8000, spare }
T-304 ::=
  ENUMERATED {
    ms100, ms200, ms400,
    ms1000, ms2000, spare3, spare2, spare1 }
T-305 ::=
  ENUMERATED {
    noUpdate, m5, m10, m30,
    m60, m120, m360, m720 }
T-307 ::=
  ENUMERATED {
    s5, s10, s15, s20,
    s30, s40, s50, spare }
T-308 ::=
  ENUMERATED {
    ms40, ms80, ms160, ms320 }
T-309 ::=
  INTEGER (1..8)
T-310 ::=
  ENUMERATED {
    ms40, ms80, ms120, ms160,
    ms200, ms240, ms280, ms320 }
T-311 ::=
  ENUMERATED {
    ms250, ms500, ms750, ms1000,
    ms1250, ms1500, ms1750, ms2000 }
-- The value 0 for T-312 is not used in this version of the specification
T-312 ::=
  INTEGER (0..15)
T-313 ::=
  INTEGER (0..15)
T-314 ::=
  ENUMERATED {
    s0, s2, s4, s6, s8,
    s12, s16, s20 }
T-315 ::=
  ENUMERATED {
    s0, s10, s30, s60, s180,
    s600, s1200, s1800 }
T-316 ::=
  ENUMERATED {
    s0, s10, s20, s30, s40,
    s50, s-inf, spare }
T-317 ::=
  ENUMERATED {
    s0, s10, s30, s60, s180,
    s600, s1200, s1800 }

```

```

T-CPCH ::=
    ENUMERATED {
        ct0, ct1 }

TMSI-and-LAI-GSM-MAP ::=
    SEQUENCE {
        tmsi      TMSI-GSM-MAP,
        lai       LAI
    }

TMSI-DS-41 ::=
    OCTET STRING (SIZE (2..17))

TotalRLC-AM-BufferSize ::=
    ENUMERATED {
        kb2, kb10, kb50, kb100,
        kb150, kb500, kb1000, spare }

TotalBufferSize ::=
    ENUMERATED {
        kb50, kb100, kb150, kb200,
        kb300, spare3, spare2, spare1 }

-- Actual value TransmissionProbability = IE value * 0.125
TransmissionProbability ::=
    INTEGER (1..8)

TransportChannelCapability ::=
    SEQUENCE {
        dl-TransChCapability  DL-TransChCapability,
        ul-TransChCapability  UL-TransChCapability
    }

TurboSupport ::=
    CHOICE {
        notSupported  NULL,
        supported     MaxNoBits
    }

TxRxFrequencySeparation ::=
    ENUMERATED {
        mhz190, mhz174-8-205-2,
        mhz134-8-245-2 }

U-RNTI ::=
    SEQUENCE {
        srnc-Identity  SRNC-Identity,
        s-RNTI         S-RNTI
    }

U-RNTI-Short ::=
    SEQUENCE {
        srnc-Identity  SRNC-Identity,
        s-RNTI-2      S-RNTI-2
    }

UE-ConnTimersAndConstants ::=
    SEQUENCE {
-- Optional is used also for parameters for which the default value is the last one read in SIB1
-- t-301 and n-301 should not be used by the UE in this version of the specification
        t-301      T-301          DEFAULT ms2000,
        n-301      N-301          DEFAULT 2,
        t-302      T-302          DEFAULT ms4000,
        n-302      N-302          DEFAULT 3,
        t-304      T-304          DEFAULT ms2000,
        n-304      N-304          DEFAULT 2,
        t-305      T-305          DEFAULT m30,
        t-307      T-307          DEFAULT s30,
        t-308      T-308          DEFAULT ms160,
        t-309      T-309          DEFAULT 5,
        t-310      T-310          DEFAULT ms160,
        n-310      N-310          DEFAULT 4,
        t-311      T-311          DEFAULT ms2000,
        t-312      T-312          DEFAULT 1,
-- n-312 shall be ignored if n-312 in UE-ConnTimersAndConstants-v3a0ext is present, and the
-- value of that element shall be used instead.
        n-312      N-312          DEFAULT s1,
        t-313      T-313          DEFAULT 3,
        n-313      N-313          DEFAULT s20,
        t-314      T-314          DEFAULT s12,
        t-315      T-315          DEFAULT s180,
-- n-315 shall be ignored if n-315 in UE-ConnTimersAndConstants-v3a0ext is present, and the
-- value of that element shall be used instead.
        n-315      N-315          DEFAULT s1,
        t-316      T-316          DEFAULT s30,
        t-317      T-317          DEFAULT s180
    }

UE-ConnTimersAndConstants-v3a0ext ::=
    SEQUENCE {
        n-312      N-312ext      OPTIONAL,

```



```

    n-315                N-315ext                OPTIONAL
}

UE-IdleTimersAndConstants ::= SEQUENCE {
    t-300                T-300,
    n-300                N-300,
    t-312                T-312,
    -- n-312 shall be ignored if n-312 in UE-IdleTimersAndConstants-v3a0ext is present, and the
    -- value of that element shall be used instead.
    n-312                N-312
}

UE-IdleTimersAndConstants-v3a0ext ::= SEQUENCE {
    n-312                N-312ext                OPTIONAL
}

UE-MultiModeRAT-Capability ::= SEQUENCE {
    multiRAT-CapabilityList MultiRAT-Capability,
    multiModeCapability      MultiModeCapability
}

UE-PowerClass ::= INTEGER (1..4)

UE-PowerClass-v370 ::= ENUMERATED {class1, class2, class3, class4,
    spare4, spare3, spare2, spare1 }

UE-RadioAccessCapability ::= SEQUENCE {
    pdcp-Capability      PDCP-Capability,
    rlc-Capability       RLC-Capability,
    transportChannelCapability TransportChannelCapability,
    rf-Capability        RF-Capability,
    physicalChannelCapability PhysicalChannelCapability,
    ue-MultiModeRAT-Capability UE-MultiModeRAT-Capability,
    securityCapability   SecurityCapability,
    ue-positioning-Capability UE-Positioning-Capability,
    measurementCapability MeasurementCapability      OPTIONAL
}

UE-RadioAccessCapabilityInfo ::= SEQUENCE {
    ue-RadioAccessCapability UE-RadioAccessCapability,
    ue-RadioAccessCapability-v370ext UE-RadioAccessCapability-v370ext
}

UE-RadioAccessCapability-v370ext ::= SEQUENCE {
    ue-RadioAccessCapabBandFDDList UE-RadioAccessCapabBandFDDList
}

UE-RadioAccessCapability-v380ext ::= SEQUENCE {
    ue-PositioningCapabilityExt-v380 UE-PositioningCapabilityExt-v380
}

UE-RadioAccessCapability-v3a0ext ::= SEQUENCE {
    ue-PositioningCapabilityExt-v3a0 UE-PositioningCapabilityExt-v3a0
}

UE-PositioningCapabilityExt-v380 ::= SEQUENCE {
    rx-tx-TimeDifferenceType2Capable BOOLEAN
}

UE-PositioningCapabilityExt-v3a0 ::= SEQUENCE {
    validity-CellPCH-UraPCH ENUMERATED { true }
}

UE-RadioAccessCapabBandFDDList ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    UE-RadioAccessCapabBandFDD

UE-RadioAccessCapabBandFDD ::= SEQUENCE{
    radioFrequencyBandFDD      RadioFrequencyBandFDD,
    fddRF-Capability          SEQUENCE {
        ue-PowerClass          UE-PowerClass-v370,
        txRxFrequencySeparation TxRxFrequencySeparation
    }
    measurementCapability      MeasurementCapability-v370      OPTIONAL,
}

UE-RadioAccessCapability-r4-ext ::= SEQUENCE {
    pdcp-Capability-r4-ext    PDCP-Capability-r4-ext,
    rf-Capability             RF-Capability-r4-ext,
}

```

```

    physicalChannelCapability-LCR          PhysicalChannelCapability-LCR-r4,
    measurementCapability-r4-ext          MeasurementCapability-r4-ext    OPTIONAL
}

UE-RadioAccessCapability-v4xyext ::= SEQUENCE {
    -- R99 UEs shall include IE "ue-TestLevelIndicator"
    accessStratumReleaseIndicator        AccessStratumReleaseIndicator
}

UE-RadioAccessCapability-r5-ext ::= SEQUENCE {
    dl-CapabilityWithSimultaneousHS-DSCHConfig DL-CapabilityWithSimultaneousHS-DSCHConfig
    OPTIONAL,
    pdcp-Capability-r4-ext              PDCP-Capability-r4-ext,
    rf-Capability                       RF-Capability-r4-ext,
    mac-hs-Capability                   MAC-hs-Capability,
    physicalChannelCapability           PhysicalChannelCapability-hspdsch-r5,
    measurementCapability-r4-ext        MeasurementCapability-r4-ext    OPTIONAL
}

UL-PhysChCapabilityFDD ::= SEQUENCE {
    maxNoDPDCH-BitsTransmitted          MaxNoDPDCH-BitsTransmitted,
    supportOfPCPCH                      BOOLEAN
}

UL-PhysChCapabilityTDD ::= SEQUENCE {
    maxTS-PerFrame                      MaxTS-PerFrame,
    maxPhysChPerTimeslot                MaxPhysChPerTimeslot,
    minimumSF                           MinimumSF-UL,
    supportOfPUSCH                      BOOLEAN
}

UL-PhysChCapabilityTDD-LCR-r4 ::= SEQUENCE {
    maxTS-PerSubFrame                  MaxTS-PerSubFrame-r4,
    maxPhysChPerTimeslot                MaxPhysChPerTimeslot,
    minimumSF                           MinimumSF-UL,
    supportOfPUSCH                     BOOLEAN,
    supportOf8PSK                      BOOLEAN
}

UL-TransChCapability ::= SEQUENCE {
    maxNoBitsTransmitted                MaxNoBits,
    maxConvCodeBitsTransmitted          MaxNoBits,
    turboEncodingSupport                TurboSupport,
    maxSimultaneousTransChs             MaxSimultaneousTransChsUL,
    modeSpecificInfo                   CHOICE {
        fdd                             NULL,
        tdd                             SEQUENCE {
            maxSimultaneousCCTrCH-Count  MaxSimultaneousCCTrCH-Count
        }
    },
    maxTransmittedBlocks                MaxTransportBlocksUL,
    maxNumberOfTFC                      MaxNumberOfTFC-UL,
    maxNumberOfTF                       MaxNumberOfTF
}

UE-Positioning-Capability ::= SEQUENCE {
    standaloneLocMethodsSupported       BOOLEAN,
    ue-BasedOTDOA-Supported             BOOLEAN,
    networkAssistedGPS-Supported        NetworkAssistedGPS-Supported,
    supportForUE-GPS-TimingOfCellFrames BOOLEAN,
    supportForIPDL                      BOOLEAN
}

UE-SecurityInformation ::= SEQUENCE {
    start-CS                             START-Value
}

URA-UpdateCause ::= ENUMERATED {
    changeOfURA,
    periodicURAUpdate,
    dummy,
    spare1 }

UTRAN-DRX-CycleLengthCoefficient ::= INTEGER (3..9)

WaitTime ::= INTEGER (0..15)

-- *****

```

```

--
--      RADIO BEARER INFORMATION ELEMENTS (10.3.4)
--
-- *****
AlgorithmSpecificInfo ::=          CHOICE {
    rfc2507-Info                    RFC2507-Info
}

AlgorithmSpecificInfo-r4 ::=       CHOICE {
    rfc2507-Info                    RFC2507-Info,
    rfc3095-Info                    RFC3095-Info-r4
}

CID-InclusionInfo-r4 ::=           ENUMERATED {
    pdcp-Header,
    rfc3095-PacketFormat }

-- Upper limit COUNT-C is 2^32 - 1
COUNT-C ::=                      INTEGER (0..4294967295)

-- Upper limit COUNT-C-MSB is 2^25 - 1
COUNT-C-MSB ::=                 INTEGER (0..33554431)

DefaultConfigIdentity ::=        INTEGER (0..9)

DefaultConfigMode ::=            ENUMERATED {
    fdd,
    tdd }

DL-AM-RLC-Mode ::=              SEQUENCE {
    inSequenceDelivery              BOOLEAN,
    receivingWindowSize            ReceivingWindowSize,
    dl-RLC-StatusInfo              DL-RLC-StatusInfo
}

DL-CounterSynchronisationInfo ::= SEQUENCE {
    rB-WithPDCP-InfoList           RB-WithPDCP-InfoList    OPTIONAL
}

DL-LogicalChannelMapping ::=     SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType        DL-TransportChannelType,
    logicalChannelIdentity          LogicalChannelIdentity    OPTIONAL
}

DL-LogicalChannelMapping-r5 ::=  SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType        DL-TransportChannelType-r5,
    logicalChannelIdentity          LogicalChannelIdentity    OPTIONAL
}

DL-LogicalChannelMappingList ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
    DL-LogicalChannelMapping

DL-LogicalChannelMappingList-r5 ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
    DL-LogicalChannelMapping-r5

DL-RLC-Mode ::=                 CHOICE {
    dl-AM-RLC-Mode                 DL-AM-RLC-Mode,
    dl-UM-RLC-Mode                 NULL,
    dl-TM-RLC-Mode                 DL-TM-RLC-Mode
}

DL-RLC-StatusInfo ::=           SEQUENCE {
    timerStatusProhibit             TimerStatusProhibit    OPTIONAL,
    timerEPC                        TimerEPC                    OPTIONAL,
    missingPDU-Indicator            BOOLEAN,
    timerStatusPeriodic             TimerStatusPeriodic    OPTIONAL
}

DL-TM-RLC-Mode ::=              SEQUENCE {
    segmentationIndication          BOOLEAN
}

DL-TransportChannelType ::=     CHOICE {
    dch                             TransportChannelIdentity,
    fach                             NULL,
}

```

```

    dsch                TransportChannelIdentity,
    dch-and-dsch        TransportChannelIdentityDCHandDSCH
}

DL-TransportChannelType-r5 ::=
    dch                CHOICE {
    fach                TransportChannelIdentity,
    dsch                NULL,
    dch-and-dsch        TransportChannelIdentity,
    hsdsch              TransportChannelIdentityDCHandDSCH,
    dch-and-hsdsch     Mac-d-FlowIdentity,
                    Mac-d-FlowIdentityDCHandHSDSCH
    }

ExpectReordering ::=
    ENUMERATED {
        reorderingNotExpected,
        reorderingExpected }

ExplicitDiscard ::=
    timerMRW           SEQUENCE {
    timerDiscard       TimerMRW,
    maxMRW             TimerDiscard,
                    MaxMRW
    }

HeaderCompressionInfo ::=
    algorithmSpecificInfo SEQUENCE {
    }

HeaderCompressionInfoList ::=
    SEQUENCE (SIZE (1..maxPDCPALgoType)) OF
    HeaderCompressionInfo

HeaderCompressionInfo-r4 ::=
    SEQUENCE {
    algorithmSpecificInfo-r4
    }

HeaderCompressionInfoList-r4 ::=
    SEQUENCE (SIZE (1..maxPDCPALgoType)) OF
    HeaderCompressionInfo-r4

LogicalChannelIdentity ::=
    INTEGER (1..15)

LosslessSRNS-RelocSupport ::=
    CHOICE {
        supported      MaxPDCP-SN-WindowSize,
        notSupported   NULL
    }

MAC-LogicalChannelPriority ::=
    INTEGER (1..8)

MaxDAT ::=
    ENUMERATED {
        dat1, dat2, dat3, dat4, dat5, dat6,
        dat7, dat8, dat9, dat10, dat15, dat20,
        dat25, dat30, dat35, dat40 }

MaxDAT-Retransmissions ::=
    SEQUENCE {
    maxDAT             MaxDAT,
    timerMRW          TimerMRW,
    maxMRW            MaxMRW
    }

MaxMRW ::=
    ENUMERATED {
        mm1, mm4, mm6, mm8, mm12, mm16,
        mm24, mm32 }

MaxPDCP-SN-WindowSize ::=
    ENUMERATED {
        sn255, sn65535 }

MaxRST ::=
    ENUMERATED {
        rst1, rst4, rst6, rst8, rst12,
        rst16, rst24, rst32 }

NoExplicitDiscard ::=
    ENUMERATED {
        dt10, dt20, dt30, dt40, dt50,
        dt60, dt70, dt80, dt90, dt100 }

PDCP-Info ::=
    losslessSRNS-RelocSupport LosslessSRNS-RelocSupport OPTIONAL,
    -- TABULAR: pdcP-PDU-Header is MD in the tabular format and it can be encoded
    -- in one bit, so the OPTIONAL is removed for compactness.
    pdcP-PDU-Header           PDCP-PDU-Header,
    headerCompressionInfoList HeaderCompressionInfoList OPTIONAL

```

```

}

PDCP-Info-r4 ::=
    SEQUENCE {
        losslessSRNS-RelocSupport    LosslessSRNS-RelocSupport    OPTIONAL,
        -- TABULAR: pdcP-PDU-Header is MD in the tabular format and it can be encoded
        -- in one bit, so the OPTIONAL is removed for compactness.
        pdcP-PDU-Header              PDCP-PDU-Header,
        headerCompressionInfoList    HeaderCompressionInfoList-r4    OPTIONAL
    }

PDCP-InfoReconfig ::=
    SEQUENCE {
        pdcP-Info                    PDCP-Info,
        -- dummy is not used in this version of the specification and
        -- it should be ignored.
        dummy                        INTEGER (0..65535)
    }

PDCP-InfoReconfig-r4 ::=
    SEQUENCE {
        pdcP-Info                    PDCP-Info-r4
    }

PDCP-PDU-Header ::=
    ENUMERATED {
        present, absent }

PDCP-SN-Info ::=
    INTEGER (0..65535)

Poll-PDU ::=
    ENUMERATED {
        pdu1, pdu2, pdu4, pdu8, pdu16,
        pdu32, pdu64, pdu128 }

Poll-SDU ::=
    ENUMERATED {
        sdu1, sdu4, sdu16, sdu64 }

PollingInfo ::=
    SEQUENCE {
        timerPollProhibit            TimerPollProhibit            OPTIONAL,
        timerPoll                    TimerPoll                        OPTIONAL,
        poll-PDU                      Poll-PDU                      OPTIONAL,
        poll-SDU                      Poll-SDU                      OPTIONAL,
        lastTransmissionPDU-Poll      BOOLEAN,
        lastRetransmissionPDU-Poll    BOOLEAN,
        pollWindow                    PollWindow                    OPTIONAL,
        timerPollPeriodic             TimerPollPeriodic           OPTIONAL
    }

PollWindow ::=
    ENUMERATED {
        pw50, pw60, pw70, pw80, pw85,
        pw90, pw95, pw99 }

PredefinedConfigIdentity ::=
    INTEGER (0..15)

PredefinedConfigValueTag ::=
    INTEGER (0..15)

PredefinedRB-Configuration ::=
    SEQUENCE {
        re-EstablishmentTimer        Re-EstablishmentTimer,
        srb-InformationList           SRB-InformationSetupList,
        rb-InformationList            RB-InformationSetupList
    }

PreDefRadioConfiguration ::=
    SEQUENCE {
        -- Radio bearer IEs
        predefinedRB-Configuration    PredefinedRB-Configuration,
        -- Transport channel IEs
        preDefTransChConfiguration    PreDefTransChConfiguration,
        -- Physical channel IEs
        preDefPhyChConfiguration      PreDefPhyChConfiguration
    }

PredefinedConfigStatusList ::=
    SEQUENCE (SIZE (maxPredefConfig)) OF
        PredefinedConfigStatusInfo

PredefinedConfigStatusInfo ::=
    CHOICE {
        storedWithValueTagSameAsPrevious    NULL,
        other                                CHOICE {
            notStored                      NULL,
            storedWithDifferentValueTag    PredefinedConfigValueTag
        }
    }
}

```

```

RAB-Info ::=
  rab-Identity
  cn-DomainIdentity
  nas-Synchronisation-Indicator
  re-EstablishmentTimer
}
SEQUENCE {
  RAB-Identity,
  CN-DomainIdentity,
  NAS-Synchronisation-Indicator OPTIONAL,
  Re-EstablishmentTimer
}

RAB-InformationList ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
  RAB-Info

RAB-InformationReconfigList ::= SEQUENCE (SIZE (1.. maxRABsetup)) OF
  RAB-InformationReconfig

RAB-InformationReconfig ::= SEQUENCE {
  rab-Identity
  cn-DomainIdentity
  nas-Synchronisation-Indicator
}
SEQUENCE {
  RAB-Identity,
  CN-DomainIdentity,
  NAS-Synchronisation-Indicator
}

RAB-Info-Post ::= SEQUENCE {
  rab-Identity
  cn-DomainIdentity
  nas-Synchronisation-Indicator
}
SEQUENCE {
  RAB-Identity,
  CN-DomainIdentity,
  NAS-Synchronisation-Indicator OPTIONAL
}

RAB-InformationSetup ::= SEQUENCE {
  rab-Info
  rb-InformationSetupList
}
SEQUENCE {
  RAB-Info,
  RB-InformationSetupList
}

RAB-InformationSetup-r4 ::= SEQUENCE {
  rab-Info
  rb-InformationSetupList
}
SEQUENCE {
  RAB-Info,
  RB-InformationSetupList-r4
}

RAB-InformationSetupList ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
  RAB-InformationSetup

RAB-InformationSetupList-r4 ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
  RAB-InformationSetup-r4

RB-ActivationTimeInfo ::= SEQUENCE {
  rb-Identity
  rlc-SequenceNumber
}
SEQUENCE {
  RB-Identity,
  RLC-SequenceNumber
}

RB-ActivationTimeInfoList ::= SEQUENCE (SIZE (1..maxRB)) OF
  RB-ActivationTimeInfo

RB-COUNT-C-Information ::= SEQUENCE {
  rb-Identity
  count-C-UL
  count-C-DL
}
SEQUENCE {
  RB-Identity,
  COUNT-C,
  COUNT-C
}

RB-COUNT-C-InformationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
  RB-COUNT-C-Information

RB-COUNT-C-MSB-Information ::= SEQUENCE {
  rb-Identity
  count-C-MSB-UL
  count-C-MSB-DL
}
SEQUENCE {
  RB-Identity,
  COUNT-C-MSB,
  COUNT-C-MSB
}

RB-COUNT-C-MSB-InformationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
  RB-COUNT-C-MSB-Information

RB-Identity ::= INTEGER (1..32)

RB-IdentityList ::= SEQUENCE (SIZE (1..maxRB)) OF
  RB-Identity

RB-InformationAffected ::= SEQUENCE {
  rb-Identity
  rb-MappingInfo
}
SEQUENCE {
  RB-Identity,
  RB-MappingInfo
}

RB-InformationAffected-r5 ::= SEQUENCE {
  rb-Identity
  RB-Identity,

```

```

    rb-MappingInfo                RB-MappingInfo
}

RB-InformationAffectedList ::=    SEQUENCE (SIZE (1..maxRB)) OF
                                   RB-InformationAffected

RB-InformationAffectedList-r5 ::= SEQUENCE (SIZE (1..maxRB)) OF
                                   RB-InformationAffected-r5

RB-InformationReconfig ::=        SEQUENCE {
    rb-Identity                    RB-Identity,
    pdcp-Info                      PDCP-InfoReconfig                OPTIONAL,
    pdcp-SN-Info                   PDCP-SN-Info                    OPTIONAL,
    rlc-Info                       RLC-Info                        OPTIONAL,
    rb-MappingInfo                 RB-MappingInfo                OPTIONAL,
    rb-StopContinue                RB-StopContinue                OPTIONAL
}

RB-InformationReconfig-r4 ::=     SEQUENCE {
    rb-Identity                    RB-Identity,
    pdcp-Info                      PDCP-InfoReconfig-r4        OPTIONAL,
    rlc-Info                       RLC-Info                        OPTIONAL,
    rb-MappingInfo                 RB-MappingInfo                OPTIONAL,
    rb-StopContinue                RB-StopContinue                OPTIONAL
}

RB-InformationReconfig-r5 ::=     SEQUENCE {
    rb-Identity                    RB-Identity,
    pdcp-Info                      PDCP-InfoReconfig-r4        OPTIONAL,
    rlc-Info                       RLC-Info                        OPTIONAL,
    rb-MappingInfo                 RB-MappingInfo-r5          OPTIONAL,
    rb-StopContinue                RB-StopContinue                OPTIONAL
}

RB-InformationReconfigList ::=    SEQUENCE (SIZE (1..maxRB)) OF
                                   RB-InformationReconfig

RB-InformationReconfigList-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
                                   RB-InformationReconfig-r4

RB-InformationReconfigList-r5 ::= SEQUENCE (SIZE (1..maxRB)) OF
                                   RB-InformationReconfig-r5

RB-InformationReleaseList ::=     SEQUENCE (SIZE (1..maxRB)) OF
                                   RB-Identity

RB-InformationSetup ::=           SEQUENCE {
    rb-Identity                    RB-Identity,
    pdcp-Info                      PDCP-Info                    OPTIONAL,
    rlc-InfoChoice                 RLC-InfoChoice,
    rb-MappingInfo                 RB-MappingInfo
}

RB-InformationSetup-r4 ::=        SEQUENCE {
    rb-Identity                    RB-Identity,
    pdcp-Info                      PDCP-Info-r4                OPTIONAL,
    rlc-Info                       RLC-Info,
    rb-MappingInfo                 RB-MappingInfo
}

RB-InformationSetupList ::=       SEQUENCE (SIZE (1..maxRBperRAB)) OF
                                   RB-InformationSetup

RB-InformationSetupList-r4 ::=    SEQUENCE (SIZE (1..maxRBperRAB)) OF
                                   RB-InformationSetup-r4

RB-MappingInfo ::=               SEQUENCE (SIZE (1..maxRBMuxOptions)) OF
                                   RB-MappingOption

RB-MappingInfo-r5 ::=            SEQUENCE (SIZE (1..maxRBMuxOptions)) OF
                                   RB-MappingOption-r5

RB-MappingOption ::=             SEQUENCE {
    ul-LogicalChannelMappings      UL-LogicalChannelMappings    OPTIONAL,
    dl-LogicalChannelMappingList    DL-LogicalChannelMappingList OPTIONAL
}

RB-MappingOption-r5 ::=          SEQUENCE {

```

```

    ul-LogicalChannelMappings      UL-LogicalChannelMappings      OPTIONAL,
    dl-LogicalChannelMappingList   DL-LogicalChannelMappingList-r5  OPTIONAL
}

RB-StopContinue ::=
    ENUMERATED {
        stopRB, continueRB }

RB-WithPDCP-Info ::=
    SEQUENCE {
        rb-Identity,
        pdcp-SN-Info
    }

RB-WithPDCP-InfoList ::=
    SEQUENCE (SIZE (1..maxRBallRABs)) OF
        RB-WithPDCP-Info

ReceivingWindowSize ::=
    ENUMERATED {
        rw1, rw8, rw16, rw32, rw64, rw128, rw256,
        rw512, rw768, rw1024, rw1536, rw2047,
        rw2560, rw3072, rw3584, rw4095 }

RFC2507-Info ::=
    SEQUENCE {
        f-MAX-PERIOD      INTEGER (1..65535)          DEFAULT 256,
        f-MAX-TIME        INTEGER (1..255)          DEFAULT 5,
        max-HEADER        INTEGER (60..65535)      DEFAULT 168,
        tcp-SPACE         INTEGER (3..255)         DEFAULT 15,
        non-TCP-SPACE     INTEGER (3..65535)       DEFAULT 15,
        -- TABULAR: expectReordering has only two possible values, so using Optional or Default
        -- would be wasteful
        expectReordering  ExpectReordering
    }

RFC3095-Info-r4 ::=
    SEQUENCE {
        cid-InclusionInfo  CID-InclusionInfo-r4,
        max-CID           INTEGER (1..16383)        DEFAULT 15,
        rohcProfileList   ROHC-ProfileList-r4,
        mrru              INTEGER (0..65535)       DEFAULT 0,
        rohcPacketSizeList ROHC-PacketSizeList-r4,
        reverseDecompressionDepth INTEGER (0..65535)        DEFAULT 0
    }

RLC-Info ::=
    SEQUENCE {
        ul-RLC-Mode      UL-RLC-Mode              OPTIONAL,
        dl-RLC-Mode      DL-RLC-Mode              OPTIONAL
    }

RLC-InfoChoice ::=
    CHOICE {
        rlc-Info,
        same-as-RB
    }

RLC-SequenceNumber ::=
    INTEGER (0..4095)

RLC-SizeInfo ::=
    SEQUENCE {
        rlc-SizeIndex    INTEGER (1..maxTF)
    }

RLC-SizeExplicitList ::=
    SEQUENCE (SIZE (1..maxTF)) OF
        RLC-SizeInfo

ROHC-Profile-r4 ::=
    INTEGER (1..3)

ROHC-ProfileList-r4 ::=
    SEQUENCE (SIZE (1..maxROHC-Profile-r4)) OF
        ROHC-Profile-r4

ROHC-PacketSize-r4 ::=
    INTEGER (2..1500)

ROHC-PacketSizeList-r4 ::=
    SEQUENCE (SIZE (1..maxROHC-PacketSizes-r4)) OF
        ROHC-PacketSize-r4

SRB-InformationSetup ::=
    SEQUENCE {
        -- The default value for rb-Identity is the smallest value not used yet.
        rb-Identity      RB-Identity              OPTIONAL,
        rlc-InfoChoice   RLC-InfoChoice,
        rb-MappingInfo   RB-MappingInfo
    }

SRB-InformationSetupList ::=
    SEQUENCE (SIZE (1..maxSRBsetup)) OF
        SRB-InformationSetup

```



```

SRB-InformationSetupList2 ::= SEQUENCE (SIZE (3..4)) OF
                               SRB-InformationSetup

TimerDiscard ::= ENUMERATED {
                  td0-1, td0-25, td0-5, td0-75,
                  td1, td1-25, td1-5, td1-75,
                  td2, td2-5, td3, td3-5, td4,
                  td4-5, td5, td7-5 }

TimerEPC ::= ENUMERATED {
              te50, te60, te70, te80, te90,
              te100, te120, te140, te160, te180,
              te200, te300, te400, te500, te700,
              te900 }

TimerMRW ::= ENUMERATED {
              te50, te60, te70, te80, te90, te100,
              te120, te140, te160, te180, te200,
              te300, te400, te500, te700, te900 }

TimerPoll ::= ENUMERATED {
               tp10, tp20, tp30, tp40, tp50,
               tp60, tp70, tp80, tp90, tp100,
               tp110, tp120, tp130, tp140, tp150,
               tp160, tp170, tp180, tp190, tp200,
               tp210, tp220, tp230, tp240, tp250,
               tp260, tp270, tp280, tp290, tp300,
               tp310, tp320, tp330, tp340, tp350,
               tp360, tp370, tp380, tp390, tp400,
               tp410, tp420, tp430, tp440, tp450,
               tp460, tp470, tp480, tp490, tp500,
               tp510, tp520, tp530, tp540, tp550,
               tp600, tp650, tp700, tp750, tp800,
               tp850, tp900, tp950, tp1000 }

TimerPollPeriodic ::= ENUMERATED {
                       tper100, tper200, tper300, tper400,
                       tper500, tper750, tper1000, tper2000 }

TimerPollProhibit ::= ENUMERATED {
                       tpp10, tpp20, tpp30, tpp40, tpp50,
                       tpp60, tpp70, tpp80, tpp90, tpp100,
                       tpp110, tpp120, tpp130, tpp140, tpp150,
                       tpp160, tpp170, tpp180, tpp190, tpp200,
                       tpp210, tpp220, tpp230, tpp240, tpp250,
                       tpp260, tpp270, tpp280, tpp290, tpp300,
                       tpp310, tpp320, tpp330, tpp340, tpp350,
                       tpp360, tpp370, tpp380, tpp390, tpp400,
                       tpp410, tpp420, tpp430, tpp440, tpp450,
                       tpp460, tpp470, tpp480, tpp490, tpp500,
                       tpp510, tpp520, tpp530, tpp540, tpp550,
                       tpp600, tpp650, tpp700, tpp750, tpp800,
                       tpp850, tpp900, tpp950, tpp1000 }

TimerRST ::= ENUMERATED {
              tr50, tr100, tr150, tr200, tr250, tr300,
              tr350, tr400, tr450, tr500, tr550,
              tr600, tr700, tr800, tr900, tr1000 }

TimerStatusPeriodic ::= ENUMERATED {
                       tsp100, tsp200, tsp300, tsp400, tsp500,
                       tsp750, tsp1000, tsp2000 }

TimerStatusProhibit ::= ENUMERATED {
                          tsp10, tsp20, tsp30, tsp40, tsp50,
                          tsp60, tsp70, tsp80, tsp90, tsp100,
                          tsp110, tsp120, tsp130, tsp140, tsp150,
                          tsp160, tsp170, tsp180, tsp190, tsp200,
                          tsp210, tsp220, tsp230, tsp240, tsp250,
                          tsp260, tsp270, tsp280, tsp290, tsp300,
                          tsp310, tsp320, tsp330, tsp340, tsp350,
                          tsp360, tsp370, tsp380, tsp390, tsp400,
                          tsp410, tsp420, tsp430, tsp440, tsp450,
                          tsp460, tsp470, tsp480, tsp490, tsp500,
                          tsp510, tsp520, tsp530, tsp540, tsp550,
                          tsp600, tsp650, tsp700, tsp750, tsp800,
                          tsp850, tsp900, tsp950, tsp1000 }

```

```

TransmissionRLC-Discard ::=          CHOICE {
    timerBasedExplicit                ExplicitDiscard,
    timerBasedNoExplicit              NoExplicitDiscard,
    maxDAT-Retransmissions            MaxDAT-Retransmissions,
    noDiscard                         MaxDAT
}

TransmissionWindowSize ::=          ENUMERATED {
    tw1, tw8, tw16, tw32, tw64, tw128, tw256,
    tw512, tw768, tw1024, tw1536, tw2047,
    tw2560, tw3072, tw3584, tw4095 }

UL-AM-RLC-Mode ::=                 SEQUENCE {
    transmissionRLC-Discard           TransmissionRLC-Discard,
    transmissionWindowSize            TransmissionWindowSize,
    timerRST                          TimerRST,
    max-RST                           MaxRST,
    pollingInfo                       PollingInfo                               OPTIONAL
}

UL-CounterSynchronisationInfo ::=  SEQUENCE {
    rB-WithPDCP-InfoList             RB-WithPDCP-InfoList    OPTIONAL,
    startList                         STARTList
}

UL-LogicalChannelMapping ::=       SEQUENCE {
    -- TABULAR: UL-TransportChannelType contains TransportChannelIdentity as well.
    ul-TransportChannelType           UL-TransportChannelType,
    logicalChannelIdentity            LogicalChannelIdentity    OPTIONAL,
    rlc-SizeList                      CHOICE {
        allSizes                      NULL,
        configured                    NULL,
        explicitList                  RLC-SizeExplicitList
    },
    mac-LogicalChannelPriority         MAC-LogicalChannelPriority
}

UL-LogicalChannelMappingList ::=   SEQUENCE {
    -- rlc-LogicalChannelMappingIndicator shall be set to TRUE in this version
    -- of the specification
    rlc-LogicalChannelMappingIndicator BOOLEAN,
    ul-LogicalChannelMapping          SEQUENCE (SIZE (maxLoChperRLC)) OF
                                        UL-LogicalChannelMapping
}

UL-LogicalChannelMappings ::=      CHOICE {
    oneLogicalChannel                 UL-LogicalChannelMapping,
    twoLogicalChannels                UL-LogicalChannelMappingList
}

UL-RLC-Mode ::=                    CHOICE {
    ul-AM-RLC-Mode                   UL-AM-RLC-Mode,
    ul-UM-RLC-Mode                   UL-UM-RLC-Mode,
    ul-TM-RLC-Mode                   UL-TM-RLC-Mode,
    spare                             NULL
}

UL-TM-RLC-Mode ::=                 SEQUENCE {
    transmissionRLC-Discard           TransmissionRLC-Discard    OPTIONAL,
    segmentationIndication            BOOLEAN
}

UL-UM-RLC-Mode ::=                 SEQUENCE {
    transmissionRLC-Discard           TransmissionRLC-Discard    OPTIONAL
}

UL-TransportChannelType ::=        CHOICE {
    dch                               TransportChannelIdentity,
    rach                              NULL,
    cpch                              NULL,
    usch                              TransportChannelIdentity
}

-- *****
--
-- TRANSPORT CHANNEL INFORMATION ELEMENTS (10.3.5)

```

```

--
-- *****
AllowedTFC-List ::=                               SEQUENCE (SIZE (1..maxTFC)) OF
                                                  TFC-Value
AllowedTFI-List ::=                               SEQUENCE (SIZE (1..maxTF)) OF
                                                  INTEGER (0..31)
BitModeRLC-SizeInfo ::=                          CHOICE {
  sizeType1                                       INTEGER (0..127),
  sizeType2                                       SEQUENCE {
    -- Actual size = (part1 * 8) + 128 + part2
    part1                                         INTEGER (0..15),
    part2                                         INTEGER (1..7)                                     OPTIONAL
  },
  sizeType3                                       SEQUENCE {
    -- Actual size = (part1 * 16) + 256 + part2
    part1                                         INTEGER (0..47),
    part2                                         INTEGER (1..15)                                    OPTIONAL
  },
  sizeType4                                       SEQUENCE {
    -- Actual size = (part1 * 64) + 1024 + part2
    part1                                         INTEGER (0..62),
    part2                                         INTEGER (1..63)                                    OPTIONAL
  }
}
-- Actual value BLER-QualityValue = IE value * 0.1
BLER-QualityValue ::=                             INTEGER (-63..0)
ChannelCodingType ::=                             CHOICE {
  -- noCoding is only used for TDD in this version of the specification,
  -- otherwise it should be ignored
  noCoding                                         NULL,
  convolutional                                    CodingRate,
  turbo                                             NULL
}
CodingRate ::=                                    ENUMERATED {
  half,
  third }
CommonDynamicTF-Info ::=                          SEQUENCE {
  rlc-Size                                         CHOICE {
    fdd                                             SEQUENCE {
      octetModeRLC-SizeInfoType2                  OctetModeRLC-SizeInfoType2
    },
    tdd                                             SEQUENCE {
      commonTDD-Choice                             CHOICE {
        bitModeRLC-SizeInfo                       BitModeRLC-SizeInfo,
        octetModeRLC-SizeInfoType1                OctetModeRLC-SizeInfoType1
      }
    }
  },
  numberOfTbSizeList                               SEQUENCE (SIZE (1..maxTF)) OF
                                                  NumberOfTransportBlocks,
  logicalChannelList                              LogicalChannelList
}
CommonDynamicTF-Info-DynamicTTI ::=              SEQUENCE {
  commonTDD-Choice                                 CHOICE {
    bitModeRLC-SizeInfo                           BitModeRLC-SizeInfo,
    octetModeRLC-SizeInfoType1                   OctetModeRLC-SizeInfoType1
  },
  numberOfTbSizeAndTTIList                        NumberOfTbSizeAndTTIList,
  logicalChannelList                              LogicalChannelList
}
CommonDynamicTF-InfoList ::=                     SEQUENCE (SIZE (1..maxTF)) OF
                                                  CommonDynamicTF-Info
CommonDynamicTF-InfoList-DynamicTTI ::=          SEQUENCE (SIZE (1..maxTF)) OF
                                                  CommonDynamicTF-Info-DynamicTTI
CommonTransChTFS ::=                              SEQUENCE {
  tti                                              CHOICE {
    tti10                                          CommonDynamicTF-InfoList,

```

```

        tti20          CommonDynamicTF-InfoList ,
        tti40          CommonDynamicTF-InfoList ,
        tti80          CommonDynamicTF-InfoList ,
        dynamic       CommonDynamicTF-InfoList-DynamicTTI
    },
    semistaticTF-Information      SemistaticTF-Information
}

CommonTransChTFS-LCR ::=
    tti          SEQUENCE {
        tti5     CHOICE {
            tti10 CommonDynamicTF-InfoList ,
            tti20 CommonDynamicTF-InfoList ,
            tti40 CommonDynamicTF-InfoList ,
            tti80 CommonDynamicTF-InfoList ,
            dynamic CommonDynamicTF-InfoList-DynamicTTI
        },
        semistaticTF-Information      SemistaticTF-Information
    }

CPCH-SetID ::=
    INTEGER (1..maxCPCHsets)

CRC-Size ::=
    ENUMERATED {
        crc0, crc8, crc12, crc16, crc24 }

DedicatedDynamicTF-Info ::=
    rlc-Size          SEQUENCE {
        bitMode       CHOICE {
            octetModeType1      BitModeRLC-SizeInfo,
            octetModeType1      OctetModeRLC-SizeInfoType1
        },
        numberOfTbSizeList      SEQUENCE (SIZE (1..maxTF)) OF
        NumberOfTransportBlocks,
        logicalChannelList      LogicalChannelList
    }

DedicatedDynamicTF-Info-DynamicTTI ::= SEQUENCE {
    rlc-Size          CHOICE {
        bitMode       BitModeRLC-SizeInfo,
        octetModeType1      OctetModeRLC-SizeInfoType1
    },
    numberOfTbSizeAndTTIList      NumberOfTbSizeAndTTIList,
    logicalChannelList      LogicalChannelList
}

DedicatedDynamicTF-InfoList ::=
    SEQUENCE (SIZE (1..maxTF)) OF
    DedicatedDynamicTF-Info

DedicatedDynamicTF-InfoList-DynamicTTI ::= SEQUENCE (SIZE (1..maxTF)) OF
    DedicatedDynamicTF-Info-DynamicTTI

DedicatedTransChTFS ::=
    tti          SEQUENCE {
        tti10     CHOICE {
            tti20     DedicatedDynamicTF-InfoList,
            tti40     DedicatedDynamicTF-InfoList,
            tti80     DedicatedDynamicTF-InfoList,
            dynamic   DedicatedDynamicTF-InfoList-DynamicTTI
        },
        semistaticTF-Information      SemistaticTF-Information
    }

-- The maximum allowed size of DL-AddReconfTransChInfo2List sequence is 16
DL-AddReconfTransChInfo2List ::=
    SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation2

-- The maximum allowed size of DL-AddReconfTransChInfoList sequence is 16
DL-AddReconfTransChInfoList ::=
    SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation

-- The maximum allowed size of DL-AddReconfTransChInfoList-r4 sequence is 16
DL-AddReconfTransChInfoList-r4 ::=
    SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation-r4

-- The maximum allowed size of DL-AddReconfTransChInfoList-r5 sequence is 16
DL-AddReconfTransChInfoList-r5 ::=
    SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation-r5

```

```

-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of messages other than: Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation ::= SEQUENCE {
    dl-TransportChannelType          DL-TrCH-Type,
    dl-transportChannelIdentity      TransportChannelIdentity,
    tfs-SignallingMode              CHOICE {
        explicit-config             TransportFormatSet,
        sameAsULTrCH                UL-TransportChannelIdentity
    },
    dch-QualityTarget                QualityTarget                OPTIONAL,
    -- dummy is not used in this version of the specification and should be ignored.
    dummy                            TM-SignallingInfo            OPTIONAL
}

DL-AddReconfTransChInformation-r4 ::= SEQUENCE {
    dl-TransportChannelType          DL-TrCH-Type,
    dl-transportChannelIdentity      TransportChannelIdentity,
    tfs-SignallingMode              CHOICE {
        explicit-config             TransportFormatSet,
        sameAsULTrCH                UL-TransportChannelIdentity
    },
    dch-QualityTarget                QualityTarget                OPTIONAL
}

DL-AddReconfTransChInformation-r5 ::= SEQUENCE {
    dl-TransportChannelType          DL-TrCH-Type-r5,
    dl-transportChannelIdentity      TransportChannelIdentity,
    tfs-SignallingMode              CHOICE {
        explicit-config             TransportFormatSet,
        sameAsULTrCH                UL-TransportChannelIdentity,
        hsdSCH                       HSDSCH-Info
    },
    dch-QualityTarget                QualityTarget                OPTIONAL
}

-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation2 ::= SEQUENCE {
    dl-TransportChannelType          DL-TrCH-Type,
    transportChannelIdentity        TransportChannelIdentity,
    tfs-SignallingMode              CHOICE {
        explicit-config             TransportFormatSet,
        sameAsULTrCH                UL-TransportChannelIdentity
    },
    qualityTarget                    QualityTarget                OPTIONAL
}

DL-CommonTransChInfo ::= SEQUENCE {
    sccpch-TFCS                      TFCS                        OPTIONAL,
    -- modeSpecificInfo should be optional. A new version of this IE should be defined
    -- to be used in later versions of messages using this IE
    modeSpecificInfo                 CHOICE {
        fdd                           SEQUENCE {
            dl-Parameters              CHOICE {
                dl-DCH-TFCS            TFCS,
                sameAsUL                NULL
            }
        },
        tdd                           SEQUENCE {
            individualDL-CCTrCH-InfoList IndividualDL-CCTrCH-InfoList OPTIONAL
        }
    }
}

DL-CommonTransChInfo-r4 ::= SEQUENCE {
    sccpch-TFCS                      TFCS                        OPTIONAL,
    modeSpecificInfo                 CHOICE {
        fdd                           SEQUENCE {
            dl-Parameters              CHOICE {
                dl-DCH-TFCS            SEQUENCE {
                    tfcs                TFCS                OPTIONAL
                },
                sameAsUL                NULL
            }
        },
        tdd                           SEQUENCE {
            individualDL-CCTrCH-InfoList IndividualDL-CCTrCH-InfoList OPTIONAL
        }
    }
}

```

```

        tdd
            individualDL-CCTrCH-InfoList
        }
    } OPTIONAL
}

DL-DeletedTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    DL-TransportChannelIdentity

DL-DeletedTransChInfoList-r5 ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    DL-TransportChannelIdentity-r5

DL-TransportChannelIdentity ::= SEQUENCE {
    dl-TransportChannelType
    dl-TransportChannelIdentity
}

DL-TransportChannelIdentity-r5 ::= SEQUENCE {
    dl-TransportChannelType
    DL-TrCH-Type-r5
}

DL-TrCH-Type ::= ENUMERATED {dch, dsch}

DL-TrCH-Type-r5 ::= CHOICE {
    dch
    dsch
    hsdSCH
}

DRAC-ClassIdentity ::= INTEGER (1..maxDRACclasses)

DRAC-StaticInformation ::= SEQUENCE {
    transmissionTimeValidity
    timeDurationBeforeRetry
    drac-ClassIdentity
}

DRAC-StaticInformationList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    DRAC-StaticInformation

ExplicitTFCS-Configuration ::= CHOICE {
    complete
    addition
    removal
    replacement
    tfcsRemoval
    tfcsAdd
}

GainFactor ::= INTEGER (0..15)

GainFactorInformation ::= CHOICE {
    signalledGainFactors
    computedGainFactors
}

HSDSCH-Info ::= SEQUENCE {
    transportFormatSet-HSDSCH
    harqInfo
    mac-hsResetIndicator
}

HARQ-Info ::= SEQUENCE {
    numberOfProcesses
    memoryPartitioning
    implicit
    explicit
},
reorderingReleaseTimer
}

--memory size range is FFS.
HARQMemorySize ::= INTEGER (1..10000)

```

```

IndividualDL-CCTrCH-Info ::= SEQUENCE {
    dl-TFCS-Identity          TFCS-Identity,
    tfcs-SignallingMode      CHOICE {
        explicit-config      TFCS,
        sameAsUL             TFCS-Identity
    }
}

IndividualDL-CCTrCH-InfoList ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
    IndividualDL-CCTrCH-Info

IndividualUL-CCTrCH-Info ::= SEQUENCE {
    ul-TFCS-Identity          TFCS-Identity,
    ul-TFCS                   TFCS,
    tfc-Subset                TFC-Subset
}

IndividualUL-CCTrCH-InfoList ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
    IndividualUL-CCTrCH-Info

LogicalChannelByRB ::= SEQUENCE {
    rb-Identity              RB-Identity,
    logChOfRb                INTEGER (0..1)
}
OPTIONAL

LogicalChannelList ::= CHOICE {
    allSizes                 NULL,
    configured               NULL,
    explicitList             SEQUENCE (SIZE (1..15)) OF
        LogicalChannelByRB
}

Mac-d-FlowIdentityDCHandHSDSCH ::= SEQUENCE {
    dch-transport-ch-id      TransportChannelIdentity,
    hsdSCH-transport-ch-id   Mac-d-FlowIdentity
}

Mac-d-FlowIdentity ::= INTEGER (1..8)

--Mac-d-Pdu sizes need to be defined
MAC-d-PDUsizes ::= INTEGER (1..10000)

NumberOfTbSizeAndTTIList ::= SEQUENCE (SIZE (1..maxTF)) OF SEQUENCE {
    numberOfTransportBlocks  NumberOfTransportBlocks,
    transmissionTimeInterval TransmissionTimeInterval
}

MessType ::= ENUMERATED {
    transportFormatCombinationControl }

Non-allowedTFC-List ::= SEQUENCE (SIZE (1..maxTFC)) OF
    TFC-Value

NumberOfTransportBlocks ::= CHOICE {
    zero                     NULL,
    one                      NULL,
    small                    INTEGER (2..17),
    large                    INTEGER (18..512)
}

OctetModeRLC-SizeInfoType1 ::= CHOICE {
    -- Actual size = (8 * sizeType1) + 16
    sizeType1                INTEGER (0..31),
    sizeType2                SEQUENCE {
        -- Actual size = (32 * part1) + 272 + (part2 * 8)
        part1                 INTEGER (0..23),
        part2                 INTEGER (1..3)
    },
    sizeType3                SEQUENCE {
        -- Actual size = (64 * part1) + 1040 + (part2 * 8)
        part1                 INTEGER (0..61),
        part2                 INTEGER (1..7)
    }
}
OPTIONAL

OctetModeRLC-SizeInfoType2 ::= CHOICE {
    -- Actual size = (sizeType1 * 8) + 48
    sizeType1                INTEGER (0..31),
}

```

```

-- Actual size = (sizeType2 * 16) + 312
sizeType2                INTEGER (0..63),
-- Actual size = (sizeType3 *64) + 1384
sizeType3                INTEGER (0..56)
}

PowerOffsetInformation ::=          SEQUENCE {
  gainFactorInformation          GainFactorInformation,
  -- PowerOffsetPp-m is always absent in TDD
  powerOffsetPp-m              PowerOffsetPp-m                OPTIONAL
}

PowerOffsetPp-m ::=              INTEGER (-5..10)

PreDefTransChConfiguration ::=    SEQUENCE {
  ul-CommonTransChInfo          UL-CommonTransChInfo,
  ul-AddReconfTrChInfoList      UL-AddReconfTransChInfoList,
  dl-CommonTransChInfo          DL-CommonTransChInfo,
  dl-TrChInfoList               DL-AddReconfTransChInfoList
}

QualityTarget ::=              SEQUENCE {
  bler-QualityValue             BLER-QualityValue
}

RateMatchingAttribute ::=        INTEGER (1..hiRM)

ReferenceTFC-ID ::=             INTEGER (0..3)

RestrictedTrChInfo ::=          SEQUENCE {
  ul-TransportChannelType        UL-TrCH-Type,
  restrictedTrChIdentity          TransportChannelIdentity,
  allowedTFI-List                AllowedTFI-List                OPTIONAL
}

RestrictedTrChInfoList ::=       SEQUENCE (SIZE (1..maxTrCH)) OF
  RestrictedTrChInfo

SemistaticTF-Information ::=     SEQUENCE {
  -- TABULAR: Transmission time interval has been included in the IE CommonTransChTFS.
  channelCodingType              ChannelCodingType,
  rateMatchingAttribute          RateMatchingAttribute,
  crc-Size                       CRC-Size
}

SignalledGainFactors ::=        SEQUENCE {
  modeSpecificInfo              CHOICE {
    fdd                          SEQUENCE {
      gainFactorBetaC            GainFactor
    },
    tdd                          NULL
  },
  gainFactorBetaD                GainFactor,
  referenceTFC-ID                ReferenceTFC-ID                OPTIONAL
}

SplitTFCI-Signalling ::=        SEQUENCE {
  splitType                      SplitType                OPTIONAL,
  tfci-Field2-Length             INTEGER (1..10)            OPTIONAL,
  tfci-Field1-Information        ExplicitTFCS-Configuration OPTIONAL,
  tfci-Field2-Information        TFCI-Field2-Information  OPTIONAL
}

SplitType ::=                   ENUMERATED {
  hardSplit, logicalSplit }

--Range for releasetimer is FFS.
T1-ReleaseTimer ::=            INTEGER (1..100)

TFC-Subset ::=                  CHOICE {
  minimumAllowedTFC-Number       TFC-Value,
  allowedTFC-List                 AllowedTFC-List,
  non-allowedTFC-List             Non-allowedTFC-List,
  restrictedTrChInfoList          RestrictedTrChInfoList,
  fullTFCS                        NULL
}

```



```

TFC-Subset-ID-With3b ::=          INTEGER (0..7)
TFC-Subset-ID-With5b ::=          INTEGER (0..31)
TFC-Subset-ID-With10b ::=         INTEGER (0..1023)
TFC-SubsetList ::=               SEQUENCE (SIZE (1.. maxTFCsub)) OF SEQUENCE {
    modeSpecificInfo              CHOICE {
        fdd                       NULL,
        tdd                       SEQUENCE {
            tfcs-ID                TFCs-Identity          OPTIONAL
        }
    },
    tfc-Subset                    TFC-Subset
}
TFC-Value ::=                   INTEGER (0..1023)
TFCI-Field2-Information ::=      CHOICE {
    tfci-Range                    TFCI-RangeList,
    explicit-config               ExplicitTFCS-Configuration
}
TFCI-Range ::=                  SEQUENCE {
    maxTFCIField2Value           INTEGER (1..1023),
    tfcs-InfoForDSCH            TFCs-InfoForDSCH
}
TFCI-RangeList ::=             SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
    TFCI-Range
TFCs ::=                        CHOICE {
    normalTFCI-Signalling        ExplicitTFCS-Configuration,
    splitTFCI-Signalling        SplitTFCI-Signalling
}
TFCs-Identity ::=              SEQUENCE {
    tfcs-ID                      TFCs-IdentityPlain          DEFAULT 1,
    sharedChannelIndicator       BOOLEAN
}
TFCs-IdentityPlain ::=         INTEGER (1..8)
TFCs-InfoForDSCH ::=          CHOICE {
    ctfc2bit                     INTEGER (0..3),
    ctfc4bit                     INTEGER (0..15),
    ctfc6bit                     INTEGER (0..63),
    ctfc8bit                     INTEGER (0..255),
    ctfc12bit                    INTEGER (0..4095),
    ctfc16bit                    INTEGER (0..65535),
    ctfc24bit                    INTEGER (0..16777215)
}
TFCs-ReconfAdd ::=            SEQUENCE{
    ctfcSize                     CHOICE{
        ctfc2Bit                 SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc2                 INTEGER (0..3),
            powerOffsetInformation PowerOffsetInformation          OPTIONAL
        },
        ctfc4Bit                 SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc4                 INTEGER (0..15),
            powerOffsetInformation PowerOffsetInformation          OPTIONAL
        },
        ctfc6Bit                 SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc6                 INTEGER (0..63),
            powerOffsetInformation PowerOffsetInformation          OPTIONAL
        },
        ctfc8Bit                 SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc8                 INTEGER (0..255),
            powerOffsetInformation PowerOffsetInformation          OPTIONAL
        },
        ctfc12Bit                SEQUENCE (SIZE(1..maxTFC)) OF SEQUENCE {
            ctfc12                INTEGER (0..4095),
            powerOffsetInformation PowerOffsetInformation          OPTIONAL
        },
        ctfc16Bit                SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc16                INTEGER(0..65535),
            powerOffsetInformation PowerOffsetInformation          OPTIONAL
        }
    }
}

```

```

    },
    ctfc24Bit
    ctfc24
    powerOffsetInformation
  }
}

TFCS-Removal ::=
  tfci
}

TFCS-RemovalList ::=
  SEQUENCE (SIZE (1..maxTFC)) OF
  TFCS-Removal

TimeDurationBeforeRetry ::=
  INTEGER (1..256)

TM-SignallingInfo ::=
  messType
  tm-SignallingMode
  model
  mode2
  -- in ul-controlledTrChList, TrCH-Type is always DCH
  ul-controlledTrChList
}

TransmissionTimeInterval ::=
  ENUMERATED {
    tti10, tti20, tti40, tti80 }

TransmissionTimeValidity ::=
  INTEGER (1..256)

--Range of TB size for hsdSCH is ffs.
TransportBlockSize-r5 ::=
  INTEGER (1..64000)

TransportChannelIdentity ::=
  INTEGER (1..32)

TransportChannelIdentityDCHandDSCH ::= SEQUENCE {
  dch-transport-ch-id
  dsch-transport-ch-id
}

TransportFormatSet ::=
  dedicatedTransChTFS
  commonTransChTFS
}

TransportFormatSet-LCR ::=
  dedicatedTransChTFS
  commonTransChTFS-LCR
}

TransportFormatSet-HSDSCH ::=
  dynamicTransportFormatInfo-r5
  fdd
  tdd
  },
  mac-d-PDU-Size-Info
}

-- The maximum allowed size of UL-AddReconfTransChInfoList sequence is 16
UL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
  UL-AddReconfTransChInformation

UL-AddReconfTransChInformation ::= SEQUENCE {
  ul-TransportChannelType
  transportChannelIdentity
  transportFormatSet
  UL-TrCH-Type,
  TransportChannelIdentity,
  TransportFormatSet
}

UL-CommonTransChInfo ::=
  -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
  -- CCH Info.
  SEQUENCE {

```

```

tfc-Subset                TFC-Subset                OPTIONAL,
prach-TFCS                TFCS                    OPTIONAL,
modeSpecificInfo         CHOICE {
    fdd                    SEQUENCE {
        ul-TFCS            TFC-Subset
    },
    tdd                    SEQUENCE {
        individualUL-CCTrCH-InfoList IndividualUL-CCTrCH-InfoList OPTIONAL
    }
}
                                                                    OPTIONAL
}

UL-CommonTransChInfo-r4 ::= SEQUENCE {
-- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
-- CCTrCH Info.
tfc-Subset                TFC-Subset                OPTIONAL,
prach-TFCS                TFCS                    OPTIONAL,
modeSpecificInfo         CHOICE {
    fdd                    SEQUENCE {
        ul-TFCS            TFC-Subset
    },
    tdd                    SEQUENCE {
        individualUL-CCTrCH-InfoList IndividualUL-CCTrCH-InfoList OPTIONAL
    }
}
                                                                    OPTIONAL,
tfc-SubsetList           TFC-SubsetList           OPTIONAL
}

-- In UL-ControlledTrChList, TrCH-Type is always DCH
UL-ControlledTrChList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    TransportChannelIdentity

UL-DeletedTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    UL-TransportChannelIdentity

UL-TransportChannelIdentity ::= SEQUENCE {
    ul-TransportChannelType UL-TrCH-Type,
    ul-TransportChannelIdentity TransportChannelIdentity
}

UL-TrCH-Type ::= ENUMERATED {dch, usch}

-- *****
--
--     PHYSICAL CHANNEL INFORMATION ELEMENTS (10.3.6)
--
-- *****

ACK-NACK-repetitionFactor ::= INTEGER(1..4)

AC-To-ASC-Mapping ::= INTEGER (0..7)

AC-To-ASC-MappingTable ::= SEQUENCE (SIZE (maxASCmap)) OF
    AC-To-ASC-Mapping

AccessServiceClass-FDD ::= SEQUENCE {
    availableSignatureStartIndex INTEGER (0..15),
    availableSignatureEndIndex  INTEGER (0..15),

    assignedSubChannelNumber    BIT STRING {
        b3(0),
        b2(1),
        b1(2),
        b0(3)
    } (SIZE(4))
}

AccessServiceClass-TDD ::= SEQUENCE {
    channelisationCodeIndices BIT STRING {
        chCodeIndex7(0),
        chCodeIndex6(1),
        chCodeIndex5(2),
        chCodeIndex4(3),
        chCodeIndex3(4),
        chCodeIndex2(5),
        chCodeIndex1(6),

```

```

        chCodeIndex0(7)
    } (SIZE(8))
    OPTIONAL,
subchannelSize CHOICE {
    size1 NULL,
    size2 SEQUENCE {
        -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'
        subchannels ENUMERATED { subch0, subch1 } OPTIONAL
    },
    size4 SEQUENCE {
        subchannels BIT STRING {
            subCh3(0),
            subCh2(1),
            subCh1(2),
            subCh0(3)
        } (SIZE(4))
    } OPTIONAL
},
    size8 SEQUENCE {
        subchannels BIT STRING {
            subCh7(0),
            subCh6(1),
            subCh5(2),
            subCh4(3),
            subCh3(4),
            subCh2(5),
            subCh1(6),
            subCh0(7)
        } (SIZE(8))
    } OPTIONAL
}
}

AccessServiceClass-TDD-LCR-r4 ::= SEQUENCE {
    availableSYNC-UlCodesIndics BIT STRING {
        sulCodeIndex7(0),
        sulCodeIndex6(1),
        sulCodeIndex5(2),
        sulCodeIndex4(3),
        sulCodeIndex3(4),
        sulCodeIndex2(5),
        sulCodeIndex1(6),
        sulCodeIndex0(7)
    } (SIZE(8))
    OPTIONAL,
subchannelSize CHOICE {
    size1 NULL,
    size2 SEQUENCE {
        -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
        subchannels ENUMERATED { subch0, subch1 } OPTIONAL
    },
    size4 SEQUENCE {
        subchannels BIT STRING {
            subCh3(0),
            subCh2(1),
            subCh1(2),
            subCh0(3)
        } (SIZE(4))
    } OPTIONAL
},
    size8 SEQUENCE {
        subchannels BIT STRING {
            subCh7(0),
            subCh6(1),
            subCh5(2),
            subCh4(3),
            subCh3(4),
            subCh2(5),
            subCh1(6),
            subCh0(7)
        } (SIZE(8))
    } OPTIONAL
}
}

AICH-Info ::= SEQUENCE {
    channelisationCode256 ChannelisationCode256,
    sttd-Indicator BOOLEAN,
    aich-TransmissionTiming AICH-TransmissionTiming
}

```

```

AICH-PowerOffset ::= INTEGER (-22..5)

AICH-TransmissionTiming ::= ENUMERATED {
    e0, e1 }

AllocationPeriodInfo ::= SEQUENCE {
    allocationActivationTime    INTEGER (0..255),
    allocationDuration          INTEGER (1..256)
}

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

AP-AICH-ChannelisationCode ::= INTEGER (0..255)

AP-PreambleScramblingCode ::= INTEGER (0..79)

AP-Signature ::= INTEGER (0..15)

AP-Signature-VCAM ::= SEQUENCE {
    ap-Signature                AP-Signature,
    availableAP-SubchannelList  AvailableAP-SubchannelList OPTIONAL
}

AP-Subchannel ::= INTEGER (0..11)

ASCSetting-FDD ::= SEQUENCE {
    -- TABULAR: accessServiceClass-FDD is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available signature and sub-channels
    accessServiceClass-FDD      AccessServiceClass-FDD OPTIONAL
}

ASCSetting-TDD ::= SEQUENCE {
    -- TABULAR: accessServiceClass-TDD is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available channelisation codes and
    -- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD      AccessServiceClass-TDD OPTIONAL
}

ASCSetting-TDD-LCR-r4 ::= SEQUENCE {
    -- TABULAR: accessServiceClass-TDD-LCR is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available SYNC_UL codes and
    -- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD-LCR  AccessServiceClass-TDD-LCR-r4 OPTIONAL
}

AvailableAP-Signature-VCAMList ::= SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
    AP-Signature-VCAM

AvailableAP-SignatureList ::= SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
    AP-Signature

AvailableAP-SubchannelList ::= SEQUENCE (SIZE (1..maxPCPCH-APsubCh)) OF
    AP-Subchannel

AvailableMinimumSF-ListVCAM ::= SEQUENCE (SIZE (1..maxPCPCH-SF)) OF
    AvailableMinimumSF-VCAM

AvailableMinimumSF-VCAM ::= SEQUENCE {
    minimumSpreadingFactor      MinimumSpreadingFactor,
    nf-Max                      NF-Max,
    maxAvailablePCPCH-Number    MaxAvailablePCPCH-Number,
    availableAP-Signature-VCAMList AvailableAP-Signature-VCAMList
}

AvailableSignatures ::= BIT STRING {
    signature15(0),
    signature14(1),
    signature13(2),
    signature12(3),
    signature11(4),
    signature10(5),
    signature9(6),
    signature8(7),
    signature7(8),

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```

signature6(9),
signature5(10),
signature4(11),
signature3(12),
signature2(13),
signature1(14),
signature0(15)
} (SIZE(16))

AvailableSubChannelNumbers ::= BIT STRING {
    subCh11(0),
    subCh10(1),
    subCh9(2),
    subCh8(3),
    subCh7(4),
    subCh6(5),
    subCh5(6),
    subCh4(7),
    subCh3(8),
    subCh2(9),
    subCh1(10),
    subCh0(11)
} (SIZE(12))

BurstType ::= ENUMERATED {
    short1, long2 }

-- Actual value Bler-Target = IE value * 0.05
Bler-Target ::= INTEGER (-63..0)

CCTrCH-PowerControlInfo ::= SEQUENCE {
    tfcs-Identity          TFCS-Identity          OPTIONAL,
    ul-DPCH-PowerControlInfo  UL-DPCH-PowerControlInfo
}

CCTrCH-PowerControlInfo-r4 ::= SEQUENCE {
    tfcs-Identity          TFCS-Identity          OPTIONAL,
    ul-DPCH-PowerControlInfo-r4  UL-DPCH-PowerControlInfo-r4
}

CD-AccessSlotSubchannel ::= INTEGER (0..11)

CD-AccessSlotSubchannelList ::= SEQUENCE (SIZE (1..maxPCPCH-CDsubCh)) OF
    CD-AccessSlotSubchannel

CD-CA-ICH-ChannelisationCode ::= INTEGER (0..255)

CD-PreambleScramblingCode ::= INTEGER (0..79)

CD-SignatureCode ::= INTEGER (0..15)

CD-SignatureCodeList ::= SEQUENCE (SIZE (1..maxPCPCH-CDsig)) OF
    CD-SignatureCode

CellAndChannelIdentity ::= SEQUENCE {
    burstType          BurstType,
    midambleShift      MidambleShiftLong,
    timeslot           TimeslotNumber,
    cellParametersID   CellParametersID
}

CellParametersID ::= INTEGER (0..127)

Cfntargetsfntframeoffset ::= INTEGER(0..255)

ChannelAssignmentActive ::= CHOICE {
    notActive          NULL,
    isActive           AvailableMinimumSF-ListVCAM
}

ChannelisationCode256 ::= INTEGER (0..255)

ChannelReqParamsForUCSM ::= SEQUENCE {
    availableAP-SignatureList  AvailableAP-SignatureList,
    availableAP-SubchannelList AvailableAP-SubchannelList          OPTIONAL
}

ClosedLoopTimingAdjMode ::= ENUMERATED {

```

```

        slot1, slot2 }

CodeNumberDSCH ::=
    INTEGER (0..255)

CodeRange ::=
    SEQUENCE {
        pdsch-CodeMapList
    }
    PDSCH-CodeMapList

CodeWordSet ::=
    ENUMERATED {
        longCWS,
        mediumCWS,
        shortCWS,
        ssdtOff }

CommonTimeslotInfo ::=
    SEQUENCE {
        -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
        -- bit it is not defined as OPTIONAL.
        secondInterleavingMode
            SecondInterleavingMode,
        tfci-Coding
            TFCI-Coding
            OPTIONAL,
        puncturingLimit
            PuncturingLimit,
        repetitionPeriodAndLength
            RepetitionPeriodAndLength
            OPTIONAL
    }

CommonTimeslotInfoSCCPCH ::=
    SEQUENCE {
        -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
        -- bit it is not defined as OPTIONAL.
        secondInterleavingMode
            SecondInterleavingMode,
        tfci-Coding
            TFCI-Coding
            OPTIONAL,
        puncturingLimit
            PuncturingLimit,
        repetitionPeriodLengthAndOffset
            RepetitionPeriodLengthAndOffset
            OPTIONAL
    }

ConstantValue ::=
    INTEGER (-35..-10)

ConstantValueTdd ::=
    INTEGER (-35..10)

CPCH-PersistenceLevels ::=
    SEQUENCE {
        cpch-SetID
            CPCH-SetID,
        dynamicPersistenceLevelTF-List
            DynamicPersistenceLevelTF-List
    }

CPCH-PersistenceLevelsList ::=
    SEQUENCE (SIZE (1..maxCPCHsets)) OF
        CPCH-PersistenceLevels

CPCH-SetInfo ::=
    SEQUENCE {
        cpch-SetID
            CPCH-SetID,
        transportFormatSet
            TransportFormatSet,
        tfcs
            TFCS,
        ap-PreambleScramblingCode
            AP-PreambleScramblingCode,
        ap-AICH-ChannelisationCode
            AP-AICH-ChannelisationCode,
        cd-PreambleScramblingCode
            CD-PreambleScramblingCode,
        cd-CA-ICH-ChannelisationCode
            CD-CA-ICH-ChannelisationCode,
        cd-AccessSlotSubchannelList
            CD-AccessSlotSubchannelList
            OPTIONAL,
        cd-SignatureCodeList
            CD-SignatureCodeList
            OPTIONAL,
        deltaPp-m
            DeltaPp-m,
        ul-DPCCH-SlotFormat
            UL-DPCCH-SlotFormat,
        n-StartMessage
            N-StartMessage,
        n-EOT
            N-EOT,
        -- TABULAR: VCAM info has been nested inside ChannelAssignmentActive,
        -- which in turn is mandatory since it's only a binary choice.
        channelAssignmentActive
            ChannelAssignmentActive,
        cpch-StatusIndicationMode
            CPCH-StatusIndicationMode,
        pcpch-ChannelInfoList
            PCPCH-ChannelInfoList
    }

CPCH-SetInfoList ::=
    SEQUENCE (SIZE (1..maxCPCHsets)) OF
        CPCH-SetInfo

CPCH-StatusIndicationMode ::=
    ENUMERATED {
        pa-mode,
        pamsf-mode }

--FFS
CQI-RepetitionFactor ::=
    INTEGER(1..4)

CSICH-PowerOffset ::=
    INTEGER (-10..5)

-- DefaultDPCH-OffsetValueFDD and DefaultDPCH-OffsetValueTDD corresponds to

```

```

-- IE "Default DPCH Offset Value" depending on the mode.
-- Actual value DefaultDPCH-OffsetValueFDD = IE value * 512
DefaultDPCH-OffsetValueFDD ::=      INTEGER (0..599)

DefaultDPCH-OffsetValueTDD ::=      INTEGER (0..7)

DeltaPp-m ::=                        INTEGER (-10..10)

-- Actual value DeltaCQI = IE value * 2
DeltaCQI ::=                         INTEGER (-5..3)

-- Actual value DeltaNACK = IE value * 2
DeltaNACK ::=                       INTEGER (-5..3)

-- Actual value DeltaACK = IE value * 2
DeltaACK ::=                       INTEGER (-5..3)

-- Actual value DeltaSIR = IE value * 0.1
DeltaSIR ::=                       INTEGER (0..30)

DL-CCTrCh ::=                        SEQUENCE {
    tfcs-ID                          TFCS-IdentityPlain          DEFAULT 1,
    timeInfo                          TimeInfo,
    commonTimeslotInfo                 CommonTimeslotInfo        OPTIONAL,
    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
        },
        tdd128                         SEQUENCE {
            dl-CCTrCH-TimeslotsCodes   DownlinkTimeslotsCodes-LCR-r4  OPTIONAL
        }
    },
    ul-CCTrChTPCList                   UL-CCTrChTPCList         OPTIONAL
}

DL-CCTrChList ::=                   SEQUENCE (SIZE (1..maxCCTrCH)) OF
    DL-CCTrCh

DL-CCTrChList-r4 ::=                 SEQUENCE (SIZE (1..maxCCTrCH)) OF
    DL-CCTrCh-r4

DL-CCTrChTPCList ::=                 SEQUENCE (SIZE (0..maxCCTrCH)) OF
    TFCS-Identity

DL-ChannelisationCode ::=            SEQUENCE {
    secondaryScramblingCode            SecondaryScramblingCode    OPTIONAL,
    sf-AndCodeNumber                   SF512-AndCodeNumber,
    scramblingCodeChange                ScramblingCodeChange      OPTIONAL
}

DL-ChannelisationCodeList ::=         SEQUENCE (SIZE (1..maxDPCH-DLchan)) OF
    DL-ChannelisationCode

DL-CommonInformation ::=              SEQUENCE {
    dl-DPCH-InfoCommon                 DL-DPCH-InfoCommon        OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                            SEQUENCE {
            defaultDPCH-OffsetValue    DefaultDPCH-OffsetValueFDD  OPTIONAL,
            dpch-CompressedModeInfo     DPCH-CompressedModeInfo    OPTIONAL,
            tx-DiversityMode            TX-DiversityMode           OPTIONAL,
            ssdt-Information             SSDT-Information           OPTIONAL
        },
        tdd                            SEQUENCE {
            defaultDPCH-OffsetValue     DefaultDPCH-OffsetValueTDD  OPTIONAL
        }
    }
}

DL-CommonInformation-r4 ::=           SEQUENCE {
    dl-DPCH-InfoCommon                 DL-DPCH-InfoCommon        OPTIONAL,

```



```

modeSpecificInfo
  fdd
    defaultDPCH-OffsetValue
    dpch-CompressedModeInfo
    tx-DiversityMode
    ssdt-Information
  },
  tdd
    tddOption
      tdd384
      tddl28
      tstd-Indicator
    },
    defaultDPCH-OffsetValue
  }
}

DL-CommonInformationPost ::=
  dl-DPCH-InfoCommon
}

DL-CommonInformationPredef ::=
  dl-DPCH-InfoCommon
}

DL-CompressedModeMethod ::=
  ENUMERATED {
    puncturing, sf-2,
    higherLayerScheduling }

DL-DPCH-InfoCommon ::=
  cfnHandling
  maintain
  initialise
  cfntargetsfnsframeoffset
},
modeSpecificInfo
  fdd
    dl-DPCH-PowerControlInfo
    powerOffsetPilot-pdpdch
    dl-rate-matching-restriction
    -- TABULAR: The number of pilot bits is nested inside the spreading factor.
    spreadingFactorAndPilot
    positionFixedOrFlexible
    tfci-Existence
  },
  tdd
    dl-DPCH-PowerControlInfo
  }
}

DL-DPCH-InfoCommonPost ::=
  dl-DPCH-PowerControlInfo
}

DL-DPCH-InfoCommonPredef ::=
  modeSpecificInfo
  fdd
    -- TABULAR: The number of pilot bits is nested inside the spreading factor.
    spreadingFactorAndPilot
    positionFixedOrFlexible
    tfci-Existence
  },
  tdd
    commonTimeslotInfo
  }
}

DL-DPCH-InfoPerRL ::=
  fdd
    pCPICH-UsageForChannelEst
    dpch-FrameOffset
    secondaryCPICH-Info
    dl-ChannelisationCodeList

```

```

CHOICE {
  SEQUENCE {
    DefaultDPCH-OffsetValueFDD OPTIONAL,
    DPCH-CompressedModeInfo OPTIONAL,
    TX-DiversityMode OPTIONAL,
    SSDT-Information-r4 OPTIONAL
  }
  SEQUENCE {
    CHOICE {
      NULL,
      SEQUENCE {
        BOOLEAN
      }
    }
  }
  DefaultDPCH-OffsetValueTDD OPTIONAL
}

SEQUENCE {
  DL-DPCH-InfoCommonPost
}

SEQUENCE {
  DL-DPCH-InfoCommonPredef OPTIONAL
}

ENUMERATED {
  puncturing, sf-2,
  higherLayerScheduling }

SEQUENCE {
  CHOICE {
    NULL,
    SEQUENCE {
      Cfntargetsfnsframeoffset OPTIONAL
    }
  }
}

CHOICE {
  SEQUENCE {
    DL-DPCH-PowerControlInfo OPTIONAL,
    PowerOffsetPilot-pdpdch,
    Dl-rate-matching-restriction OPTIONAL,
    SF512-AndPilot,
    PositionFixedOrFlexible,
    BOOLEAN
  }
  SEQUENCE {
    DL-DPCH-PowerControlInfo OPTIONAL
  }
}

SEQUENCE {
  DL-DPCH-PowerControlInfo OPTIONAL
}

SEQUENCE {
  DL-DPCH-PowerControlInfo OPTIONAL
}

SEQUENCE {
  CHOICE {
    SEQUENCE {
      SF512-AndPilot,
      PositionFixedOrFlexible,
      BOOLEAN
    }
    SEQUENCE {
      CommonTimeslotInfo
    }
  }
}

CHOICE {
  SEQUENCE {
    PCPICH-UsageForChannelEst,
    DPCH-FrameOffset,
    SecondaryCPICH-Info OPTIONAL,
    DL-ChannelisationCodeList,

```

```

        tpc-CombinationIndex          TPC-CombinationIndex,
        ssdt-CellIdentity              SSDT-CellIdentity
        closedLoopTimingAdjMode       ClosedLoopTimingAdjMode          OPTIONAL,
    },
    tdd                                DL-CCTrChList
}

DL-DPCH-InfoPerRL-r4 ::=              CHOICE {
    fdd                                SEQUENCE {
        pCPICH-UsageForChannelEst     PCPICH-UsageForChannelEst,
        dpch-FrameOffset               DPCH-FrameOffset,
        secondaryCPICH-Info            SecondaryCPICH-Info          OPTIONAL,
        dl-ChannelisationCodeList      DL-ChannelisationCodeList,
        tpc-CombinationIndex           TPC-CombinationIndex,
        ssdt-CellIdentity               SSDT-CellIdentity          OPTIONAL,
        closedLoopTimingAdjMode        ClosedLoopTimingAdjMode     OPTIONAL
    },
    tdd                                DL-CCTrChList-r4
}

DL-DPCH-InfoPerRL-PostFDD ::=        SEQUENCE {
    pCPICH-UsageForChannelEst         PCPICH-UsageForChannelEst,
    dl-ChannelisationCode             DL-ChannelisationCode,
    tpc-CombinationIndex              TPC-CombinationIndex
}

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

DL-DPCH-InfoPerRL-PostTDD-LCR-r4 ::= SEQUENCE {
    dl-CCTrCh-TimeslotsCodes          DownlinkTimeslotsCodes-LCR-r4
}

DL-DPCH-PowerControlInfo ::=         SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            dpc-Mode                   DPC-Mode
        },
        tdd                            SEQUENCE {
            tpc-StepSizeTDD            TPC-StepSizeTDD          OPTIONAL
        }
    }
}

DL-FrameType ::=                     ENUMERATED {
    dl-FrameTypeA, dl-FrameTypeB }

DL-HSPDSCH-Information ::=           SEQUENCE {
    hs-scch-Info                      HS-SCCH-Info,
modeSpecificInfo                  CHOICE {
    fdd                            SEQUENCE {
        measurement-feedback-Info     Measurement-Feedback-Info  OPTIONAL
    },
    tdd                            NULL
}
}

DL-InformationPerRL ::=              SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            primaryCPICH-Info          PrimaryCPICH-Info,
            pdsch-SHO-DCH-Info         PDSCH-SHO-DCH-Info          OPTIONAL,
            pdsch-CodeMapping          PDSCH-CodeMapping          OPTIONAL
        },
        tdd                            PrimaryCCPCH-Info
    },
    dl-DPCH-InfoPerRL                DL-DPCH-InfoPerRL          OPTIONAL,
    sccpch-InfoForFACH                SCCPCH-InfoForFACH        OPTIONAL
}

DL-InformationPerRL-r4 ::=           SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            primaryCPICH-Info          PrimaryCPICH-Info,
            pdsch-SHO-DCH-Info         PDSCH-SHO-DCH-Info          OPTIONAL,
            pdsch-CodeMapping          PDSCH-CodeMapping          OPTIONAL
        },

```

```

        tdd                                PrimaryCCPCH-Info-r4
    },
    dl-DPCH-InfoPerRL                      DL-DPCH-InfoPerRL-r4                OPTIONAL,
    sccpch-InfoForFACH                     SCCPCH-InfoForFACH-r4            OPTIONAL,
    cell-id                                CellIdentity                     OPTIONAL
}

DL-InformationPerRL-r5 ::= SEQUENCE {
    modeSpecificInfo                       CHOICE {
        fdd                                SEQUENCE {
            primaryCPICH-Info              PrimaryCPICH-Info,
            pdsch-SHO-DCH-Info             PDSCH-SHO-DCH-Info            OPTIONAL,
            pdsch-CodeMapping              PDSCH-CodeMapping            OPTIONAL,
            servingHSDSCH-RL-indicator     BOOLEAN
        },
        tdd                                PrimaryCCPCH-Info-r4
    },
    dl-DPCH-InfoPerRL                      DL-DPCH-InfoPerRL-r4                OPTIONAL,
    sccpch-InfoForFACH                     SCCPCH-InfoForFACH-r4            OPTIONAL,
    cell-id                                CellIdentity                     OPTIONAL
}

DL-InformationPerRL-List ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL

DL-InformationPerRL-List-r4 ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL-r4

DL-InformationPerRL-List-r5 ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL-r5

DL-InformationPerRL-ListPostFDD ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL-PostFDD

DL-InformationPerRL-PostFDD ::= SEQUENCE {
    primaryCPICH-Info                      PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL                     DL-DPCH-InfoPerRL-PostFDD
}

DL-InformationPerRL-PostTDD ::= SEQUENCE {
    primaryCCPCH-Info                      PrimaryCCPCH-InfoPost,
    dl-DPCH-InfoPerRL                     DL-DPCH-InfoPerRL-PostTDD
}

DL-InformationPerRL-PostTDD-LCR-r4 ::= SEQUENCE {
    primaryCCPCH-Info                      PrimaryCCPCH-InfoPostTDD-LCR-r4,
    dl-DPCH-InfoPerRL                     DL-DPCH-InfoPerRL-PostTDD-LCR-r4
}

DL-PDSCH-Information ::= SEQUENCE {
    pdsch-SHO-DCH-Info                    PDSCH-SHO-DCH-Info                OPTIONAL,
    pdsch-CodeMapping                      PDSCH-CodeMapping                OPTIONAL
}

DL-rate-matching-restriction ::= SEQUENCE {
    restrictedTrCH-InfoList                 RestrictedTrCH-InfoList            OPTIONAL
}

DL-TS-ChannelisationCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

DL-TS-ChannelisationCodesShort ::= SEQUENCE {
    codesRepresentation                    CHOICE {
        consecutive                        SEQUENCE {
            firstChannelisationCode        DL-TS-ChannelisationCode,
            lastChannelisationCode         DL-TS-ChannelisationCode
        },
        bitmap                             BIT STRING {
            chCode16-SF16(0),
            chCode15-SF16(1),
            chCode14-SF16(2),
            chCode13-SF16(3),
            chCode12-SF16(4),
            chCode11-SF16(5),
            chCode10-SF16(6),

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```

        chCode9-SF16(7),
        chCode8-SF16(8),
        chCode7-SF16(9),
        chCode6-SF16(10),
        chCode5-SF16(11),
        chCode4-SF16(12),
        chCode3-SF16(13),
        chCode2-SF16(14),
        chCode1-SF16(15)
    } (SIZE (16))
}
}

DownlinkAdditionalTimeslots ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo,
            dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber-LCR-r4
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
            dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkTimeslotsCodes ::= SEQUENCE {
    firstIndividualTimeslotInfo IndividualTimeslotInfo,
    dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive INTEGER (1..maxTS-1),
            timeslotList SEQUENCE (SIZE (1..maxTS-1)) OF
                DownlinkAdditionalTimeslots
        }
    }
}

DownlinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {
    firstIndividualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
    dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive INTEGER (1..maxTS-LCR-1),
            timeslotList SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                DownlinkAdditionalTimeslots-LCR-r4
        }
    }
}

DPC-Mode ::= ENUMERATED {
    singleTPC,
    tpcTripletInSoft }

-- Actual value DPCCH-PowerOffset = IE value * 2
DPCCH-PowerOffset ::= INTEGER (-82..-3)

-- Actual value DPCCH-PowerOffset = 2 + (IE value * 4)
DPCCH-PowerOffset2 ::= INTEGER (-28..-13)

DPCH-CompressedModeInfo ::= SEQUENCE {
    tgp-SequenceList TGP-SequenceList
}

```

```

DPCH-CompressedModeStatusInfo ::= SEQUENCE {
    tgps-Reconfiguration-CFN          TGPS-Reconfiguration-CFN,
    tgp-SequenceShortList             SEQUENCE (SIZE (1..maxTGPS)) OF
                                      TGP-SequenceShort
}

-- Actual value DPCH-FrameOffset = IE value * 256
DPCH-FrameOffset ::= INTEGER (0..149)

DSCH-Mapping ::= SEQUENCE {
    maxTFCI-Field2Value              MaxTFCI-Field2Value,
    spreadingFactor                   SF-PDSCH,
    codeNumber                        CodeNumberDSCH,
    multiCodeInfo                     MultiCodeInfo
}

DSCH-MappingList ::= SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
    DSCH-Mapping

DSCH-RadioLinkIdentifier ::= INTEGER (0..511)

DurationTimeInfo ::= INTEGER (1..4096)

DynamicPersistenceLevel ::= INTEGER (1..8)

DynamicPersistenceLevelList ::= SEQUENCE (SIZE (1..maxPRACH)) OF
    DynamicPersistenceLevel

DynamicPersistenceLevelTF-List ::= SEQUENCE (SIZE (1..maxTF-CPCH)) OF
    DynamicPersistenceLevel

FACH-PCH-Information ::= SEQUENCE {
    transportFormatSet               TransportFormatSet,
    transportChannelIdentity         TransportChannelIdentity,
    ctch-Indicator                   BOOLEAN
}

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

--Range of Feedback-cycle is FFS.
Feedback-cycle ::= ENUMERATED {
    fc0, fc1, fc5, fc10, fc20, fc40, fc80 }

--Range of Feedback-offset is FFS.
Feedback-offset ::= INTEGER (1..5)

FPACH-Info-r4 ::= SEQUENCE {
    timeslot                          TimeslotNumber-LCR-r4,
    channelisationCode                TDD-FPACH-CCode16-r4,
    midambleShiftAndBurstType         MidambleShiftAndBurstType-LCR-r4,
    wi                                 Wi-LCR
}

FrequencyInfo ::= SEQUENCE {
    modeSpecificInfo                 CHOICE {
        fdd                           FrequencyInfoFDD,
        tdd                           FrequencyInfoTDD
    }
}

FrequencyInfoFDD ::= SEQUENCE {
    uarfcn-UL                         UARFCN                OPTIONAL,
    uarfcn-DL                         UARFCN
}

FrequencyInfoTDD ::= SEQUENCE {
    uarfcn-Nt                         UARFCN
}

HS-ChannelisationCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

HS-ChannelisationCode-LCR ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,

```

```

cc16-9, cc16-10, cc16-11, cc16-12,
cc16-13, cc16-14, cc16-15, cc16-16 }

HS-SCCH-Info ::=
  modeSpecificInfo
  fdd
  tdd
    tdd384
    tdd128
  }
}

HS-SCCH-Codes ::=
  INTEGER (0..127)

HS-SCCH-TDD128 ::=
  SEQUENCE (SIZE (1..maxHSSCCHs)) OF
    HS-SCCH-TDD128List

HS-SCCH-TDD128List ::=
  SEQUENCE {
    timeslotNumber          TimeslotNumber-LCR-r4,
    firstChannelisationCode HS-ChannelisationCode-LCR,
    secondChannelisationCode HS-ChannelisationCode-LCR,
    midambleAllocationMode  CHOICE {
      defaultMidamble      NULL,
      commonMidamble       NULL
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration  INTEGER (1..8),
    bler-target             Bler-Target,
    hs-sich-configuration  HS-SICH-Configuration-TDD128384
  }

HS-SICH-Configuration-TDD128 ::=
  SEQUENCE {
    timeslotNumber          TimeslotNumber-LCR-r4,
    channelisationCode      HS-ChannelisationCode-LCR,
    midambleAllocationMode  CHOICE {
      defaultMidamble      NULL,
      ueSpecificMidamble   SEQUENCE {
        midambleShift      MidambleShiftLong
      }
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration  INTEGER (1..8),
    nack-ack-power-offset  INTEGER (0-7.87),
    power-level-HSSICH     INTEGER (-120..-58),
    tpc-step-size          ENUMERATED { s1, s2, s3 , spare1}
  }

HS-SCCH-TDD384 ::=
  SEQUENCE (SIZE (1..maxHSSCCHs)) OF
    HS-SCCH-TDD384List

HS-SCCH-TDD384List ::=
  SEQUENCE {
    timeslotNumber          TimeslotNumber,
    channelisationCode      HS-ChannelisationCode,
    midambleAllocationMode  CHOICE {
      defaultMidamble      NULL,
      commonMidamble       NULL
    },
    midambleconfiguration  MidambleConfiguration,
    bler-target             Bler-Target,
    hs-sich-configuration  HS-SICH-Configuration-TDD384
  }

HS-SICH-Configuration-TDD384 ::=
  SEQUENCE {
    timeslotNumber          TimeslotNumber,
    channelisationCode      HS-ChannelisationCode,
    midambleAllocationMode  CHOICE {
      defaultMidamble      NULL,
      ueSpecificMidamble   SEQUENCE {
        midambleShift      MidambleShiftLong
      }
    },
    midambleconfiguration  MidambleConfiguration,
    nack-ack-power-offset  INTEGER (-7.87),
    -- Actual value ul-target-SIR = IE value * 0.5
  }

```

```

    ul-target-SIR                                INTEGER (-22..40)
}

IndividualTimeslotInfo ::=                      SEQUENCE {
    timeslotNumber                               TimeslotNumber,
    tfci-Existence                              BOOLEAN,
    midambleShiftAndBurstType                   MidambleShiftAndBurstType
}

IndividualTimeslotInfo-LCR-r4 ::=              SEQUENCE {
    timeslotNumber                               TimeslotNumber-LCR-r4,
    tfci-Existence                              BOOLEAN,
    midambleShiftAndBurstType                   MidambleShiftAndBurstType-LCR-r4,
    modulation                                  ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                              ENUMERATED { zero, one, sixteenOverSF }
}

IndividualTimeslotInfo-LCR-r4-ext ::=          SEQUENCE {
-- timeslotNumber and tfci-Existence is taken from IndividualTimeslotInfo.
-- midambleShiftAndBurstType in IndividualTimeslotInfo shall be ignored.
    midambleShiftAndBurstType                   MidambleShiftAndBurstType-LCR-r4,
    modulation                                  ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                              ENUMERATED { zero, one, sixteenOverSF }
}

IndividualTS-Interference ::=                  SEQUENCE {
    timeslot                                     TimeslotNumber,
    ul-TimeslotInterference                     TDD-UL-Interference
}

IndividualTS-Interference-LCR-r4 ::=           SEQUENCE {
    timeslot                                     TimeslotNumber-LCR-r4,
    ul-TimeslotInterference                     UL-Interference
}

IndividualTS-InterferenceList ::=             SEQUENCE (SIZE (1..maxTS)) OF
    IndividualTS-Interference

IndividualTS-InterferenceList-r4 ::=          CHOICE {
    tdd384                                       SEQUENCE (SIZE (1..maxTS)) OF
        IndividualTS-Interference,
    tdd128                                       SEQUENCE (SIZE (1..maxTS-LCR)) OF
        IndividualTS-Interference-LCR-r4
}

ITP ::=                                       ENUMERATED {
    mode0, mode1 }

NidentifyAbort ::= INTEGER (1..128)

MaxAllowedUL-TX-Power ::=                    INTEGER (-50..33)

MaxAvailablePCPCH-Number ::=                 INTEGER (1..64)

MaxPowerIncrease-r4 ::=                     INTEGER (0..3)

MaxTFCI-Field2Value ::=                     INTEGER (1..1023)

Measurement-Feedback-Info ::=               SEQUENCE {
-- bler-threshold
    modeSpecificInfo                             CHOICE {
-- fdd
        fdd                                       SEQUENCE {
-- pohsdsch
            pohsdsch                               Po-hsdsch
-- feedback-cycle
            feedback-cycle                         Feedback-cycle
-- feedback-offset
            feedback-offset                 Feedback-offset
-- cqi-RepetitionFactor
            cqi-RepetitionFactor                   CQI-RepetitionFactor,
-- deltaCQI
            deltaCQI                               DeltaCQI
        },
    tdd                                           NULL
}

MidambleConfiguration ::=                   ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstTypeand3 ::=      ENUMERATED {ms4, ms8, ms16}

```

```

MidambleConfigurationBurstType2 ::=      ENUMERATED {ms3, ms6}

MidambleShiftAndBurstType ::=      SEQUENCE {
  burstType
    CHOICE {
      type1
        SEQUENCE {
          midambleConfigurationBurstType1and3 MidambleConfigurationBurstType1and3,
          midambleAllocationMode
            CHOICE {
              defaultMidamble      NULL,
              commonMidamble      NULL,
              ueSpecificMidamble   SEQUENCE {
                midambleShift      MidambleShiftLong
              }
            }
        }
      },
      type2
        SEQUENCE {
          midambleConfigurationBurstType2 MidambleConfigurationBurstType2,
          midambleAllocationMode
            CHOICE {
              defaultMidamble      NULL,
              commonMidamble      NULL,
              ueSpecificMidamble   SEQUENCE {
                midambleShift      MidambleShiftShort
              }
            }
        }
      },
      type3
        SEQUENCE {
          midambleConfigurationBurstType1and3 MidambleConfigurationBurstType1and3,
          midambleAllocationMode
            CHOICE {
              defaultMidamble      NULL,
              ueSpecificMidamble   SEQUENCE {
                midambleShift      MidambleShiftLong
              }
            }
        }
    }
}

MidambleShiftAndBurstType-LCR-r4 ::= SEQUENCE {
  midambleAllocationMode
    CHOICE {
      defaultMidamble      NULL,
      commonMidamble      NULL,
      ueSpecificMidamble   SEQUENCE {
        midambleShift      INTEGER (0..15)
      }
    }
},
-- Actual value midambleConfiguration = IE value * 2
midambleConfiguration      INTEGER (1..8)
}

MidambleShiftLong ::=      INTEGER (0..15)

MidambleShiftShort ::=     INTEGER (0..5)

MinimumSpreadingFactor ::= ENUMERATED {
  sf4, sf8, sf16, sf32,
  sf64, sf128, sf256 }

MultiCodeInfo ::=         INTEGER (1..16)

N-EOT ::=                  INTEGER (0..7)

N-GAP ::=                   ENUMERATED {
  f2, f4, f8 }

N-PCH ::=                   INTEGER (1..8)

N-StartMessage ::=         INTEGER (1..8)

NB01 ::=                    INTEGER (0..50)

NF-Max ::=                  INTEGER (1..64)

NumberOfDPDCH ::=          INTEGER (1..maxDPDCH-UL)

NumberOfFBI-Bits ::=       INTEGER (1..2)

OpenLoopPowerControl-TDD ::= SEQUENCE {

```



```

primaryCCPCH-TX-Power      PrimaryCCPCH-TX-Power,
-- alpha, prach-ConstantValue, dpch-ConstantValue and pusch-ConstantValue
-- shall be ignored in 1.28Mcps TDD mode.
alpha                      Alpha                      OPTIONAL,
prach-ConstantValue       ConstantValueTdd,
dpch-ConstantValue        ConstantValueTdd,
pusch-ConstantValue       ConstantValueTdd           OPTIONAL
}

OpenLoopPowerControl-IPDL-TDD-r4 ::= SEQUENCE {
  ipdl-alpha               Alpha,
  maxPowerIncrease         MaxPowerIncrease-r4
}

PagingIndicatorLength ::= ENUMERATED {
  pi4, pi8, pi16 }

PC-Preamble ::= INTEGER (0..7)

PCP-Length ::= ENUMERATED {
  as0, as8 }

PCPCH-ChannelInfo ::= SEQUENCE {
  pcpch-UL-ScramblingCode  INTEGER (0..79),
  pcpch-DL-ChannelisationCode  INTEGER (0..511),
  pcpch-DL-ScramblingCode    SecondaryScramblingCode  OPTIONAL,
  pcp-Length                 PCP-Length,
  ucsM-Info                  UCSM-Info                OPTIONAL
}

PCPCH-ChannelInfoList ::= SEQUENCE (SIZE (1..maxPCPCHs)) OF
  PCPCH-ChannelInfo

PCPICH-UsageForChannelEst ::= ENUMERATED {
  mayBeUsed,
  shallNotBeUsed }

PDSCH-CapacityAllocationInfo ::= SEQUENCE {
  -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
  -- selected the IE is OPTIONAL otherwise it should not be sent
  pdsch-PowerControlInfo    PDSCH-PowerControlInfo    OPTIONAL,
  pdsch-AllocationPeriodInfo  AllocationPeriodInfo,
  configuration              CHOICE {
    old-Configuration        SEQUENCE {
      tfcs-ID                TFCS-IdentityPlain          DEFAULT 1,
      pdsch-Identity         PDSCH-Identity
    },
    new-Configuration        SEQUENCE {
      pdsch-Info             PDSCH-Info,
      pdsch-Identity         PDSCH-Identity          OPTIONAL
    }
  }
}

PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
  pdsch-AllocationPeriodInfo  AllocationPeriodInfo,
  configuration              CHOICE {
    old-Configuration        SEQUENCE {
      tfcs-ID                TFCS-IdentityPlain          DEFAULT 1,
      pdsch-Identity         PDSCH-Identity
    },
    new-Configuration        SEQUENCE {
      pdsch-Info-r4         PDSCH-Info-r4,
      pdsch-Identity         PDSCH-Identity          OPTIONAL,
      pdsch-PowerControlInfo PDSCH-PowerControlInfo    OPTIONAL
    }
  }
}

PDSCH-CodeInfo ::= SEQUENCE {
  spreadingFactor            SF-PDSCH,
  codeNumber                 CodeNumberDSCH,
  multiCodeInfo             MultiCodeInfo
}

PDSCH-CodeInfoList ::= SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
  PDSCH-CodeInfo

```

```

PDSCH-CodeMap ::=
    spreadingFactor
    multiCodeInfo
    codeNumberStart
    codeNumberStop
}

PDSCH-CodeMapList ::=
    SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
        PDSCH-CodeMap

PDSCH-CodeMapping ::=
    dl-ScramblingCode
    signallingMethod
    codeRange
    tfci-Range
    explicit-config
    replace
}

PDSCH-Identity ::=
    INTEGER (1..hiPDSCHidentities)

PDSCH-Info ::=
    tfcs-ID
    commonTimeslotInfo
    pdsch-TimeslotsCodes
}

PDSCH-Info-r4 ::=
    tfcs-ID
    commonTimeslotInfo
    tddOption
    tdd384
        pdsch-TimeslotsCodes
    },
    tdd128
        pdsch-TimeslotsCodes
}

PDSCH-Info-LCR-r4 ::=
    tfcs-ID
    commonTimeslotInfo
    pdsch-TimeslotsCodes
}

PDSCH-PowerControlInfo ::=
    tpc-StepSizeTDD
    ul-CCTrChTPCList
}

PDSCH-SHO-DCH-Info ::=
    dsch-RadioLinkIdentifier
    r1-IdentififierList
}

PDSCH-SysInfo ::=
    pdsch-Identity
    pdsch-Info
    dsch-TFS
    dsch-TFCS
}

PDSCH-SysInfo-LCR-r4 ::=
    pdsch-Identity
    pdsch-Info
    dsch-TFS
    dsch-TFCS
}

PDSCH-SysInfoList ::=
    SEQUENCE (SIZE (1..maxPDSCH)) OF
        PDSCH-SysInfo

PDSCH-SysInfoList-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxPDSCH)) OF
        PDSCH-SysInfo-LCR-r4

```

```

PDSCH-SysInfoList-SFN ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    SEQUENCE {
        pdsch-SysInfo          PDSCH-SysInfo,
        sfn-TimeInfo           SFN-TimeInfo           OPTIONAL
    }

PDSCH-SysInfoList-SFN-LCR-r4 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    SEQUENCE {
        pdsch-SysInfo          PDSCH-SysInfo-LCR-r4,
        sfn-TimeInfo           SFN-TimeInfo           OPTIONAL
    }

PersistenceScalingFactor ::= ENUMERATED {
    psf0-9, psf0-8, psf0-7, psf0-6,
    psf0-5, psf0-4, psf0-3, psf0-2 }

PersistenceScalingFactorList ::= SEQUENCE (SIZE (1..maxASCPersist)) OF
    PersistenceScalingFactor

PI-CountPerFrame ::= ENUMERATED {
    e18, e36, e72, e144 }

PichChannelisationCodeList-LCR-r4 ::= SEQUENCE (SIZE (1..2)) OF
    DL-TS-ChannelisationCode

PICH-Info ::= CHOICE {
    fdd SEQUENCE {
        channelisationCode256 ChannelisationCode256,
        pi-CountPerFrame      PI-CountPerFrame,
        sttd-Indicator        BOOLEAN
    },
    tdd SEQUENCE {
        channelisationCode      TDD-PICH-CCode           OPTIONAL,
        timeslot                TimeslotNumber           OPTIONAL,
        midambleShiftAndBurstType MidambleShiftAndBurstType,
        repetitionPeriodLengthOffset RepPerLengthOffset-PICH   OPTIONAL,
        pagingIndicatorLength    PagingIndicatorLength    DEFAULT pi4,
        n-GAP                    N-GAP                   DEFAULT f4,
        n-PCH                     N-PCH                   DEFAULT 2
    }
}

PICH-Info-LCR-r4 ::= SEQUENCE {
    timeslot                TimeslotNumber-LCR-r4           OPTIONAL,
    pichChannelisationCodeList-LCR-r4 PichChannelisationCodeList-LCR-r4,
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR-r4,
    repetitionPeriodLengthOffset RepPerLengthOffset-PICH   OPTIONAL,
    pagingIndicatorLength    PagingIndicatorLength           DEFAULT pi4,
    n-GAP                    N-GAP                           DEFAULT f4,
    n-PCH                     N-PCH                           DEFAULT 2
}

PICH-PowerOffset ::= INTEGER (-10..5)

PilotBits128 ::= ENUMERATED {
    pb4, pb8 }

PilotBits256 ::= ENUMERATED {
    pb2, pb4, pb8 }

--Range of po-hsdsch is FFS.
Po-hsdsch ::= INTEGER (-10..0)

PositionFixedOrFlexible ::= ENUMERATED {
    fixed,
    flexible }

PowerControlAlgorithm ::= CHOICE {
    algorithm1 TPC-StepSizeFDD,
    algorithm2 NULL
}

PowerOffsetPilot-pdpdch ::= INTEGER (0..24)

PowerRampStep ::= INTEGER (1..8)

PRACH-ChanCodes-LCR-r4 ::= SEQUENCE (SIZE (1..4)) OF
    TDD-PRACH-CCode-LCR-r4

```

```

PRACH-Definition-LCR-r4 ::= SEQUENCE {
    timeslot TimeslotNumber-PRACH-LCR-r4,
    prach-ChanCodes-LCR PRACH-ChanCodes-LCR-r4,
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR-r4,
    fpach-Info FPACH-Info-r4
}

PRACH-Midamble ::= ENUMERATED {
    direct,
    direct-Inverted }

PRACH-Partitioning ::= CHOICE {
    fdd SEQUENCE (SIZE (1..maxASC)) OF
        ASCSetting-FDD,
    tdd SEQUENCE (SIZE (1..maxASC)) OF
        ASCSetting-TDD
}

PRACH-Partitioning-LCR-r4 ::= SEQUENCE (SIZE (1..maxASC)) OF
    ASCSetting-TDD-LCR-r4

PRACH-PowerOffset ::= SEQUENCE {
    powerRampStep PowerRampStep,
    preambleRetransMax PreambleRetransMax
}

PRACH-RACH-Info ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            availableSignatures AvailableSignatures,
            availableSF SF-PRACH,
            preambleScramblingCodeWordNumber PreambleScramblingCodeWordNumber,
            puncturingLimit PuncturingLimit,
            availableSubChannelNumbers AvailableSubChannelNumbers
        },
        tdd SEQUENCE {
            timeslot TimeslotNumber,
            channelisationCodeList TDD-PRACH-CCodeList,
            prach-Midamble PRACH-Midamble
        }
    }
}

PRACH-RACH-Info-LCR-r4 ::= SEQUENCE {
    sync-UL-Info SYNC-UL-Info-r4,
    prach-DefinitionList SEQUENCE (SIZE (1..maxPRACH-FPACH)) OF
        PRACH-Definition-LCR-r4
}

PRACH-SystemInformation ::= SEQUENCE {
    prach-RACH-Info PRACH-RACH-Info,
    transportChannelIdentity TransportChannelIdentity,
    rach-TransportFormatSet TransportFormatSet OPTIONAL,
    rach-TFCS TFCS OPTIONAL,
    prach-Partitioning PRACH-Partitioning OPTIONAL,
    persistenceScalingFactorList PersistenceScalingFactorList OPTIONAL,
    ac-To-ASC-MappingTable AC-To-ASC-MappingTable OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            primaryCPICH-TX-Power PrimaryCPICH-TX-Power OPTIONAL,
            constantValue ConstantValue OPTIONAL,
            prach-PowerOffset PRACH-PowerOffset OPTIONAL,
            rach-TransmissionParameters RACH-TransmissionParameters OPTIONAL,
            aich-Info AICH-Info OPTIONAL
        },
        tdd NULL
    }
}

PRACH-SystemInformation-LCR-r4 ::= SEQUENCE {
    prach-RACH-Info-LCR PRACH-RACH-Info-LCR-r4,
    rach-TransportFormatSet-LCR TransportFormatSet-LCR OPTIONAL,
    prach-Partitioning-LCR PRACH-Partitioning-LCR-r4 OPTIONAL
}

PRACH-SystemInformationList ::= SEQUENCE (SIZE (1..maxPRACH)) OF
    PRACH-SystemInformation

```

```

PRACH-SystemInformationList-LCR-r4 ::= SEQUENCE (SIZE (1..maxPRACH)) OF
                                         PRACH-SystemInformation-LCR-r4

PreambleRetransMax ::=                    INTEGER (1..64)

PreambleScramblingCodeWordNumber ::=     INTEGER (0..15)

PreDefPhyChConfiguration ::=            SEQUENCE {
    ul-DPCH-InfoPredef                    UL-DPCH-InfoPredef,
    dl-CommonInformationPredef            DL-CommonInformationPredef OPTIONAL
}

PrimaryCCPCH-Info ::=                   CHOICE {
    fdd                                     SEQUENCE {
        tx-DiversityIndicator              BOOLEAN
    },
    tdd                                     SEQUENCE {
        -- syncCase should be ignored for 1.28Mcps TDD mode
        syncCase                           CHOICE {
            syncCase1                       SEQUENCE {
                timeslot                     TimeslotNumber
            },
            syncCase2                       SEQUENCE {
                timeslotSync2                TimeslotSync2
            }
        }
        cellParametersID                    CellParametersID OPTIONAL,
        sctd-Indicator                       BOOLEAN OPTIONAL,
    }
}

PrimaryCCPCH-Info-r4 ::=                 CHOICE {
    fdd                                     SEQUENCE {
        tx-DiversityIndicator              BOOLEAN
    },
    tdd                                     SEQUENCE {
        tddOption                           CHOICE {
            tdd384                           SEQUENCE {
                syncCase                     CHOICE {
                    syncCase1                 SEQUENCE {
                        timeslot               TimeslotNumber
                    },
                    syncCase2                 SEQUENCE {
                        timeslotSync2         TimeslotSync2
                    }
                }
            },
            tdd128                           SEQUENCE {
                tstd-Indicator                BOOLEAN
            }
        }
        cellParametersID                    CellParametersID OPTIONAL,
        blockSTTD-Indicator                 BOOLEAN
    }
}

PrimaryCCPCH-Info-LCR-r4 ::=             SEQUENCE {
    tstd-Indicator                          BOOLEAN,
    cellParametersID                        CellParametersID OPTIONAL,
    blockSTTD-Indicator                     BOOLEAN
}

-- For 1.28Mcps TDD, the following IE includes elements for the PCCPCH Info additional to those
-- in PrimaryCCPCH-Info
PrimaryCCPCH-Info-LCR-r4-ext ::=        SEQUENCE {
    tstd-Indicator                          BOOLEAN
}

PrimaryCCPCH-InfoPost ::=               SEQUENCE {
    syncCase                                 CHOICE {
        syncCase1                           SEQUENCE {
            timeslot                          TimeslotNumber
        },
        syncCase2                           SEQUENCE {
            timeslotSync2                     TimeslotSync2
        }
    },
}

```

```

    cellParametersID          CellParametersID,
    sctd-Indicator            BOOLEAN
}

PrimaryCCPCH-InfoPostTDD-LCR-r4 ::= SEQUENCE {
    tstd-Indicator            BOOLEAN,
    cellParametersID         CellParametersID,
    blockSTTD-Indicator       BOOLEAN
}

PrimaryCCPCH-TX-Power ::= INTEGER (6..43)

PrimaryCPICH-Info ::= SEQUENCE {
    primaryScramblingCode     PrimaryScramblingCode
}

PrimaryCPICH-TX-Power ::= INTEGER (-10..50)

PrimaryScramblingCode ::= INTEGER (0..511)

PuncturingLimit ::= ENUMERATED {
    p10-40, p10-44, p10-48, p10-52, p10-56,
    p10-60, p10-64, p10-68, p10-72, p10-76,
    p10-80, p10-84, p10-88, p10-92, p10-96, p11 }

PUSCH-CapacityAllocationInfo ::= SEQUENCE {
    pusch-Allocation          CHOICE {
        pusch-AllocationPending    NULL,
        pusch-AllocationAssignment SEQUENCE {
            pusch-AllocationPeriodInfo AllocationPeriodInfo,
            pusch-PowerControlInfo     UL-TargetSIR OPTIONAL,
            configuration               CHOICE {
                old-Configuration      SEQUENCE {
                    tfcs-ID             TFCS-IdentityPlain    DEFAULT 1,
                    pusch-Identity      PUSCH-Identity
                },
                new-Configuration      SEQUENCE {
                    pusch-Info          PUSCH-Info,
                    pusch-Identity      PUSCH-Identity    OPTIONAL
                }
            }
        }
    }
}

PUSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
    pusch-Allocation          CHOICE {
        pusch-AllocationPending    NULL,
        pusch-AllocationAssignment SEQUENCE {
            pusch-AllocationPeriodInfo AllocationPeriodInfo,
            pusch-PowerControlInfo     PUSCH-PowerControlInfo-r4 OPTIONAL,
            configuration               CHOICE {
                old-Configuration      SEQUENCE {
                    tfcs-ID             TFCS-IdentityPlain    DEFAULT 1,
                    pusch-Identity      PUSCH-Identity
                },
                new-Configuration      SEQUENCE {
                    pusch-Info-r4      PUSCH-Info-r4,
                    pusch-Identity      PUSCH-Identity    OPTIONAL
                }
            }
        }
    }
}

PUSCH-Identity ::= INTEGER (1..hiPUSCHidentities)

PUSCH-Info ::= SEQUENCE {
    tfcs-ID                   TFCS-IdentityPlain    DEFAULT 1,
    commonTimeslotInfo        CommonTimeslotInfo    OPTIONAL,
    pusch-TimeslotsCodes      UplinkTimeslotsCodes  OPTIONAL
}

PUSCH-Info-r4 ::= SEQUENCE {
    tfcs-ID                   TFCS-IdentityPlain    DEFAULT 1,
    commonTimeslotInfo        CommonTimeslotInfo    OPTIONAL,
    tddOption                 CHOICE {
        tdd384                 SEQUENCE {

```

```

        pusch-TimeslotsCodes          UplinkTimeslotsCodes          OPTIONAL
    },
    tdd128                             SEQUENCE {
        pusch-TimeslotsCodes          UplinkTimeslotsCodes-LCR-r4  OPTIONAL
    }
}

PUSCH-Info-LCR-r4 ::=                SEQUENCE {
    tfcs-ID                            TFCS-IdentityPlain          DEFAULT 1,

    commonTimeslotInfo                CommonTimeslotInfo          OPTIONAL,
    pusch-TimeslotsCodes              UplinkTimeslotsCodes-LCR-r4  OPTIONAL
}

PUSCH-PowerControlInfo-r4 ::=        SEQUENCE {
    -- The IE ul-TargetSIR corresponds to PRX-PUSCHdes for 1.28Mcps TDD
    -- Actual value PRX-PUSCHdes = (value of IE "ul-TargetSIR" - 120)
    ul-TargetSIR                      UL-TargetSIR,
    tddOption                          CHOICE {
        tdd384                        NULL,
        tdd128                        SEQUENCE {
            tpc-StepSize              TPC-StepSizeTDD            OPTIONAL,
            dl-CCTrChTPCList          DL-CCTrChTPCList          OPTIONAL
        }
    }
}

PUSCH-SysInfo ::=                   SEQUENCE {
    pusch-Identity                    PUSCH-Identity,
    pusch-Info                        PUSCH-Info,
    usch-TFS                          TransportFormatSet          OPTIONAL,
    usch-TFCS                          TFCS                        OPTIONAL
}

PUSCH-SysInfo-LCR-r4 ::=            SEQUENCE {
    pusch-Identity                    PUSCH-Identity,
    pusch-Info                        PUSCH-Info-LCR-r4,
    usch-TFS                          TransportFormatSet          OPTIONAL,
    usch-TFCS                          TFCS                        OPTIONAL
}

PUSCH-SysInfoList ::=               SEQUENCE (SIZE (1..maxPUSCH)) OF
    PUSCH-SysInfo

PUSCH-SysInfoList-LCR-r4 ::=        SEQUENCE (SIZE (1..maxPUSCH)) OF
    PUSCH-SysInfo-LCR-r4

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

PUSCH-SysInfoList-SFN-LCR-r4 ::=    SEQUENCE (SIZE (1..maxPUSCH)) OF
    SEQUENCE {
        pusch-SysInfo                PUSCH-SysInfo-LCR-r4,
        sfm-TimeInfo                  SFN-TimeInfo                OPTIONAL
    }

RACH-TransmissionParameters ::=     SEQUENCE {
    mmax                              INTEGER (1..32),
    nb01Min                          NB01,
    nb01Max                          NB01
}

ReducedScramblingCodeNumber ::=     INTEGER (0..8191)

RepetitionPeriodAndLength ::=        CHOICE {
    repetitionPeriod1                 NULL,
    -- repetitionPeriod2 could just as well be NULL also.
    repetitionPeriod2                 INTEGER (1..1),
    repetitionPeriod4                 INTEGER (1..3),
    repetitionPeriod8                 INTEGER (1..7),
    repetitionPeriod16                 INTEGER (1..15),
    repetitionPeriod32                 INTEGER (1..31),
    repetitionPeriod64                 INTEGER (1..63)
}

```

```

RepetitionPeriodLengthAndOffset ::= CHOICE {
    repetitionPeriod1          NULL,
    repetitionPeriod2          SEQUENCE {
        length                 NULL,
        offset                 INTEGER (0..1)
    },
    repetitionPeriod4          SEQUENCE {
        length                 INTEGER (1..3),
        offset                 INTEGER (0..3)
    },
    repetitionPeriod8          SEQUENCE {
        length                 INTEGER (1..7),
        offset                 INTEGER (0..7)
    },
    repetitionPeriod16         SEQUENCE {
        length                 INTEGER (1..15),
        offset                 INTEGER (0..15)
    },
    repetitionPeriod32         SEQUENCE {
        length                 INTEGER (1..31),
        offset                 INTEGER (0..31)
    },
    repetitionPeriod64         SEQUENCE {
        length                 INTEGER (1..63),
        offset                 INTEGER (0..63)
    }
}

ReplacedPDSCH-CodeInfo ::= SEQUENCE {
    tfci-Field2               MaxTFCI-Field2Value,
    spreadingFactor           SF-PDSCH,
    codeNumber                 CodeNumberDSCH,
    multiCodeInfo             MultiCodeInfo
}

ReplacedPDSCH-CodeInfoList ::= SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
    ReplacedPDSCH-CodeInfo

RepPerLengthOffset-PICH ::= CHOICE {
    rpp4-2                    INTEGER (0..3),
    rpp8-2                    INTEGER (0..7),
    rpp8-4                    INTEGER (0..7),
    rpp16-2                   INTEGER (0..15),
    rpp16-4                   INTEGER (0..15),
    rpp32-2                   INTEGER (0..31),
    rpp32-4                   INTEGER (0..31),
    rpp64-2                   INTEGER (0..63),
    rpp64-4                   INTEGER (0..63)
}

RestrictedTrCH ::= SEQUENCE {
    dl-restrictedTrCh-Type    DL-TrCH-Type,
    restrictedDL-TrCH-Identity TransportChannelIdentity,
    allowedTFIList            AllowedTFI-List
}

RestrictedTrCH-InfoList ::= SEQUENCE (SIZE(1..maxTrCH)) OF
    RestrictedTrCH

RL-AdditionInformation ::= SEQUENCE {
    primaryCPICH-Info         PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL         DL-DPCH-InfoPerRL,
    tfci-CombiningIndicator   BOOLEAN,
    sccpch-InfoForFACH         SCCPCH-InfoForFACH           OPTIONAL
}

RL-AdditionInformationList ::= SEQUENCE (SIZE (1..maxRL-1)) OF
    RL-AdditionInformation

RL-IdentifierList ::= SEQUENCE (SIZE (1..maxRL)) OF
    PrimaryCPICH-Info

RL-RemovalInformationList ::= SEQUENCE (SIZE (1..maxRL)) OF
    PrimaryCPICH-Info

RPP ::= ENUMERATED {
    mode0, mode1 }

```



```

S-Field ::=
    ENUMERATED {
        elbit, e2bits }

SCCPCH-ChannelisationCode ::=
    ENUMERATED {
        cc16-1, cc16-2, cc16-3, cc16-4,
        cc16-5, cc16-6, cc16-7, cc16-8,
        cc16-9, cc16-10, cc16-11, cc16-12,
        cc16-13, cc16-14, cc16-15, cc16-16 }

SCCPCH-ChannelisationCodeList ::= SEQUENCE (SIZE (1..16)) OF
    SCCPCH-ChannelisationCode

SCCPCH-InfoForFACH ::=
    SEQUENCE {
        secondaryCCPCH-Info      SecondaryCCPCH-Info,
        tfcs                      TFCS,
        modeSpecificInfo         CHOICE {
            fdd                   SEQUENCE {
                fach-PCH-InformationList      FACH-PCH-InformationList,
                sib-ReferenceListFACH         SIB-ReferenceListFACH
            },
            tdd                   SEQUENCE {
                fach-PCH-InformationList      FACH-PCH-InformationList
            }
        }
    }

SCCPCH-InfoForFACH-r4 ::=
    SEQUENCE {
        secondaryCCPCH-Info      SecondaryCCPCH-Info-r4,
        tfcs                      TFCS,
        fach-PCH-InformationList  FACH-PCH-InformationList,
        modeSpecificInfo         CHOICE {
            fdd                   SEQUENCE {
                sib-ReferenceListFACH         SIB-ReferenceListFACH
            },
            tdd                   NULL
        }
    }

SCCPCH-SystemInformation ::= SEQUENCE {
    secondaryCCPCH-Info      SecondaryCCPCH-Info,
    tfcs                      TFCS,
    fach-PCH-InformationList  FACH-PCH-InformationList,
    pich-Info                 PICH-Info,
    }
    OPTIONAL,
    OPTIONAL,
    OPTIONAL

SCCPCH-SystemInformation-LCR-r4-ext ::= SEQUENCE {
    secondaryCCPCH-Info      SecondaryCCPCH-Info-LCR-r4-ext,
    -- pich-Info in the SCCPCH-SystemInformation IE shall be absent,
    -- and instead the following used.
    pich-Info                 PICH-Info-LCR-r4,
    }
    OPTIONAL

SCCPCH-SystemInformationList ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
    SCCPCH-SystemInformation

-- SCCPCH-SystemInformationList-LCR-r4-ext includes elements additional to those in
-- SCCPCH-SystemInformationList for the 1.28Mcps TDD. The order of the IEs
-- indicates which SCCPCH-SystemInformation-LCR-r4-ext IE extends which
-- SCCPCH-SystemInformation IE.
SCCPCH-SystemInformationList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
    SCCPCH-SystemInformation-LCR-r4-ext

ScramblingCodeChange ::=
    ENUMERATED {
        codeChange, noCodeChange }

ScramblingCodeType ::=
    ENUMERATED {
        shortSC,
        longSC }

SecondaryCCPCH-Info ::=
    SEQUENCE {
        modeSpecificInfo         CHOICE {
            fdd                   SEQUENCE {
                -- dummy1 is not used in this version of the specification and should be ignored.
                dummy1            PCPICH-UsageForChannelEst,
                -- dummy2 is not used in this version of the specification. It should not
                -- be sent and if received it should be ignored.
                dummy2            SecondaryCPICH-Info,
            }
        }
    }
    OPTIONAL,

```

```

        secondaryScramblingCode      SecondaryScramblingCode      OPTIONAL,
        sttd-Indicator                BOOLEAN,
        sf-AndCodeNumber              SF256-AndCodeNumber,
        pilotSymbolExistence          BOOLEAN,
        tfci-Existence                BOOLEAN,
        positionFixedOrFlexible        PositionFixedOrFlexible,
        timingOffset                   TimingOffset                   DEFAULT 0
    },
    tdd                                SEQUENCE {
        -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
        commonTimeslotInfo             CommonTimeslotInfoSCCPCH,
        individualTimeslotInfo          IndividualTimeslotInfo,
        channelisationCode              SCCPCH-ChannelisationCodeList
    }
}

SecondaryCCPCH-Info-r4 ::= SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            secondaryScramblingCode      SecondaryScramblingCode      OPTIONAL,
            sttd-Indicator                BOOLEAN,
            sf-AndCodeNumber              SF256-AndCodeNumber,
            pilotSymbolExistence          BOOLEAN,
            tfci-Existence                BOOLEAN,
            positionFixedOrFlexible        PositionFixedOrFlexible,
            timingOffset                   TimingOffset                   DEFAULT 0
        },
        tdd                            SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
            commonTimeslotInfo             CommonTimeslotInfoSCCPCH,
            tddOption                      CHOICE {
                tdd384                     SEQUENCE {
                    individualTimeslotInfo  IndividualTimeslotInfo
                },
                tdd128                     SEQUENCE {
                    individualTimeslotInfo  IndividualTimeslotInfo-LCR-r4
                }
            },
            channelisationCode              SCCPCH-ChannelisationCodeList
        }
    }
}

SecondaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
    individualTimeslotLCR-Ext           IndividualTimeslotInfo-LCR-r4-ext
}

SecondaryCPICH-Info ::= SEQUENCE {
    secondaryDL-ScramblingCode          SecondaryScramblingCode      OPTIONAL,
    channelisationCode                  ChannelisationCode256
}

SecondaryScramblingCode ::= INTEGER (1..15)

SecondInterleavingMode ::= ENUMERATED {
    frameRelated, timeslotRelated }

-- SF256-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF256-AndCodeNumber ::= CHOICE {
    sf4                                 INTEGER (0..3),
    sf8                                 INTEGER (0..7),
    sf16                                INTEGER (0..15),
    sf32                                INTEGER (0..31),
    sf64                                INTEGER (0..63),
    sf128                               INTEGER (0..127),
    sf256                               INTEGER (0..255)
}

-- SF512-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF512-AndCodeNumber ::= CHOICE {
    sf4                                 INTEGER (0..3),
    sf8                                 INTEGER (0..7),
    sf16                                INTEGER (0..15),
    sf32                                INTEGER (0..31),
    sf64                                INTEGER (0..63),
    sf128                               INTEGER (0..127),
    sf256                               INTEGER (0..255),
}

```

```

    sf512                                INTEGER (0..511)
}

-- SF512-AndPilot encodes both "Spreading factor" and "Number of bits for Pilot bits"
SF512-AndPilot ::= CHOICE {
    sfd4                                NULL,
    sfd8                                NULL,
    sfd16                               NULL,
    sfd32                               NULL,
    sfd64                               NULL,
    sfd128                              PilotBits128,
    sfd256                              PilotBits256,
    sfd512                              NULL
}
SF-PDSCH ::= ENUMERATED {
    sfp4, sfp8, sfp16, sfp32,
    sfp64, sfp128, sfp256 }

SF-PRACH ::= ENUMERATED {
    sfpr32, sfpr64, sfpr128, sfpr256 }

SFN-TimeInfo ::= SEQUENCE {
    activationTimeSFN                    INTEGER (0..4095),
    physChDuration                       DurationTimeInfo
}

SpecialBurstScheduling ::= INTEGER (0..7)

SpreadingFactor ::= ENUMERATED {
    sf4, sf8, sf16, sf32,
    sf64, sf128, sf256 }

SRB-delay ::= INTEGER (0..7)

SSDT-CellIdentity ::= ENUMERATED {
    ssdt-id-a, ssdt-id-b, ssdt-id-c,
    ssdt-id-d, ssdt-id-e, ssdt-id-f,
    ssdt-id-g, ssdt-id-h }

SSDT-Information ::= SEQUENCE {
    s-Field                              S-Field,
    codeWordSet                          CodeWordSet
}

SSDT-Information-r4 ::= SEQUENCE {
    s-Field                              S-Field,
    codeWordSet                          CodeWordSet,
    ssdt-UL                              SSDT-UL-r4                                OPTIONAL
}

-- SSDT-UL-r4 is used to extend the
-- SSDT-Information IE from Release 4 onwards.
SSDT-UL-r4 ::= ENUMERATED {
    ul, ul-AndDL }

SynchronisationParameters-r4 ::= SEQUENCE {
    sync-UL-CodesBitmap                  BIT STRING {
        code7(0),
        code6(1),
        code5(2),
        code4(3),
        code3(4),
        code2(5),
        code1(6),
        code0(7)
    } (SIZE (8))                                OPTIONAL,
    fpach-Info                           FPACH-Info-r4,
    sync-UL-Procedure                     SYNC-UL-Procedure-r4                                OPTIONAL
}

SYNC-UL-Procedure-r4 ::= SEQUENCE {
    max-SYNC-UL-Transmissions            ENUMERATED { tr1, tr2, tr4, tr8 },
    powerRampStep                        INTEGER (0..3)
}

SYNC-UL-Info-r4 ::= SEQUENCE {
    sync-UL-Codes-Bitmap                  BIT STRING {
        code7(0),

```

```

        code6(1),
        code5(2),
        code4(3),
        code3(4),
        code2(5),
        code1(6),
        code0(7)
    } ( SIZE ( 8)),
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes          INTEGER (0..62),
    powerRampStep        INTEGER (0..3),
    max-SYNC-UL-Transmissions
    mmax                 ENUMERATED { tr1, tr2, tr4, tr8 } ,
    INTEGER(1..32)
}

TDD-FPACH-CCode16-r4 ::=          ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-UL-Interference ::=          INTEGER (-110..-52)

TDD-PICH-CCode ::=              ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode8 ::=            ENUMERATED {
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8 }

TDD-PRACH-CCode16 ::=           ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode-LCR-r4 ::=       ENUMERATED {
    cc4-1, cc4-2, cc4-3, cc4-4,
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8,
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCodeList ::=          CHOICE {
    sf8                      SEQUENCE (SIZE (1..8)) OF
        TDD-PRACH-CCode8,
    sf16                      SEQUENCE (SIZE (1..8)) OF
        TDD-PRACH-CCode16
}

TFC-ControlDuration ::=          ENUMERATED {
    tfc-cd1, tfc-cd2, tfc-cd4, tfc-cd8,
    tfc-cd16, tfc-cd24, tfc-cd32,
    tfc-cd48, tfc-cd64, tfc-cd128,
    tfc-cd192, tfc-cd256, tfc-cd512 }

TFCI-Coding ::=                  ENUMERATED {
    tfci-bits-4, tfci-bits-8,
    tfci-bits-16, tfci-bits-32 }

TGCFN ::=                         INTEGER (0..255)

-- In TGD, value 270 represents "undefined" in the tabular description.
TGD ::=                           INTEGER (15..270)

TGL ::=                             INTEGER (1..14)

TGMP ::=                           ENUMERATED {
    tdd-Measurement, fdd-Measurement,
    gsm-CarrierRSSIMeasurement,
    gsm-initialBSICIdentification, gsmBSICReconfirmation,
    multi-carrier }

```

```

TGP-Sequence ::=
    tgpsi
    tgps-Status
        activate
            tgcfm
        },
        deactivate
    },
    tgps-ConfigurationParams
}

SEQUENCE {
    TGPSI,
    CHOICE {
        SEQUENCE {
            TGCFM
        },
        NULL
    }
}

TGPS-Reconfiguration-CFN ::= INTEGER (0..255)

TGP-SequenceList ::= SEQUENCE (SIZE (1..maxTGPS)) OF
    TGP-Sequence

TGP-SequenceShort ::= SEQUENCE {
    tgpsi
    tgps-Status
        activate
            tgcfm
        },
        deactivate
    }

}

TGPL ::= INTEGER (1..144)

-- TABULAR: In TGPRC, value 0 represents "infinity" in the tabular description.
TGPRC ::= INTEGER (0..511)

TGPS-ConfigurationParams ::= SEQUENCE {
    tgmpp
    tgprc
    tgsn
    tgl1
    tgl2
    tgd
    tgpl1
    tgpl2
    rpp
    itp
    -- TABULAR: Compressed mode method is nested inside UL-DL-Mode
    ul-DL-Mode
    dl-FrameType
    deltaSIR1
    deltaSIRAfter1
    deltaSIR2
    deltaSIRAfter2
    nidentifyAbort
    treconfirmAbort
}

SEQUENCE {
    TGMP,
    TGPRC,
    TGSN,
    TGL,
    TGL
    OPTIONAL,
    TGD,
    TGPL,
    TGPL
    OPTIONAL,
    RPP,
    ITP,
    UL-DL-Mode,
    DL-FrameType,
    DeltaSIR,
    DeltaSIR,
    DeltaSIR
    OPTIONAL,
    DeltaSIR
    OPTIONAL,
    NidentifyAbort
    OPTIONAL,
    TreconfirmAbort
    OPTIONAL
}

TGPSI ::= INTEGER (1..maxTGPS)

TGSN ::= INTEGER (0..14)

TimeInfo ::= SEQUENCE {
    activationTime
    durationTimeInfo
}

OPTIONAL,
OPTIONAL

TimeslotList ::= SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotNumber

TimeslotList-r4 ::= CHOICE {
    tdd384
        SEQUENCE (SIZE (1..maxTS)) OF
            TimeslotNumber,
    tdd128
        SEQUENCE (SIZE (1..maxTS-LCR)) OF
            TimeslotNumber-LCR-r4
}

-- If TimeslotNumber is included for a 1.28Mcps TDD description, it shall take values from 0..6
TimeslotNumber ::= INTEGER (0..14)

TimeslotNumber-LCR-r4 ::= INTEGER (0..6)

TimeslotNumber-PRACH-LCR-r4 ::= INTEGER (1..6)

```

```

TimeslotSync2 ::=                INTEGER (0..6)

-- Actual value TimingOffset = IE value * 256
TimingOffset ::=                INTEGER (0..149)

TPC-CombinationIndex ::=        INTEGER (0..5)

TPC-StepSizeFDD ::=             INTEGER (0..1)

-- Actual value TPC-StepSizeTDD = IE value + 1
TPC-StepSizeTDD ::=            INTEGER (1..3)

-- Actual value TreconfirmAbort = IE value * 0.5 seconds
TreconfirmAbort ::=            INTEGER (1..20)

TX-DiversityMode ::=            ENUMERATED {
                                noDiversity,
                                sttd,
                                closedLoopModel1,
                                closedLoopMode2 }

UARFCN ::=                      INTEGER (0..16383)

UCSM-Info ::=                   SEQUENCE {
    minimumSpreadingFactor      MinimumSpreadingFactor,
    nF-Max                      NF-Max,
    channelReqParamsForUCSM     ChannelReqParamsForUCSM
}

UL-CCTrCH ::=                   SEQUENCE {
    tfcs-ID                     TFCS-IdentityPlain           DEFAULT 1,
    ul-TargetSIR                UL-TargetSIR,
    timeInfo                     TimeInfo,
    commonTimeslotInfo           CommonTimeslotInfo           OPTIONAL,
    ul-CCTrCH-TimeslotsCodes     UplinkTimeslotsCodes         OPTIONAL
}

UL-CCTrCH-r4 ::=               SEQUENCE {
    tfcs-ID                     TFCS-IdentityPlain           DEFAULT 1,
    ul-TargetSIR                UL-TargetSIR,
    timeInfo                     TimeInfo,
    commonTimeslotInfo           CommonTimeslotInfo           OPTIONAL,
    tddOption                    CHOICE {
        tdd384                   SEQUENCE {
            ul-CCTrCH-TimeslotsCodes UplinkTimeslotsCodes   OPTIONAL
        },
        tdd128                   SEQUENCE {
            ul-CCTrCH-TimeslotsCodes UplinkTimeslotsCodes-LCR-r4 OPTIONAL
        }
    }
}

UL-CCTrCHList ::=              SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                UL-CCTrCH

UL-CCTrCHList-r4 ::=           SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                UL-CCTrCH-r4

UL-CCTrChTPCList ::=           SEQUENCE (SIZE (0..maxCCTrCH)) OF
                                TFCS-Identity

UL-ChannelRequirement ::=      CHOICE {
    ul-DPCH-Info                UL-DPCH-Info,
    cpch-SetInfo                CPCH-SetInfo
}

UL-ChannelRequirement-r4 ::=   CHOICE {
    ul-DPCH-Info                UL-DPCH-Info-r4,
    cpch-SetInfo                CPCH-SetInfo
}

UL-ChannelRequirement-r5 ::=   CHOICE {
    ul-DPCH-Info                UL-DPCH-Info-r5,
    cpch-SetInfo                CPCH-SetInfo
}

UL-ChannelRequirementWithCPCH-SetID ::= CHOICE {

```

```

    ul-DPCH-Info
    cpch-SetInfo
    cpch-SetID
}

UL-ChannelRequirementWithCPCH-SetID-r4 ::= CHOICE {
    ul-DPCH-Info
    cpch-SetInfo
    cpch-SetID
}

UL-ChannelRequirementWithCPCH-SetID-r5 ::= CHOICE {
    ul-DPCH-Info
    cpch-SetInfo
    cpch-SetID
}

UL-CompressedModeMethod ::= ENUMERATED {
    sf-2,
    higherLayerScheduling }

UL-DL-Mode ::= CHOICE {
    ul
    dl
    ul-and-dl
        ul
        dl
    }
}

UL-DPCCH-SlotFormat ::= ENUMERATED {
    slf0, slf1, slf2 }

UL-DPCH-Info ::= SEQUENCE {
    ul-DPCH-PowerControlInfo
    modeSpecificInfo
        fdd
            scramblingCodeType
            scramblingCode
            numberOfDPDCH
            spreadingFactor
            tfci-Existence
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits
            puncturingLimit
        },
        tdd
            ul-TimingAdvance
            ul-CCTrCHList
    }
}

UL-DPCH-Info-r4 ::= SEQUENCE {
    ul-DPCH-PowerControlInfo
    modeSpecificInfo
        fdd
            scramblingCodeType
            scramblingCode
            numberOfDPDCH
            spreadingFactor
            tfci-Existence
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits
            puncturingLimit
        },
        tdd
            ul-TimingAdvance
            ul-CCTrCHList
    }
}

UL-DPCH-Info-r5 ::= SEQUENCE {
    ul-DPCH-PowerControlInfo
    modeSpecificInfo
        fdd
            scramblingCodeType
            scramblingCode
            numberOfDPDCH
            spreadingFactor
            tfci-Existence
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits
            puncturingLimit
        },
        tdd
            ul-TimingAdvance
            ul-CCTrCHList
    }
}

```

```

        numberOfDPDCH                NumberOfDPDCH                DEFAULT 1,
        spreadingFactor                SpreadingFactor,
        tfci-Existence                BOOLEAN,
        -- numberOfFBI-Bits is conditional based on history
        numberOfFBI-Bits                NumberOfFBI-Bits                OPTIONAL,
        puncturingLimit                PuncturingLimit
    },
    tdd                                SEQUENCE {
        ul-TimingAdvance                UL-TimingAdvanceControl-r4    OPTIONAL,
        ul-CCTrCHList                  UL-CCTrCHList-r4
    }
}

UL-DPCH-InfoPostFDD ::=              SEQUENCE {
    ul-DPCH-PowerControlInfo          UL-DPCH-PowerControlInfoPostFDD,
    scramblingCodeType                ScramblingCodeType,
    reducedScramblingCodeNumber        ReducedScramblingCodeNumber,
    spreadingFactor                    SpreadingFactor
}

UL-DPCH-InfoPostTDD ::=              SEQUENCE {
    ul-DPCH-PowerControlInfo          UL-DPCH-PowerControlInfoPostTDD,
    ul-TimingAdvance                  UL-TimingAdvanceControl                OPTIONAL,
    ul-CCTrCH-TimeslotsCodes          UplinkTimeslotsCodes
}

UL-DPCH-InfoPostTDD-LCR-r4 ::=       SEQUENCE {
    ul-DPCH-PowerControlInfo          UL-DPCH-PowerControlInfoPostTDD-LCR-r4,
    ul-TimingAdvance                  UL-TimingAdvanceControl-LCR-r4        OPTIONAL,
    ul-CCTrCH-TimeslotsCodes          UplinkTimeslotsCodes-LCR-r4
}

UL-DPCH-InfoPredef ::=               SEQUENCE {
    ul-DPCH-PowerControlInfo          UL-DPCH-PowerControlInfoPredef,
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            tfci-Existence              BOOLEAN,
            puncturingLimit             PuncturingLimit
        },
        tdd                            SEQUENCE {
            commonTimeslotInfo          CommonTimeslotInfo
        }
    }
}

UL-DPCH-PowerControlInfo ::=         CHOICE {
    fdd                                SEQUENCE {
        dpccch-PowerOffset              DPCCCH-PowerOffset,
        pc-Preamble                     PC-Preamble,
        sRB-delay                       SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm           PowerControlAlgorithm
    },
    tdd                                SEQUENCE {
        ul-TargetSIR                    UL-TargetSIR                        OPTIONAL,
        ul-OL-PC-Signalling              CHOICE {
            broadcast-UL-OL-PC-info      NULL,
            handoverGroup                SEQUENCE {
                individualTS-InterferenceList IndividualTS-InterferenceList,
                dpch-ConstantValue        ConstantValueTdd,
                primaryCCPCH-TX-Power     PrimaryCCPCH-TX-Power
            }
        }
    }
}

UL-DPCH-PowerControlInfo-r4 ::=       CHOICE {
    fdd                                SEQUENCE {
        dpccch-PowerOffset              DPCCCH-PowerOffset,
        pc-Preamble                     PC-Preamble,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm           PowerControlAlgorithm
    },
    tdd                                SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
        -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
    }
}

```



```

    ul-TargetSIR                UL-TargetSIR                OPTIONAL,
    ul-OL-PC-Signalling          CHOICE {
      broadcast-UL-OL-PC-info    NULL,
      handoverGroup              SEQUENCE {
        tddOption                 CHOICE {
          tdd384                  SEQUENCE {
            individualTS-InterferenceList  IndividualTS-InterferenceList,
            dpch-ConstantValue            ConstantValue
          },
          tdd128                    SEQUENCE {
            tpc-StepSize              TPC-StepSizeTDD
          }
        }
      },
      primaryCCPCH-TX-Power      PrimaryCCPCH-TX-Power
    }
  }
}

UL-DPCH-PowerControlInfo-r5 ::= CHOICE {
  fdd                          SEQUENCE {
    dpch-PowerOffset           DPCH-PowerOffset,
    pc-Preamble                 PC-Preamble,
    -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    powerControlAlgorithm      PowerControlAlgorithm,
    deltaACK                   DeltaACK      OPTIONAL,
    deltaNACK                  DeltaNACK   OPTIONAL,
    ack-NACK-repetition-factor ACK-NACK-repetitionFactor OPTIONAL
    dpch-2-offset          INTEGER (-164 .. 6)
  },
  tdd                          SEQUENCE {
    -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
    -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
    ul-TargetSIR                UL-TargetSIR                OPTIONAL,
    ul-OL-PC-Signalling          CHOICE {
      broadcast-UL-OL-PC-info    NULL,
      handoverGroup              SEQUENCE {
        tddOption                 CHOICE {
          tdd384                  SEQUENCE {
            individualTS-InterferenceList  IndividualTS-InterferenceList,
            dpch-ConstantValue            ConstantValue
          },
          tdd128                    SEQUENCE {
            tpc-StepSize              TPC-StepSizeTDD
          }
        }
      },
      primaryCCPCH-TX-Power      PrimaryCCPCH-TX-Power
    }
  }
}

UL-DPCH-PowerControlInfoPostFDD ::= SEQUENCE {
  -- DPCCH-PowerOffset2 has a smaller range to save bits
  dpch-PowerOffset2           DPCCH-PowerOffset2,
  pc-Preamble                  PC-Preamble,
  sRB-delay                    SRB-delay
}

UL-DPCH-PowerControlInfoPostTDD ::= SEQUENCE {
  ul-TargetSIR                UL-TargetSIR,
  ul-TimeslotInterference      TDD-UL-Interference
}

UL-DPCH-PowerControlInfoPostTDD-LCR-r4 ::= SEQUENCE {
  ul-TargetSIR                UL-TargetSIR
}

UL-DPCH-PowerControlInfoPredef ::= CHOICE {
  fdd                          SEQUENCE {
    -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    powerControlAlgorithm      PowerControlAlgorithm
  },
  tdd                          SEQUENCE {
    -- dpch-ConstantValue shall be ignored if in 1.28Mcps TDD mode.
    dpch-ConstantValue          ConstantValueTdd
  }
}

```

```

UL-Interference ::= INTEGER (-110..-70)

UL-ScramblingCode ::= INTEGER (0..16777215)

UL-SynchronisationParameters-r4 ::= SEQUENCE {
    stepSize          INTEGER (1..8),
    frequency         INTEGER (1..8)
}

-- Actual value UL-TargetSIR = (IE value * 0.5) - 11
UL-TargetSIR ::= INTEGER (0..62)

UL-TimingAdvance ::= INTEGER (0..63)

UL-TimingAdvanceControl ::= CHOICE {
    disabled          NULL,
    enabled           SEQUENCE {
        ul-TimingAdvance          UL-TimingAdvance          OPTIONAL,
        activationTime             ActivationTime             OPTIONAL
    }
}

UL-TimingAdvanceControl-r4 ::= CHOICE {
    disabled          NULL,
    enabled           SEQUENCE {
        tddOption      CHOICE {
            tdd384     SEQUENCE {
                ul-TimingAdvance          UL-TimingAdvance          OPTIONAL,
                activationTime             ActivationTime             OPTIONAL
            },
            tdd128     SEQUENCE {
                ul-SynchronisationParameters-r4 UL-SynchronisationParameters-r4 OPTIONAL,
                synchronisationParameters      SynchronisationParameters-r4 OPTIONAL
            }
        }
    }
}

UL-TimingAdvanceControl-LCR-r4 ::= CHOICE {
    disabled          NULL,
    enabled           SEQUENCE {
        ul-SynchronisationParameters-r4 UL-SynchronisationParameters-r4 OPTIONAL,
        synchronisationParameters      SynchronisationParameters-r4   OPTIONAL
    }
}

UL-TS-ChannelisationCode ::= ENUMERATED {
    cc1-1, cc2-1, cc2-2,
    cc4-1, cc4-2, cc4-3, cc4-4,
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8,
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

UL-TS-ChannelisationCodeList ::= SEQUENCE (SIZE (1..2)) OF
    UL-TS-ChannelisationCode

UplinkAdditionalTimeslots ::= SEQUENCE {
    parameters          CHOICE {
        sameAsLast      SEQUENCE {
            timeslotNumber TimeslotNumber
        },
        newParameters   SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo,
            ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList
        }
    }
}

UplinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters          CHOICE {
        sameAsLast      SEQUENCE {
            timeslotNumber TimeslotNumber
        },

```

```

        newParameters                               SEQUENCE {
            individualTimeslotInfo                  IndividualTimeslotInfo-LCR-r4,
            ul-TS-ChannelisationCodeList           UL-TS-ChannelisationCodeList
        }
    }
}

UplinkTimeslotsCodes ::=                          SEQUENCE {
    dynamicSFusage                                BOOLEAN,
    firstIndividualTimeslotInfo                   IndividualTimeslotInfo,
    ul-TS-ChannelisationCodeList                 UL-TS-ChannelisationCodeList,
    moreTimeslots                                CHOICE {
        noMore                                    NULL,
        additionalTimeslots                       CHOICE {
            consecutive                           SEQUENCE {
                numAdditionalTimeslots            INTEGER (1..maxTS-1)
            },
            timeslotList                          SEQUENCE (SIZE (1..maxTS-1)) OF
                UplinkAdditionalTimeslots
        }
    }
}

UplinkTimeslotsCodes-LCR-r4 ::=                  SEQUENCE {
    dynamicSFusage                                BOOLEAN,
    firstIndividualTimeslotInfo                   IndividualTimeslotInfo-LCR-r4,
    ul-TS-ChannelisationCodeList                 UL-TS-ChannelisationCodeList,
    moreTimeslots                                CHOICE {
        noMore                                    NULL,
        additionalTimeslots                       CHOICE {
            consecutive                           SEQUENCE {
                numAdditionalTimeslots            INTEGER (1..maxTS-LCR-1)
            },
            timeslotList                          SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                UplinkAdditionalTimeslots-LCR-r4
        }
    }
}

Wi-LCR ::=                                       INTEGER(1..4)

-- *****
--
--     MEASUREMENT INFORMATION ELEMENTS (10.3.7)
--
-- *****

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

AcquisitionSatInfoList ::=                      SEQUENCE (SIZE (1..maxSat)) OF
    AcquisitionSatInfo

AdditionalMeasurementID-List ::=                SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasurementIdentity

AlmanacSatInfo ::=                             SEQUENCE {
    dataID                                        INTEGER (0..3),
    satID                                          SatID,
    e                                              BIT STRING (SIZE (16)),
    t-oa                                          BIT STRING (SIZE (8)),
    deltaI                                        BIT STRING (SIZE (16)),
    omegaDot                                      BIT STRING (SIZE (16)),
    satHealth                                    BIT STRING (SIZE (8)),
    a-Sqrt                                       BIT STRING (SIZE (24)),
    omega0                                        BIT STRING (SIZE (24)),
    m0                                           BIT STRING (SIZE (24)),
    omega                                         BIT STRING (SIZE (24)),

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```

    af0          BIT STRING (SIZE (11)),
    af1          BIT STRING (SIZE (11))
}

AlmanacSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
    AlmanacSatInfo

AverageRLC-BufferPayload ::= ENUMERATED {
    pla0, pla4, pla8, pla16, pla32,
    pla64, pla128, pla256, pla512,
    pla1024, pla2k, pla4k, pla8k, pla16k,
    pla32k, pla64k, pla128k, pla256k,
    pla512k, pla1024k, spare12, spare11,
    spare10, spare9, spare8, spare7, spare6,
    spare5, spare4, spare3, spare2, spare1 }

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

BadSatList ::= SEQUENCE (SIZE (1..maxSat)) OF
    INTEGER (0..63)

Frequency-Band ::= ENUMERATED {
    dcs1800BandUsed, pcs1900BandUsed }

BCCH-ARFCN ::= INTEGER (0..1023)

BLER-MeasurementResults ::= SEQUENCE {
    transportChannelIdentity      TransportChannelIdentity,
    dl-TransportChannelBLER      DL-TransportChannelBLER           OPTIONAL
}

BLER-MeasurementResultsList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    BLER-MeasurementResults

BLER-TransChIdList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    TransportChannelIdentity

BSIC-VerificationRequired ::= ENUMERATED {
    required, notRequired }

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

BurstModeParameters ::= SEQUENCE {
    burstStart      INTEGER (0..15),
    burstLength    INTEGER (10..25),
    burstFreq      INTEGER (1..16)
}

CellDCH-ReportCriteria ::= CHOICE {
    intraFreqReportingCriteria      IntraFreqReportingCriteria,
    periodicalReportingCriteria     PeriodicalReportingCriteria
}

CellDCH-ReportCriteria-LCR-r4 ::= CHOICE {
    intraFreqReportingCriteria      IntraFreqReportingCriteria-LCR-r4,
    periodicalReportingCriteria     PeriodicalReportingCriteria
}

-- Actual value CellIndividualOffset = IE value * 0.5
CellIndividualOffset ::= INTEGER (-20..20)

CellInfo ::= SEQUENCE {
    cellIndividualOffset      CellIndividualOffset           DEFAULT 0,
    referenceTimeDifferenceToCell      ReferenceTimeDifferenceToCell      OPTIONAL,
    modeSpecificInfo          CHOICE {
        fdd                  SEQUENCE {
            primaryCPICH-Info      PrimaryCPICH-Info           OPTIONAL,
            primaryCPICH-TX-Power  PrimaryCPICH-TX-Power      OPTIONAL,

```

```

        readSFN-Indicator          BOOLEAN,
        tx-DiversityIndicator      BOOLEAN
    },
    tdd                            SEQUENCE {
        primaryCCPCH-Info          PrimaryCCPCH-Info,
        primaryCCPCH-TX-Power      PrimaryCCPCH-TX-Power      OPTIONAL,
        timeslotInfoList           TimeslotInfoList          OPTIONAL,
        readSFN-Indicator          BOOLEAN
    }
}

CellInfo-r4 ::=
    cellIndividualOffset           DEFAULT 0,
    referenceTimeDifferenceToCell  OPTIONAL,
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            primaryCPICH-Info      PrimaryCPICH-Info          OPTIONAL,
            primaryCPICH-TX-Power  PrimaryCPICH-TX-Power    OPTIONAL,
            readSFN-Indicator      BOOLEAN,
            tx-DiversityIndicator  BOOLEAN
        },
        tdd                        SEQUENCE {
            primaryCCPCH-Info-r4   PrimaryCCPCH-Info-r4,
            primaryCCPCH-TX-Power-r4 PrimaryCCPCH-TX-Power-r4 OPTIONAL,
            timeslotInfoList-r4    TimeslotInfoList-r4      OPTIONAL,
            readSFN-Indicator-r4   BOOLEAN
        }
    }
}

CellInfoSI-RSCP ::=
    cellIndividualOffset           DEFAULT 0,
    referenceTimeDifferenceToCell  OPTIONAL,
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            primaryCPICH-Info      PrimaryCPICH-Info          OPTIONAL,
            primaryCPICH-TX-Power  PrimaryCPICH-TX-Power    OPTIONAL,
            readSFN-Indicator      BOOLEAN,
            tx-DiversityIndicator  BOOLEAN
        },
        tdd                        SEQUENCE {
            primaryCCPCH-Info      PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power  PrimaryCCPCH-TX-Power    OPTIONAL,
            timeslotInfoList       TimeslotInfoList          OPTIONAL,
            readSFN-Indicator      BOOLEAN
        }
    },
    cellSelectionReselectionInfo  CellSelectReselectInfoSIB-11-12-RSCP OPTIONAL
}

CellInfoSI-RSCP-LCR-r4 ::=
    cellIndividualOffset           DEFAULT 0,
    referenceTimeDifferenceToCell  OPTIONAL,
    primaryCCPCH-Info             PrimaryCCPCH-Info-LCR-r4,
    primaryCCPCH-TX-Power         PrimaryCCPCH-TX-Power      OPTIONAL,
    timeslotInfoList              TimeslotInfoList-LCR-r4   OPTIONAL,
    readSFN-Indicator             BOOLEAN,
    cellSelectionReselectionInfo  CellSelectReselectInfoSIB-11-12-RSCP OPTIONAL
}

CellInfoSI-ECN0 ::=
    cellIndividualOffset           DEFAULT 0,
    referenceTimeDifferenceToCell  OPTIONAL,
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            primaryCPICH-Info      PrimaryCPICH-Info          OPTIONAL,
            primaryCPICH-TX-Power  PrimaryCPICH-TX-Power    OPTIONAL,
            readSFN-Indicator      BOOLEAN,
            tx-DiversityIndicator  BOOLEAN
        },
        tdd                        SEQUENCE {
            primaryCCPCH-Info      PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power  PrimaryCCPCH-TX-Power    OPTIONAL,
            timeslotInfoList       TimeslotInfoList          OPTIONAL,
            readSFN-Indicator      BOOLEAN
        }
    }
}

```

```

    },
    cellSelectionReselectionInfo          CellSelectReselectInfoSIB-11-12-ECN0    OPTIONAL
}

CellInfoSI-ECN0-LCR-r4 ::=
cellIndividualOffset                    CellIndividualOffset                DEFAULT 0,
referenceTimeDifferenceToCell           ReferenceTimeDifferenceToCell        OPTIONAL,
primaryCCPCH-Info                       PrimaryCCPCH-Info-LCR-r4,
primaryCCPCH-TX-Power                   PrimaryCCPCH-TX-Power                OPTIONAL,
timeslotInfoList                        TimeslotInfoList-LCR-r4              OPTIONAL,
readSFN-Indicator                       BOOLEAN,
cellSelectionReselectionInfo            CellSelectReselectInfoSIB-11-12-ECN0    OPTIONAL
}

CellInfoSI-HCS-RSCP ::=
cellIndividualOffset                    CellIndividualOffset                DEFAULT 0,
referenceTimeDifferenceToCell           ReferenceTimeDifferenceToCell        OPTIONAL,
modeSpecificInfo                        CHOICE {
    fdd
        primaryCPICH-Info                PrimaryCPICH-Info                    OPTIONAL,
        primaryCPICH-TX-Power            PrimaryCPICH-TX-Power                OPTIONAL,
        readSFN-Indicator                 BOOLEAN,
        tx-DiversityIndicator             BOOLEAN
    },
    tdd
        primaryCCPCH-Info                 PrimaryCCPCH-Info,
        primaryCCPCH-TX-Power            PrimaryCCPCH-TX-Power                OPTIONAL,
        timeslotInfoList                  TimeslotInfoList                      OPTIONAL,
        readSFN-Indicator                 BOOLEAN
    }
},
cellSelectionReselectionInfo            CellSelectReselectInfoSIB-11-12-HCS-RSCP    OPTIONAL
}

CellInfoSI-HCS-RSCP-LCR-r4 ::=
cellIndividualOffset                    CellIndividualOffset                DEFAULT 0,
referenceTimeDifferenceToCell           ReferenceTimeDifferenceToCell        OPTIONAL,
primaryCCPCH-Info                       PrimaryCCPCH-Info-LCR-r4,
primaryCCPCH-TX-Power                   PrimaryCCPCH-TX-Power                OPTIONAL,
timeslotInfoList                        TimeslotInfoList-LCR-r4              OPTIONAL,
readSFN-Indicator                       BOOLEAN,
cellSelectionReselectionInfo            CellSelectReselectInfoSIB-11-12-HCS-RSCP    OPTIONAL
}

CellInfoSI-HCS-ECN0 ::=
cellIndividualOffset                    CellIndividualOffset                DEFAULT 0,
referenceTimeDifferenceToCell           ReferenceTimeDifferenceToCell        OPTIONAL,
modeSpecificInfo                        CHOICE {
    fdd
        primaryCPICH-Info                PrimaryCPICH-Info                    OPTIONAL,
        primaryCPICH-TX-Power            PrimaryCPICH-TX-Power                OPTIONAL,
        readSFN-Indicator                 BOOLEAN,
        tx-DiversityIndicator             BOOLEAN
    },
    tdd
        primaryCCPCH-Info                 PrimaryCCPCH-Info,
        primaryCCPCH-TX-Power            PrimaryCCPCH-TX-Power                OPTIONAL,
        timeslotInfoList                  TimeslotInfoList                      OPTIONAL,
        readSFN-Indicator                 BOOLEAN
    }
},
cellSelectionReselectionInfo            CellSelectReselectInfoSIB-11-12-HCS-ECN0    OPTIONAL
}

CellInfoSI-HCS-ECN0-LCR-r4 ::=
cellIndividualOffset                    CellIndividualOffset                DEFAULT 0,
referenceTimeDifferenceToCell           ReferenceTimeDifferenceToCell        OPTIONAL,
primaryCCPCH-Info                       PrimaryCCPCH-Info-LCR-r4,
primaryCCPCH-TX-Power                   PrimaryCCPCH-TX-Power                OPTIONAL,
timeslotInfoList                        TimeslotInfoList-LCR-r4              OPTIONAL,
readSFN-Indicator                       BOOLEAN,
cellSelectionReselectionInfo            CellSelectReselectInfoSIB-11-12-HCS-ECN0    OPTIONAL
}

CellMeasuredResults ::=
cellIdentity                            CellIdentity                          OPTIONAL,
sfn-SFN-ObsTimeDifference                SFN-SFN-ObsTimeDifference            OPTIONAL,
cellSynchronisationInfo                  CellSynchronisationInfo                OPTIONAL,

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```

modeSpecificInfo          CHOICE {
  fdd                      SEQUENCE {
    primaryCPICH-Info      PrimaryCPICH-Info,
    cpich-Ec-N0            CPICH-Ec-N0           OPTIONAL,
    cpich-RSCP             CPICH-RSCP           OPTIONAL,
    pathloss               Pathloss             OPTIONAL
  },
  tdd                      SEQUENCE {
    cellParametersID      CellParametersID,
    proposedTGSN          TGSN
    primaryCCPCH-RSCP     PrimaryCCPCH-RSCP   OPTIONAL,
    pathloss              Pathloss           OPTIONAL,
    timeslotISCP-List     TimeslotISCP-List  OPTIONAL
  }
}

CellMeasurementEventResults ::= CHOICE {
  fdd                      SEQUENCE (SIZE (1..maxCellMeas)) OF
    PrimaryCPICH-Info,
  tdd                      SEQUENCE (SIZE (1..maxCellMeas)) OF
    PrimaryCCPCH-Info
}

CellMeasurementEventResults-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  PrimaryCCPCH-Info-LCR-r4

CellReportingQuantities ::= SEQUENCE {
  sfm-SFM-OTD-Type        SFM-SFM-OTD-Type,
  cellIdentity-reportingIndicator    BOOLEAN,
  cellSynchronisationInfoReportingIndicator    BOOLEAN,
  modeSpecificInfo        CHOICE {
    fdd                    SEQUENCE {
      cpich-Ec-N0-reportingIndicator    BOOLEAN,
      cpich-RSCP-reportingIndicator     BOOLEAN,
      pathloss-reportingIndicator       BOOLEAN
    },
    tdd                    SEQUENCE {
      timeslotISCP-reportingIndicator    BOOLEAN,
      proposedTGSN-ReportingRequired    BOOLEAN,
      primaryCCPCH-RSCP-reportingIndicator    BOOLEAN,
      pathloss-reportingIndicator        BOOLEAN
    }
  }
}

CellSelectReselectInfoSIB-11-12 ::= SEQUENCE {
  q-Offset1S-N            Q-OffsetS-N           DEFAULT 0,
  q-Offset2S-N            Q-OffsetS-N           OPTIONAL,
  maxAllowedUL-TX-Power   MaxAllowedUL-TX-Power OPTIONAL,
  hcs-NeighbouringCellInformation-RSCP    HCS-NeighbouringCellInformation-RSCP
  OPTIONAL,
  modeSpecificInfo        CHOICE {
    fdd                    SEQUENCE {
      q-QualMin            Q-QualMin             OPTIONAL,
      q-RxlevMin           Q-RxlevMin           OPTIONAL
    },
    tdd                    SEQUENCE {
      q-RxlevMin           Q-RxlevMin           OPTIONAL
    },
    gsm                    SEQUENCE {
      q-RxlevMin           Q-RxlevMin           OPTIONAL
    }
  }
}

CellSelectReselectInfoSIB-11-12-RSCP ::= SEQUENCE {
  q-OffsetS-N            Q-OffsetS-N           DEFAULT 0,
  maxAllowedUL-TX-Power   MaxAllowedUL-TX-Power OPTIONAL,
  modeSpecificInfo        CHOICE {
    fdd                    SEQUENCE {
      q-QualMin            Q-QualMin             OPTIONAL,
      q-RxlevMin           Q-RxlevMin           OPTIONAL
    },
    tdd                    SEQUENCE {
      q-RxlevMin           Q-RxlevMin           OPTIONAL
    },
    gsm                    SEQUENCE {

```

```

    }
    }
}

CellSelectReselectInfoSIB-11-12-ECNO ::= SEQUENCE {
    q-Offset1S-N          Q-OffsetS-N          DEFAULT 0,
    q-Offset2S-N          Q-OffsetS-N          DEFAULT 0,
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    modeSpecificInfo      CHOICE {
        fdd                SEQUENCE {
            q-QualMin      Q-QualMin          OPTIONAL,
            q-RxlevMin     Q-RxlevMin        OPTIONAL
        },
        tdd                SEQUENCE {
            q-RxlevMin     Q-RxlevMin        OPTIONAL
        },
        gsm                SEQUENCE {
            q-RxlevMin     Q-RxlevMin        OPTIONAL
        }
    }
}

CellSelectReselectInfoSIB-11-12-HCS-RSCP ::= SEQUENCE {
    q-OffsetS-N           Q-OffsetS-N           DEFAULT 0,
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    hcs-NeighbouringCellInformation-RSCP HCS-NeighbouringCellInformation-RSCP
    OPTIONAL,
    modeSpecificInfo      CHOICE {
        fdd                SEQUENCE {
            q-QualMin      Q-QualMin          OPTIONAL,
            q-RxlevMin     Q-RxlevMin        OPTIONAL
        },
        tdd                SEQUENCE {
            q-RxlevMin     Q-RxlevMin        OPTIONAL
        },
        gsm                SEQUENCE {
            q-RxlevMin     Q-RxlevMin        OPTIONAL
        }
    }
}

CellSelectReselectInfoSIB-11-12-HCS-ECNO ::= SEQUENCE {
    q-Offset1S-N          Q-OffsetS-N          DEFAULT 0,
    q-Offset2S-N          Q-OffsetS-N          DEFAULT 0,
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    hcs-NeighbouringCellInformation-ECNO HCS-NeighbouringCellInformation-ECNO
    OPTIONAL,
    modeSpecificInfo      CHOICE {
        fdd                SEQUENCE {
            q-QualMin      Q-QualMin          OPTIONAL,
            q-RxlevMin     Q-RxlevMin        OPTIONAL
        },
        tdd                SEQUENCE {
            q-RxlevMin     Q-RxlevMin        OPTIONAL
        },
        gsm                SEQUENCE {
            q-RxlevMin     Q-RxlevMin        OPTIONAL
        }
    }
}

CellsForInterFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    InterFreqCellID
CellsForInterRATMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    InterRATCellID
CellsForIntraFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    IntraFreqCellID

CellSynchronisationInfo ::= SEQUENCE {
    modeSpecificInfo      CHOICE {
        fdd                SEQUENCE {
            countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL,
            tm              INTEGER(0..38399)
        },
        tdd                SEQUENCE {
            countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL
        }
    }
}

```



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    }
}

CellToReport ::=
    bsicReported
    SEQUENCE {
        BSICReported
    }

CellToReportList ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellToReport

CodePhaseSearchWindow ::=
    ENUMERATED {
        w1023, w1, w2, w3, w4, w6, w8,
        w12, w16, w24, w32, w48, w64,
        w96, w128, w192 }

CountC-SFN-Frame-difference ::= SEQUENCE {
    -- Actual value countC-SFN-High = IE value * 256
    countC-SFN-High    INTEGER(0..15),
    off                INTEGER(0..255)
}

-- SPARE: CPICH-Ec-No, Max = 49
-- Values above Max are spare
CPICH-Ec-N0 ::=
    INTEGER (0..63)

-- SPARE: CPICH- RSCP, Max = 91
-- Values above Max are spare
CPICH-RSCP ::=
    INTEGER (0..127)

DeltaPRC ::=
    INTEGER (-127..127)

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

DGPS-CorrectionSatInfo ::=
    SEQUENCE {
        satID          SatID,
        iode           IODE,
        udre           UDRE,
        prc            PRC,
        rrc            RRC,
        deltaPRC2      DeltaPRC,
        deltaRRC2      DeltaRRC,
        deltaPRC3      DeltaPRC          OPTIONAL,
        deltaRRC3      DeltaRRC          OPTIONAL
    }

DGPS-CorrectionSatInfoList ::=
    SEQUENCE (SIZE (1..maxSat)) OF
        DGPS-CorrectionSatInfo

DiffCorrectionStatus ::=
    ENUMERATED {
        udre-1-0, udre-0-75, udre-0-5, udre-0-3,
        udre-0-2, udre-0-1, noData, invalidData }

DL-TransportChannelBLER ::=
    INTEGER (0..63)

DopplerUncertainty ::=
    ENUMERATED {
        hz12-5, hz25, hz50, hz100, hz200,
        spare3, spare2, spare1 }

EllipsoidPoint ::=
    SEQUENCE {
        latitudeSign   ENUMERATED { north, south },
        latitude        INTEGER (0..8388607),
        longitude       INTEGER (-8388608..8388607)
    }

EllipsoidPointAltitude ::=
    SEQUENCE {
        latitudeSign   ENUMERATED { north, south },
        latitude        INTEGER (0..8388607),
        longitude       INTEGER (-8388608..8388607),
        altitudeDirection ENUMERATED {height, depth},
        altitude        INTEGER (0..32767)
    }

EllipsoidPointAltitudeEllipsoide ::=
    SEQUENCE {
        latitudeSign   ENUMERATED { north, south },

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latitude                INTEGER (0..8388607),
longitude               INTEGER (-8388608..8388607),
altitudeDirection      ENUMERATED {height, depth},
altitude                INTEGER (0..32767),
uncertaintySemiMajor   INTEGER (0..127),
uncertaintySemiMinor   INTEGER (0..127),
orientationMajorAxis    INTEGER (0..89),
uncertaintyAltitude    INTEGER (0..127),
confidence              INTEGER (0..100)
}

EllipsoidPointUncertCircle ::= SEQUENCE {
    latitudeSign          ENUMERATED { north, south },
    latitude              INTEGER (0..8388607),
    longitude             INTEGER (-8388608..8388607),
    uncertaintyCode       INTEGER (0..127)
}

EllipsoidPointUncertEllipse ::= SEQUENCE {
    latitudeSign          ENUMERATED { north, south },
    latitude              INTEGER (0..8388607),
    longitude             INTEGER (-8388608..8388607),
    uncertaintySemiMajor  INTEGER (0..127),
    uncertaintySemiMinor  INTEGER (0..127),
    orientationMajorAxis  INTEGER (0..89),
    confidence            INTEGER (0..100)
}

EnvironmentCharacterisation ::= ENUMERATED {
    possibleHeavyMultipathNLOS,
    lightMultipathLOS,
    notDefined,
    spare }

Event1a ::= SEQUENCE {
    triggeringCondition    TriggeringCondition2,
    reportingRange        ReportingRange,
    forbiddenAffectCellList ForbiddenAffectCellList           OPTIONAL,
    w                     W,
    reportDeactivationThreshold ReportDeactivationThreshold,
    reportingAmount       ReportingAmount,
    reportingInterval     ReportingInterval
}

Event1a-r4 ::= SEQUENCE {
    triggeringCondition    TriggeringCondition2,
    reportingRange        ReportingRange,
    forbiddenAffectCellList ForbiddenAffectCellList-r4         OPTIONAL,
    w                     W,
    reportDeactivationThreshold ReportDeactivationThreshold,
    reportingAmount       ReportingAmount,
    reportingInterval     ReportingInterval
}

Event1a-LCR-r4 ::= SEQUENCE {
    triggeringCondition    TriggeringCondition2,
    reportingRange        ReportingRange,
    forbiddenAffectCellList ForbiddenAffectCellList-LCR-r4     OPTIONAL,
    w                     W,
    reportDeactivationThreshold ReportDeactivationThreshold,
    reportingAmount       ReportingAmount,
    reportingInterval     ReportingInterval
}

Event1b ::= SEQUENCE {
    triggeringCondition    TriggeringCondition1,
    reportingRange        ReportingRange,
    forbiddenAffectCellList ForbiddenAffectCellList           OPTIONAL,
    w                     W
}

Event1b-r4 ::= SEQUENCE {
    triggeringCondition    TriggeringCondition1,
    reportingRange        ReportingRange,
    forbiddenAffectCellList ForbiddenAffectCellList-r4         OPTIONAL,

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    w                                W
}

Event1b-LCR-r4 ::=                    SEQUENCE {
    triggeringCondition                TriggeringCondition1,
    reportingRange                    ReportingRange,
    forbiddenAffectCellList           ForbiddenAffectCellList-LCR-r4    OPTIONAL,
    w                                  W
}

Event1c ::=                          SEQUENCE {
    replacementActivationThreshold    ReplacementActivationThreshold,
    reportingAmount                   ReportingAmount,
    reportingInterval                 ReportingInterval
}

Event1e ::=                          SEQUENCE {
    triggeringCondition                TriggeringCondition2,
    thresholdUsedFrequency            ThresholdUsedFrequency
}

Event1f ::=                          SEQUENCE {
    triggeringCondition                TriggeringCondition1,
    thresholdUsedFrequency            ThresholdUsedFrequency
}

Event2a ::=                          SEQUENCE {
    -- dummy is not used in this version of the specification and should be ignored
    dummy                             Threshold,
    usedFreqW                          W,
    hysteresis                         HysteresisInterFreq,
    timeToTrigger                      TimeToTrigger,
    reportingCellStatus                ReportingCellStatus    OPTIONAL,
    nonUsedFreqParameterList          NonUsedFreqParameterList    OPTIONAL
}

Event2b ::=                          SEQUENCE {
    usedFreqThreshold                 Threshold,
    usedFreqW                          W,
    hysteresis                         HysteresisInterFreq,
    timeToTrigger                      TimeToTrigger,
    reportingCellStatus                ReportingCellStatus    OPTIONAL,
    nonUsedFreqParameterList          NonUsedFreqParameterList    OPTIONAL
}

Event2c ::=                          SEQUENCE {
    hysteresis                         HysteresisInterFreq,
    timeToTrigger                      TimeToTrigger,
    reportingCellStatus                ReportingCellStatus    OPTIONAL,
    nonUsedFreqParameterList          NonUsedFreqParameterList    OPTIONAL
}

Event2d ::=                          SEQUENCE {
    usedFreqThreshold                 Threshold,
    usedFreqW                          W,
    hysteresis                         HysteresisInterFreq,
    timeToTrigger                      TimeToTrigger,
    reportingCellStatus                ReportingCellStatus    OPTIONAL
}

Event2e ::=                          SEQUENCE {
    hysteresis                         HysteresisInterFreq,
    timeToTrigger                      TimeToTrigger,
    reportingCellStatus                ReportingCellStatus    OPTIONAL,
    nonUsedFreqParameterList          NonUsedFreqParameterList    OPTIONAL
}

Event2f ::=                          SEQUENCE {
    usedFreqThreshold                 Threshold,
    usedFreqW                          W,
    hysteresis                         HysteresisInterFreq,
    timeToTrigger                      TimeToTrigger,
    reportingCellStatus                ReportingCellStatus    OPTIONAL
}

Event3a ::=                          SEQUENCE {
    thresholdOwnSystem                Threshold,
    w                                  W,
}

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    thresholdOtherSystem      Threshold,
    hysteresis                Hysteresis,
    timeToTrigger             TimeToTrigger,
    reportingCellStatus       ReportingCellStatus          OPTIONAL
}

Event3b ::=
    thresholdOtherSystem      SEQUENCE {
        Threshold,
        Hysteresis,
        TimeToTrigger,
        reportingCellStatus   ReportingCellStatus          OPTIONAL
    }

Event3c ::=
    thresholdOtherSystem      SEQUENCE {
        Threshold,
        Hysteresis,
        TimeToTrigger,
        reportingCellStatus   ReportingCellStatus          OPTIONAL
    }

Event3d ::=
    hysteresis                SEQUENCE {
        Hysteresis,
        TimeToTrigger,
        reportingCellStatus   ReportingCellStatus          OPTIONAL
    }

EventIDInterFreq ::=
    ENUMERATED {
        e2a, e2b, e2c, e2d, e2e, e2f, spare2, spare1 }

EventIDInterRAT ::=
    ENUMERATED {
        e3a, e3b, e3c, e3d }

EventIDIntraFreq ::=
    ENUMERATED {
        e1a, e1b, e1c, e1d, e1e,
        e1f, e1g, e1h, e1i, spare7,
        spare6, spare5, spare4, spare3, spare2,
        spare1 }

EventResults ::=
    CHOICE {
        intraFreqEventResults  IntraFreqEventResults,
        interFreqEventResults  InterFreqEventResults,
        interRATEventResults   InterRATEventResults,
        trafficVolumeEventResults TrafficVolumeEventResults,
        qualityEventResults     QualityEventResults,
        ue-InternalEventResults UE-InternalEventResults,
        ue-positioning-MeasurementEventResults UE-Positioning-MeasurementEventResults,
        spare                   NULL
    }

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

FACH-MeasurementOccasionInfo ::= SEQUENCE {
    fACH-meas-occasion-coeff   INTEGER (1..12)          OPTIONAL,
    inter-freq-FDD-meas-ind    BOOLEAN,
    -- inter-freq-TDD-meas-ind is for 3.84Mcps TDD. For 1.28Mcps TDD, the IE in
    -- FACH-MeasurementOccasionInfo-LCR-r4-ext is used.
    inter-freq-TDD-meas-ind    BOOLEAN,
    inter-RAT-meas-ind         SEQUENCE (SIZE (1..maxOtherRAT)) OF
                                RAT-Type          OPTIONAL
}

FACH-MeasurementOccasionInfo-LCR-r4-ext ::= SEQUENCE {
    inter-freq-TDD128-meas-ind  BOOLEAN
}

FilterCoefficient ::=
    ENUMERATED {
        fc0, fc1, fc2, fc3, fc4, fc5,
        fc6, fc7, fc8, fc9, fc11, fc13,
        fc15, fc17, fc19, spare1 }

-- Actual value FineSFN-SFN = IE value * 0.0625
FineSFN-SFN ::=
    INTEGER (0..15)

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ForbiddenAffectCell ::= CHOICE {
    fdd PrimaryCPICH-Info,
    tdd PrimaryCCPCH-Info
}

ForbiddenAffectCell-r4 ::= CHOICE {
    fdd PrimaryCPICH-Info,
    tdd PrimaryCCPCH-Info-r4
}

ForbiddenAffectCell-LCR-r4 ::= SEQUENCE {
    tdd PrimaryCCPCH-Info-LCR-r4
}

ForbiddenAffectCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell

ForbiddenAffectCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell-r4

ForbiddenAffectCellList-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell-LCR-r4

FreqQualityEstimateQuantity-FDD ::= ENUMERATED {
    cpich-Ec-N0,
    cpich-RSCP }

FreqQualityEstimateQuantity-TDD ::= ENUMERATED {
    primaryCCPCH-RSCP }

GPS-MeasurementParam ::= SEQUENCE {
    satelliteID INTEGER (0..63),
    c-N0 INTEGER (0..63),
    doppler INTEGER (-32768..32768),
    wholeGPS-Chips INTEGER (0..1023),
    fractionalGPS-Chips INTEGER (0..1023),
    multipathIndicator MultipathIndicator,
    pseudorangeRMS-Error INTEGER (0..63)
}

GPS-MeasurementParamList ::= SEQUENCE (SIZE (1..maxSat)) OF
    GPS-MeasurementParam

GSM-CarrierRSSI ::= BIT STRING (SIZE (6))

GSM-MeasuredResults ::= SEQUENCE {
    gsm-CarrierRSSI GSM-CarrierRSSI OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy INTEGER (46..173) OPTIONAL,
    bsicReported BSICReported,
    observedTimeDifferenceToGSM ObservedTimeDifferenceToGSM OPTIONAL
}

GSM-MeasuredResultsList ::= SEQUENCE (SIZE (1..maxReportedGSMCells)) OF
    GSM-MeasuredResults

GPS-TOW-1msec ::= INTEGER (0..604799999)

GPS-TOW-Assist ::= SEQUENCE {
    satID SatID,
    tlm-Message BIT STRING (SIZE (14)),
    tlm-Reserved BIT STRING (SIZE (2)),
    alert BOOLEAN,
    antiSpoof BOOLEAN
}

GPS-TOW-AssistList ::= SEQUENCE (SIZE (1..maxSat)) OF
    GPS-TOW-Assist

HCS-CellReselectInformation-RSCP ::= SEQUENCE {
    -- TABULAR: The default value for penaltyTime is "notUsed"
    -- Temporary offset is nested inside PenaltyTime-RSCP
    penaltyTime PenaltyTime-RSCP
}

HCS-CellReselectInformation-ECNO ::= SEQUENCE {

```

```

-- TABULAR: The default value for penaltyTime is "notUsed"
-- Temporary offset is nested inside PenaltyTime-ECNO
penaltyTime                PenaltyTime-ECNO
}

HCS-NeighbouringCellInformation-RSCP ::= SEQUENCE {
    hcs-PRIO                HCS-PRIO                DEFAULT 0,
    q-HCS                   Q-HCS                   DEFAULT 0,
    hcs-CellReselectInformation HCS-CellReselectInformation-RSCP
}

HCS-NeighbouringCellInformation-ECNO ::= SEQUENCE {
    hcs-PRIO                HCS-PRIO                DEFAULT 0,
    q-HCS                   Q-HCS                   DEFAULT 0,
    hcs-CellReselectInformation HCS-CellReselectInformation-ECNO
}

HCS-PRIO ::=
    INTEGER (0..7)

HCS-ServingCellInformation ::= SEQUENCE {
    hcs-PRIO                HCS-PRIO                DEFAULT 0,
    q-HCS                   Q-HCS                   DEFAULT 0,
    t-CR-Max                T-CR-Max                OPTIONAL
}

-- Actual value Hysteresis = IE value * 0.5
Hysteresis ::=
    INTEGER (0..15)

-- Actual value HysteresisInterFreq = IE value * 0.5
HysteresisInterFreq ::=
    INTEGER (0..29)

InterFreqCell ::=
    SEQUENCE {
        frequencyInfo        FrequencyInfo,
        nonFreqRelatedEventResults CellMeasurementEventResults
    }

InterFreqCell-LCR-r4 ::=
    SEQUENCE {
        frequencyInfo        FrequencyInfo,
        nonFreqRelatedEventResults CellMeasurementEventResults-LCR-r4
    }

InterFreqCellID ::=
    INTEGER (0..maxCellMeas-1)

InterFreqCellInfoList ::=
    SEQUENCE {
        removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
        newInterFreqCellList     NewInterFreqCellList        OPTIONAL,
        cellsForInterFreqMeasList CellsForInterFreqMeasList    OPTIONAL
    }

InterFreqCellInfoList-r4 ::=
    SEQUENCE {
        removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
        newInterFreqCellList     NewInterFreqCellList-r4        OPTIONAL
    }

InterFreqCellInfoSI-List-RSCP ::=
    SEQUENCE {
        removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
        newInterFreqCellList     NewInterFreqCellSI-List-RSCP    OPTIONAL
    }

InterFreqCellInfoSI-List-ECNO ::=
    SEQUENCE {
        removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
        newInterFreqCellList     NewInterFreqCellSI-List-ECNO    OPTIONAL
    }

InterFreqCellInfoSI-List-HCS-RSCP ::=
    SEQUENCE {
        removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
        newInterFreqCellList     NewInterFreqCellSI-List-HCS-RSCP    OPTIONAL
    }

InterFreqCellInfoSI-List-HCS-ECNO ::=
    SEQUENCE {
        removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
        newInterFreqCellList     NewInterFreqCellSI-List-HCS-ECNO    OPTIONAL
    }

InterFreqCellInfoSI-List-RSCP-LCR ::=
    SEQUENCE {
        removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
        newInterFreqCellList     NewInterFreqCellSI-List-RSCP-LCR-r4    OPTIONAL
    }
}

```

```

InterFreqCellInfoSI-List-ECN0-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-ECN0-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECN0-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 OPTIONAL
}

InterFreqCellList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell

InterFreqCellList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell-LCR-r4

InterFreqCellMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

InterFreqEvent ::= CHOICE {
    event2a Event2a,
    event2b Event2b,
    event2c Event2c,
    event2d Event2d,
    event2e Event2e,
    event2f Event2f
}

InterFreqEventList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    InterFreqEvent

InterFreqEventResults ::= SEQUENCE {
    eventID EventIDInterFreq,
    interFreqCellList InterFreqCellList OPTIONAL
}

InterFreqEventResults-LCR-r4-ext ::= SEQUENCE {
    eventID EventIDInterFreq,
    interFreqCellList InterFreqCellList-LCR-r4-ext OPTIONAL
}

InterFreqMeasQuantity ::= SEQUENCE {
    reportingCriteria CHOICE {
        intraFreqReportingCriteria SEQUENCE {
            intraFreqMeasQuantity IntraFreqMeasQuantity
        },
        interFreqReportingCriteria SEQUENCE {
            filterCoefficient FilterCoefficient DEFAULT fc0,
            modeSpecificInfo CHOICE {
                fdd SEQUENCE {
                    freqQualityEstimateQuantity-FDD FreqQualityEstimateQuantity-FDD
                },
                tdd SEQUENCE {
                    freqQualityEstimateQuantity-TDD FreqQualityEstimateQuantity-TDD
                }
            }
        }
    }
}

InterFreqMeasuredResults ::= SEQUENCE {
    frequencyInfo FrequencyInfo OPTIONAL,
    ultra-CarrierRSSI UTRA-CarrierRSSI OPTIONAL,
    interFreqCellMeasuredResultsList InterFreqCellMeasuredResultsList OPTIONAL
}

InterFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqMeasuredResults

InterFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-RSCP OPTIONAL
}

```

```

InterFreqMeasurementSysInfo-ECN0 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-ECN0          OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-RSCP      OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-ECN0      OPTIONAL
}

InterFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-RSCP-LCR      OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-ECN0-LCR      OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-RSCP-LCR  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-ECN0-LCR  OPTIONAL
}

InterFreqReportCriteria ::= CHOICE {
    intraFreqReportingCriteria
    interFreqReportingCriteria
    periodicalReportingCriteria
    noReporting
}

InterFreqReportCriteria-r4 ::= CHOICE {
    intraFreqReportingCriteria-r4,
    interFreqReportingCriteria,
    periodicalReportingCriteria,
    noReporting
}

InterFreqReportingCriteria ::= SEQUENCE {
    interFreqEventList
}

InterFreqReportingQuantity ::= SEQUENCE {
    ultra-Carrier-RSSI
    frequencyQualityEstimate
    nonFreqRelatedQuantities
}

InterFrequencyMeasurement ::= SEQUENCE {
    interFreqCellInfoList
    interFreqMeasQuantity
    interFreqReportingQuantity
    measurementValidity
    interFreqSetUpdate
    reportCriteria
}

InterFrequencyMeasurement-r4 ::= SEQUENCE {
    interFreqCellInfoList
    interFreqMeasQuantity
    interFreqReportingQuantity
    measurementValidity
    interFreqSetUpdate
    reportCriteria
}

InterRAT-TargetCellDescription ::= SEQUENCE {
    technologySpecificInfo
    gsm
    bsic
    frequency-band
    bcch-ARFCN
    ncMode
}

```



```

    },
    is-2000
    spare2
    spare1
  }
}

InterRATCellID ::=
    INTEGER (0..maxCellMeas-1)

InterRATCellInfoList ::=
    SEQUENCE {
        removedInterRATCellList    RemovedInterRATCellList,
        -- NOTE: Future revisions of dedicated messages including IE newInterRATCellList
        -- should use a corrected version of this IE
        newInterRATCellList        NewInterRATCellList,
        cellsForInterRATMeasList    CellsForInterRATMeasList
    }
    OPTIONAL

InterRATCellInfoList-B ::=
    SEQUENCE {
        removedInterRATCellList    RemovedInterRATCellList,
        -- NOTE: IE newInterRATCellList should be optional. However, system information
        -- does not support message versions. Hence, this can not be corrected
        newInterRATCellList        NewInterRATCellList-B
    }

InterRATCellInfoList-r4 ::=
    SEQUENCE {
        removedInterRATCellList    RemovedInterRATCellList,
        newInterRATCellList        NewInterRATCellList
    }
    OPTIONAL,
    cellsForInterRATMeasList    CellsForInterRATMeasList
    OPTIONAL

InterRATCellIndividualOffset ::=
    INTEGER (-50..50)

InterRATEvent ::=
    CHOICE {
        event3a                    Event3a,
        event3b                    Event3b,
        event3c                    Event3c,
        event3d                    Event3d
    }

InterRATEventList ::=
    SEQUENCE (SIZE (1..maxMeasEvent)) OF
        InterRATEvent

InterRATEventResults ::=
    SEQUENCE {
        eventID                    EventIDInterRAT,
        cellToReportList           CellToReportList
    }

InterRATInfo ::=
    ENUMERATED {
        gsm
    }

InterRATMeasQuantity ::=
    SEQUENCE {
        measQuantityUTRAN-QualityEstimate    IntraFreqMeasQuantity
        ratSpecificInfo                       CHOICE {
            gsm                               SEQUENCE {
                measurementQuantity          MeasurementQuantityGSM,
                filterCoefficient            FilterCoefficient
            }
            bsic-VerificationRequired        BSIC-VerificationRequired
        },
        is-2000                               SEQUENCE {
            tadd-EcIo                        INTEGER (0..63),
            tcomp-EcIo                       INTEGER (0..15),
            softSlope                        INTEGER (0..63)
        }
        addIntercept                        INTEGER (0..63)
    }
    OPTIONAL,
    DEFAULT fc0,
    OPTIONAL,
    OPTIONAL

InterRATMeasuredResults ::=
    CHOICE {
        gsm                                GSM-MeasuredResultsList,
        spare                               NULL
    }

InterRATMeasuredResultsList ::= SEQUENCE (SIZE (1..maxOtherRAT-16)) OF
    InterRATMeasuredResults

InterRATMeasurement ::=
    SEQUENCE {
        interRATCellInfoList             InterRATCellInfoList
        interRATMeasQuantity              InterRATMeasQuantity
    }
    OPTIONAL,
    OPTIONAL

```

```

interRATReportingQuantity      InterRATReportingQuantity      OPTIONAL,
reportCriteria                 InterRATReportCriteria
}

InterRATMeasurement-r4 ::=    SEQUENCE {
interRATCellInfoList          InterRATCellInfoList-r4        OPTIONAL,
interRATMeasQuantity          InterRATMeasQuantity           OPTIONAL,
interRATReportingQuantity     InterRATReportingQuantity     OPTIONAL,
reportCriteria                 InterRATReportCriteria
}

InterRATMeasurementSysInfo ::= SEQUENCE {
interRATCellInfoList          InterRATCellInfoList           OPTIONAL
}

InterRATMeasurementSysInfo-B ::= SEQUENCE {
interRATCellInfoList          InterRATCellInfoList-B        OPTIONAL
}

InterRATReportCriteria ::=    CHOICE {
interRATReportingCriteria     InterRATReportingCriteria,
periodicalReportingCriteria   PeriodicalWithReportingCellStatus,
noReporting                    ReportingCellStatusOpt
}

InterRATReportingCriteria ::= SEQUENCE {
interRATEventList             InterRATEventList             OPTIONAL
}

InterRATReportingQuantity ::= SEQUENCE {
  utran-EstimatedQuality      BOOLEAN,
  ratSpecificInfo             CHOICE {
    gsm                        SEQUENCE {
      dummy                    BOOLEAN,
      observedTimeDifferenceGSM BOOLEAN,
      gsm-Carrier-RSSI         BOOLEAN
    }
  }
}

IntraFreqCellID ::=          INTEGER (0..maxCellMeas-1)

IntraFreqCellInfoList ::=    SEQUENCE {
removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
newIntraFreqCellList          NewIntraFreqCellList          OPTIONAL,
cellsForIntraFreqMeasList     CellsForIntraFreqMeasList     OPTIONAL
}

IntraFreqCellInfoList-r4 ::= SEQUENCE {
removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
newIntraFreqCellList          NewIntraFreqCellList-r4      OPTIONAL,
cellsForIntraFreqMeasList     CellsForIntraFreqMeasList     OPTIONAL
}

IntraFreqCellInfoSI-List-RSCP ::= SEQUENCE {
removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
newIntraFreqCellList          NewIntraFreqCellSI-List-RSCP
}

IntraFreqCellInfoSI-List-ECNO ::= SEQUENCE {
removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
newIntraFreqCellList          NewIntraFreqCellSI-List-ECNO
}

IntraFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-RSCP
}

IntraFreqCellInfoSI-List-HCS-ECNO ::= SEQUENCE {
removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-ECNO
}

IntraFreqCellInfoSI-List-RSCP-LCR-r4 ::= SEQUENCE {
removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
newIntraFreqCellList          NewIntraFreqCellSI-List-RSCP-LCR-r4
}

```

```

IntraFreqCellInfoSI-List-ECN0-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList RemovedIntraFreqCellList OPTIONAL,
    newIntraFreqCellList NewIntraFreqCellSI-List-ECN0-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList RemovedIntraFreqCellList OPTIONAL,
    newIntraFreqCellList NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList RemovedIntraFreqCellList OPTIONAL,
    newIntraFreqCellList NewIntraFreqCellSI-List-HCS-ECN0-LCR-r4
}

IntraFreqEvent ::= CHOICE {
    e1a Event1a,
    e1b Event1b,
    e1c Event1c,
    e1d NULL,
    e1e Event1e,
    e1f Event1f,
    e1g NULL,
    e1h ThresholdUsedFrequency,
    e1i ThresholdUsedFrequency
}

IntraFreqEvent-r4 ::= CHOICE {
    e1a Event1a-r4,
    e1b Event1b-r4,
    e1c Event1c,
    e1d NULL,
    e1e Event1e,
    e1f Event1f,
    e1g NULL,
    e1h ThresholdUsedFrequency,
    e1i ThresholdUsedFrequency
}

IntraFreqEvent-LCR-r4 ::= CHOICE {
    e1a Event1a-LCR-r4,
    e1b Event1b-LCR-r4,
    e1c Event1c,
    e1d NULL,
    e1e Event1e,
    e1f Event1f,
    e1g NULL,
    e1h ThresholdUsedFrequency,
    e1i ThresholdUsedFrequency
}

IntraFreqEventCriteria ::= SEQUENCE {
    event IntraFreqEvent,
    hysteresis Hysteresis,
    timeToTrigger TimeToTrigger,
    reportingCellStatus ReportingCellStatus OPTIONAL
}

IntraFreqEventCriteria-r4 ::= SEQUENCE {
    event IntraFreqEvent-r4,
    hysteresis Hysteresis,
    timeToTrigger TimeToTrigger,
    reportingCellStatus ReportingCellStatus OPTIONAL
}

IntraFreqEventCriteria-LCR-r4 ::= SEQUENCE {
    event IntraFreqEvent-LCR-r4,
    hysteresis Hysteresis,
    timeToTrigger TimeToTrigger,
    reportingCellStatus ReportingCellStatus OPTIONAL
}

IntraFreqEventCriteriaList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria

IntraFreqEventCriteriaList-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria-r4

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```

IntraFreqEventCriteriaList-LCR-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                       IntraFreqEventCriteria-LCR-r4

IntraFreqEventResults ::= SEQUENCE {
    eventID                               EventIDIntraFreq,
    cellMeasurementEventResults           CellMeasurementEventResults
}

IntraFreqMeasQuantity ::= SEQUENCE {
    filterCoefficient                     FilterCoefficient           DEFAULT fc0,
    modeSpecificInfo                       CHOICE {
        fdd                               SEQUENCE {
            intraFreqMeasQuantity-FDD     IntraFreqMeasQuantity-FDD
        },
        tdd                               SEQUENCE {
            intraFreqMeasQuantity-TDDList IntraFreqMeasQuantity-TDDList
        }
    }
}

-- If IntraFreqMeasQuantity-FDD is used in InterRATMeasQuantity, then only
-- cpich-Ec-N0 and cpich-RSCP are allowed.
-- If IntraFreqMeasQuantity-FDD is used in InterFreqMeasQuantity, then
-- ultra-CarrierRSSI is not allowed.
IntraFreqMeasQuantity-FDD ::= ENUMERATED {
    cpich-Ec-N0,
    cpich-RSCP,
    pathloss,
    ultra-CarrierRSSI }

-- If IntraFreqMeasQuantity-TDD is used in InterFreqMeasQuantity, then
-- ultra-CarrierRSSI is not allowed.
IntraFreqMeasQuantity-TDD ::= ENUMERATED {
    primaryCCPCH-RSCP,
    pathloss,
    timeslotISCP,
    ultra-CarrierRSSI }

IntraFreqMeasQuantity-TDDList ::= SEQUENCE (SIZE (1..4)) OF
                                    IntraFreqMeasQuantity-TDD

IntraFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                    CellMeasuredResults

IntraFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    intraFreqMeasurementID               MeasurementIdentity           DEFAULT 1,
    intraFreqCellInfoSI-List             IntraFreqCellInfoSI-List-RSCP OPTIONAL,
    intraFreqMeasQuantity                 IntraFreqMeasQuantity        OPTIONAL,
    intraFreqReportingQuantityForRACH     IntraFreqReportingQuantityForRACH OPTIONAL,
    maxReportedCellsOnRACH                MaxReportedCellsOnRACH       OPTIONAL,
    reportingInfoForCellDCH               ReportingInfoForCellDCH       OPTIONAL
}

IntraFreqMeasurementSysInfo-ECNO ::= SEQUENCE {
    intraFreqMeasurementID               MeasurementIdentity           DEFAULT 1,
    intraFreqCellInfoSI-List             IntraFreqCellInfoSI-List-ECNO OPTIONAL,
    intraFreqMeasQuantity                 IntraFreqMeasQuantity        OPTIONAL,
    intraFreqReportingQuantityForRACH     IntraFreqReportingQuantityForRACH OPTIONAL,
    maxReportedCellsOnRACH                MaxReportedCellsOnRACH       OPTIONAL,
    reportingInfoForCellDCH               ReportingInfoForCellDCH       OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    intraFreqMeasurementID               MeasurementIdentity           DEFAULT 1,
    intraFreqCellInfoSI-List             IntraFreqCellInfoSI-List-HCS-RSCP OPTIONAL,
    intraFreqMeasQuantity                 IntraFreqMeasQuantity        OPTIONAL,
    intraFreqReportingQuantityForRACH     IntraFreqReportingQuantityForRACH OPTIONAL,
    maxReportedCellsOnRACH                MaxReportedCellsOnRACH       OPTIONAL,
    reportingInfoForCellDCH               ReportingInfoForCellDCH       OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECNO ::= SEQUENCE {
    intraFreqMeasurementID               MeasurementIdentity           DEFAULT 1,
    intraFreqCellInfoSI-List             IntraFreqCellInfoSI-List-HCS-ECNO OPTIONAL,
    intraFreqMeasQuantity                 IntraFreqMeasQuantity        OPTIONAL,
    intraFreqReportingQuantityForRACH     IntraFreqReportingQuantityForRACH OPTIONAL,
    maxReportedCellsOnRACH                MaxReportedCellsOnRACH       OPTIONAL,
}

```

```

    reportingInfoForCellDCH          ReportingInfoForCellDCH          OPTIONAL
  }

IntraFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-RSCP-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity       OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH      OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-ECN0-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity       OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH      OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity       OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH      OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-ECN0-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity       OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH      OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqReportCriteria ::= CHOICE {
    intraFreqReportingCriteria      IntraFreqReportingCriteria,
    periodicalReportingCriteria     PeriodicalWithReportingCellStatus,
    noReporting                     ReportingCellStatusOpt
}

IntraFreqReportCriteria-r4 ::= CHOICE {
    intraFreqReportingCriteria-r4   IntraFreqReportingCriteria-r4,
    periodicalReportingCriteria     PeriodicalWithReportingCellStatus,
    noReporting                     ReportingCellStatusOpt
}

IntraFreqReportingCriteria ::= SEQUENCE {
    eventCriteriaList              IntraFreqEventCriteriaList  OPTIONAL
}

IntraFreqReportingCriteria-r4 ::= SEQUENCE {
    eventCriteriaList              IntraFreqEventCriteriaList-r4  OPTIONAL
}

IntraFreqReportingCriteria-LCR-r4 ::= SEQUENCE {
    eventCriteriaList              IntraFreqEventCriteriaList-LCR-r4  OPTIONAL
}

IntraFreqReportingQuantity ::= SEQUENCE {
    activeSetReportingQuantities    CellReportingQuantities,
    monitoredSetReportingQuantities CellReportingQuantities,
    detectedSetReportingQuantities  CellReportingQuantities      OPTIONAL
}

IntraFreqReportingQuantityForRACH ::= SEQUENCE {
    sfn-SFN-OTD-Type              SFN-SFN-OTD-Type,
    modeSpecificInfo              CHOICE {
        fdd                       SEQUENCE {
            intraFreqRepQuantityRACH-FDD  IntraFreqRepQuantityRACH-FDD
        },
        tdd                       SEQUENCE {
            intraFreqRepQuantityRACH-TDDList  IntraFreqRepQuantityRACH-TDDList
        }
    }
}

```

```

}
}
IntraFreqRepQuantityRACH-FDD ::= ENUMERATED {
    cpich-EcN0, cpich-RSCP,
    pathloss, noReport }

IntraFreqRepQuantityRACH-TDD ::= ENUMERATED {
    timeslotISCP,
    primaryCCPCH-RSCP,
    noReport }

IntraFreqRepQuantityRACH-TDDList ::= SEQUENCE (SIZE (1..2)) OF
    IntraFreqRepQuantityRACH-TDD

IntraFrequencyMeasurement ::= SEQUENCE {
    intraFreqCellInfoList          IntraFreqCellInfoList          OPTIONAL,
    intraFreqMeasQuantity          IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantity     IntraFreqReportingQuantity     OPTIONAL,
    measurementValidity            MeasurementValidity            OPTIONAL,
    reportCriteria                 IntraFreqReportCriteria        OPTIONAL
}

IntraFrequencyMeasurement-r4 ::= SEQUENCE {
    intraFreqCellInfoList-r4      IntraFreqCellInfoList-r4      OPTIONAL,
    intraFreqMeasQuantity         IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantity    IntraFreqReportingQuantity    OPTIONAL,
    measurementValidity          MeasurementValidity            OPTIONAL,
    reportCriteria-r4             IntraFreqReportCriteria-r4    OPTIONAL
}

IODE ::= INTEGER (0..255)

IP-Length ::= ENUMERATED {
    ip15, ip110 }

IP-PCCPCH-r4 ::= BOOLEAN

IP-Spacing ::= ENUMERATED {
    e5, e7, e10, e15, e20,
    e30, e40, e50 }

IP-Spacing-TDD ::= ENUMERATED {
    e30, e40, e50, e70, e100}

IS-2000SpecificMeasInfo ::= ENUMERATED {
    frequency, timeslot, colourcode,
    outputpower, pn-Offset }

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 }

MaxReportedCellsOnRACH ::= ENUMERATED {
    noReport,
    currentCell,
    currentAnd-1-BestNeighbour,
    currentAnd-2-BestNeighbour,
    currentAnd-3-BestNeighbour,
    currentAnd-4-BestNeighbour,
    currentAnd-5-BestNeighbour,
    currentAnd-6-BestNeighbour }

MeasuredResults ::= CHOICE {
    intraFreqMeasuredResultsList  IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList  InterFreqMeasuredResultsList,
    interRATMeasuredResultsList   InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList TrafficVolumeMeasuredResultsList,

```

```

    qualityMeasuredResults          QualityMeasuredResults,
    ue-InternalMeasuredResults      UE-InternalMeasuredResults,
    ue-positioning-MeasuredResults  UE-Positioning-MeasuredResults,
    spare                            NULL
}

MeasuredResults-v390ext ::=          SEQUENCE {
    ue-positioning-MeasuredResults-v390ext  UE-Positioning-MeasuredResults-v390ext
}

MeasuredResults-LCR-r4 ::=          CHOICE {
    intraFreqMeasuredResultsList      IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList      InterFreqMeasuredResultsList,
    interRATMeasuredResultsList       InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList  TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults            QualityMeasuredResults,
    ue-InternalMeasuredResults        UE-InternalMeasuredResults-LCR-r4,
    ue-positioning-MeasuredResults    UE-Positioning-MeasuredResults,
    spare                              NULL
}

MeasuredResultsList ::=              SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasuredResults

MeasuredResultsList-LCR-r4-ext ::=  SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasuredResults-LCR-r4

MeasuredResultsOnRACH ::=           SEQUENCE {
    currentCell                       SEQUENCE {
        modeSpecificInfo             CHOICE {
            fdd                       SEQUENCE {
                measurementQuantity   CHOICE {
                    cpich-Ec-N0       CPICH-Ec-N0,
                    cpich-RSCP        CPICH-RSCP,
                    pathloss           Pathloss,
                    spare              NULL
                }
            },
            tdd                       SEQUENCE {
                timeslotISCP           TimeslotISCP-List      OPTIONAL,
                primaryCCPCH-RSCP     PrimaryCCPCH-RSCP    OPTIONAL
            }
        },
        monitoredCells                MonitoredCellRACH-List    OPTIONAL
    }
}

MeasurementCommand ::=              CHOICE {
    setup                              MeasurementType,
    modify                              SEQUENCE {
        measurementType              MeasurementType      OPTIONAL
    },
    release                             NULL
}

MeasurementCommand-r4 ::=           CHOICE {
    setup                              MeasurementType-r4,
    modify                              SEQUENCE {
        measurementType              MeasurementType-r4  OPTIONAL
    },
    release                             NULL
}

MeasurementControlSysInfo ::=       SEQUENCE {
    use-of-HCS                         CHOICE {
        hcs-not-used                  SEQUENCE {
            cellSelectQualityMeasure  CHOICE {
                cpich-RSCP            SEQUENCE {
                    intraFreqMeasurementSysInfo  IntraFreqMeasurementSysInfo-RSCP
                }
            },
            cpich-Ec-N0               SEQUENCE {
                intraFreqMeasurementSysInfo  IntraFreqMeasurementSysInfo-ECNO
            }
        },
        interFreqMeasurementSysInfo  InterFreqMeasurementSysInfo-RSCP    OPTIONAL
    },
    interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-ECNO    OPTIONAL
}

```

```

        interRATMeasurementSysInfo      InterRATMeasurementSysInfo-B      OPTIONAL
    },
    hcs-used                             SEQUENCE      {
        cellSelectQualityMeasure        CHOICE      {
            cpich-RSCP                   SEQUENCE      {
                intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-HCS-RSCP
            }
        }
    } OPTIONAL,
        interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-HCS-RSCP
    } OPTIONAL
    },
        cpich-Ec-N0                       SEQUENCE      {
            intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-HCS-ECN0
        }
    } OPTIONAL,
        interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-HCS-ECN0
    } OPTIONAL
    },
    interRATMeasurementSysInfo      InterRATMeasurementSysInfo      OPTIONAL
},
},
trafficVolumeMeasSysInfo          TrafficVolumeMeasSysInfo          OPTIONAL,
ue-InternalMeasurementSysInfo      UE-InternalMeasurementSysInfo      OPTIONAL
}

MeasurementControlSysInfo-LCR-r4-ext ::= SEQUENCE {
-- CHOICE use-of-HCS shall have the same value as the use-of-HCS
-- in MeasurementControlSysInfo
use-of-HCS                          CHOICE      {
    hcs-not-used                       SEQUENCE      {
        -- CHOICE cellSelectQualityMeasure shall have the same value as the
        -- cellSelectQualityMeasure in MeasurementControlSysInfo
        cellSelectQualityMeasure        CHOICE      {
            cpich-RSCP                   SEQUENCE      {
                intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL,
                interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL
            },
            cpich-Ec-N0                   SEQUENCE      {
                intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL,
                interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL
            }
        }
    }
},
    hcs-used                             SEQUENCE      {
        -- CHOICE cellSelectQualityMeasure shall have the same value as the
        -- cellSelectQualityMeasure in MeasurementControlSysInfo
        cellSelectQualityMeasure        CHOICE      {
            cpich-RSCP                   SEQUENCE      {
                intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4
            }
        }
    } OPTIONAL,
        interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 OPTIONAL
    },
        cpich-Ec-N0                       SEQUENCE      {
            intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-HCS-ECN0-LCR-r4
        }
    } OPTIONAL,
        interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 OPTIONAL
    }
},
}
}

MeasurementIdentity ::= INTEGER (1..16)

MeasurementQuantityGSM ::= ENUMERATED {
    gsm-CarrierRSSI,
    dummy }

MeasurementReportingMode ::= SEQUENCE {
    measurementReportTransferMode      TransferMode,
    periodicalOrEventTrigger           PeriodicalOrEventTrigger
}

MeasurementType ::= CHOICE {
    intraFrequencyMeasurement          IntraFrequencyMeasurement,
    interFrequencyMeasurement          InterFrequencyMeasurement,
    interRATMeasurement                InterRATMeasurement,
    ue-positioning-Measurement          UE-Positioning-Measurement,
    trafficVolumeMeasurement           TrafficVolumeMeasurement,
}

```



```

    qualityMeasurement          QualityMeasurement,
    ue-InternalMeasurement      UE-InternalMeasurement
}

MeasurementType-r4 ::=
    intraFrequencyMeasurement   IntraFrequencyMeasurement-r4,
    interFrequencyMeasurement   InterFrequencyMeasurement-r4,
    interRATMeasurement         InterRATMeasurement-r4,
    up-Measurement              UE-Positioning-Measurement-r4,
    trafficVolumeMeasurement    TrafficVolumeMeasurement,
    qualityMeasurement          QualityMeasurement,
    ue-InternalMeasurement      UE-InternalMeasurement-r4
}

MeasurementValidity ::=
    ue-State
}

MonitoredCellRACH-List ::=
    SEQUENCE (SIZE (1..8)) OF
        MonitoredCellRACH-Result

MonitoredCellRACH-Result ::=
    sfn-SFN-ObsTimeDifference   SFN-SFN-ObsTimeDifference           OPTIONAL,
    modeSpecificInfo           CHOICE {
        fdd                     SEQUENCE {
            primaryCPICH-Info    PrimaryCPICH-Info,
            measurementQuantity  CHOICE {
                cpich-Ec-NO      CPICH-Ec-NO,
                cpich-RSCP       CPICH-RSCP,
                pathloss         Pathloss,
                spare            NULL
            }
        },
        tdd                     SEQUENCE {
            cellParametersID     CellParametersID,
            primaryCCPCH-RSCP    PrimaryCCPCH-RSCP
        }
    }
}

MultipathIndicator ::=
    ENUMERATED {
        nm,
        low,
        medium,
        high
    }

N-CR-T-CRMaxHyst ::=
    n-CR                        INTEGER (1..16)                DEFAULT 8,
    t-CRMaxHyst                 T-CRMaxHyst
}

NavigationModelSatInfo ::=
    satID                       SatID,
    satelliteStatus             SatelliteStatus,
    ephemerisParameter         EphemerisParameter           OPTIONAL
}

NavigationModelSatInfoList ::=
    SEQUENCE (SIZE (1..maxSat)) OF
        NavigationModelSatInfo

EphemerisParameter ::=
    codeOnL2                    BIT STRING (SIZE (2)),
    uraIndex                    BIT STRING (SIZE (4)),
    satHealth                   BIT STRING (SIZE (6)),
    iodc                        BIT STRING (SIZE (10)),
    l2Pflag                     BIT STRING (SIZE (1)),
    sflRevd                     SubFrame1Reserved,
    t-GD                        BIT STRING (SIZE (8)),
    t-oc                        BIT STRING (SIZE (16)),
    af2                         BIT STRING (SIZE (8)),
    af1                         BIT STRING (SIZE (16)),
    af0                         BIT STRING (SIZE (22)),
    c-rs                        BIT STRING (SIZE (16)),
    delta-n                     BIT STRING (SIZE (16)),
    m0                         BIT STRING (SIZE (32)),
    c-uc                        BIT STRING (SIZE (16)),
    e                          BIT STRING (SIZE (32)),

```

```

c-us BIT STRING (SIZE (16)),
a-Sqrt BIT STRING (SIZE (32)),
t-oe BIT STRING (SIZE (16)),
fitInterval BIT STRING (SIZE (1)),
aodo BIT STRING (SIZE (5)),
c-ic BIT STRING (SIZE (16)),
omega0 BIT STRING (SIZE (32)),
c-is BIT STRING (SIZE (16)),
i0 BIT STRING (SIZE (32)),
c-rc BIT STRING (SIZE (16)),
omega BIT STRING (SIZE (32)),
omegaDot BIT STRING (SIZE (24)),
iDot BIT STRING (SIZE (14))
}
NC-Mode ::= BIT STRING (SIZE (3))

Neighbour ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      neighbourIdentity PrimaryCPICH-Info OPTIONAL,
      ue-RX-TX-TimeDifferenceType2Info UE-RX-TX-TimeDifferenceType2Info OPTIONAL
    },
    tdd SEQUENCE {
      neighbourAndChannelIdentity CellAndChannelIdentity OPTIONAL
    }
  },
  neighbourQuality NeighbourQuality,
  sfm-SFN-ObsTimeDifference2 SFM-SFN-ObsTimeDifference2}

Neighbour-v390ext ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      frequencyInfo FrequencyInfo
    },
    tdd NULL
  }
}

NeighbourList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  Neighbour

-- The order of the cells in IE NeighbourList-v390ext shall be the
-- same as the order in IE NeighbourList
NeighbourList-v390ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  Neighbour-v390ext

NeighbourQuality ::= SEQUENCE {
  ue-Positioning-OTDOA-Quality UE-Positioning-OTDOA-Quality
}

NewInterFreqCell ::= SEQUENCE {
  interFreqCellID InterFreqCellID OPTIONAL,
  frequencyInfo FrequencyInfo OPTIONAL,
  cellInfo CellInfo
}

NewInterFreqCell-r4 ::= SEQUENCE {
  interFreqCellID InterFreqCellID OPTIONAL,
  frequencyInfo FrequencyInfo OPTIONAL,
  cellInfo-r4 CellInfo-r4
}

NewInterFreqCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  NewInterFreqCell

NewInterFreqCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  NewInterFreqCell-r4

NewInterFreqCellSI-RSCP ::= SEQUENCE {
  interFreqCellID InterFreqCellID OPTIONAL,
  frequencyInfo FrequencyInfo OPTIONAL,
  cellInfo CellInfoSI-RSCP
}

NewInterFreqCellSI-ECN0 ::= SEQUENCE {
  interFreqCellID InterFreqCellID OPTIONAL,
  frequencyInfo FrequencyInfo OPTIONAL,
  cellInfo CellInfoSI-ECN0
}

```

```

}

NewInterFreqCellSI-HCS-RSCP ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCellSI-HCS-ECN0 ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCellSI-RSCP-LCR-r4 ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCellSI-ECN0-LCR-r4 ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCellSI-HCS-RSCP-LCR-r4 ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCellSI-HCS-ECN0-LCR-r4 ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCellSI-List-ECN0 ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-ECN0

NewInterFreqCellSI-List-HCS-RSCP ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-RSCP

NewInterFreqCellSI-List-HCS-ECN0 ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-ECN0

NewInterFreqCellSI-List-RSCP ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-RSCP

NewInterFreqCellSI-List-ECN0-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-ECN0-LCR-r4

NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-RSCP-LCR-r4

NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-ECN0-LCR-r4

NewInterFreqCellSI-List-RSCP-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-RSCP-LCR-r4

NewInterRATCell ::=
    interRATCellID
    technologySpecificInfo
    gsm
        cellSelectionReselectionInfo
        interRATCellIndividualOffset
        bsic
        frequency-band
        bcch-ARFCN
        -- dummy is not used in this version of the specification, it should
        -- not be sent and if received it should be ignored.
        dummy
    },
    is-2000
        is-2000SpecificMeasInfo
    },
    SEQUENCE {
        InterRATCellID
        CHOICE {
            SEQUENCE {
                CellSelectReselectInfoSIB-11-12
                InterRATCellIndividualOffset,
                BSIC,
                Frequency-Band,
                BCCH-ARFCN,
                NULL
            }
        }
    }
}

```

```

-- ASN.1 inconsistency: NewInterRATCellList should be optional within
-- InterRATCellInfoList. The UE shall consider IE NewInterRATCell with
-- technologySpecificInfo set to "none" as valid and handle the
-- message as if the IE NewInterRATCell was absent
none                NULL,
spare1              NULL
}
}

NewInterRATCell-r4 ::=          SEQUENCE {
    interRATCellID          InterRATCellID          OPTIONAL,
    technologySpecificInfo  CHOICE {
        gsm                 SEQUENCE {
            cellSelectionReselectionInfo  CellSelectReselectInfoSIB-11-12  OPTIONAL,
            interRATCellIndividualOffset  InterRATCellIndividualOffset,
            bsic                   BSIC,
            frequency-band         Frequency-Band,
            bcch-ARFCN             BCCH-ARFCN
        },
        is-2000                SEQUENCE {
            is-2000SpecificMeasInfo      IS-2000SpecificMeasInfo
        },
        spare1                  NULL
    }
}

NewInterRATCell-B ::=          SEQUENCE {
    interRATCellID          InterRATCellID          OPTIONAL,
    technologySpecificInfo  CHOICE {
        gsm                 SEQUENCE {
            cellSelectionReselectionInfo  CellSelectReselectInfoSIB-11-12  OPTIONAL,
            interRATCellIndividualOffset  InterRATCellIndividualOffset,
            bsic                   BSIC,
            frequency-band         Frequency-Band,
            bcch-ARFCN             BCCH-ARFCN,
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
            dummy                NULL                OPTIONAL
        },
        is-2000                SEQUENCE {
            is-2000SpecificMeasInfo      IS-2000SpecificMeasInfo
        },
        -- ASN.1 inconsistency: NewInterRATCellList-B should be optional within
        -- InterRATCellInfoList-B. The UE shall consider IE NewInterRATCell-B with
        -- technologySpecificInfo set to "none" as valid and handle the
        -- message as if the IE NewInterRATCell-B was absent
        none                    NULL,
        spare1                  NULL
    }
}

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

NewInterRATCellList-r4 ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterRATCell-r4

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

NewIntraFreqCell ::=          SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfo
}

NewIntraFreqCell-r4 ::=          SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfo-r4
}

NewIntraFreqCellList ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCell

NewIntraFreqCellList-r4 ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCell-r4

NewIntraFreqCellSI-RSCP ::=          SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,

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    cellInfo                CellInfoSI-RSCP
}

NewIntraFreqCellSI-ECN0 ::= SEQUENCE {
    intraFreqCellID        IntraFreqCellID        OPTIONAL,
    cellInfo                CellInfoSI-ECN0
}

NewIntraFreqCellSI-HCS-RSCP ::= SEQUENCE {
    intraFreqCellID        IntraFreqCellID        OPTIONAL,
    cellInfo                CellInfoSI-HCS-RSCP
}

NewIntraFreqCellSI-HCS-ECN0 ::= SEQUENCE {
    intraFreqCellID        IntraFreqCellID        OPTIONAL,
    cellInfo                CellInfoSI-HCS-ECN0
}

NewIntraFreqCellSI-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqCellID        IntraFreqCellID        OPTIONAL,
    cellInfo                CellInfoSI-RSCP-LCR-r4
}

NewIntraFreqCellSI-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqCellID        IntraFreqCellID        OPTIONAL,
    cellInfo                CellInfoSI-ECN0-LCR-r4
}

NewIntraFreqCellSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqCellID        IntraFreqCellID        OPTIONAL,
    cellInfo                CellInfoSI-HCS-RSCP-LCR-r4
}

NewIntraFreqCellSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqCellID        IntraFreqCellID        OPTIONAL,
    cellInfo                CellInfoSI-HCS-ECN0-LCR-r4
}

NewIntraFreqCellSI-List-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-RSCP

NewIntraFreqCellSI-List-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-ECN0

NewIntraFreqCellSI-List-HCS-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-RSCP

NewIntraFreqCellSI-List-HCS-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-ECN0

NewIntraFreqCellSI-List-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-RSCP-LCR-r4

NewIntraFreqCellSI-List-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-ECN0-LCR-r4

NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-RSCP-LCR-r4

NewIntraFreqCellSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-ECN0-LCR-r4

-- 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"
NonUsedFreqParameter ::= SEQUENCE {
    nonUsedFreqThreshold    Threshold,
    nonUsedFreqW            W
}

NonUsedFreqParameterList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    NonUsedFreqParameter

ObservedTimeDifferenceToGSM ::= INTEGER (0..4095)

OTDOA-SearchWindowSize ::= ENUMERATED {
    c20, c40, c80, c160, c320,

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c640, c1280, moreThan1280 }

-- SPARE: Pathloss, Max = 158
-- Values above Max are spare
Pathloss ::= INTEGER (46..173)

PenaltyTime-RSCP ::= CHOICE {
    notUsed
    pt10
    pt20
    pt30
    pt40
    pt50
    pt60
}

PenaltyTime-ECNO ::= CHOICE {
    notUsed
    pt10
    pt20
    pt30
    pt40
    pt50
    pt60
}

PendingTimeAfterTrigger ::= ENUMERATED {
    ptat0-25, ptat0-5, ptat1,
    ptat2, ptat4, ptat8, ptat16 }

PeriodicalOrEventTrigger ::= ENUMERATED {
    periodical,
    eventTrigger }

PeriodicalReportingCriteria ::= SEQUENCE {
    reportingAmount
    reportingInterval
}
                                DEFAULT ra-Infinity,

PeriodicalWithReportingCellStatus ::= SEQUENCE {
    periodicalReportingCriteria
    reportingCellStatus
}
                                OPTIONAL

PLMNIdentitiesOfNeighbourCells ::= SEQUENCE {
    plmnsOfIntraFreqCellsList
    plmnsOfInterFreqCellsList
    plmnsOfInterRATCellsList
}
                                OPTIONAL,
                                OPTIONAL,
                                OPTIONAL

PLMNsOfInterFreqCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity
    }
                                OPTIONAL

PLMNsOfIntraFreqCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity
    }
                                OPTIONAL

PLMNsOfInterRATCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity
    }
                                OPTIONAL

PositionEstimate ::= CHOICE {
    ellipsoidPoint
    ellipsoidPointUncertCircle
    ellipsoidPointUncertEllipse
    ellipsoidPointAltitude
    ellipsoidPointAltitudeEllipse
}

PositioningMethod ::= ENUMERATED {
    otdoa,
    gps,
    otdoaOrGPS, cellID }

```

```

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

-- SPARE: PrimaryCCPCH-RSCP, Max = 91
-- Values above Max are spare
PrimaryCCPCH-RSCP ::=
    INTEGER (0..127)

Q-HCS ::=
    INTEGER (0..99)

Q-OffsetS-N ::=
    INTEGER (-50..50)

Q-QualMin ::=
    INTEGER (-24..0)

-- Actual value Q-RxlevMin = (IE value * 2) + 1
Q-RxlevMin ::=
    INTEGER (-58..-13)

QualityEventResults ::=
    SEQUENCE (SIZE (1..maxTrCH)) OF
        TransportChannelIdentity

QualityMeasuredResults ::=
    SEQUENCE {
        blerMeasurementResultsList    BLER-MeasurementResultsList    OPTIONAL,
        modeSpecificInfo              CHOICE {
            fdd                       NULL,
            tdd                       SEQUENCE {
                sir-MeasurementResults    SIR-MeasurementList    OPTIONAL
            }
        }
    }

QualityMeasurement ::=
    SEQUENCE {
        qualityReportingQuantity      QualityReportingQuantity      OPTIONAL,
        reportCriteria                QualityReportCriteria
    }

QualityReportCriteria ::=
    CHOICE {
        qualityReportingCriteria      QualityReportingCriteria,
        periodicalReportingCriteria  PeriodicalReportingCriteria,
        noReporting                   NULL
    }

QualityReportingCriteria ::=
    SEQUENCE (SIZE (1..maxTrCH)) OF
        QualityReportingCriteriaSingle

QualityReportingCriteriaSingle ::=
    SEQUENCE {
        transportChannelIdentity      TransportChannelIdentity,
        totalCRC                      INTEGER (1..512),
        badCRC                        INTEGER (1..512),
        pendingAfterTrigger           INTEGER (1..512)
    }

QualityReportingQuantity ::=
    SEQUENCE {
        dl-TransChBLER                BOOLEAN,
        bler-dl-TransChIdList         BLER-TransChIdList          OPTIONAL,
        modeSpecificInfo              CHOICE {
            fdd                       NULL,
            tdd                       SEQUENCE {
                sir-TFCS-List         SIR-TFCS-List          OPTIONAL
            }
        }
    }

RAT-Type ::=
    ENUMERATED {
        gsm, is2000 }

ReferenceCellPosition ::=
    CHOICE {
        ellipsoidPoint               EllipsoidPoint,
        ellipsoidPointWithAltitude   EllipsoidPointAltitude
    }

-- ReferenceLocation, as defined in 23.032
ReferenceLocation ::=
    SEQUENCE {
        ellipsoidPointAltitudeEllipsoide    EllipsoidPointAltitudeEllipsoide
    }

ReferenceSFN ::=
    INTEGER (0..4095)

ReferenceTimeDifferenceToCell ::=
    CHOICE {
        -- Actual value accuracy40 = IE value * 40
    }

```

```

accuracy40                INTEGER (0..960),
-- Actual value accuracy256 = IE value * 256
accuracy256                INTEGER (0..150),
-- Actual value accuracy2560 = IE value * 2560
accuracy2560               INTEGER (0..15)
}

RemovedInterFreqCellList ::= CHOICE {
  removeAllInterFreqCells  NULL,
  removeSomeInterFreqCells SEQUENCE (SIZE (1..maxCellMeas)) OF
                           InterFreqCellID,
  removeNoInterFreqCells  NULL
}

RemovedInterRATCellList ::= CHOICE {
  removeAllInterRATCells  NULL,
  removeSomeInterRATCells SEQUENCE (SIZE (1..maxCellMeas)) OF
                           InterRATCellID,
  removeNoInterRATCells  NULL
}

RemovedIntraFreqCellList ::= CHOICE {
  removeAllIntraFreqCells  NULL,
  removeSomeIntraFreqCells SEQUENCE (SIZE (1..maxCellMeas)) OF
                           IntraFreqCellID,
  removeNoIntraFreqCells  NULL
}

ReplacementActivationThreshold ::= ENUMERATED {
  notApplicable, t1, t2,
  t3, t4, t5, t6, t7 }

ReportDeactivationThreshold ::= ENUMERATED {
  notApplicable, t1, t2,
  t3, t4, t5, t6, t7 }

ReportingAmount ::= ENUMERATED {
  ra1, ra2, ra4, ra8, ra16, ra32,
  ra64, ra-Infinity }

ReportingCellStatus ::= CHOICE{
  withinActiveSet                MaxNumberOfReportingCellsType1,
  withinMonitoredSetUsedFreq     MaxNumberOfReportingCellsType1,
  withinActiveAndOrMonitoredUsedFreq MaxNumberOfReportingCellsType1,
  withinDetectedSetUsedFreq     MaxNumberOfReportingCellsType1,
  withinMonitoredAndOrDetectedUsedFreq MaxNumberOfReportingCellsType1,

  allActiveplusMonitoredSet      MaxNumberOfReportingCellsType3,
  allActivePlusDetectedSet       MaxNumberOfReportingCellsType3,
  allActivePlusMonitoredAndOrDetectedSet
                                  MaxNumberOfReportingCellsType3,
  withinVirtualActSet            MaxNumberOfReportingCellsType1,
  withinMonitoredSetNonUsedFreq  MaxNumberOfReportingCellsType1,
  withinMonitoredAndOrVirtualActiveSetNonUsedFreq
                                  MaxNumberOfReportingCellsType1,
  allVirtualActSetplusMonitoredSetNonUsedFreq
                                  MaxNumberOfReportingCellsType3,
  withinActSetOrVirtualActSet-InterRATcells
                                  MaxNumberOfReportingCellsType2,
  withinActSetAndOrMonitoredUsedFreqOrVirtualActSetAndOrMonitoredNonUsedFreq
                                  MaxNumberOfReportingCellsType2
}

ReportingCellStatusOpt ::= SEQUENCE {
  reportingCellStatus           ReportingCellStatus           OPTIONAL
}

ReportingInfoForCellDCH ::= SEQUENCE {
  intraFreqReportingQuantity    IntraFreqReportingQuantity,
  measurementReportingMode      MeasurementReportingMode,
  reportCriteria                CellDCH-ReportCriteria
}

ReportingInfoForCellDCH-LCR-r4 ::= SEQUENCE {
  intraFreqReportingQuantity    IntraFreqReportingQuantity,
  measurementReportingMode      MeasurementReportingMode,
  reportCriteria                CellDCH-ReportCriteria-LCR-r4
}

```



```

}

ReportingInterval ::=
    ENUMERATED {
        noPeriodicalreporting, ri0-25,
        ri0-5, ril, ri2, ri4, ri8, ril6 }

ReportingIntervalLong ::=
    ENUMERATED {
        ril0, ril0-25, ril0-5, ril1,
        ril2, ril3, ril4, ril6, ril8,
        ril12, ril16, ril20, ril24,
        ril28, ril32, ril64 }

-- Actual value ReportingRange = IE value * 0.5
ReportingRange ::=
    INTEGER (0..29)

RL-AdditionInfoList ::=
    SEQUENCE (SIZE (1..maxRL)) OF
        PrimaryCPICH-Info

RL-InformationLists ::=
    SEQUENCE {
        rl-AdditionInfoList          RL-AdditionInfoList          OPTIONAL,
        rl-RemovalInformationList    RL-RemovalInformationList    OPTIONAL
    }

RLC-BuffersPayload ::=
    ENUMERATED {
        pl0, pl4, pl8, pl16, pl32,
        pl64, pl128, pl256, pl512, pl1024,
        pl2k, pl4k, pl8k, pl16k, pl32k,
        pl64k, pl128k, pl256k, pl512k, pl1024k,
        spare12, spare11, spare10, spare9, spare8,
        spare7, spare6, spare5, spare4, spare3,
        spare2, spare1 }

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

SatData ::=
    SEQUENCE{
        satID          SatID,
        iode           IODE
    }

SatDataList ::=
    SEQUENCE (SIZE (0..maxSat)) OF
        SatData

SatelliteStatus ::=
    ENUMERATED {
        ns-NN-U,
        es-SN,
        es-NN-U,
        rev2,
        rev }

SatID ::=
    INTEGER (0..63)

SFN-Offset-Validity ::=
    ENUMERATED { false }

SFN-SFN-Drift ::=
    ENUMERATED {
        sfnsfndrift0, sfnsfndrift1, sfnsfndrift2,
        sfnsfndrift3, sfnsfndrift4, sfnsfndrift5,
        sfnsfndrift8, sfnsfndrift10, sfnsfndrift15,
        sfnsfndrift25, sfnsfndrift35, sfnsfndrift50,
        sfnsfndrift65, sfnsfndrift80, sfnsfndrift100,
        sfnsfndrift-1, sfnsfndrift-2, sfnsfndrift-3,
        sfnsfndrift-4, sfnsfndrift-5, sfnsfndrift-8,
        sfnsfndrift-10, sfnsfndrift-15, sfnsfndrift-25,
        sfnsfndrift-35, sfnsfndrift-50, sfnsfndrift-65,
        sfnsfndrift-80, sfnsfndrift-100}

SFN-SFN-ObsTimeDifference ::=
    CHOICE {
        type1          SFN-SFN-ObsTimeDifference1,
        type2          SFN-SFN-ObsTimeDifference2
    }

-- SPARE: SFN-SFN-ObsTimeDifference1, Max = 9830399
-- Values above Max are spare
SFN-SFN-ObsTimeDifference1 ::=
    INTEGER (0..16777215)

-- SPARE: SFN-SFN-ObsTimeDifference2, Max = 40961
-- Values above Max are spare
SFN-SFN-ObsTimeDifference2 ::=
    INTEGER (0..65535)

```

```

SFN-SFN-OTD-Type ::=
    ENUMERATED {
        noReport,
        type1,
        type2 }

SFN-SFN-RelTimeDifference1 ::=
    sfm-Offset
    sfm-sfm-Reltimedifference
    SEQUENCE {
        INTEGER (0 .. 4095),
        INTEGER (0.. 38399)
    }

SFN-TOW-Uncertainty ::=
    ENUMERATED {
        lessThan10,
        moreThan10 }

SIR ::=
    INTEGER (0..63)

SIR-MeasurementList ::=
    SEQUENCE (SIZE (1..maxCCTrCH)) OF
        SIR-MeasurementResults

SIR-MeasurementResults ::=
    tfcs-ID
    sir-TimeslotList
    SEQUENCE {
        TFCS-IdentityPlain,
        SIR-TimeslotList
    }

SIR-TFCS ::=
    TFCS-IdentityPlain

SIR-TFCS-List ::=
    SEQUENCE (SIZE (1..maxCCTrCH)) OF
        SIR-TFCS

SIR-TimeslotList ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        SIR

-- SubFrame1Reserved, reserved bits in subframe 1 of the GPS navigation message
SubFrame1Reserved ::=
    reserved1
    reserved2
    reserved3
    reserved4
    SEQUENCE {
        BIT STRING (SIZE (23)),
        BIT STRING (SIZE (24)),
        BIT STRING (SIZE (24)),
        BIT STRING (SIZE (16))
    }

T-ADVinfo ::=
    t-ADV
    sfm
    SEQUENCE {
        INTEGER(0..2047),
        INTEGER(0..4095)
    }

T-CRMax ::=
    notUsed
    t30
    t60
    t120
    t180
    t240
    CHOICE {
        NULL,
        N-CR-T-CRMaxHyst,
        N-CR-T-CRMaxHyst,
        N-CR-T-CRMaxHyst,
        N-CR-T-CRMaxHyst,
        N-CR-T-CRMaxHyst
    }

T-CRMaxHyst ::=
    ENUMERATED {
        notUsed, t10, t20, t30,
        t40, t50, t60, t70 }

TemporaryOffset1 ::=
    ENUMERATED {
        to3, to6, to9, to12, to15,
        to18, to21, infinite }

TemporaryOffset2 ::=
    ENUMERATED {
        to2, to3, to4, to6, to8,
        to10, to12, infinite }

TemporaryOffsetList ::=
    temporaryOffset1
    temporaryOffset2
    SEQUENCE {
        TemporaryOffset1,
        TemporaryOffset2
    }

Threshold ::=
    INTEGER (-115..0)

ThresholdPositionChange ::=
    ENUMERATED {

```

```

        pc10, pc20, pc30, pc40, pc50,
        pc100, pc200, pc300, pc500,
        pc1000, pc2000, pc5000, pc10000,
        pc20000, pc50000, pc100000 }

ThresholdSFN-GPS-TOW ::=          ENUMERATED {
        ms1, ms2, ms3, ms5, ms10,
        ms20, ms50, ms100 }

ThresholdSFN-SFN-Change ::=      ENUMERATED {
        c0-25, c0-5, c1, c2, c3, c4, c5,
        c10, c20, c50, c100, c200, c500,
        c1000, c2000, c5000 }

ThresholdUsedFrequency ::=        INTEGER (-115..165)

-- Actual value TimeInterval = IE value * 20.
TimeInterval ::=                  INTEGER (1..13)

TimeslotInfo ::=                  SEQUENCE {
        timeslotNumber
        burstType
}

TimeslotInfo-LCR-r4 ::=           SEQUENCE {
        timeslotNumber
        TimeslotNumber-LCR-r4
}

TimeslotInfoList ::=              SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotInfo

TimeslotInfoList-LCR-r4 ::=       SEQUENCE (SIZE (1..maxTS-LCR)) OF
        TimeslotInfo-LCR-r4

TimeslotInfoList-r4 ::=           CHOICE {
        tdd384
            SEQUENCE (SIZE (1..maxTS)) OF
                TimeslotInfo,
        tdd128
            SEQUENCE (SIZE (1..maxTS-LCR)) OF
                TimeslotInfo-LCR-r4
}

-- SPARE: TimeslotISCP, Max = 91
-- Values above Max are spare
TimeslotISCP ::=                  INTEGER (0..127)

-- TimeslotISCP-List shall not include more than 6 elements in 1.28Mcps TDD mode.
TimeslotISCP-List ::=             SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotISCP

TimeslotListWithISCP ::=          SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotWithISCP

TimeslotWithISCP ::=              SEQUENCE {
        timeslot
        timeslotISCP
}

TimeToTrigger ::=                 ENUMERATED {
        ttt0, ttt10, ttt20, ttt40, ttt60,
        ttt80, ttt100, ttt120, ttt160,
        ttt200, ttt240, tt320, ttt640,
        ttt1280, ttt2560, ttt5000 }

TrafficVolumeEventParam ::=       SEQUENCE {
        eventID
        reportingThreshold
        timeToTrigger
        pendingTimeAfterTrigger
        tx-InterruptionAfterTrigger
}
        TrafficVolumeEventType,
        TrafficVolumeThreshold,
        TimeToTrigger
        PendingTimeAfterTrigger
        TX-InterruptionAfterTrigger
        OPTIONAL,
        OPTIONAL,
        OPTIONAL

TrafficVolumeEventResults ::=      SEQUENCE {
        ul-transportChannelCausingEvent
        trafficVolumeEventIdentity
}
        UL-TrCH-Identity,
        TrafficVolumeEventType

```

```

TrafficVolumeEventType ::=          ENUMERATED {
                                        e4a,
                                        e4b }

TrafficVolumeMeasQuantity ::=        CHOICE {
    rlc-BufferPayload                NULL,
    averageRLC-BufferPayload          TimeInterval,
    varianceOfRLC-BufferPayload       TimeInterval
}

TrafficVolumeMeasSysInfo ::=         SEQUENCE {
    trafficVolumeMeasurementID        MeasurementIdentity          DEFAULT 4,
    trafficVolumeMeasurementObjectList TrafficVolumeMeasurementObjectList OPTIONAL,
    trafficVolumeMeasQuantity         TrafficVolumeMeasQuantity     OPTIONAL,
    trafficVolumeReportingQuantity     TrafficVolumeReportingQuantity OPTIONAL,
    -- dummy is not used in this version of specification, it should
    -- not be sent and if received it should be ignored.
    dummy                             TrafficVolumeReportingCriteria OPTIONAL,
    measurementValidity               MeasurementValidity          OPTIONAL,
    measurementReportingMode          MeasurementReportingMode,
    reportCriteriaSysInf              TrafficVolumeReportCriteriaSysInfo
}

TrafficVolumeMeasuredResults ::=     SEQUENCE {
    rb-Identity                       RB-Identity,
    rlc-BuffersPayload                RLC-BuffersPayload          OPTIONAL,
    averageRLC-BufferPayload           AverageRLC-BufferPayload     OPTIONAL,
    varianceOfRLC-BufferPayload        VarianceOfRLC-BufferPayload  OPTIONAL
}

TrafficVolumeMeasuredResultsList ::= SEQUENCE (SIZE (1..maxRB)) OF
    TrafficVolumeMeasuredResults

TrafficVolumeMeasurement ::=         SEQUENCE {
    trafficVolumeMeasurementObjectList TrafficVolumeMeasurementObjectList OPTIONAL,
    trafficVolumeMeasQuantity         TrafficVolumeMeasQuantity     OPTIONAL,
    trafficVolumeReportingQuantity     TrafficVolumeReportingQuantity OPTIONAL,
    measurementValidity               MeasurementValidity          OPTIONAL,
    reportCriteria                    TrafficVolumeReportCriteria
}

TrafficVolumeMeasurementObjectList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    UL-TrCH-Identity

TrafficVolumeReportCriteria ::=      CHOICE {
    trafficVolumeReportingCriteria     TrafficVolumeReportingCriteria,
    periodicalReportingCriteria        PeriodicalReportingCriteria,
    noReporting                        NULL
}

TrafficVolumeReportCriteriaSysInfo ::= CHOICE {
    trafficVolumeReportingCriteria     TrafficVolumeReportingCriteria,
    periodicalReportingCriteria        PeriodicalReportingCriteria
}

TrafficVolumeReportingCriteria ::=   SEQUENCE {
    -- NOTE: transChCriteriaList should be mandatory in later versions of this message
    transChCriteriaList                TransChCriteriaList          OPTIONAL
}

TrafficVolumeReportingQuantity ::=   SEQUENCE {
    rlc-RB-BufferPayload               BOOLEAN,
    rlc-RB-BufferPayloadAverage        BOOLEAN,
    rlc-RB-BufferPayloadVariance       BOOLEAN
}

TrafficVolumeThreshold ::=           ENUMERATED {
    th8, th16, th32, th64, th128,
    th256, th512, th1024, th2k, th3k,
    th4k, th6k, th8k, th12k, th16k,
    th24k, th32k, th48k, th64k, th96k,
    th128k, th192k, th256k, th384k,
    th512k, th768k }

TransChCriteria ::=                  SEQUENCE {
    ul-transportChannelID              UL-TrCH-Identity            OPTIONAL,

```

```

eventSpecificParameters
}

TransChCriteriaList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
                        TrafficVolumeEventParam OPTIONAL

TransferMode ::= ENUMERATED {
                    acknowledgedModeRLC,
                    unacknowledgedModeRLC }

TransmittedPowerThreshold ::= INTEGER (-50..33)

TriggeringCondition1 ::= ENUMERATED {
                            activeSetCellsOnly,
                            monitoredSetCellsOnly,
                            activeSetAndMonitoredSetCells }

TriggeringCondition2 ::= ENUMERATED {
                            activeSetCellsOnly,
                            monitoredSetCellsOnly,
                            activeSetAndMonitoredSetCells,
                            detectedSetCellsOnly,
                            detectedSetAndMonitoredSetCells }

TX-InterruptionAfterTrigger ::= ENUMERATED {
                                txiat0-25, txiat0-5, txiat1,
                                txiat2, txiat4, txiat8, txiat16 }

UDRE ::= ENUMERATED {
            lessThan1,
            between1-and-4,
            between4-and-8,
            over8 }

UE-6AB-Event ::= SEQUENCE {
    timeToTrigger      TimeToTrigger,
    transmittedPowerThreshold TransmittedPowerThreshold
}

UE-6FG-Event ::= SEQUENCE {
    timeToTrigger      TimeToTrigger,
    -- in 1.28 Mcps TDD ue-RX-TX-TimeDifferenceThreshold corresponds to TADV Threshold
    ue-RX-TX-TimeDifferenceThreshold UE-RX-TX-TimeDifferenceThreshold
}

UE-AutonomousUpdateMode ::= CHOICE {
    on                NULL,
    onWithNoReporting NULL,
    off               RL-InformationLists
}

UE-InternalEventParam ::= CHOICE {
    event6a          UE-6AB-Event,
    event6b          UE-6AB-Event,
    event6c          TimeToTrigger,
    event6d          TimeToTrigger,
    event6e          TimeToTrigger,
    event6f          UE-6FG-Event,
    event6g          UE-6FG-Event
}

UE-InternalEventParamList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
                              UE-InternalEventParam

UE-InternalEventResults ::= CHOICE {
    event6a          NULL,
    event6b          NULL,
    event6c          NULL,
    event6d          NULL,
    event6e          NULL,
    event6f          PrimaryCPICH-Info,
    event6g          PrimaryCPICH-Info,
    spare           NULL
}

UE-InternalMeasQuantity ::= SEQUENCE {
    measurementQuantity UE-MeasurementQuantity,

```

```

    filterCoefficient          FilterCoefficient          DEFAULT fc0
  }

UE-InternalMeasuredResults ::= SEQUENCE {
  modeSpecificInfo          CHOICE {
    fdd                      SEQUENCE {
      ue-TransmittedPowerFDD      UE-TransmittedPower          OPTIONAL,
      ue-RX-TX-ReportEntryList    UE-RX-TX-ReportEntryList     OPTIONAL
    },
    tdd                      SEQUENCE {
      ue-TransmittedPowerTDD-List  UE-TransmittedPowerTDD-List  OPTIONAL,
      appliedTA                    UL-TimingAdvance             OPTIONAL
    }
  }
}

UE-InternalMeasuredResults-LCR-r4 ::= SEQUENCE {
  ue-TransmittedPowerTDD-List    UE-TransmittedPowerTDD-List  OPTIONAL,
  t-ADVinfo                      T-ADVinfo                     OPTIONAL
}

UE-InternalMeasurement ::= SEQUENCE {
  ue-InternalMeasQuantity        UE-InternalMeasQuantity       OPTIONAL,
  ue-InternalReportingQuantity   UE-InternalReportingQuantity  OPTIONAL,
  reportCriteria                 UE-InternalReportCriteria
}

UE-InternalMeasurement-r4 ::= SEQUENCE {
  ue-InternalMeasQuantity        UE-InternalMeasQuantity       OPTIONAL,
  ue-InternalReportingQuantity   UE-InternalReportingQuantity-r4  OPTIONAL,
  reportCriteria                 UE-InternalReportCriteria
}

UE-InternalMeasurementSysInfo ::= SEQUENCE {
  ue-InternalMeasurementID       MeasurementIdentity            DEFAULT 5,
  ue-InternalMeasQuantity        UE-InternalMeasQuantity
}

UE-InternalReportCriteria ::= CHOICE {
  ue-InternalReportingCriteria   UE-InternalReportingCriteria,
  periodicalReportingCriteria    PeriodicalReportingCriteria,
  noReporting                    NULL
}

UE-InternalReportingCriteria ::= SEQUENCE {
  ue-InternalEventParamList      UE-InternalEventParamList     OPTIONAL
}

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

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

```

```

-- TABULAR: UE-MeasurementQuantity, for 3.84 Mcps TDD only the first two values
-- ue-TransmittedPower and ultra-Carrier-RSSI are used.
-- For 1.28 Mcps TDD ue-RX-TX-TimeDifference corresponds to T-ADV in the tabular
UE-MeasurementQuantity ::=          ENUMERATED {
                                        ue-TransmittedPower,
                                        ultra-Carrier-RSSI,
                                        ue-RX-TX-TimeDifference }

UE-RX-TX-ReportEntry ::=          SEQUENCE {
    primaryCPICH-Info              PrimaryCPICH-Info,
    ue-RX-TX-TimeDifferenceType1    UE-RX-TX-TimeDifferenceType1
}

UE-RX-TX-ReportEntryList ::=      SEQUENCE (SIZE (1..maxRL)) OF
    UE-RX-TX-ReportEntry

-- SPARE: UE-RX-TX-TimeDifferenceType1, Max = 1280
-- Values above Max are spare
UE-RX-TX-TimeDifferenceType1 ::=  INTEGER (768..1791)

-- Actual value UE-RX-TX-TimeDifferenceType2 = IE value * 0.0625 + 768
UE-RX-TX-TimeDifferenceType2 ::=  INTEGER (0..8191)

UE-RX-TX-TimeDifferenceType2Info ::= SEQUENCE {
    ue-RX-TX-TimeDifferenceType2    UE-RX-TX-TimeDifferenceType2,
    neighbourQuality                NeighbourQuality
}

-- In 1.28 Mcps TDD, actual value for
-- T-ADV Threshold = (UE-RX-TX-TimeDifferenceThreshold - 768) * 0.125
UE-RX-TX-TimeDifferenceThreshold ::= INTEGER (768..1280)

UE-TransmittedPower ::=          INTEGER (0..104)

UE-TransmittedPowerTDD-List ::=  SEQUENCE (SIZE (1..maxTS)) OF
    UE-TransmittedPower

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

UE-Positioning-Accuracy ::=      BIT STRING (SIZE (7))

UE-Positioning-CipherParameters ::= SEQUENCE {
    cipheringKeyFlag                BIT STRING (SIZE (1)),
    cipheringSerialNumber           INTEGER (0..65535)
}

UE-Positioning-Error ::=        SEQUENCE {
    errorReason                     UE-Positioning-ErrorCause,
    ue-positioning-GPS-additionalAssistanceDataRequest    UE-Positioning-GPS-
AdditionalAssistanceDataRequest OPTIONAL
}

UE-Positioning-ErrorCause ::=   ENUMERATED {
    notEnoughOTDOA-Cells,
    notEnoughGPS-Satellites,
    assistanceDataMissing,
    methodNotSupported,
    undefinedError,
    requestDeniedByUser,
    notProcessedAndTimeout ,
    referenceCellNotServingCell }

UE-Positioning-EventParam ::=   SEQUENCE {
    reportingAmount                 ReportingAmount,
    reportFirstFix                  BOOLEAN,
    measurementInterval             UE-Positioning-MeasurementInterval,
    eventSpecificInfo               UE-Positioning-EventSpecificInfo
}

UE-Positioning-EventParamList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    UE-Positioning-EventParam

```

```

UE-Positioning-EventSpecificInfo ::=          CHOICE {
  e7a                                         ThresholdPositionChange,
  e7b                                         ThresholdSFN-SFN-Change,
  e7c                                         ThresholdSFN-GPS-TOW
}

UE-Positioning-GPS-AcquisitionAssistance ::= SEQUENCE {
  gps-ReferenceTime                          INTEGER (0..604799999),
  utran-GPSReferenceTime                     UTRAN-GPSReferenceTime      OPTIONAL,
  satelliteInformationList                   AcquisitionSatInfoList
}

UE-Positioning-GPS-AdditionalAssistanceDataRequest ::= SEQUENCE {
  almanacRequest                             BOOLEAN,
  utcModelRequest                            BOOLEAN,
  ionosphericModelRequest                    BOOLEAN,
  navigationModelRequest                     BOOLEAN,
  dgpsCorrectionsRequest                     BOOLEAN,
  referenceLocationRequest                   BOOLEAN,
  referenceTimeRequest                       BOOLEAN,
  aquisitionAssistanceRequest               BOOLEAN,
  realTimeIntegrityRequest                   BOOLEAN,
  navModelAddDataRequest                     UE-Positioning-GPS-NavModelAddDataReq  OPTIONAL
}

UE-Positioning-GPS-Almanac ::=              SEQUENCE {
  wn-a                                        BIT STRING (SIZE (8)),
  almanacSatInfoList                         AlmanacSatInfoList,
  sv-GlobalHealth                            BIT STRING (SIZE (364))      OPTIONAL
}

UE-Positioning-GPS-AssistanceData ::=       SEQUENCE {
  ue-positioning-GPS-ReferenceTime           UE-Positioning-GPS-ReferenceTime
  OPTIONAL,
  ue-positioning-GPS-ReferenceLocation       ReferenceLocation             OPTIONAL,
  ue-positioning-GPS-DGPS-Corrections       UE-Positioning-GPS-DGPS-Corrections
  OPTIONAL,
  ue-positioning-GPS-NavigationModel         UE-Positioning-GPS-NavigationModel
  OPTIONAL,
  ue-positioning-GPS-IonosphericModel       UE-Positioning-GPS-IonosphericModel
  OPTIONAL,
  ue-positioning-GPS-UTC-Model              UE-Positioning-GPS-UTC-Model
  OPTIONAL,
  ue-positioning-GPS-Almanac                UE-Positioning-GPS-Almanac
  OPTIONAL,
  ue-positioning-GPS-AcquisitionAssistance  UE-Positioning-GPS-AcquisitionAssistance
  OPTIONAL,
  ue-positioning-GPS-Real-timeIntegrity     BadSatList                    OPTIONAL,
  ue-positioning-GPS-referenceCellInfo      UE-Positioning-GPS-ReferenceCellInfo
  OPTIONAL
}

UE-Positioning-GPS-DGPS-Corrections ::=     SEQUENCE {
  gps-TOW                                     INTEGER (0..604799),
  statusHealth                               DiffCorrectionStatus,
  dgps-CorrectionSatInfoList                 DGPS-CorrectionSatInfoList
}

UE-Positioning-GPS-IonosphericModel ::=     SEQUENCE {
  alfa0                                       BIT STRING (SIZE (8)),
  alfa1                                       BIT STRING (SIZE (8)),
  alfa2                                       BIT STRING (SIZE (8)),
  alfa3                                       BIT STRING (SIZE (8)),
  beta0                                       BIT STRING (SIZE (8)),
  beta1                                       BIT STRING (SIZE (8)),
  beta2                                       BIT STRING (SIZE (8)),
  beta3                                       BIT STRING (SIZE (8))
}

UE-Positioning-GPS-MeasurementResults ::=   SEQUENCE {
  referenceTime                               CHOICE {
    utran-GPSReferenceTimeResult             UTRAN-GPSReferenceTimeResult,
    gps-ReferenceTimeOnly                    INTEGER (0..604799999)
  },
  gps-MeasurementParamList                   GPS-MeasurementParamList
}

```



```

UE-Positioning-GPS-NavModelAddDataReq ::= SEQUENCE {
  navigationModelSatInfoList NavigationModelSatInfoList
}

UE-Positioning-GPS-NavModelAddDataReq ::= SEQUENCE {
  gps-Week INTEGER (0..1023),
  -- SPARE: gps-Toe, Max = 167
  -- Values above Max are spare
  gps-Toe INTEGER (0..255),
  -- SPARE: tToeLimit, Max = 10
  -- Values above Max are spare
  tToeLimit INTEGER (0..15),
  satDataList SatDataList
}

UE-Positioning-GPS-ReferenceCellInfo ::= SEQUENCE{
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      referenceIdentity PrimaryCPICH-Info
    },
    tdd SEQUENCE {
      referenceIdentity CellParametersID
    }
  }
}

UE-Positioning-GPS-ReferenceTime ::= SEQUENCE {
  gps-Week INTEGER (0..1023),
  gps-tow-lmsec GPS-TOW-lmsec, utran-GPSReferenceTime UTRAN-
GPSReferenceTime OPTIONAL,
  sfn-tow-Uncertainty SFN-TOW-Uncertainty OPTIONAL,
  utran-GPS-DriftRate UTRAN-GPS-DriftRate OPTIONAL,
  gps-TOW-AssistList GPS-TOW-AssistList OPTIONAL
}

UE-Positioning-GPS-UTC-Model ::= SEQUENCE {
  a1 BIT STRING (SIZE (24)),
  a0 BIT STRING (SIZE (32)),
  t-ot BIT STRING (SIZE (8)),
  wn-t BIT STRING (SIZE (8)),
  delta-t-LS BIT STRING (SIZE (8)),
  wn-lsf BIT STRING (SIZE (8)),
  dn BIT STRING (SIZE (8)),
  delta-t-LSF BIT STRING (SIZE (8))
}

UE-Positioning-IPDL-Parameters ::= SEQUENCE {
  ip-Spacing IP-Spacing,
  ip-Length IP-Length,
  ip-Offset INTEGER (0..9),
  seed INTEGER (0..63),
  burstModeParameters BurstModeParameters OPTIONAL
}

UE-Positioning-IPDL-Parameters-r4 ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      ip-Spacing IP-Spacing,
      ip-Length IP-Length,
      ip-Offset INTEGER (0..9),
      seed INTEGER (0..63)
    },
    tdd SEQUENCE {
      ip-Spacing-TDD IP-Spacing-TDD,
      ip-slot INTEGER (0..14),
      ip-Start INTEGER (0..4095),
      ip-PCCPCG IP-PCCPCH-r4 OPTIONAL
    }
  },
  burstModeParameters BurstModeParameters OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDD-r4-ext ::= SEQUENCE {
  ip-Spacing IP-Spacing-TDD,
  ip-slot INTEGER (0..14),
  ip-Start INTEGER (0..4095),
  ip-PCCPCG IP-PCCPCH-r4 OPTIONAL,
  burstModeParameters BurstModeParameters
}

```

```

}

UE-Positioning-MeasuredResults ::=
  ue-positioning-OTDOA-Measurement
  OPTIONAL,
  ue-positioning-PositionEstimateInfo
  OPTIONAL,
  ue-positioning-GPS-Measurement
  OPTIONAL,
  ue-positioning-Error
  OPTIONAL
}

UE-Positioning-MeasuredResults-v390ext ::=
  ue-Positioning-OTDOA-Measurement-v390ext
}

UE-Positioning-Measurement ::=
  ue-positioning-ReportingQuantity
  reportCriteria
  ue-positioning-OTDOA-AssistanceData
  OPTIONAL,
  ue-positioning-GPS-AssistanceData
  OPTIONAL
}

UE-Positioning-Measurement-v390ext ::=
  ue-positioning-ReportingQuantity-v390ext
  OPTIONAL,
  measurementValidity
  ue-positioning-OTDOA-AssistanceData-UEB
  OPTIONAL
}

UE-Positioning-Measurement-r4 ::=
  ue-positioning-ReportingQuantity
  measurementValidity
  OPTIONAL,
  reportCriteria
  ue-positioning-OTDOA-AssistanceData
  OPTIONAL,
  ue-positioning-GPS-AssistanceData
  OPTIONAL
}

UE-Positioning-MeasurementEventResults ::=
  event7a
  event7b
  event7c
  spare
}

UE-Positioning-MeasurementInterval ::=
  e5, e15, e60, e300,
  e900, e1800, e3600, e7200
}

UE-Positioning-MethodType ::=
  ue-Assisted,
  ue-Based,
  ue-BasedPreferred,
  ue-AssistedPreferred
}

UE-Positioning-OTDOA-AssistanceData ::=
  ue-positioning-OTDOA-ReferenceCellInfo
  OPTIONAL,
  ue-positioning-OTDOA-NeighbourCellList
  OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4 ::=
  ue-positioning-OTDOA-ReferenceCellInfo
  OPTIONAL,
  ue-positioning-OTDOA-NeighbourCellList
  OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4ext ::= SEQUENCE {
  -- In case of TDD these IPDL parameters shall be used for the reference cell instead of

```

```

-- IPDL Parameters in IE UE-Positioning-OTDOA-ReferenceCellInfo
UE-Positioning-IPDL-Parameters-TDD-r4-ext      UE-Positioning-IPDL-Parameters-TDD-r4-ext
OPTIONAL,
-- These IPDL parameters shall be used for the neighbour cells in case of TDD instead of
-- IPDL Parameters in IE UE-Positioning-OTDOA-NeighbourCellInfoList. The cells shall be
-- listed in the same order as in IE UE-Positioning-OTDOA-NeighbourCellInfoList
ue-Positioning-IPDL-Parameters-TDDLList-r4-ext  UE-Positioning-IPDL-Parameters-TDDLList-r4-ext
OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-UEB ::= SEQUENCE {
  ue-positioning-OTDOA-ReferenceCellInfo-UEB      UE-Positioning-OTDOA-ReferenceCellInfo-UEB
  OPTIONAL,
  ue-positioning-OTDOA-NeighbourCellList-UEB      UE-Positioning-OTDOA-NeighbourCellList-
UEB
  OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDDLList-r4-ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  UE-Positioning-IPDL-Parameters-TDD-r4-ext

UE-Positioning-OTDOA-Measurement ::= SEQUENCE {
  sfn          INTEGER (0..4095),
  modeSpecificInfo CHOICE {
    fdd          SEQUENCE {
      referenceCellIdentity      PrimaryCPICH-Info,
      ue-RX-TX-TimeDifferenceType2Info UE-RX-TX-TimeDifferenceType2Info
    },
    tdd          SEQUENCE {
      referenceCellIdentity      CellParametersID
    }
  },
  neighbourList      NeighbourList      OPTIONAL
}

UE-Positioning-OTDOA-Measurement-v390ext ::= SEQUENCE {
  neighbourList-v390ext      NeighbourList-v390ext
}

UE-Positioning-OTDOA-NeighbourCellInfo ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd          SEQUENCE {
      primaryCPICH-Info      PrimaryCPICH-Info
    },
    tdd          SEQUENCE {
      cellAndChannelIdentity      CellAndChannelIdentity
    }
  },
  frequencyInfo      FrequencyInfo      OPTIONAL,
  ue-positioning-IPDL-Parameters      UE-Positioning-IPDL-Parameters
  OPTIONAL,
  sfn-SFN-RelTimeDifference      SFN-SFN-RelTimeDifference,
  sfn-SFN-Drift      SFN-SFN-Drift      OPTIONAL,
  searchWindowSize      OTDOA-SearchWindowSize,
  positioningMode CHOICE {
    ueBased      SEQUENCE {},
    ueAssisted      SEQUENCE {}
  }
}

UE-Positioning-OTDOA-NeighbourCellInfo-r4 ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd          SEQUENCE {
      primaryCPICH-Info      PrimaryCPICH-Info
    },
    tdd          SEQUENCE {
      cellAndChannelIdentity      CellAndChannelIdentity
    }
  },
  frequencyInfo      FrequencyInfo      OPTIONAL,
  ue-positioning-IPDL-Parameters      UE-Positioning-IPDL-Parameters-r4
  OPTIONAL,
  sfn-SFN-RelTimeDifference      SFN-SFN-RelTimeDifference,
  sfn-SFN-Drift      SFN-SFN-Drift      OPTIONAL,
  searchWindowSize      OTDOA-SearchWindowSize,
  positioningMode CHOICE {
    ueBased      SEQUENCE {
      relativeNorth      INTEGER (-20000..20000)      OPTIONAL,
      relativeEast      INTEGER (-20000..20000)      OPTIONAL,
      relativeAltitude      INTEGER (-4000..4000)      OPTIONAL,
    }
  }
}

```

```

        fineSFN-SFN           FineSFN-SFN           OPTIONAL,
        -- actual value roundTripTime = (IE value * 0.0625) + 876
        roundTripTime        INTEGER (0.. 32766)      OPTIONAL
    },
    ueAssisted                SEQUENCE {}
}
}

UE-Positioning-OTDOA-NeighbourCellInfo-UEB ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd                SEQUENCE {
            primaryCPICH-Info    PrimaryCPICH-Info
        },
        tdd                SEQUENCE{
            cellAndChannelIdentity    CellAndChannelIdentity
        }
    },
    frequencyInfo          FrequencyInfo           OPTIONAL,
    ue-positioning-IPDL-Parameters    UE-Positioning-IPDL-Parameters    OPTIONAL,
    sfn-SFN-RelTimeDifference    SFN-SFN-RelTimeDifference,
    sfn-SFN-Drift                SFN-SFN-Drift           OPTIONAL,
    searchWindowSize            OTDOA-SearchWindowSize,
    relativeNorth                INTEGER (-20000..20000)    OPTIONAL,
    relativeEast                 INTEGER (-20000..20000)    OPTIONAL,
    relativeAltitude             INTEGER (-4000..4000)      OPTIONAL,
    fineSFN-SFN                 FineSFN-SFN,
    -- actual value roundTripTime = (IE value * 0.0625) + 876
    roundTripTime                INTEGER (0..32766)         OPTIONAL
}

UE-Positioning-OTDOA-NeighbourCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    UE-Positioning-OTDOA-NeighbourCellInfo

UE-Positioning-OTDOA-NeighbourCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    UE-Positioning-OTDOA-NeighbourCellInfo-r4

UE-Positioning-OTDOA-NeighbourCellList-UEB ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    UE-Positioning-OTDOA-NeighbourCellInfo-UEB

UE-Positioning-OTDOA-Quality ::= SEQUENCE {
    stdResolution            BIT STRING (SIZE (2)),
    numberOfOTDOA-Measurements    BIT STRING (SIZE (3)),
    stdOfOTDOA-Measurements    BIT STRING (SIZE (5))
}

UE-Positioning-OTDOA-ReferenceCellInfo ::= SEQUENCE {
    sfn                      INTEGER (0..4095)
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                SEQUENCE {
            primaryCPICH-Info    PrimaryCPICH-Info
        },
        tdd                SEQUENCE{
            cellAndChannelIdentity    CellAndChannelIdentity
        }
    },
    frequencyInfo          FrequencyInfo           OPTIONAL,
    positioningMode CHOICE {
        ueBased            SEQUENCE {},
        ueAssisted        SEQUENCE {}
    },
    ue-positioning-IPDL-Parameters    UE-Positioning-IPDL-Parameters    OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-r4 ::= SEQUENCE {
    sfn                      INTEGER (0..4095)
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                SEQUENCE {
            primaryCPICH-Info    PrimaryCPICH-Info
        },
        tdd                SEQUENCE{
            cellAndChannelIdentity    CellAndChannelIdentity
        }
    },
    frequencyInfo          FrequencyInfo           OPTIONAL,
    positioningMode CHOICE {
        ueBased            SEQUENCE {

```

```

        cellPosition                ReferenceCellPosition    OPTIONAL,
        -- actual value roundTripTime = (IE value * 0.0625) + 876
        roundTripTime                INTEGER (0..32766)        OPTIONAL
    },
    ueAssisted                        SEQUENCE {}
},
ue-positioning-IPDL-Parameters      UE-Positioning-IPDL-Parameters-r4    OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-UEB ::= SEQUENCE {
    sfn                                INTEGER (0..4095)                OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                            SEQUENCE {
            primaryCPICH-Info          PrimaryCPICH-Info
        },
        tdd                            SEQUENCE {
            cellAndChannelIdentity     CellAndChannelIdentity
        }
    },
    frequencyInfo                    FrequencyInfo                OPTIONAL,
    cellPosition                      ReferenceCellPosition        OPTIONAL,
    -- actual value roundTripTime = (IE value * 0.0625) + 876
    roundTripTime                    INTEGER (0..32766)                OPTIONAL,
    ue-positioning-IPDL-Parameters    UE-Positioning-IPDL-Parameters    OPTIONAL
}

UE-Positioning-PositionEstimateInfo ::= SEQUENCE {
    referenceTime CHOICE {
        utran-GPSReferenceTimeResult  UTRAN-GPSReferenceTimeResult,
        gps-ReferenceTimeOnly         INTEGER (0..604799999),
        cell-Timing                   SEQUENCE {
            sfn                        INTEGER (0..4095),
            modeSpecificInfo          CHOICE {
                fdd                    SEQUENCE {
                    primaryCPICH-Info  PrimaryCPICH-Info
                },
                tdd                    SEQUENCE {
                    cellAndChannelIdentity CellAndChannelIdentity
                }
            }
        }
    },
    positionEstimate                  PositionEstimate
}

UE-Positioning-ReportCriteria ::= CHOICE {
    ue-positioning-ReportingCriteria  UE-Positioning-EventParamList,
    periodicalReportingCriteria       PeriodicalReportingCriteria,
    noReporting                        NULL
}

UE-Positioning-ReportingQuantity ::= SEQUENCE {
    methodType                        UE-Positioning-MethodType,
    positioningMethod                  PositioningMethod,
    -- dummy1 is not used in this version of specification and it should
    -- be ignored.
    dummy1                            UE-Positioning-ResponseTime,
    accuracy                          UE-Positioning-Accuracy                OPTIONAL,
    gps-TimingOfCellWanted            BOOLEAN,
    -- dummy2 is not used in this version of specification and it should
    -- be ignored.
    dummy2                            BOOLEAN,
    additionalAssistanceDataReq       BOOLEAN,
    environmentCharacterisation        EnvironmentCharacterisation        OPTIONAL
}

UE-Positioning-ReportingQuantity-v390ext ::= SEQUENCE {
    vertical-Accuracy                  UE-Positioning-Accuracy
}

UE-Positioning-ReportingQuantity-r4 ::= SEQUENCE {
    methodType                        UE-Positioning-MethodType,
    positioningMethod                  PositioningMethod,
    horizontalAccuracy                 UE-Positioning-Accuracy                OPTIONAL,
    verticalAccuracy                   UE-Positioning-Accuracy                OPTIONAL,
    gps-TimingOfCellWanted            BOOLEAN,
    additionalAssistanceDataReq       BOOLEAN,
    environmentCharacterisation        EnvironmentCharacterisation        OPTIONAL
}

```

```

}

UE-Positioning-ResponseTime ::=
    ENUMERATED {
        s1, s2, s4, s8, s16,
        s32, s64, s128 }

-- SPARE: UTRA-CarrierRSSI, Max = 76
-- Values above Max are spare
UTRA-CarrierRSSI ::=
    INTEGER (0..127)

UTRAN-GPS-DriftRate ::=
    ENUMERATED {
        utran-GPSDrift0, utran-GPSDrift1, utran-GPSDrift2,
        utran-GPSDrift5, utran-GPSDrift10, utran-GPSDrift15,
        utran-GPSDrift25, utran-GPSDrift50, utran-GPSDrift-1,
        utran-GPSDrift-2, utran-GPSDrift-5, utran-GPSDrift-10,
        utran-GPSDrift-15, utran-GPSDrift-25, utran-GPSDrift-50}

UTRAN-GPSReferenceTime ::=
    SEQUENCE {
        -- For utran-GPSTimingOfCell values above 2322431999999 are not
        -- used in this version of the specification
        utran-GPSTimingOfCell
            SEQUENCE {
                ms-part
                    INTEGER (0..1023),
                ls-part
                    INTEGER (0..4294967295)
            },
        modeSpecificInfo
            CHOICE {
                fdd
                    SEQUENCE {
                        referenceIdentity
                            PrimaryCPICH-Info
                    },
                tdd
                    SEQUENCE {
                        referenceIdentity
                            CellParametersID
                    }
            },
        sfnsfn
            OPTIONAL,
            INTEGER (0..4095)
    }

UTRAN-GPSReferenceTimeResult ::=
    SEQUENCE {
        -- For ue-GPSTimingOfCell values above 37158911999999 are not
        -- used in this version of the specification
        ue-GPSTimingOfCell
            SEQUENCE {
                ms-part
                    INTEGER (0.. 16383),
                ls-part
                    INTEGER (0..4294967295)
            },
        modeSpecificInfo
            CHOICE {
                fdd
                    SEQUENCE {
                        referenceIdentity
                            PrimaryCPICH-Info
                    },
                tdd
                    SEQUENCE {
                        referenceIdentity
                            CellParametersID
                    }
            },
        sfnsfn
            INTEGER (0..4095)
    }

VarianceOfRLC-BufferPayload ::=
    ENUMERATED {
        plv0, plv4, plv8, plv16, plv32, plv64,
        plv128, plv256, plv512, plv1024,
        plv2k, plv4k, plv8k, plv16k, spare2, spare1 }

-- Actual value W = IE value * 0.1
W ::=
    INTEGER (0..20)

-- *****
--
-- OTHER INFORMATION ELEMENTS (10.3.8)
--
-- *****

BCC ::=
    INTEGER (0..7)

BCCH-ModificationInfo ::=
    SEQUENCE {
        mib-ValueTag
            MIB-ValueTag,
        bcch-ModificationTime
            BCCH-ModificationTime
    }
    OPTIONAL

-- Actual value BCCH-ModificationTime = IE value * 8
BCCH-ModificationTime ::=
    INTEGER (0..511)

BSIC ::=
    SEQUENCE {

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```

    ncc                NCC,
    bcc                BCC
}

CBS-DRX-Level1Information ::= SEQUENCE {
    ctch-AllocationPeriod    INTEGER (1..256),
    cbs-FrameOffset          INTEGER (0..255)
}

CDMA2000-Message ::= SEQUENCE {
    msg-Type                BIT STRING (SIZE (8)),
    payload                  BIT STRING (SIZE (1..512))
}

CDMA2000-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
    CDMA2000-Message

CDMA2000-UMTS-Frequency-List ::= SEQUENCE (SIZE (1..maxNumCDMA2000Freqs)) OF
    FrequencyInfoCDMA2000

CellValueTag ::= INTEGER (1..4)

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

FDD-UMTS-Frequency-List ::= SEQUENCE (SIZE (1..maxNumFDDFreqs)) OF
    FrequencyInfoFDD

FrequencyInfoCDMA2000 ::= SEQUENCE {
    band-Class              BIT STRING (SIZE (5)),
    cdma-Freq                BIT STRING (SIZE(11))
}

GSM-BA-Range ::= SEQUENCE {
    gsmLowRangeUARFCN        UARFCN,
    gsmUpRangeUARFCN         UARFCN
}

GSM-BA-Range-List ::= SEQUENCE (SIZE (1..maxNumGSMFreqRanges)) OF
    GSM-BA-Range

GSM-Classmark2 ::= OCTET STRING (SIZE (5))

GSM-Classmark3 ::= OCTET STRING (SIZE (1..32))

GSM-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
    BIT STRING (SIZE (1..512))

GsmSecurityCapability ::= BIT STRING {
    a5-7(0),
    a5-6(1),
    a5-5(2),
    a5-4(3),
    a5-3(4),
    a5-2(5),
    a5-1(6)
} (SIZE (7))

IdentificationOfReceivedMessage ::= SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    receivedMessageType        ReceivedMessageType
}

InterRAT-ChangeFailureCause ::= CHOICE {
    configurationUnacceptable    NULL,
    physicalChannelFailure      NULL,
    protocolError                ProtocolErrorInformation,
    unspecified                  NULL,
    spare4                       NULL,
    spare3                       NULL,
    spare2                       NULL,
    spare1                       NULL
}

InterRAT-UE-RadioAccessCapability ::= CHOICE {
    gsm                           SEQUENCE {
        gsm-Classmark2            GSM-Classmark2,
        gsm-Classmark3            GSM-Classmark3
    }
}

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    },
    cdma2000
        cdma2000-MessageList
    }
}

InterRAT-UE-RadioAccessCapabilityList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
InterRAT-UE-RadioAccessCapability

InterRAT-UE-SecurityCapability ::= CHOICE {
    gsm
        gsmSecurityCapability
    }
}

InterRAT-UE-SecurityCapList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
InterRAT-UE-SecurityCapability

InterRAT-HO-FailureCause ::= CHOICE {
    configurationUnacceptable
        NULL,
    physicalChannelFailure
        NULL,
    protocolError
        ProtocolErrorInformation,
    interRAT-ProtocolError
        NULL,
    unspecified
        NULL,
    spare11
        NULL,
    spare10
        NULL,
    spare9
        NULL,
    spare8
        NULL,
    spare7
        NULL,
    spare6
        NULL,
    spare5
        NULL,
    spare4
        NULL,
    spare3
        NULL,
    spare2
        NULL,
    spare1
        NULL
}

MasterInformationBlock ::= SEQUENCE {
    mib-ValueTag
        MIB-ValueTag,
    -- TABULAR: The PLMN identity and ANSI-41 core network information
    -- are included in PLMN-Type.
    plmn-Type
        PLMN-Type,
    sibSb-ReferenceList
        SIBSb-ReferenceList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions
        SEQUENCE {}
} OPTIONAL

MIB-ValueTag ::= INTEGER (1..8)

NCC ::= INTEGER (0..7)

PLMN-ValueTag ::= INTEGER (1..256)

PredefinedConfigIdentityAndValueTag ::= SEQUENCE {
    predefinedConfigIdentity
        PredefinedConfigIdentity,
    predefinedConfigValueTag
        PredefinedConfigValueTag
}

ProtocolErrorInformation ::= SEQUENCE {
    diagnosticsType
        CHOICE {
            type1
                SEQUENCE {
                    protocolErrorCause
                        ProtocolErrorCause
                },
            spare
                NULL
        }
}

ReceivedMessageType ::= ENUMERATED {
    activeSetUpdate,
    cellChangeOrderFromUTRAN,
    cellUpdateConfirm,
    counterCheck,
    downlinkDirectTransfer,
    interRATHandoverCommand,
    measurementControl,
    pagingType2,
    physicalChannelReconfiguration,

```



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physicalSharedChannelAllocation,
radioBearerReconfiguration,
radioBearerRelease,
radioBearerSetup,
rrcConnectionRelease,
rrcConnectionReject,
rrcConnectionSetup,
securityModeCommand,
signallingConnectionRelease,
transportChannelReconfiguration,
transportFormatCombinationControl,
ueCapabilityEnquiry,
ueCapabilityInformationConfirm,
uplinkPhysicalChannelControl,
uraUpdateConfirm,
utranMobilityInformation,
assistanceDataDelivery,
spare5, spare4, spare3, spare2,
spare1
}

Rplmn-Information ::= SEQUENCE {
    gsm-BA-Range-List          GSM-BA-Range-List          OPTIONAL,
    fdd-UMTS-Frequency-List   FDD-UMTS-Frequency-List
    OPTIONAL,
    tdd-UMTS-Frequency-List   TDD-UMTS-Frequency-List
    OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-
List OPTIONAL
}

Rplmn-Information-r4 ::= SEQUENCE {
    gsm-BA-Range-List          GSM-BA-Range-List          OPTIONAL,
    fdd-UMTS-Frequency-List   FDD-UMTS-Frequency-List   OPTIONAL,
    tdd384-UMTS-Frequency-List TDD-UMTS-Frequency-List   OPTIONAL,
    tdd128-UMTS-Frequency-List TDD-UMTS-Frequency-List   OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-List   OPTIONAL
}

SchedulingInformation ::= SEQUENCE {
    scheduling                  SEQUENCE {
        segCount                SegCount                DEFAULT 1,
        sib-Pos                  CHOICE {
            -- The element name indicates the repetition period and the value
            -- (multiplied by two) indicates the position of the first segment.
            rep4                  INTEGER (0..1),
            rep8                  INTEGER (0..3),
            rep16                 INTEGER (0..7),
            rep32                 INTEGER (0..15),
            rep64                 INTEGER (0..31),
            rep128                INTEGER (0..63),
            rep256                INTEGER (0..127),
            rep512                INTEGER (0..255),
            rep1024               INTEGER (0..511),
            rep2048               INTEGER (0..1023),
            rep4096               INTEGER (0..2047)
        },
        sib-PosOffsetInfo        SibOFF-List                OPTIONAL
    }
}

SchedulingInformationSIB ::= SEQUENCE {
    sib-Type                    SIB-TypeAndTag,
    scheduling                   SchedulingInformation
}

SchedulingInformationSIBSb ::= SEQUENCE {
    sibSb-Type                  SIBSb-TypeAndTag,
    scheduling                   SchedulingInformation
}

SegCount ::= INTEGER (1..16)

SegmentIndex ::= INTEGER (1..15)

-- Actual value SFN-Prime = 2 * IE value
SFN-Prime ::= INTEGER (0..2047)

```

```

SIB-Data-fixed ::=                               BIT STRING (SIZE (222))

SIB-Data-variable ::=                           BIT STRING (SIZE (1..214))

SIBOccurIdentity ::=                            INTEGER (0..15)

SIBOccurrenceIdentityAndValueTag ::=           SEQUENCE {
    sibOccurIdentity                            SIBOccurIdentity,
    sibOccurValueTag                            SIBOccurValueTag
}

SIBOccurValueTag ::=                            INTEGER (0..15)

SIB-ReferenceList ::=                           SEQUENCE (SIZE (1..maxSIB)) OF
    SchedulingInformationSIB

SIBSb-ReferenceList ::=                         SEQUENCE (SIZE (1..maxSIB)) OF
    SchedulingInformationSIBSb

SIB-ReferenceListFACH ::=                       SEQUENCE (SIZE (1..maxSIB-FACH)) OF
    SchedulingInformationSIB

SIB-Type ::=                                    ENUMERATED {
    masterInformationBlock,
    systemInformationBlockType1,
    systemInformationBlockType2,
    systemInformationBlockType3,
    systemInformationBlockType4,
    systemInformationBlockType5,
    systemInformationBlockType6,
    systemInformationBlockType7,
    systemInformationBlockType8,
    systemInformationBlockType9,
    systemInformationBlockType10,
    systemInformationBlockType11,
    systemInformationBlockType12,
    systemInformationBlockType13,
    systemInformationBlockType13-1,
    systemInformationBlockType13-2,
    systemInformationBlockType13-3,
    systemInformationBlockType13-4,
    systemInformationBlockType14,
    systemInformationBlockType15,
    systemInformationBlockType15-1,
    systemInformationBlockType15-2,
    systemInformationBlockType15-3,
    systemInformationBlockType16,
    systemInformationBlockType17,
    systemInformationBlockType15-4,
    systemInformationBlockType18,
    schedulingBlock1,
    schedulingBlock2,
    systemInformationBlockType15-5,
    spare1, spare2 }

SIB-TypeAndTag ::=                             CHOICE {
    sysInfoType1                               PLMN-ValueTag,
    sysInfoType2                               CellValueTag,
    sysInfoType3                               CellValueTag,
    sysInfoType4                               CellValueTag,
    sysInfoType5                               CellValueTag,
    sysInfoType6                               CellValueTag,
    sysInfoType7                               NULL,
    sysInfoType8                               CellValueTag,
    sysInfoType9                               NULL,
    sysInfoType10                              NULL,
    sysInfoType11                              CellValueTag,
    sysInfoType12                              CellValueTag,
    sysInfoType13                              CellValueTag,
    sysInfoType13-1                            CellValueTag,
    sysInfoType13-2                            CellValueTag,
    sysInfoType13-3                            CellValueTag,
    sysInfoType13-4                            CellValueTag,
    sysInfoType14                              NULL,
    sysInfoType15                              CellValueTag,
    sysInfoType16                              PredefinedConfigIdentityAndValueTag,

```

```

sysInfoType17                NULL,
sysInfoType15-1              CellValueTag,
sysInfoType15-2              SIBOccurrenceIdentityAndValueTag,
sysInfoType15-3              SIBOccurrenceIdentityAndValueTag,
sysInfoType15-4              CellValueTag,
sysInfoType18                CellValueTag,
sysInfoType15-5              CellValueTag,
spare5                       NULL,
spare4                       NULL,
spare3                       NULL,
spare2                       NULL,
spare1                       NULL
}

SIBSb-TypeAndTag ::=
  sysInfoType1                CHOICE {
  sysInfoType2                PLMN-ValueTag,
  sysInfoType3                CellValueTag,
  sysInfoType4                CellValueTag,
  sysInfoType5                CellValueTag,
  sysInfoType6                CellValueTag,
  sysInfoType7                NULL,
  sysInfoType8                CellValueTag,
  sysInfoType9                NULL,
  sysInfoType10               NULL,
  sysInfoType11               CellValueTag,
  sysInfoType12               CellValueTag,
  sysInfoType13               CellValueTag,
  sysInfoType13-1             CellValueTag,
  sysInfoType13-2             CellValueTag,
  sysInfoType13-3             CellValueTag,
  sysInfoType13-4             CellValueTag,
  sysInfoType14               NULL,
  sysInfoType15               CellValueTag,
  sysInfoType16               PredefinedConfigIdentityAndValueTag,
  sysInfoType17               NULL,
  sysInfoTypeSB1              CellValueTag,
  sysInfoTypeSB2              CellValueTag,
  sysInfoType15-1             CellValueTag,
  sysInfoType15-2             SIBOccurrenceIdentityAndValueTag,
  sysInfoType15-3             SIBOccurrenceIdentityAndValueTag,
  sysInfoType15-4             CellValueTag,
  sysInfoType18               CellValueTag,
  sysInfoType15-5             CellValueTag,
  spare2                      NULL,
  spare1                      NULL
}

SibOFF ::=
  ENUMERATED {
    so2, so4, so6, so8, so10,
    so12, so14, so16, so18,
    so20, so22, so24, so26,
    so28, so30, so32 }

SibOFF-List ::=
  SEQUENCE (SIZE (1..15)) OF
  SibOFF

SysInfoType1 ::=
  SEQUENCE {
    -- Core network IEs
    cn-CommonGSM-MAP-NAS-SysInfo  NAS-SystemInformationGSM-MAP,
    cn-DomainSysInfoList          CN-DomainSysInfoList,
    -- User equipment IEs
    ue-ConnTimersAndConstants      UE-ConnTimersAndConstants      OPTIONAL,
    ue-IdleTimersAndConstants      UE-IdleTimersAndConstants      OPTIONAL,
    -- Extension mechanism for non- release99 information
    v3a0NonCriticalExtensions      SEQUENCE {
      sysInfoType1-v3a0ext         SysInfoType1-v3a0ext-IEs,
      nonCriticalExtensions        SEQUENCE {} OPTIONAL
    }
  }
  OPTIONAL

SysInfoType1-v3a0ext-IEs ::= SEQUENCE {
  ue-ConnTimersAndConstants-v3a0ext  UE-ConnTimersAndConstants-v3a0ext,
  ue-IdleTimersAndConstants-v3a0ext  UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType2 ::=
  SEQUENCE {
    -- UTRAN mobility IEs

```

```

ura-IdentityList          URA-IdentityList,
-- Extension mechanism for non- release99 information
nonCriticalExtensions    SEQUENCE {}          OPTIONAL
}

SysInfoType3 ::=          SEQUENCE {
    sib4indicator          BOOLEAN,
-- UTRAN mobility IEs
    cellIdentity          CellIdentity,
    cellSelectReselectInfo CellSelectReselectInfoSIB-3-4,
    cellAccessRestriction CellAccessRestriction,
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions SEQUENCE {
    sysInfoType3-v4xyext  SysInfoType3-v4xyext-IEs,
    nonCriticalExtensions SEQUENCE {}          OPTIONAL
}
}

SysInfoType3-v4xyext-IEs ::= SEQUENCE {
    mapping-LCR           Mapping-LCR-r4          OPTIONAL
}

SysInfoType4 ::=          SEQUENCE {
-- UTRAN mobility IEs
    cellIdentity          CellIdentity,
    cellSelectReselectInfo CellSelectReselectInfoSIB-3-4,
    cellAccessRestriction CellAccessRestriction,
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions SEQUENCE {
    sysInfoType4-v4xyext  SysInfoType4-v4xyext-IEs,
    nonCriticalExtensions SEQUENCE {}          OPTIONAL
}
}

SysInfoType4-v4xyext-IEs ::= SEQUENCE {
    mapping-LCR           Mapping-LCR-r4          OPTIONAL
}

SysInfoType5 ::=          SEQUENCE {
    sib6indicator          BOOLEAN,
-- Physical channel IEs
    pich-PowerOffset      PICH-PowerOffset,
    modeSpecificInfo      CHOICE {
        fdd                SEQUENCE {
            aich-PowerOffset AICH-PowerOffset
        },
        tdd                SEQUENCE {
-- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
-- and the info included in the tdd128SpecificInfo instead.
        pusch-SysInfoList-SFN PUSCH-SysInfoList-SFN    OPTIONAL,
        pdsch-SysInfoList-SFN PDSCH-SysInfoList-SFN    OPTIONAL,
        openLoopPowerControl-TDD OpenLoopPowerControl-TDD
        },
    },
    primaryCCPCH-Info      PrimaryCCPCH-Info          OPTIONAL,
    prach-SystemInformationList PRACH-SystemInformationList,
    sccpch-SystemInformationList SCCPCH-SystemInformationList,
-- cbs-DRX-Level1Information is conditional on any of the CTCH indicator IEs in
-- sccpch-SystemInformationList
    cbs-DRX-Level1Information CBS-DRX-Level1Information    OPTIONAL,
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions SEQUENCE {
    sysInfoType5-v4xyext  SysInfoType5-v4xyext-IEs,
-- Extension mechanism for non- rel-4 information
    nonCriticalExtensions SEQUENCE {}          OPTIONAL
}
}

SysInfoType5-v4xyext-IEs ::= SEQUENCE {
    pNBsCH-Allocation-r4    PNBsCH-Allocation-r4    OPTIONAL,
-- In case of TDD, the following IE is included instead of the
-- IE up-IPDL-Parameter in up-OTDOA-AssistanceData.
    openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4    OPTIONAL,
-- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
-- PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
-- IE rach-TransportFormatSet shall be absent and the corresponding IE in the following
-- PRACH-SystemInformationList-LCR-r4 shall be used
    prach-SystemInformationList-LCR-r4 PRACH-SystemInformationList-LCR-r4    OPTIONAL,

```

```

tdd128SpecificInfo          SEQUENCE {
  pusch-SysInfoList-SFN    PUSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
  pdsch-SysInfoList-SFN    PDSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
  pCCPCH-LCR-Extensions    PrimaryCCPCH-Info-LCR-r4-ext    OPTIONAL,
  sCCPCH-LCR-ExtensionsList SCCPCH-SystemInformationList-LCR-r4-ext
}
                                                                    OPTIONAL
}

SysInfoType6 ::=           SEQUENCE {
  -- Physical channel IEs
  pich-PowerOffset         PICH-PowerOffset,
  modeSpecificInfo         CHOICE {
    fdd                     SEQUENCE {
      aich-PowerOffset      AICH-PowerOffset,
      -- dummy is not used in this version of specification, it should
      -- not be sent and if received it should be ignored.
      dummy                 CSICH-PowerOffset          OPTIONAL
    },
    tdd                     SEQUENCE {
      -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList-SFN,
      -- pdsch-SysInfoList-SFN and openLoopPowerControl-TDD should be absent
      -- and the info included in the tdd128SpecificInfo instead.
      pusch-SysInfoList-SFN PUSCH-SysInfoList-SFN    OPTIONAL,
      pdsch-SysInfoList-SFN PDSCH-SysInfoList-SFN    OPTIONAL,
      openLoopPowerControl-TDD OpenLoopPowerControl-TDD
    }
  },
  primaryCCPCH-Info        PrimaryCCPCH-Info          OPTIONAL,
  prach-SystemInformationList PRACH-SystemInformationList OPTIONAL,
  sCCPCH-SystemInformationList SCCPCH-SystemInformationList OPTIONAL,
  cbs-DRX-Level1Information CBS-DRX-Level1Information  OPTIONAL,
  -- Conditional on any of the CTCH indicator IEs in
  -- sCCPCH-SystemInformationList
  -- Extension mechanism for non- release99 information
  v4xyNonCriticalExtensions SEQUENCE {
    sysInfoType6-v4xyext    SysInfoType6-v4xyext-IEs,
    -- Extension mechanism for non- rel-4 information
    nonCriticalExtensions    SEQUENCE {}
  }
}
                                                                    OPTIONAL

SysInfoType6-v4xyext-IEs ::= SEQUENCE {
  -- openLoopPowerControl-IPDL-TDD is present only if IPDLs are applied for TDD
  openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4    OPTIONAL,
  -- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included
  -- in PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
  -- IE rach-TransportFormatSet shall be absent and the corresponding IEs in the following
  -- PRACH-SystemInformationList-LCR-r4 shall be used
  prach-SystemInformationList-LCR-r4 PRACH-SystemInformationList-LCR-r4    OPTIONAL,
  tdd128SpecificInfo                SEQUENCE {
    pusch-SysInfoList-SFN    PUSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
    pdsch-SysInfoList-SFN    PDSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
    pCCPCH-LCR-Extensions    PrimaryCCPCH-Info-LCR-r4-ext    OPTIONAL,
    sCCPCH-LCR-ExtensionsList SCCPCH-SystemInformationList-LCR-r4-ext    OPTIONAL
  }
}
                                                                    OPTIONAL

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

SysInfoType8 ::=           SEQUENCE {
  -- User equipment IEs
  cpch-Parameters          CPCH-Parameters,
  -- Physical channel IEs
  cpch-SetInfoList         CPCH-SetInfoList,
  csich-PowerOffset        CSICH-PowerOffset,

```

```

-- Extension mechanism for non- release99 information
nonCriticalExtensions SEQUENCE {} OPTIONAL
}

SysInfoType9 ::= SEQUENCE {
-- Physical channel IEs
cpch-PersistenceLevelsList CPCH-PersistenceLevelsList,
-- Extension mechanism for non- release99 information
nonCriticalExtensions SEQUENCE {} OPTIONAL
}

SysInfoType10 ::= SEQUENCE {
-- User equipment IEs
drac-SysInfoList DRAC-SysInfoList,
-- Extension mechanism for non- release99 information
nonCriticalExtensions SEQUENCE {} OPTIONAL
}

SysInfoType11 ::= SEQUENCE {
sib12indicator BOOLEAN,
-- Measurement IEs
fach-MeasurementOccasionInfo FACH-MeasurementOccasionInfo OPTIONAL,
measurementControlSysInfo MeasurementControlSysInfo,
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions SEQUENCE {
sysInfoType11-v4xyext SysInfoType11-v4xyext-IEs,
nonCriticalExtensions SEQUENCE {} OPTIONAL
} OPTIONAL
}

SysInfoType11-v4xyext-IEs ::= SEQUENCE {
fach-MeasurementOccasionInfo-LCR-Ext FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
measurementControlSysInfo-LCR MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType12 ::= SEQUENCE {
-- Measurement IEs
fach-MeasurementOccasionInfo FACH-MeasurementOccasionInfo OPTIONAL,
measurementControlSysInfo MeasurementControlSysInfo,
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions SEQUENCE {
sysInfoType12-v4xyext SysInfoType12-v4xyext-IEs,
nonCriticalExtensions SEQUENCE {} OPTIONAL
} OPTIONAL
}

SysInfoType12-v4xyext-IEs ::= SEQUENCE {
fach-MeasurementOccasionInfo-LCR-Ext FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
measurementControlSysInfo-LCR MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType13 ::= SEQUENCE {
-- Core network IEs
cn-DomainSysInfoList CN-DomainSysInfoList,
-- User equipment IEs
ue-IdleTimersAndConstants UE-IdleTimersAndConstants OPTIONAL,
capabilityUpdateRequirement CapabilityUpdateRequirement OPTIONAL,
-- Extension mechanism for non- release99 information
v3a0NonCriticalExtensions SEQUENCE {
sysInfoType13-v3a0ext SysInfoType13-v3a0ext-IEs,
v4xyNonCriticalExtensions SEQUENCE {
sysInfoType13-v4xyext SysInfoType13-v4xyext-IEs,
-- Extension mechanism for non- release99 information
nonCriticalExtensions SEQUENCE {} OPTIONAL
} OPTIONAL
} OPTIONAL
}

SysInfoType13-v3a0ext-IEs ::= SEQUENCE {
ue-IdleTimersAndConstants-v3a0ext UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType13-v4xyext-IEs ::= SEQUENCE {
capabilityUpdateRequirement-r4Ext CapabilityUpdateRequirement-r4-ext OPTIONAL
}

SysInfoType13-1 ::= SEQUENCE {
-- ANSI-41 IEs

```

```

    ansi-41-RAND-Information      ANSI-41-RAND-Information,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType13-2 ::=              SEQUENCE {
-- ANSI-41 IEs
    ansi-41-UserZoneID-Information ANSI-41-UserZoneID-Information,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType13-3 ::=              SEQUENCE {
-- ANSI-41 IEs
    ansi-41-PrivateNeighbourListInfo ANSI-41-PrivateNeighbourListInfo,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType13-4 ::=              SEQUENCE {
-- ANSI-41 IEs
    ansi-41-GlobalServiceRedirectInfo
                                ANSI-41-GlobalServiceRedirectInfo,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

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

SysInfoType15 ::=                SEQUENCE {
-- Measurement IEs

    ue-positioning-GPS-CipherParameters UE-Positioning-CipherParameters    OPTIONAL,
    ue-positioning-GPS-ReferenceLocation ReferenceLocation,
    ue-positioning-GPS-ReferenceTime    UE-Positioning-GPS-ReferenceTime,

    ue-positioning-GPS-Real-timeIntegrity BadSatList                        OPTIONAL,
-- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions        SEQUENCE {
        sysInfoType15-v4xyext        SysInfoType15-v4xyext-IEs,
-- Extension mechanism for non- release4 information
        nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
    } OPTIONAL
}

SysInfoType15-v4xyext-IEs ::= SEQUENCE {
    up-IPDL-Parameters-TDD            UE-Positioning-IPDL-Parameters-TDD-r4-ext    OPTIONAL
}

SysInfoType15-1 ::=              SEQUENCE {
-- DGPS corrections
    ue-positioning-GPS-DGPS-Corrections UE-Positioning-GPS-DGPS-Corrections,

-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType15-2 ::=              SEQUENCE {
-- Ephemeris and clock corrections
    transmissionTOW                INTEGER (0..604799),
    satID                            SatID,
    ephemerisParameter              EphemerisParameter,

-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType15-3 ::=              SEQUENCE {
-- Almanac and other data
    transmissionTOW                INTEGER (0.. 604799),
    ue-positioning-GPS-Almanac      UE-Positioning-GPS-Almanac
OPTIONAL,

```

```

        ue-positioning-GPS-IonosphericModel          UE-Positioning-GPS-IonosphericModel
OPTIONAL,
        ue-positioning-GPS-UTC-Model                UE-Positioning-GPS-UTC-Model
OPTIONAL,
        satMask                                     BIT STRING (SIZE (1..32))  OPTIONAL,
        lsbTOW                                       BIT STRING (SIZE (8))    OPTIONAL,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions                       SEQUENCE {}              OPTIONAL
}

SysInfoType15-4 ::=                               SEQUENCE {
-- Measurement IEs
        ue-positioning-OTDOA-CipherParameters      UE-Positioning-CipherParameters      OPTIONAL,
        ue-positioning-OTDOA-AssistanceData        UE-Positioning-OTDOA-AssistanceData,
        v3a0NonCriticalExtensions                 SEQUENCE {
                sysInfoType15-4-v3a0ext           SysInfoType15-4-v3a0ext,
-- Extension mechanism for non- release99 information
                v4xyNonCriticalExtensions         SEQUENCE {
                        sysInfoType15-4-v4xyext   SysInfoType15-4-v4xyext,
                        nonCriticalExtensions     SEQUENCE {}          OPTIONAL
                } OPTIONAL
        } OPTIONAL
}

SysInfoType15-4-v3a0ext ::= SEQUENCE {
        sfn-Offset-Validity                       SFN-Offset-Validity          OPTIONAL
}

SysInfoType15-4-v4xyext ::= SEQUENCE {
        ue-Positioning-OTDOA-AssistanceData-r4ext UE-Positioning-OTDOA-AssistanceData-r4ext  OPTIONAL
}

SysInfoType15-5 ::=                               SEQUENCE {
-- Measurement IEs
        ue-positioning-OTDOA-AssistanceData-UEB    UE-Positioning-OTDOA-AssistanceData-UEB,
        v3a0NonCriticalExtensions                 SEQUENCE {
                sysInfoType15-5-v3a0ext           SysInfoType15-5-v3a0ext,
-- Extension mechanism for non- release99 information
                nonCriticalExtensions             SEQUENCE {}          OPTIONAL
        } OPTIONAL
}

SysInfoType15-5-v3a0ext ::= SEQUENCE {
        sfn-Offset-Validity                       SFN-Offset-Validity          OPTIONAL
}

SysInfoType16 ::=                               SEQUENCE {
-- Radio bearer IEs
        preDefinedRadioConfiguration             PreDefRadioConfiguration,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions                     SEQUENCE {}                  OPTIONAL
}

SysInfoType17 ::=                               SEQUENCE {
-- Physical channel IEs
-- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList and
-- pdsch-SysInfoList should be absent and the info included in the
-- tdd128SpecificInfo instead.
        pusch-SysInfoList                         PUSCH-SysInfoList           OPTIONAL,
        pdsch-SysInfoList                         PDSCH-SysInfoList           OPTIONAL,
-- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions                 SEQUENCE {
                sysInfoType17-v4xyext           SysInfoType17-v4xyext-IEs,
                nonCriticalExtensions           SEQUENCE {}                  OPTIONAL
        } OPTIONAL
}

SysInfoType17-v4xyext-IEs ::= SEQUENCE {
        tdd128SpecificInfo                       SEQUENCE {
                pusch-SysInfoList               PUSCH-SysInfoList-LCR-r4      OPTIONAL,
                pdsch-SysInfoList               PDSCH-SysInfoList-LCR-r4      OPTIONAL
        }
}

SysInfoType18 ::=                               SEQUENCE {
        idleModePLMNIdentities                   PLMNIdentitiesOfNeighbourCells  OPTIONAL,
        connectedModePLMNIdentities              PLMNIdentitiesOfNeighbourCells  OPTIONAL,
-- Extension mechanism for non- release99 information

```



```

        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }

SysInfoTypeSB1 ::=                    SEQUENCE {
    -- Other IEs
        sib-ReferenceList              SIB-ReferenceList,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }

SysInfoTypeSB2 ::=                    SEQUENCE {
    -- Other IEs
        sib-ReferenceList              SIB-ReferenceList,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }

TDD-UMTS-Frequency-List ::=          SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF
                                        FrequencyInfoTDD

-- *****
--
--      ANSI-41 INFORMATION ELEMENTS (10.3.9)
--
-- *****

ANSI-41-GlobalServiceRedirectInfo ::= ANSI-41-NAS-Parameter
ANSI-41-PrivateNeighbourListInfo ::= ANSI-41-NAS-Parameter
ANSI-41-RAND-Information ::=         ANSI-41-NAS-Parameter
ANSI-41-UserZoneID-Information ::=   ANSI-41-NAS-Parameter
ANSI-41-NAS-Parameter ::=           BIT STRING (SIZE (1..2048))

Min-P-REV ::=                        BIT STRING (SIZE (8))

NAS-SystemInformationANSI-41 ::=     ANSI-41-NAS-Parameter
NID ::=                              BIT STRING (SIZE (16))

P-REV ::=                            BIT STRING (SIZE (8))

SID ::=                              BIT STRING (SIZE (15))

END

```

11.4 Constant definitions

Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

```

hipDSCHidentities                    INTEGER ::= 64
hipUSCHidentities                    INTEGER ::= 64
hiRM                                  INTEGER ::= 256
maxAC                                 INTEGER ::= 16
maxAdditionalMeas                     INTEGER ::= 4
maxASC                                INTEGER ::= 8
maxASCmap                             INTEGER ::= 7
maxASCpersist                         INTEGER ::= 6
maxCCTrCH                             INTEGER ::= 8
maxCellMeas                           INTEGER ::= 32
maxCellMeas-1                         INTEGER ::= 31
maxCNdomains                          INTEGER ::= 4
maxCPCHsets                           INTEGER ::= 16
maxDPCH-DLchan                        INTEGER ::= 8
maxDPDCH-UL                           INTEGER ::= 6
maxDRACclasses                        INTEGER ::= 8
maxFACHPCH                            INTEGER ::= 8
maxFreq                               INTEGER ::= 8
maxFreqBandsFDD                       INTEGER ::= 8
maxFreqBandsTDD                       INTEGER ::= 4
maxFreqBandsGSM                       INTEGER ::= 16
maxHProcesses                         INTEGER ::= 6
maxHSDSCHTbIndex                      INTEGER ::= 64
maxHSDSCHTbIndex-tdd384               INTEGER ::= 512
maxHSSCCHs                            INTEGER ::= 4
maxInterSysMessages                   INTEGER ::= 4
maxLoCHperRLC                         INTEGER ::= 2
maxMAC-d-PDU sizes                    INTEGER ::= 16

```

```

maxMeasEvent          INTEGER ::= 8
maxMeasIntervals     INTEGER ::= 3
maxMeasParEvent      INTEGER ::= 2
maxNumCDMA2000Freqs  INTEGER ::= 8
maxNumGSMFreqRanges  INTEGER ::= 32
maxNumFDDFreqs       INTEGER ::= 8
maxNumTDDFreqs       INTEGER ::= 8
maxNoOfMeas          INTEGER ::= 16
maxOtherRAT          INTEGER ::= 15
maxOtherRAT-16       INTEGER ::= 16
maxPage1             INTEGER ::= 8
maxPCPCH-APsig       INTEGER ::= 16
maxPCPCH-APsubCh     INTEGER ::= 12
maxPCPCH-CDsig       INTEGER ::= 16
maxPCPCH-CDsubCh     INTEGER ::= 12
maxPCPCH-SF          INTEGER ::= 7
maxPCPCHs            INTEGER ::= 64
maxPDCPAlgoType      INTEGER ::= 8
maxPDSCH             INTEGER ::= 8
maxPDSCH-TFCIgroups  INTEGER ::= 256
maxPRACH             INTEGER ::= 16
maxPRACH-FPACH       INTEGER ::= 8
maxPredefConfig      INTEGER ::= 16
maxPUSCH             INTEGER ::= 8
maxQueueIDs          INTEGER ::= 8
maxRABsetup          INTEGER ::= 16
maxRAT               INTEGER ::= 16
maxRB                INTEGER ::= 32
maxRBallRABs         INTEGER ::= 27
maxRBMuxOptions      INTEGER ::= 8
maxRBperRAB          INTEGER ::= 8
maxReportedGSMCells  INTEGER ::= 6
maxRL                INTEGER ::= 8
maxRL-1              INTEGER ::= 7
maxROHC-PacketSizes-r4  INTEGER ::= 16
maxROHC-Profile-r4   INTEGER ::= 8
maxSat               INTEGER ::= 16
maxSCCPCH            INTEGER ::= 16
maxSIB               INTEGER ::= 32
maxSIB-FACH          INTEGER ::= 8
maxSIBperMsg         INTEGER ::= 16
maxSRBsetup          INTEGER ::= 8
maxSystemCapability  INTEGER ::= 16
maxTF                INTEGER ::= 32
maxTF-CPCH           INTEGER ::= 16
maxTFC               INTEGER ::= 1024
maxTFCsub            INTEGER ::= 1024
maxTFCI-2-Combs      INTEGER ::= 512
maxTGPS              INTEGER ::= 6
maxTrCH              INTEGER ::= 32
-- maxTrCHpreconf should be 16 but has been set to 32 for compatibility
maxTrCHpreconf       INTEGER ::= 32
maxTS                INTEGER ::= 14
maxTS-1              INTEGER ::= 13
maxTS-LCR            INTEGER ::= 6
maxTS-LCR-1          INTEGER ::= 5
maxURA               INTEGER ::= 8

```

END

11.5 RRC information between network nodes

```
Internode-definitions DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

```
IMPORTS
```

```

    HandoverToUTRANCommand,
    MeasurementReport,
    PhysicalChannelReconfiguration,
    RadioBearerReconfiguration,
    RadioBearerRelease,
    RadioBearerSetup,
    RRC-FailureInfo-r3-IEs,
    TransportChannelReconfiguration
FROM PDU-definitions

```

```

-- Core Network IEs :
  CN-DomainIdentity,
  CN-DomainInformationList,
  CN-DRX-CycleLengthCoefficient,
  NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
  CellIdentity,
  URA-Identity,
-- User Equipment IEs :
  C-RNTI,
  DL-PhysChCapabilityFDD-v380ext,
  FailureCauseWithProtErr,
  RRC-MessageSequenceNumber,
  STARTList,
  START-Value,
  U-RNTI,
  UE-RadioAccessCapability,
  UE-RadioAccessCapability-v370ext,
  UE-RadioAccessCapability-v380ext,
  UE-RadioAccessCapability-v3a0ext,
  UE-RadioAccessCapability-v4xyext,
-- Radio Bearer IEs :
  PredefinedConfigStatusList,
  PredefinedConfigValueTag,
  RAB-InformationSetupList,
  RAB-Identity,
  SRB-InformationSetupList,
-- Transport Channel IEs :
  CPCH-SetID,
  DL-CommonTransChInfo,
  DL-AddReconfTransChInfoList,
  DRAC-StaticInformationList,
  UL-CommonTransChInfo,
  UL-AddReconfTransChInfoList,
-- Measurement IEs :
  MeasurementIdentity,
  MeasurementReportingMode,
  MeasurementType,
  MeasurementType-r4,
  AdditionalMeasurementID-List,
  PositionEstimate,
  UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
InterRAT-UE-RadioAccessCapabilityList
FROM InformationElements

  maxCNdomains,
  maxNoOfMeas,

  maxRB,
  maxSRBsetup
FROM Constant-definitions
;

-- Part 1: Class definitions similar to what has been defined in 11.1 for RRC messages
-- Information that is tranferred in the same direction and across the same path is grouped

-- *****
--
-- RRC information, to target RNC
--
-- *****
-- RRC Information to target RNC sent either from source RNC or from another RAT

ToTargetRNC-Container ::= CHOICE {
  interRATHandoverInfo          InterRATHandoverInfoWithInterRATCapabilities-r3,
  srcnRelocation                SRNC-RelocationInfo-r3,
  extension                      NULL
}

-- *****
--
-- RRC information, target RNC to source RNC
--
-- *****

```

```

Target-RNC-ToSourceRNC-Container ::= CHOICE {
    radioBearerSetup          RadioBearerSetup,
    radioBearerReconfiguration RadioBearerReconfiguration,
    radioBearerRelease        RadioBearerRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    rrc-FailureInfo           RRC-FailureInfo-r3-IEs,
    extension                  NULL
}

-- Part 2: Container definitions, similar to the PDU definitions in 11.2 for RRC messages
-- In alphabetical order

-- *****
--
-- Handover to UTRAN information
--
-- *****

InterRATHandoverInfoWithInterRATCapabilities-r3 ::= CHOICE {
    r3 SEQUENCE {
        -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
        -- includes non critical extensions
        interRATHandoverInfo-r3 InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
        v390NonCriticalExtensions SEQUENCE {
            interRATHandoverInfoWithInterRATCapabilities-v390ext
        }
        InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
        -- Reserved for future non critical extension
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
},
criticalExtensions SEQUENCE {}
}

InterRATHandoverInfoWithInterRATCapabilities-r3-IEs ::= SEQUENCE {
    -- The order of the IEs may not reflect the tabular format
    -- but has been chosen to simplify the handling of the information in the BSC
    -- Other IEs
    ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
    -- interRATHandoverInfo, Octet string is used to obtain 8 bit length field prior to
    -- actual information. This makes it possible for BSS to transparently handle information
    -- received via GSM air interface even when it includes non critical extensions.
    -- The octet string shall include the InterRATHandoverInfo information
    -- The BSS can re-use the 04.18 length field received from the MS
    interRATHandoverInfo OCTET STRING (SIZE (0..255))
}

InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    failureCauseWithProtErr FailureCauseWithProtErr OPTIONAL
}

-- *****
--
-- SRNC Relocation information
--
-- *****

SRNC-RelocationInfo-r3 ::= CHOICE {
    r3 SEQUENCE {
        sRNC-RelocationInfo-r3 SRNC-RelocationInfo-r3-IEs,
        v380NonCriticalExtensions SEQUENCE {
            sRNC-RelocationInfo-v380ext SRNC-RelocationInfo-v380ext-IEs,
            -- Reserved for future non critical extension
        }
        v390NonCriticalExtensions SEQUENCE {
            sRNC-RelocationInfo-v390ext SRNC-RelocationInfo-v390ext-IEs,
            v3a0NonCriticalExtensions SEQUENCE {
                sRNC-RelocationInfo-v3a0ext SRNC-RelocationInfo-v3a0ext-IEs,
                v4xyNonCriticalExtensions SEQUENCE {
                    sRNC-RelocationInfo-v4xyext SRNC-RelocationInfo-v4xyext-IEs,
                    -- Reserved for future non critical extension
                }
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            }
        }
    }
},
OPTIONAL
}

```

```

    criticalExtensions          SEQUENCE {}
}

SRNC-RelocationInfo-r3-IEs ::= SEQUENCE {
    -- Non-RRC IEs
    stateOfRRC                  StateOfRRC,
    stateOfRRC-Procedure        StateOfRRC-Procedure,
    -- Ciphering related information IEs
    -- If the extension v380 is included use the extension for the ciphering status per CN domain
    cipheringStatus             CipheringStatus,
    calculationTimeForCiphering CalculationTimeForCiphering          OPTIONAL,
    cipheringInfoPerRB-List     CipheringInfoPerRB-List          OPTIONAL,
    count-C-List                COUNT-C-List                OPTIONAL,
    integrityProtectionStatus    IntegrityProtectionStatus,
    srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList,
    implementationSpecificParams ImplementationSpecificParams          OPTIONAL,
    -- User equipment IEs
    u-RNTI                      U-RNTI,
    c-RNTI                      C-RNTI                OPTIONAL,
    ue-RadioAccessCapability    UE-RadioAccessCapability,
    ue-Positioning-LastKnownPos UE-Positioning-LastKnownPos          OPTIONAL,
    -- Other IEs
    ue-RATSpecificCapability    InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                URA-Identity                OPTIONAL,
    -- Core network IEs
    cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP,
    cn-DomainInformationList     CN-DomainInformationList          OPTIONAL,
    -- Measurement IEs
    ongoingMeasRepList          OngoingMeasRepList            OPTIONAL,
    -- Radio bearer IEs
    predefinedConfigStatusList   PredefinedConfigStatusList,
    srb-InformationList          SRB-InformationSetupList,
    rab-InformationList          RAB-InformationSetupList          OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo        UL-CommonTransChInfo          OPTIONAL,
    ul-TransChInfoList          UL-AddReconfTransChInfoList    OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                      SEQUENCE {
            cpch-SetID            CPCH-SetID                OPTIONAL,
            transChDRAC-Info      DRAC-StaticInformationList OPTIONAL
        },
        tdd                      NULL
    },
    dl-CommonTransChInfo        DL-CommonTransChInfo          OPTIONAL,
    dl-TransChInfoList          DL-AddReconfTransChInfoList    OPTIONAL,
    -- Measurement report
    measurementReport            MeasurementReport              OPTIONAL,
    nonCriticalExtensions        SEQUENCE {
        -- In case of TDD only up-Ipdl-Parameters-TDD is present, otherwise
        -- this IE is absent
        up-Ipdl-Parameters-TDD   UE-Positioning-IPDL-Parameters-TDD-r4-ext OPTIONAL,
        -- Extension mechanism for non- release4 information
        nonCriticalExtensions     SEQUENCE {}
    }
}

SRNC-RelocationInfo-v380ext-IEs ::= SEQUENCE {
    -- Ciphering related information IEs
    cn-DomainIdentity            CN-DomainIdentity,
    cipheringStatusList          CipheringStatusList
}

SRNC-RelocationInfo-v390ext-IEs ::= SEQUENCE {
    cn-DomainInformationList-v390ext CN-DomainInformationList-v390ext          OPTIONAL,
    ue-RadioAccessCapability-v370ext UE-RadioAccessCapability-v370ext          OPTIONAL,
    ue-RadioAccessCapability-v380ext UE-RadioAccessCapability-v380ext          OPTIONAL,
    dl-PhysChCapabilityFDD-v380ext   DL-PhysChCapabilityFDD-v380ext,
    failureCauseWithProtErr         FailureCauseWithProtErr          OPTIONAL
}

SRNC-RelocationInfo-v3a0ext-IEs ::= SEQUENCE {
    startValueForCIphering-v3a0ext   START-Value,
    cipheringInfoForSRB1-v3a0ext     CipheringInfoForSRB1-v3a0ext,
    ue-RadioAccessCapability-v3a0ext  UE-RadioAccessCapability-v3a0ext          OPTIONAL
}

SRNC-RelocationInfo-v4xyext-IEs ::= SEQUENCE {

```

```

    ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}
CipheringInfoForSRB1-v3a0ext ::= SEQUENCE {
    dl-UM-SN                            BIT STRING (SIZE (7))
}
CipheringStatusList ::=                SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        CipheringStatusCNdomain
CipheringStatusCNdomain ::=            SEQUENCE {
    cn-DomainIdentity                    CN-DomainIdentity,
    cipheringStatus                       CipheringStatus
}
SRNC-RelocationInfo-r4 ::=            SEQUENCE {
    -- Non-RRC IEs
    stateOfRRC                           StateOfRRC,
    stateOfRRC-Procedure                  StateOfRRC-Procedure,
    cipheringStatus                       CipheringStatus,
    calculationTimeForCiphering           CalculationTimeForCiphering    OPTIONAL,
    cipheringInfoPerRB-List               CipheringInfoPerRB-List      OPTIONAL,
    integrityProtectionStatus             IntegrityProtectionStatus,
    srb-SpecificIntegrityProtInfoList     SRB-SpecificIntegrityProtInfoList,
    implementationSpecificParams          ImplementationSpecificParams  OPTIONAL,
    -- User equipment IEs
    u-RNTI                                U-RNTI,
    c-RNTI                                C-RNTI                        OPTIONAL,
    ue-RadioAccessCapability              UE-RadioAccessCapability,
    ue-Positioning-LastKnownPos           UE-Positioning-LastKnownPos   OPTIONAL,
    -- Other IEs
    ue-RATSpecificCapability              InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                          URA-Identity                  OPTIONAL,
    -- Core network IEs
    cn-CommonGSM-MAP-NAS-SysInfo          NAS-SystemInformationGSM-MAP,
    cn-DomainInformationList              CN-DomainInformationList      OPTIONAL,
    -- Measurement IEs
    ongoingMeasRepList                    OngoingMeasRepList-r4        OPTIONAL,
    -- Radio bearer IEs
    predefinedConfigStatusList            PredefinedConfigStatusList,
    srb-InformationList                   SRB-InformationSetupList,
    rab-InformationList                    RAB-InformationSetupList      OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo                  UL-CommonTransChInfo          OPTIONAL,
    ul-TransChInfoList                    UL-AddReconfTransChInfoList   OPTIONAL,
    modeSpecificInfo                       CHOICE {
        fdd                                SEQUENCE {
            cpch-SetID                      CPCH-SetID                    OPTIONAL,
            transChDRAC-Info                DRAC-StaticInformationList    OPTIONAL
        },
        tdd                                NULL
    },
    dl-CommonTransChInfo                  DL-CommonTransChInfo          OPTIONAL,
    dl-TransChInfoList                    DL-AddReconfTransChInfoList   OPTIONAL,
    -- Measurement report
    measurementReport                      MeasurementReport              OPTIONAL,
    nonCriticalExtensions                  SEQUENCE {
        -- In case of TDD only up-IPDL-Parameters-TDD is present, otherwise
        -- this IE is absent
        up-IPDL-Parameters-TDD              UE-Positioning-IPDL-Parameters-TDD-r4-ext  OPTIONAL,
        -- Extension mechanism for non-release4 information
        nonCriticalExtensions                SEQUENCE {}
    }
}
-- IE definitions
CalculationTimeForCiphering ::=        SEQUENCE {
    cell-Id                               CellIdentity,
    sfn                                    INTEGER (0..4095)
}
CipheringInfoPerRB ::=                  SEQUENCE {
    dl-HFN                                 BIT STRING (SIZE (20..25)),
    ul-HFN                                 BIT STRING (SIZE (20..25))
}

```

```

-- TABULAR: CipheringInfoPerRB-List, multiplicity value numberOfRadioBearers
-- has been replaced with maxRB.
CipheringInfoPerRB-List ::= SEQUENCE (SIZE (1..maxRB)) OF
    CipheringInfoPerRB

CipheringStatus ::= ENUMERATED {
    started, notStarted }

CN-DomainInformation-v390ext ::= SEQUENCE {
    cn-DRX-CycleLengthCoeff CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList-v390ext ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainInformation-v390ext

COUNT-C-List ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    COUNT-CSingle

COUNT-CSingle ::= SEQUENCE {
    cn-DomainIdentity CN-DomainIdentity,
    count-C BIT STRING (SIZE (32))
}

ImplementationSpecificParams ::= BIT STRING (SIZE (1..512))

IntegrityProtectionStatus ::= ENUMERATED {
    started, notStarted }

MeasurementCommandWithType ::= CHOICE {
    setup MeasurementType,
    modify NULL,
    release NULL
}

MeasurementCommandWithType-r4 ::= CHOICE {
    setup MeasurementType-r4,
    modify NULL,
    release NULL
}

OngoingMeasRep ::= SEQUENCE {
    measurementIdentity MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType
    measurementCommandWithType MeasurementCommandWithType,
    measurementReportingMode MeasurementReportingMode OPTIONAL,
    additionalMeasurementID-List AdditionalMeasurementID-List OPTIONAL
}

OngoingMeasRep-r4 ::= SEQUENCE {
    measurementIdentity MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType-r4.
    measurementCommandWithType-r4 MeasurementCommandWithType-r4,
    measurementReportingMode MeasurementReportingMode OPTIONAL,
    additionalMeasurementID-List AdditionalMeasurementID-List OPTIONAL
}

OngoingMeasRepList ::= SEQUENCE (SIZE (1..maxNoOfMeas)) OF
    OngoingMeasRep

OngoingMeasRepList-r4 ::= SEQUENCE (SIZE (1..maxNoOfMeas)) OF
    OngoingMeasRep-r4

SRB-SpecificIntegrityProtInfo ::= SEQUENCE {
    ul-RRC-HFN BIT STRING (SIZE (28)),
    dl-RRC-HFN BIT STRING (SIZE (28)),
    ul-RRC-SequenceNumber RRC-MessageSequenceNumber,
    dl-RRC-SequenceNumber RRC-MessageSequenceNumber
}

SRB-SpecificIntegrityProtInfoList ::= SEQUENCE (SIZE (4..maxSRBsetup)) OF
    SRB-SpecificIntegrityProtInfo

StateOfRRC ::= ENUMERATED {
    cell-DCH, cell-FACH,
    cell-PCH, ura-PCH }

```

```
StateOfRRC-Procedure ::=          ENUMERATED {
                                     awaitNoRRC-Message,
                                     awaitRRC-ConnectionRe-establishmentComplete,
                                     awaitRB-SetupComplete,
                                     awaitRB-ReconfigurationComplete,
                                     awaitTransportCH-ReconfigurationComplete,
                                     awaitPhysicalCH-ReconfigurationComplete,
                                     awaitActiveSetUpdateComplete,
                                     awaitHandoverComplete,
                                     sendCellUpdateConfirm,
                                     sendUraUpdateConfirm,
                                     sendRrcConnectionReestablishment,
                                     otherStates
                                }

UE-Positioning-LastKnownPos ::=   SEQUENCE {
                                     sfn
                                     cell-id
                                     positionEstimate
                                }

END
```


CR-Form-v7

CHANGE REQUEST

⌘ **25.331 CR 1652** ⌘ rev **-** ⌘ Current version: **5.1.0** ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Transport channel information elements for HSDPA		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ HSDPA-L23	Date:	⌘ 20/06/2002
Category:	⌘ F	Release:	⌘ REL-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ Corrections for HSDPA
Summary of change:	⌘ <ul style="list-style-type: none"> New distribution of information by introduction of new IE Added or reconfigured MAC-d flow in order to differentiate between transport channel and MAC-d flow Description of handling of IE included (mapping between MAC-d flow and MAC-hs queue and T1 per queue) Description for H-RNTI removed from Added or reconfigured Transport channel because not needed Description for HSDSCH TFS removed in order to align to latest decisions (preconfigured TFS) Description for HS-DSCH Transport Format Set removed, Information on MAC-d PDU size moved to another IE T1 moved to more appropriate IE IE MAC-hs capability removed according to decisions in last meeting
Consequences if not approved:	⌘ HS-DSCH information missing

Clauses affected:	⌘ 8.6.5.5a, 8.6.5.6, 8.6.5.6a, 8.6.5.6b, 10.3.3.19a, 10.3.4.21, 10.3.5.1, 10.3.5.1a, 10.3.5.7a, 10.3.5.7b, 10.3.5.7c, 11.3							
Other specs	⌘	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td>X</td> <td></td> </tr> </table>	Y	N	X		Other core specifications	⌘
Y	N							
X								

affected:

<input checked="" type="checkbox"/>	Test specifications
<input checked="" type="checkbox"/>	O&M Specifications

Other comments: ☞

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>.

Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☞ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.5.5a Added or reconfigured MAC-d flow

If the IE "Added or reconfigured MAC-d flow" is included the UE shall:

- 1> set the release timer for each of the MAC-hs queues in the MAC-hs entity to the value in the corresponding IE "T1".
- 1> apply the indicated mapping between MAC-d flows and MAC-hs queues
- 1> configure MAC-hs with the mapping between MAC-d PDU sizes index and allowed MAC-d PDU sizes as indicated potentially replacing already existing MAC-d PDU sizes

8.6.5.6 Added or Reconfigured DL TrCH information

If the IE "Added or Reconfigured DL TrCH information" is included then for the transport channel identified by the IE "DL Transport Channel Identity" the UE shall:

- 1> if the choice "DL parameters" is set to 'explicit':
 - 2> perform the actions for the IE "Transport Format Set" as specified in subclause 8.6.5.1.
- 1> if the choice "DL parameters" is set to 'same as uplink':
 - 2> if the IE "UL Transport Channel Identity" indicates an existing or a new UL Transport Channel:
 - 3> store as transport format for this transport channel the transport format associated with the transport channel identified by the IE "UL Transport Channel Identity".
 - 2> else:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the choice "DL parameters" is set to 'HSDSCH':
 - ~~2> if the IE "New H-RNTI" is included:

 - ~~3> perform the actions as specified in subclause 8.6.3.1b.~~~~
 - ~~2> if the IE "HSDSCH-TFS" is included:

 - ~~3> perform the actions specified in subclause 8.6.5.6a.~~~~
 - 2> if the IE "HARQ Info" is included:
 - 3> perform the actions specified in subclause 8.6.5.6b.
 - 2> if the IE "MAC-hs reset indicator" is present:
 - 3> reset the MAC-hs entity[15].
- 1> if the IE "DCH quality target" is included:
 - 2> perform the actions specified in subclause 8.6.5.4.

~~8.6.5.6a HS-DSCH Transport Format Set~~

~~If the IE "HS-DSCH Transport Format Set" is included, the UE shall:~~

- ~~1> store the mapping of the TB size to the TBI (Transport Block Index);~~
- ~~1> if the IE "MAC-d PDU size Info" is included:

 - ~~2> store the mapping of the Size Index Identifier (SID) to the MAC-d PDU size included in the IE "MAC-d PDU size Info".~~~~

8.6.5.6b HARQ Info

If the IE "HARQ Info" is included, the UE shall:

1> configure the MAC-hs entity with the number of HARQ processes indicated in IE "Number of Processes";

1> if the IE "Memory Partitioning" is set to 'Implicit':

2> partition the soft memory buffer in the MAC-hs entity equally among the processes configured above.

1> if the IE "Memory Partitioning" is set to 'Explicit':

2> partition the soft memory buffer in the MAC-hs entity according to the IE "Process memory size".

~~1> set the release timer for each of the priority queues in the MAC-hs entity to the value in the corresponding IE "T1".~~

10.3.3.19a—MAC-hs capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description	Version
Total buffer size	MP		Integer {50, 100, 150, 200, 300}	Total combined receiving buffer capability in RLC and MAC-hs in kBytes	REL-5

10.3.3.42 UE radio access capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Access stratum release indicator	MP		Enumerated(R99)	Indicates the release of the UE according to [35]. The IE also indicates the release of the RRC transfer syntax supported by the UE..	
	CV-not_rrc_connectionSetupComplete		Enumerated(REL-4)	15 spare values are needed.	REL-4
PDCP capability	MP		PDCP capability 10.3.3.24		
RLC capability	MP		RLC capability 10.3.3.34		
MAC-hs capability	OP		MAC-hs capability 10.3.3.19a		REL-5
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	One "TDD RF capability" entity shall be included for every Chip rate capability supported.	
		1 to 2			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		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
UE positioning capability	MP		UE positioning capability 10.3.3.45		
Measurement capability	CH- fdd_req_su p		Measurement capability 10.3.3.21		

Condition	Explanation
<i>fdd_req_sup</i>	The IE is mandatory present if the 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.
<i>not_rrc_connectionSetupComplete</i>	The IE is not needed in the RRC CONNECTION SETUP COMPLETE message. Otherwise the IE is mandatory present.

10.3.4.21 RB mapping info

A multiplexing option for each possible transport channel [or MAC-d flow](#) this RB can be multiplexed on.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Information for each multiplexing option	MP	1 to <maxRBmuxOptions>			
>RLC logical channel mapping indicator	CV-UL- RLCLogicalChannels		Boolean	TRUE indicates that the first logical channel shall be used for data PDUs and the second logical channel shall be used for control PDUs. FALSE indicates that control and data PDUs can be sent on either of the two logical channels. This parameter is not used in this release and shall be set to TRUE.	
>Number of uplink RLC logical channels	CV-UL- RLC info	1 to MaxLoCHperRLC		1 or 2 logical channels per RLC entity or radio bearer RLC [16]	
>>Uplink transport channel type	MP		Enumerated(DCH,RACH,CPCH,USCH)	CPCH is FDD only USCH is TDD only	
>>ULTransport channel identity	CV-UL- DCH/USCH		Transport channel identity 10.3.5.18	This is the ID of a DCH or USCH (TDD only) that this RB could be mapped onto.	
>>>Logical channel identity	OP		Integer(1..15)	This parameter is used to distinguish logical	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
				channels multiplexed by MAC on a transport channel.	
>>CHOICE <i>RLC size list</i>	MP			The RLC sizes that are allowed for this logical channel For radio bearers mapped to RACH, "Explicit list" is the only valid choice. The UE shall regard all other choices as undefined IE values and handle these as specified in clause 9.	
>>>All			Null	All RLC sizes listed in the <i>Transport Format Set</i> . 10.3.5.23	
>>>Configured			Null	The RLC sizes configured for this logical channel in the <i>Transport Format Set</i> . 10.3.5.23 if present in this message or in the previously stored configuration otherwise	
>>>Explicit List		1 to <maxTF>		Lists the RLC sizes that are valid for the logical channel.	
>>>>RLC size index	MP		Integer(1..maxTF)	The integer number is a reference to the <i>RLC size</i> which arrived at that position in the <i>Transport Format Set</i> 10.3.5.23	
>>MAC logical channel priority	MP		Integer(1..8)	This is priority between a user's different RBs (or logical channels). [15]	
>Downlink RLC logical channel info	CV-DL-RLC info				
>>Number of downlink RLC logical channels	MD	1 to MaxLoCHperRLC		1 or 2 logical channels per RLC entity or radio bearer RLC [16] Default value is that parameter values for DL are exactly the same as for corresponding UL logical channel. In case two	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
				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 , HS-DSCH, DCH + HS-DSCH)		REL-5
>>>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		
>>>DL HS-DSCH MAC-d flow identity	C-DL-HS-DSCH		MAC-d flow identity 10.3.5.7c		REL-5
>>>Logical channel identity	OP		Integer(1..15)	16 is reserved	

Condition	Explanation
<i>UL-RLC info</i>	If "CHOICE <i>Uplink RLC mode</i> " in the IE "RLC info" that applies for that RB (i.e. either the one stored or received in the same message for the RB for which the "RB mapping info" was received, or the one stored or received in the same message for the RB pointed at in the IE "Same as RB" in the IE "RB information to setup" stored or received in the same message) is present this IE is mandatory present. Otherwise the IE is not needed.
<i>DL-RLC info</i>	If "CHOICE <i>Downlink RLC mode</i> " in the IE "RLC info" that applies for that RB (i.e. either the one stored or received in the same message for the RB for which the "RB mapping info" was received, or the one stored or received in the same message for the RB pointed at in the IE "Same as RB" in the IE "RB information to setup" stored or received in the same message) is present this IE is mandatory present. Otherwise the IE is not needed.
<i>UL-RLCLogicalChannels</i>	If "Number of uplink RLC logical channels" in IE "RB mapping info" is 2, then this IE is mandatory present. Otherwise this IE is not needed.
<i>UL-DCH/USCH</i>	If IE "Uplink transport channel type" is equal to "DCH" or "USCH" (TDD only) this IE is mandatory present. Otherwise the IE is not needed.
<i>DL-DCH</i>	If IE "Downlink transport channel type" is equal to "DCH" or "DCH+DSCH" this IE is mandatory present. Otherwise the IE is not needed.
<i>DL-DSCH</i>	If IE "Downlink transport channel type" is equal to "DSCH" or "DCH+DSCH" this IE is mandatory present. Otherwise the IE is not needed.
<i>DL-HSDSCH</i>	If IE "Downlink transport channel type" is equal to "HSDSCH" this IE is mandatory present. Otherwise

	the IE is not needed.
--	-----------------------

10.3.5.1 Added or Reconfigured DL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Downlink transport channel type	MP		Enumerated(DCH,DSCH,HS-DSCH)		REL-5
DL Transport channel identity	MP		Transport channel identity 10.3.5.18		REL-5
	<i>CV-not HS-DSCH</i>				REL-5
DL HS-DSCH MAC-d flow identity	CV-HS-DSCH		MAC-d flow identity 10.3.5.7e		REL-5
CHOICE <i>DL parameters</i>					
>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	
>HS-DSCH					
>>HS-DSCH TFS	OP		HS-DSCH Transport Format Set 10.3.5.7b	Provides the mapping of the transport format resource indicator to the transport block size	REL-5
>>HARQ Info	OP		HARQ info 10.3.5.7a		REL-5
>>MAC-hs reset indicator	MP		Boolean	TRUE Indicates the MAC-hs entity needs to be reset.	REL-5
>> Added or reconfigured MAC-d flow	OP		Added or reconfigured MAC-d flow 10.3.5.1a		REL-5
DCH quality target	OP		Quality target 10.3.5.10		
Transparent mode signalling info	<i>CV-MessageType</i>		Transparent mode signalling info 10.3.5.17	This IE is not used in RB RELEASE message nor RB RECONFIGURATION message	

Condition	Explanation
<i>MessageType</i>	This IE is not needed in Radio Bearer Release message and Radio Bearer Reconfiguration message. Otherwise it is optional.
<i>NotHS-DSCH</i>	If the downlink transport channel type is DCH or DSCH then this IE is mandatory otherwise it is not needed.
<i>HS-DSCH</i>	If the downlink transport channel type is HSDSCH then this IE is mandatory otherwise it is not needed.

10.3.5.1a Added or reconfigured MAC-d flow

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
MAC-hs queue list	OP	<1 to maxQueue ID>			REL-5
>MAC-hs queue Id	MP		Integer(1..8)		REL-5
>MAC-d Flow Identity	MP		MAC-d Flow Identity 10.3.5.7c		REL-5
>T1	MP		Integer(FFS)	Timer when PDUs are released to the upper layers even though there are outstanding PDUs with lower TSN values.	REL-5
>MAC-d PDU size Info	OP	<1 to max MACdPDU sizes>		Mapping of the different MAC-d PDU sizes configured for the HS-DSCH to the MAC-d PDU size index in the MAC-hs header.	REL-5
>>MAC-d PDU size	MP		Integer (1..5000)		REL-5
>>MAC-d PDU size index	MP		Integer(0..7)		REL-5

10.3.5.7a HARQ Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Number of Processes	MP		Integer (1..63)		REL-5
CHOICE <i>Memory Partitioning</i>	MP				REL-5
>Implicit				UE shall apply memory partitioning of equal size across all HARQ processes	REL-5
>Explicit					REL-5
>>Memory size	MP	<1 to maxHProcess>			REL-5
>>>Process Memory size	MP		FFS	Memory size in kbytes	REL-5
Re-ordering Release Timer	MP	<1 to maxQueue ID>			REL-5
>T1	MP			Timer when PDUs are released to the upper layers even though there are outstanding PDUs with lower TSN values.	REL-5

10.3.5.7b—HS-DSCH Transport Format Set

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Dynamic Transport Format Information	MP	1 to <maxHSD SCH_TBin dex>			REL-5
>Transport Block Size	MP		Integer (1) FFS	Provides mapping of the Transport Block Index sent on the HS-SCCH to the dynamic Transport Block size	REL-5
MAC-d PDU size Info	QP	<1 to max MACdPDU sizes>			REL-5
>MAC-d PDU size	MP		Integer (1) FFS	Mapping of the different MAC-d PDU sizes configured for the HS-DSCH to the SID in the MAC-hs header.	REL-5

10.3.5.7c MAC-d Flow Identity

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
MAC-d flow identity	MP		Integer (40.78)		REL-5

11.1 General message structure

Class-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

```

ActiveSetUpdate,
ActiveSetUpdateComplete,
ActiveSetUpdateFailure,
AssistanceDataDelivery,
CellChangeOrderFromUTRAN,
CellChangeOrderFromUTRANFailure,
CellUpdate,
CellUpdateConfirm-CCCH,
CellUpdateConfirm,
CounterCheck,
CounterCheckResponse,
DownlinkDirectTransfer,
HandoverToUTRANComplete,
InitialDirectTransfer,
HandoverFromUTRANCommand-GSM,
HandoverFromUTRANCommand-CDMA2000,
HandoverFromUTRANFailure,
MeasurementControl,
MeasurementControlFailure,
MeasurementReport,
PagingType1,
PagingType2,
PhysicalChannelReconfiguration,
PhysicalChannelReconfigurationComplete,
PhysicalChannelReconfigurationFailure,
PhysicalSharedChannelAllocation,
PUSCHCapacityRequest,
    
```

```

RadioBearerReconfiguration,
RadioBearerReconfigurationComplete,
RadioBearerReconfigurationFailure,
RadioBearerRelease,
RadioBearerReleaseComplete,
RadioBearerReleaseFailure,
RadioBearerSetup,
RadioBearerSetupComplete,
RadioBearerSetupFailure,
RRCConnectionReject,
RRCConnectionRelease,
RRCConnectionRelease-CCCH,
RRCConnectionReleaseComplete,
RRCConnectionRequest,
RRCConnectionSetup,
RRCConnectionSetupComplete,
RRCStatus,
SecurityModeCommand,
SecurityModeComplete,
SecurityModeFailure,
SignallingConnectionRelease,
SignallingConnectionReleaseIndication,
SystemInformation-BCH,
SystemInformation-FACH,
SystemInformationChangeIndication,
TransportChannelReconfiguration,
TransportChannelReconfigurationComplete,
TransportChannelReconfigurationFailure,
TransportFormatCombinationControl,
TransportFormatCombinationControlFailure,
UECapabilityEnquiry,
UECapabilityInformation,
UECapabilityInformationConfirm,
UplinkDirectTransfer,
UplinkPhysicalChannelControl,
URAUpdate,
URAUpdateConfirm,
URAUpdateConfirm-CCCH,
UTRANMobilityInformation,
UTRANMobilityInformationConfirm,
UTRANMobilityInformationFailure
FROM PDU-definitions

-- User Equipment IEs :
  IntegrityCheckInfo
FROM InformationElements;

--*****
--
-- Downlink DCCH messages
--
--*****

DL-DCCH-Message ::= SEQUENCE {
    integrityCheckInfo      OPTIONAL,
    message                  DL-DCCH-MessageType
}

DL-DCCH-MessageType ::= CHOICE {
    activeSetUpdate           ActiveSetUpdate,
    assistanceDataDelivery   AssistanceDataDelivery,
    cellChangeOrderFromUTRAN CellChangeOrderFromUTRAN,
    cellUpdateConfirm        CellUpdateConfirm,
    counterCheck              CounterCheck,
    downlinkDirectTransfer    DownlinkDirectTransfer,
    handoverFromUTRANCommand-GSM HandoverFromUTRANCommand-GSM,
    handoverFromUTRANCommand-CDMA2000 HandoverFromUTRANCommand-CDMA2000,
    measurementControl        MeasurementControl,
    pagingType2               PagingType2,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    physicalSharedChannelAllocation PhysicalSharedChannelAllocation,
    radioBearerReconfiguration RadioBearerReconfiguration,
    radioBearerRelease        RadioBearerRelease,
    radioBearerSetup          RadioBearerSetup,
    rrcConnectionRelease      RRCConnectionRelease,
    securityModeCommand       SecurityModeCommand,
    signallingConnectionRelease SignallingConnectionRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,

```

```

transportFormatCombinationControl TransportFormatCombinationControl,
ueCapabilityEnquiry UECapabilityEnquiry,
ueCapabilityInformationConfirm UECapabilityInformationConfirm,
uplinkPhysicalChannelControl UplinkPhysicalChannelControl,
uraUpdateConfirm URAUpdateConfirm,
utranMobilityInformation UTRANMobilityInformation,
spare7 NULL,
spare6 NULL,
spare5 NULL,
spare4 NULL,
spare3 NULL,
spare2 NULL,
spare1 NULL
}

--*****
--
-- Uplink DCCH messages
--
--*****

UL-DCCH-Message ::= SEQUENCE {
    integrityCheckInfo IntegrityCheckInfo OPTIONAL,
    message UL-DCCH-MessageType
}

UL-DCCH-MessageType ::= CHOICE {
    activeSetUpdateComplete ActiveSetUpdateComplete,
    activeSetUpdateFailure ActiveSetUpdateFailure,
    cellChangeOrderFromUTRANFailure CellChangeOrderFromUTRANFailure,
    counterCheckResponse CounterCheckResponse,
    handoverToUTRANComplete HandoverToUTRANComplete,
    initialDirectTransfer InitialDirectTransfer,
    handoverFromUTRANFailure HandoverFromUTRANFailure,
    measurementControlFailure MeasurementControlFailure,
    measurementReport MeasurementReport,
    physicalChannelReconfigurationComplete PhysicalChannelReconfigurationComplete,
    physicalChannelReconfigurationFailure PhysicalChannelReconfigurationFailure,
    radioBearerReconfigurationComplete RadioBearerReconfigurationComplete,
    radioBearerReconfigurationFailure RadioBearerReconfigurationFailure,
    radioBearerReleaseComplete RadioBearerReleaseComplete,
    radioBearerReleaseFailure RadioBearerReleaseFailure,
    radioBearerSetupComplete RadioBearerSetupComplete,
    radioBearerSetupFailure RadioBearerSetupFailure,
    rrcConnectionReleaseComplete RRCConnectionReleaseComplete,
    rrcConnectionSetupComplete RRCConnectionSetupComplete,
    rrcStatus RRCStatus,
    securityModeComplete SecurityModeComplete,
    securityModeFailure SecurityModeFailure,
    signallingConnectionReleaseIndication SignallingConnectionReleaseIndication,
    transportChannelReconfigurationComplete TransportChannelReconfigurationComplete,
    transportChannelReconfigurationFailure TransportChannelReconfigurationFailure,
    transportFormatCombinationControlFailure TransportFormatCombinationControlFailure,
    ueCapabilityInformation UECapabilityInformation,
    uplinkDirectTransfer UplinkDirectTransfer,
    utranMobilityInformationConfirm UTRANMobilityInformationConfirm,
    utranMobilityInformationFailure UTRANMobilityInformationFailure,
    spare2 NULL,
    spare1 NULL
}

--*****
--
-- Downlink CCCH messages
--
--*****

DL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo IntegrityCheckInfo OPTIONAL,
    message DL-CCCH-MessageType
}

```



```

DL-CCCH-MessageType ::= CHOICE {
    cellUpdateConfirm          CellUpdateConfirm-CCCH,
    rrcConnectionReject       RRCConnectionReject,
    rrcConnectionRelease      RRCConnectionRelease-CCCH,
    rrcConnectionSetup        RRCConnectionSetup,
    uraUpdateConfirm          URAUpdateConfirm-CCCH,
    spare3                     NULL,
    spare2                     NULL,
    spare1                     NULL
}

--*****
--
-- Uplink CCCH messages
--
--*****

UL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo        IntegrityCheckInfo        OPTIONAL,
    message                    UL-CCCH-MessageType
}

UL-CCCH-MessageType ::= CHOICE {
    cellUpdate                CellUpdate,
    rrcConnectionRequest      RRCConnectionRequest,
    uraUpdate                  URAUpdate,
    spare1                     NULL
}

--*****
--
-- PCCH messages
--
--*****

PCCH-Message ::= SEQUENCE {
    message                    PCCH-MessageType
}

PCCH-MessageType ::= CHOICE {
    pagingType1               PagingType1,
    spare                      NULL
}

--*****
--
-- Downlink SHCCH messages
--
--*****

DL-SHCCH-Message ::= SEQUENCE {
    message                    DL-SHCCH-MessageType
}

DL-SHCCH-MessageType ::= CHOICE {
    physicalSharedChannelAllocation PhysicalSharedChannelAllocation,
    extension                  NULL
}

--*****
--
-- Uplink SHCCH messages
--
--*****

UL-SHCCH-Message ::= SEQUENCE {
    message                    UL-SHCCH-MessageType
}

UL-SHCCH-MessageType ::= CHOICE {
    puschCapacityRequest      PUSCHCapacityRequest,
    spare                      NULL
}

--*****
--
-- BCCH messages sent on FACH

```

```

--
--*****
BCCH-FACH-Message ::= SEQUENCE {
    message          BCCH-FACH-MessageType
}

BCCH-FACH-MessageType ::= CHOICE {
    systemInformation          SystemInformation-FACH,
    systemInformationChangeIndication SystemInformationChangeIndication,
    spare2                     NULL,
    spare1                     NULL
}

--*****
--
-- BCCH messages sent on BCH
--
--*****

BCCH-BCH-Message ::= SEQUENCE {
    message          SystemInformation-BCH
}

END

```

11.2 PDU definitions

```

--*****
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*****

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

--*****
--
-- IE parameter types from other modules
--
--*****

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    CN-InformationInfoFull,
    NAS-Message,
    PagingRecordTypeID,
-- UTRAN Mobility IEs :
    CellIdentity,
    CellIdentity-PerRL-List,
    URA-Identity,
-- User Equipment IEs :
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CapabilityUpdateRequirement-r4,
    CapabilityUpdateRequirement-r4-ext,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    DSCH-RNTI,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    H-RNTI,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    N-308,

```

```

PagingCause,
PagingRecordList,
ProtocolErrorIndicator,
ProtocolErrorIndicatorWithMoreInfo,
Rb-timer-indicator,
RedirectionInfo,
RejectionCause,
ReleaseCause,
RRC-StateIndicator,
RRC-TransactionIdentifier,
SecurityCapability,
START-Value,
STARTList,
U-RNTI,
U-RNTI-Short,
UE-RadioAccessCapability,
UE-RadioAccessCapability-r4-ext,
UE-RadioAccessCapability-r5-ext,
UE-RadioAccessCapability-v370ext,
UE-RadioAccessCapability-v380ext,
UE-RadioAccessCapability-v3a0ext,
UE-RadioAccessCapability-v4xyext,
DL-PhysChCapabilityFDD-v380ext,
UE-ConnTimersAndConstants,
UE-ConnTimersAndConstants-v3a0ext,
UE-SecurityInformation,
URA-UpdateCause,
UTRAN-DRX-CycleLengthCoefficient,
WaitTime,
-- Radio Bearer IEs :
DefaultConfigIdentity,
DefaultConfigMode,
DL-CounterSynchronisationInfo,
PredefinedConfigIdentity,
PredefinedConfigStatusList,
RAB-Info,
RAB-Info-Post,
RAB-InformationList,
RAB-InformationReconfigList,
RAB-InformationSetupList,
RAB-InformationSetupList-r4,
RB-ActivationTimeInfoList,
RB-COUNT-C-InformationList,
RB-COUNT-C-MSB-InformationList,
RB-IdentityList,
RB-InformationAffectedList,
RB-InformationAffectedList-r5,
RB-InformationReconfigList,
RB-InformationReconfigList-r4,
RB-InformationReconfigList-r5,
RB-InformationReleaseList,
RB-WithPDCP-InfoList, SRB-InformationSetupList,
SRB-InformationSetupList2,
UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
CPCH-SetID,
DL-AddReconfTransChInfo2List,
DL-AddReconfTransChInfoList,
DL-AddReconfTransChInfoList-r4,
DL-AddReconfTransChInfoList-r5,
DL-CommonTransChInfo,
DL-CommonTransChInfo-r4,
DL-DeletedTransChInfoList,
DL-DeletedTransChInfoList-r5,
DRAC-StaticInformationList,
TFC-Subset,
TFCS-Identity,
UL-AddReconfTransChInfoList,
UL-CommonTransChInfo,
UL-CommonTransChInfo-r4,
UL-DeletedTransChInfoList,
-- Physical Channel IEs :
Alpha,
CCTrCH-PowerControlInfo,
CCTrCH-PowerControlInfo-r4,
ConstantValue,
ConstantValueTdd,
CPCH-SetInfo,

```

```

DL-CommonInformation,
DL-CommonInformation-r4,
DL-CommonInformationPost,
DL-HSPDSCH-Information,
DL-InformationPerRL,
DL-InformationPerRL-List,
DL-InformationPerRL-List-r4,
DL-InformationPerRL-List-r5,
DL-InformationPerRL-ListPostFDD,
DL-InformationPerRL-PostTDD,
DL-InformationPerRL-PostTDD-LCR-r4,
DL-PDSCH-Information,
DPCH-CompressedModeStatusInfo,
FrequencyInfo,
FrequencyInfoFDD,
FrequencyInfoTDD,
MaxAllowedUL-TX-Power,
OpenLoopPowerControl-IPDL-TDD-r4,
PDSCH-CapacityAllocationInfo,
PDSCH-CapacityAllocationInfo-r4,
PDSCH-Identity,
PrimaryCCPCH-TX-Power,
PUSCH-CapacityAllocationInfo,
PUSCH-CapacityAllocationInfo-r4,
PUSCH-Identity,
RL-AdditionInformationList,
RL-RemovalInformationList,
SpecialBurstScheduling,
SSDT-Information,
TFC-ControlDuration,
SSDT-UL-r4,
TimeslotList,
TimeslotList-r4,
TX-DiversityMode,
UL-ChannelRequirement,
UL-ChannelRequirement-r4,
UL-ChannelRequirement-r5,
UL-ChannelRequirementWithCPCH-SetID,
UL-ChannelRequirementWithCPCH-SetID-r4,
UL-ChannelRequirementWithCPCH-SetID-r5,
UL-DPCH-Info,
UL-DPCH-Info-r4,
UL-DPCH-InfoPostFDD,
UL-DPCH-InfoPostTDD,
UL-DPCH-InfoPostTDD-LCR-r4,
UL-SynchronisationParameters-r4,
UL-TimingAdvance,
UL-TimingAdvanceControl,
UL-TimingAdvanceControl-r4,
-- Measurement IEs :
AdditionalMeasurementID-List,
Frequency-Band,
EventResults,
InterFreqEventResults-LCR-r4-ext,
InterRAT-TargetCellDescription,
MeasuredResults,
MeasuredResults-v390ext,
MeasuredResultsList,
MeasuredResultsList-LCR-r4-ext,
MeasuredResultsOnRACH,
MeasurementCommand,
MeasurementCommand-r4,
MeasurementIdentity,
MeasurementReportingMode,
PrimaryCCPCH-RSCP,
SFN-Offset-Validity,
TimeslotListWithISCP,
TrafficVolumeMeasuredResultsList,
UE-Positioning-GPS-AssistanceData,
UE-Positioning-Measurement-v390ext,
UE-Positioning-OTDOA-AssistanceData,
UE-Positioning-OTDOA-AssistanceData-r4ext,
UE-Positioning-OTDOA-AssistanceData-UEB,
UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
BCCH-ModificationInfo,
CDMA2000-MessageList,
GSM-MessageList,
InterRAT-ChangeFailureCause,

```

```

InterRAT-HO-FailureCause,
InterRAT-UE-RadioAccessCapabilityList,
InterRAT-UE-SecurityCapList,
IntraDomainNasNodeSelector,
ProtocolErrorMoreInformation,
Rplmn-Information,
Rplmn-Information-r4,
SegCount,
SegmentIndex,
SFN-Prime,
SIB-Data-fixed,
SIB-Data-variable,
SIB-Type
FROM InformationElements

maxSIBperMsg
FROM Constant-definitions;

-- *****
--
-- ACTIVE SET UPDATE (FDD only)
--
-- *****

ActiveSetUpdate ::= CHOICE {
    r3
        activeSetUpdate-r3          SEQUENCE {
            activeSetUpdate-r3-IEs,
            v4xyNonCriticalExtensions SEQUENCE {
                activeSetUpdate-v4xyext-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            } OPTIONAL
        },
    later-than-r3
        rrc-TransactionIdentifier SEQUENCE {
            RRC-TransactionIdentifier,
            criticalExtensions SEQUENCE {}
        }
}

ActiveSetUpdate-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
    cipheringModeInfo CipheringModeInfo OPTIONAL,
    activationTime ActivationTime OPTIONAL,
    newU-RNTI U-RNTI OPTIONAL,
    -- Core network IEs
    cn-InformationInfo CN-InformationInfo OPTIONAL,
    -- Radio bearer IEs
    dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
    -- Physical channel IEs
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    rl-AdditionInformationList RL-AdditionInformationList OPTIONAL,
    rl-RemovalInformationList RL-RemovalInformationList OPTIONAL,
    tx-DiversityMode TX-DiversityMode OPTIONAL,
    ssdt-Information SSdT-Information OPTIONAL
}

ActiveSetUpdate-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- ssdt-UL extends SSdT-Information. FDD only.
    ssdt-UL SSdT-UL-r4 OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE RL-AdditionInformationList included in this message
    cell-id-PerRL-List CellIdentity-PerRL-List OPTIONAL
}

-- *****
--
-- ACTIVE SET UPDATE COMPLETE (FDD only)
--
-- *****

ActiveSetUpdateComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo IntegrityProtActivationInfo OPTIONAL,
    -- Radio bearer IEs
    rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfoList OPTIONAL,

```

```

        ul-CounterSynchronisationInfo    UL-CounterSynchronisationInfo    OPTIONAL,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
    }
-- *****
--
-- ACTIVE SET UPDATE FAILURE (FDD only)
--
-- *****

ActiveSetUpdateFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        failureCause                     FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
    }
-- *****
--
-- Assistance Data Delivery
--
-- *****

AssistanceDataDelivery ::= CHOICE {
    r3                                     SEQUENCE {
        assistanceDataDelivery-r3       AssistanceDataDelivery-r3-IEs,
        v3aoNonCriticalExetensions      SEQUENCE {
            assistanceDataDelivery-v3a0ext AssistanceDataDelivery-v3a0ext,
            v4xyNonCriticalExtensions    SEQUENCE {
                assistanceDataDelivery-v4xyext
                AssistanceDataDelivery-v4xyext-IEs,
                SEQUENCE {}              OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                         SEQUENCE {
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        criticalExtensions                SEQUENCE {}
    }
}

AssistanceDataDelivery-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    -- Measurement Information Elements
        ue-positioning-GPS-AssistanceData UE-Positioning-GPS-AssistanceData
    OPTIONAL,
        ue-positioning-OTDOA-AssistanceData-UEB UE-Positioning-OTDOA-AssistanceData-UEB
    OPTIONAL
}

AssistanceDataDelivery-v3a0ext ::= SEQUENCE {
    sfm-Offset-Validity                  SFN-Offset-Validity    OPTIONAL
}

AssistanceDataDelivery-v4xyext-IEs ::= SEQUENCE {
    ue-Positioning-OTDOA-AssistanceData-r4ext UE-Positioning-OTDOA-AssistanceData-r4ext    OPTIONAL
}
-- *****
--
-- CELL CHANGE ORDER FROM UTRAN
--
-- *****

CellChangeOrderFromUTRAN ::= CHOICE {
    r3                                     SEQUENCE {
        cellChangeOrderFromUTRAN-IEs    CellChangeOrderFromUTRAN-r3-IEs,
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
    },
    later-than-r3                         SEQUENCE {
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        criticalExtensions                SEQUENCE {}
    }
}

```

```

CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
  -- User equipment IES
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy                          IntegrityProtectionModeInfo      OPTIONAL,
  activationTime                 ActivationTime                  OPTIONAL,
  rab-InformationList            RAB-InformationList             OPTIONAL,
  interRAT-TargetCellDescription InterRAT-TargetCellDescription
}

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

CellChangeOrderFromUTRANFailure ::= CHOICE {
  r3                             SEQUENCE {
    cellChangeOrderFromUTRANFailure-r3
                                CellChangeOrderFromUTRANFailure-r3-IEs,
    nonCriticalExtensions        SEQUENCE {} OPTIONAL
  },
  -- dummy is not used in this version of the specification and it
  -- should be ignored.
  dummy                          SEQUENCE {
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    criticalExtensions           SEQUENCE {}
  }
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
  -- User equipment IES
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy                          IntegrityProtectionModeInfo      OPTIONAL,
  interRAT-ChangeFailureCause   InterRAT-ChangeFailureCause
}

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

CellUpdate ::= SEQUENCE {
  -- User equipment IES
  u-RNTI                         U-RNTI,
  startList                      STARTList,
  am-RLC-ErrorIndicationRb2-3or4 BOOLEAN,
  am-RLC-ErrorIndicationRb5orAbove BOOLEAN,
  cellUpdateCause                CellUpdateCause,
  -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
  failureCause                   FailureCauseWithProtErrTrId      OPTIONAL,
  rb-timer-indicator             Rb-timer-indicator,
  -- Measurement IES
  measuredResultsOnRACH          MeasuredResultsOnRACH            OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {} OPTIONAL
}

-- *****
--
-- CELL UPDATE CONFIRM
--
-- *****

CellUpdateConfirm ::= CHOICE {
  r3                             SEQUENCE {
    cellUpdateConfirm-r3         CellUpdateConfirm-r3-IEs,
    v3a0NonCriticalExtensions    SEQUENCE {
      cellUpdateConfirm-v3a0ext  CellUpdateConfirm-v3a0ext,
      v4xyNonCriticalExtensions  SEQUENCE {
        cellUpdateConfirm-v4xyext CellUpdateConfirm-v4xyext-IEs,
        nonCriticalExtensions    SEQUENCE {} OPTIONAL
      }
    } OPTIONAL
  } OPTIONAL
}

```

```

    },
    later-than-r3
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions CHOICE {
        r4 SEQUENCE {
            cellUpdateConfirm-r4 CellUpdateConfirm-r4-IEs,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        },
        r5 SEQUENCE {
            cellUpdateConfirm-r5 CellUpdateConfirm-r5-IEs,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        },
        criticalExtensions SEQUENCE {}
    }
}
}

CellUpdateConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
    cipheringModeInfo CipheringModeInfo OPTIONAL,
    activationTime ActivationTime OPTIONAL,
    new-U-RNTI U-RNTI OPTIONAL,
    new-C-RNTI C-RNTI OPTIONAL,
    rrc-StateIndicator RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    rlc-Re-establishIndicatorRb2-3or4 BOOLEAN,
    rlc-Re-establishIndicatorRb5orAbove BOOLEAN,
    -- CN information elements
    cn-InformationInfo CN-InformationInfo OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity URA-Identity OPTIONAL,
    -- Radio bearer IEs
    rb-InformationReleaseList RB-InformationReleaseList OPTIONAL,
    rb-InformationReconfigList RB-InformationReconfigList OPTIONAL,
    rb-InformationAffectedList RB-InformationAffectedList OPTIONAL,
    dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
    ul-deletedTransChInfoList UL-DeletedTransChInfoList OPTIONAL,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
    modeSpecificTransChInfo CHOICE {
        fdd SEQUENCE {
            cpch-SetID CPCH-SetID OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
        },
        tdd NULL
    },
    dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
    dl-DeletedTransChInfoList DL-DeletedTransChInfoList OPTIONAL,
    dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList OPTIONAL,
    -- Physical channel IEs
    frequencyInfo FrequencyInfo OPTIONAL,
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    ul-ChannelRequirement UL-ChannelRequirement OPTIONAL,
    modeSpecificPhysChInfo CHOICE {
        fdd SEQUENCE {
            dl-PDSCH-Information DL-PDSCH-Information OPTIONAL
        },
        tdd NULL
    },
    dl-CommonInformation DL-CommonInformation OPTIONAL,
    dl-InformationPerRL-List DL-InformationPerRL-List OPTIONAL
}

CellUpdateConfirm-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI DSCH-RNTI OPTIONAL
}

CellUpdateConfirm-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- ssdt-UL extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL SSdT-UL-r4 OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
}

```



```

-- in IE DL-InformationPerRL-List included in this message
cell-id-PerRL-List          CellIdentity-PerRL-List          OPTIONAL
}

CellUpdateConfirm-r4-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo              OPTIONAL,
  activationTime                  ActivationTime                  OPTIONAL,
  new-U-RNTI                      U-RNTI                        OPTIONAL,
  new-C-RNTI                      C-RNTI                        OPTIONAL,
  new-DSCH-RNTI                  DSCH-RNTI                     OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  rlc-ResetIndicatorC-Plane        BOOLEAN,
  rlc-ResetIndicatorU-Plane        BOOLEAN,
-- CN information elements
  cn-InformationInfo              CN-InformationInfo            OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                    URA-Identity                  OPTIONAL,
-- Radio bearer IEs
  rb-InformationReleaseList        RB-InformationReleaseList     OPTIONAL,
  rb-InformationReconfigList       RB-InformationReconfigList-r4  OPTIONAL,
  rb-InformationAffectedList       RB-InformationAffectedList     OPTIONAL,
  rb-WithPDCP-InfoList            RB-WithPDCP-InfoList          OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo            UL-CommonTransChInfo-r4       OPTIONAL,
  ul-deletedTransChInfoList        UL-DeletedTransChInfoList     OPTIONAL,
  ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList   OPTIONAL,
  modeSpecificTransChInfo          CHOICE {
    fdd                            SEQUENCE {
      cpch-SetID                  CPCH-SetID                    OPTIONAL,
      addReconfTransChDRAC-Info    DRAC-StaticInformationList    OPTIONAL
    },
    tdd                            NULL
  },
  dl-CommonTransChInfo            DL-CommonTransChInfo-r4       OPTIONAL,
  dl-DeletedTransChInfoList        DL-DeletedTransChInfoList     OPTIONAL,
  dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList-r4 OPTIONAL,
-- Physical channel IEs
  frequencyInfo                   FrequencyInfo                   OPTIONAL,
  maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power         OPTIONAL,
  ul-ChannelRequirement            UL-ChannelRequirement-r4      OPTIONAL,
  modeSpecificPhysChInfo           CHOICE {
    fdd                            SEQUENCE {
      dl-PDSCH-Information        DL-PDSCH-Information          OPTIONAL
    },
    tdd                            NULL
  },
  dl-CommonInformation            DL-CommonInformation-r4       OPTIONAL,
  dl-InformationPerRL-List         DL-InformationPerRL-List-r4   OPTIONAL
}

CellUpdateConfirm-r5-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo              OPTIONAL,
  activationTime                  ActivationTime                  OPTIONAL,
  new-U-RNTI                      U-RNTI                        OPTIONAL,
  new-C-RNTI                      C-RNTI                        OPTIONAL,
  new-DSCH-RNTI                  DSCH-RNTI                     OPTIONAL,
  new-H-RNTI                      H-RNTI                        OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  rlc-ResetIndicatorC-Plane        BOOLEAN,
  rlc-ResetIndicatorU-Plane        BOOLEAN,
-- CN information elements
  cn-InformationInfo              CN-InformationInfo            OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                    URA-Identity                  OPTIONAL,
-- Radio bearer IEs
  rb-InformationReleaseList        RB-InformationReleaseList     OPTIONAL,
  rb-InformationReconfigList       RB-InformationReconfigList-r5  OPTIONAL,
  rb-InformationAffectedList       RB-InformationAffectedList-r5  OPTIONAL,
  rb-WithPDCP-InfoList            RB-WithPDCP-InfoList          OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo            UL-CommonTransChInfo-r4       OPTIONAL,
  ul-deletedTransChInfoList        UL-DeletedTransChInfoList     OPTIONAL,

```

```

    ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList      OPTIONAL,
    modeSpecificTransChInfo          CHOICE {
        fdd                          SEQUENCE {
            cpch-SetID                CPCH-SetID                OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
        },
        tdd                          NULL
    },
    dl-CommonTransChInfo              DL-CommonTransChInfo-r4            OPTIONAL,
    dl-DeletedTransChInfoList         DL-DeletedTransChInfoList-r5      OPTIONAL,
    dl-AddReconfTransChInfoList       DL-AddReconfTransChInfoList-r5    OPTIONAL,
-- Physical channel IEs
    frequencyInfo                     FrequencyInfo                     OPTIONAL,
    maxAllowedUL-TX-Power              MaxAllowedUL-TX-Power            OPTIONAL,
    ul-ChannelRequirement              UL-ChannelRequirement-r5         OPTIONAL,
    modeSpecificPhysChInfo             CHOICE {
        fdd                          SEQUENCE {
            dl-PDSCH-Information       DL-PDSCH-Information         OPTIONAL
        },
        tdd                          NULL
    },
    dl-HSPDSCH-Information             DL-HSPDSCH-Information           OPTIONAL,
    dl-CommonInformation               DL-CommonInformation-r4          OPTIONAL,
    dl-InformationPerRL-List           DL-InformationPerRL-List-r5      OPTIONAL
}

-- *****
--
-- CELL UPDATE CONFIRM for CCCH
--
-- *****

CellUpdateConfirm-CCCH ::= CHOICE {
    r3                                SEQUENCE {
        -- User equipment IEs
        u-RNTI                        U-RNTI,
        -- The rest of the message is identical to the one sent on DCCH.
        cellUpdateConfirm-r3          CellUpdateConfirm-r3-IEs,
        v4xyNonCriticalExtensions     SEQUENCE {
            cellUpdateConfirm-v4xyext CellUpdateConfirm-v4xyext-IEs,
            nonCriticalExtensions     SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3                     SEQUENCE {
        u-RNTI                        U-RNTI,
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                          SEQUENCE {
                -- The rest of the message is identical to the one sent on DCCH.
                cellUpdateConfirm-r4    CellUpdateConfirm-r4-IEs,
                nonCriticalExtensions   SEQUENCE {} OPTIONAL
            },
            criticalExtensions          SEQUENCE {}
        }
    }
}

-- *****
--
-- COUNTER CHECK
--
-- *****

CounterCheck ::= CHOICE {
    r3                                SEQUENCE {
        counterCheck-r3               CounterCheck-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    later-than-r3                     SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
}

CounterCheck-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    -- Radio bearer IEs

```

```

        rb-COUNT-C-MSB-InformationList  RB-COUNT-C-MSB-InformationList
    }
-- *****
--
-- COUNTER CHECK RESPONSE
--
-- *****

CounterCheckResponse ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    -- Radio bearer IEs
    rb-COUNT-C-InformationList        RB-COUNT-C-InformationList        OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {} OPTIONAL
}
-- *****
--
-- DOWNLINK DIRECT TRANSFER
--
-- *****

DownlinkDirectTransfer ::= CHOICE {
    r3
        downlinkDirectTransfer-r3      DownlinkDirectTransfer-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    later-than-r3
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
}

DownlinkDirectTransfer-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    -- Core network IEs
    cn-DomainIdentity                 CN-DomainIdentity,
    nas-Message                        NAS-Message
}
-- *****
--
-- HANDOVER TO UTRAN COMMAND
--
-- *****

HandoverToUTRANCommand ::= CHOICE {
    r3
        SEQUENCE {
            handoverToUTRANCommand-r3  HandoverToUTRANCommand-r3-IEs,
            v4xyNonCriticalExtensions    SEQUENCE {
                handoverToUTRANCommand-v4xyext  HandoverToUTRANCommand-v4xyext-IEs,
                nonCriticalExtensions          SEQUENCE {} OPTIONAL
            } OPTIONAL
        },
        criticalExtensions              CHOICE {
            r4
                SEQUENCE {
                    handoverToUTRANCommand-r4  HandoverToUTRANCommand-r4-IEs,
                    nonCriticalExtensions      SEQUENCE {} OPTIONAL
                },
            criticalExtensions          SEQUENCE {}
        }
}

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    new-U-RNTI                        U-RNTI-Short,
    -- dummy is not used in this version of specification, it should
    -- not be sent and if received it should be ignored.
    dummy                              ActivationTime                OPTIONAL,
    cipheringAlgorithm                 CipheringAlgorithm          OPTIONAL,
    -- Radio bearer IEs
    -- Specification mode information
    specificationMode                  CHOICE {
        complete                  SEQUENCE {

```

```

    srb-InformationSetupList          SRB-InformationSetupList,
    rab-InformationSetupList          RAB-InformationSetupList          OPTIONAL,
    ul-CommonTransChInfo             UL-CommonTransChInfo,
    ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo             DL-CommonTransChInfo,
    dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList,
    ul-DPCH-Info                     UL-DPCH-Info,
    modeSpecificInfo                 CHOICE {
        fdd                           SEQUENCE {
            dl-PDSCH-Information      DL-PDSCH-Information OPTIONAL,
            cpch-SetInfo              CPCH-SetInfo          OPTIONAL
        },
        tdd                           NULL
    },
    dl-CommonInformation              DL-CommonInformation,
    dl-InformationPerRL-List          DL-InformationPerRL-List,
    frequencyInfo                    FrequencyInfo
},
preconfiguration                     SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
    preConfigMode                    CHOICE {
        predefinedConfigIdentity      PredefinedConfigIdentity,
        defaultConfig                SEQUENCE {
            defaultConfigMode         DefaultConfigMode,
            defaultConfigIdentity     DefaultConfigIdentity
        }
    },
    rab-Info                          RAB-Info-Post          OPTIONAL,
    modeSpecificInfo                  CHOICE {
        fdd                           SEQUENCE {
            ul-DPCH-Info              UL-DPCH-InfoPostFDD,
            dl-CommonInformationPost  DL-CommonInformationPost,
            dl-InformationPerRL-List  DL-InformationPerRL-ListPostFDD,
            frequencyInfo              FrequencyInfoFDD
        },
        tdd                           SEQUENCE {
            ul-DPCH-Info              UL-DPCH-InfoPostTDD,
            dl-CommonInformationPost  DL-CommonInformationPost,
            dl-InformationPerRL-List  DL-InformationPerRL-ListPostTDD,
            frequencyInfo              FrequencyInfoTDD,
            primaryCCPCH-TX-Power     PrimaryCCPCH-TX-Power
        }
    }
},
},
-- Physical channel IEs
    maxAllowedUL-TX-Power             MaxAllowedUL-TX-Power
}

HandoverToUTRANCommand-v4xyext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSDT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL                           SSDT-UL-r4              OPTIONAL,
    cell-id                            CellIdentity           OPTIONAL
}

HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
-- User equipment IEs
    new-U-RNTI                         U-RNTI-Short,
    cipheringAlgorithm                  CipheringAlgorithm      OPTIONAL,
-- Radio bearer IEs
    rab-Info                            RAB-Info-Post,
-- Specification mode information
    specificationMode                   CHOICE {
        complete                        SEQUENCE {
            srb-InformationSetupList  SRB-InformationSetupList,
            rab-InformationSetupList  RAB-InformationSetupList-r4  OPTIONAL,
            ul-CommonTransChInfo     UL-CommonTransChInfo,
            ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
            dl-CommonTransChInfo     DL-CommonTransChInfo,
            dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList,
            ul-DPCH-Info              UL-DPCH-Info-r4,
            modeSpecificInfo          CHOICE {
                fdd                   SEQUENCE {

```

```

                dl-PDSCH-Information          DL-PDSCH-Information OPTIONAL,
                cpch-SetInfo                 CPCH-SetInfo         OPTIONAL
            },
            tdd                               NULL
        },
        dl-CommonInformation                 DL-CommonInformation-r4,
        dl-InformationPerRL-List             DL-InformationPerRL-List-r4,
        frequencyInfo                       FrequencyInfo
    },
    preconfiguration                       SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
        predefinedConfigIdentity           PredefinedConfigIdentity,
        rab-Info                           RAB-Info-Post         OPTIONAL,
        modeSpecificInfo                   CHOICE {
            fdd                             SEQUENCE {
                ul-DPCH-Info                UL-DPCH-InfoPostFDD,
                dl-CommonInformationPost     DL-CommonInformationPost,
                dl-InformationPerRL-List     DL-InformationPerRL-ListPostFDD,
                frequencyInfo               FrequencyInfoFDD
            },
            tdd                             CHOICE {
                tdd384                      SEQUENCE {
                    ul-DPCH-Info            UL-DPCH-InfoPostTDD,
                    dl-InformationPerRL     DL-InformationPerRL-PostTDD,
                    frequencyInfo           FrequencyInfoTDD,
                    primaryCCPCH-TX-Power   PrimaryCCPCH-TX-Power
                },
                tdd128                      SEQUENCE {
                    ul-DPCH-Info            UL-DPCH-InfoPostTDD-LCR-r4,
                    dl-InformationPerRL     DL-InformationPerRL-PostTDD-LCR-r4,
                    frequencyInfo           FrequencyInfoTDD,
                    primaryCCPCH-TX-Power   PrimaryCCPCH-TX-Power
                }
            }
        }
    },
}
-- Physical channel IEs
maxAllowedUL-TX-Power                    MaxAllowedUL-TX-Power
}

-- *****
--
-- HANDOVER TO UTRAN COMPLETE
--
-- *****

HandoverToUTRANComplete ::= SEQUENCE {
--TABULAR: Integrity protection shall not be performed on this message.
-- User equipment IEs
-- TABULAR: startList is conditional on history.
    startList                            STARTList                            OPTIONAL,
-- Radio bearer IEs
    count-C-ActivationTime                ActivationTime                            OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions                  SEQUENCE {}                            OPTIONAL
}

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

InitialDirectTransfer ::= SEQUENCE {
-- Core network IEs
    cn-DomainIdentity                    CN-DomainIdentity,
    intraDomainNasNodeSelector           IntraDomainNasNodeSelector,
    nas-Message                           NAS-Message,
-- Measurement IEs
    measuredResultsOnRACH                 MeasuredResultsOnRACH                    OPTIONAL,
    v3a0NonCriticalExtensions             SEQUENCE {
        initialDirectTransfer-v3a0ext     InitialDirectTransfer-v3a0ext,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions             SEQUENCE {}                            OPTIONAL
    }
}

```

```

}

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

-- *****
--
-- HANOVER FROM UTRAN COMMAND
--
-- *****

HandoverFromUTRANCommand-GSM ::= CHOICE {
    r3          SEQUENCE {
        handoverFromUTRANCommand-GSM-r3
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    later-than-r3          SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
}

HandoverFromUTRANCommand-GSM-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    activationTime                  ActivationTime          OPTIONAL,
    -- Radio bearer IEs
    toHandover-Info                RAB-Info                OPTIONAL,
    -- Measurement IEs
    frequency-band                  Frequency-Band,
    -- Other IEs
    gsm-message                      CHOICE {
        -- In the single-GSM-Message case, what follows the basic production is a variable
        -- length bit string with no length field, containing the GSM message including GSM
        -- padding up to end of container, to be analysed according to GSM specifications
        single-GSM-Message          SEQUENCE {},
        gsm-MessageList              SEQUENCE {
            gsm-Messages              GSM-MessageList
        }
    }
}

HandoverFromUTRANCommand-CDMA2000 ::= CHOICE {
    r3          SEQUENCE {
        handoverFromUTRANCommand-CDMA2000-r3
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    later-than-r3          SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
}

HandoverFromUTRANCommand-CDMA2000-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    activationTime                  ActivationTime          OPTIONAL,
    -- Radio bearer IEs
    toHandover-Info                RAB-Info                OPTIONAL,
    -- Other IEs
    cdma2000-MessageList            CDMA2000-MessageList
}

-- *****
--
-- HANOVER FROM UTRAN FAILURE
--
-- *****

HandoverFromUTRANFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    -- Other IEs

```

```

interRAT-HO-FailureCause      InterRAT-HO-FailureCause      OPTIONAL,
interRATMessage               CHOICE {
  gsm                          SEQUENCE {
    gsm-MessageList           GSM-MessageList
  },
  cdma2000                     SEQUENCE {
    cdma2000-MessageList     CDMA2000-MessageList
  }
}                               OPTIONAL,
-- Extension mechanism for non- release99 information
nonCriticalExtensions         SEQUENCE {}      OPTIONAL
}

-- *****
--
-- INTER RAT HANDOVER INFO
--
-- *****

InterRATHandoverInfo ::= SEQUENCE {
  -- This structure is defined for historical reasons, backward compatibility with 04.18
  predefinedConfigStatusList  CHOICE {
    absent                      NULL,
    present                    PredefinedConfigStatusList
  },
  ue-SecurityInformation      CHOICE {
    absent                      NULL,
    present                    UE-SecurityInformation
  },
  ue-CapabilityContainer      CHOICE {
    absent                      NULL,
    present                    OCTET STRING (SIZE (0..63))
  },
  -- Non critical extensions
  v390NonCriticalExtensions   CHOICE {
    absent                      NULL,
    present                    SEQUENCE {
      interRATHandoverInfo-v390ext  InterRATHandoverInfo-v390ext-IEs,
      v3a0NonCriticalExtensions     SEQUENCE {
        interRATHandoverInfo-v3a0ext  InterRATHandoverInfo-v3a0ext,
        v4xyNonCriticalExtensions     SEQUENCE {
          interRATHandoverInfo-v4xyext  InterRATHandoverInfo-v4xyext-IEs,
          -- Reserved for future non critical extension
          nonCriticalExtensions        SEQUENCE {} OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  }
}

InterRATHandoverInfo-v390ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v380ext  UE-RadioAccessCapability-v380ext      OPTIONAL,
  dl-PhysChCapabilityFDD-v380ext    DL-PhysChCapabilityFDD-v380ext
}

InterRATHandoverInfo-v3a0ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v3a0ext  UE-RadioAccessCapability-v3a0ext      OPTIONAL
}

InterRATHandoverInfo-v4xyext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v4xyext  UE-RadioAccessCapability-v4xyext
}

-- *****
--
-- MEASUREMENT CONTROL
--
-- *****

MeasurementControl ::= CHOICE {
  r3                               SEQUENCE {
    measurementControl-r3          MeasurementControl-r3-IEs,
    v390nonCriticalExtensions      SEQUENCE {
      measurementControl-v390ext    MeasurementControl-v390ext,

```

```

        v3a0NonCriticalExtensions      SEQUENCE {
            measurementControl-v3a0ext  MeasurementControl-v3a0ext,
            v4xyNonCriticalExtensions   SEQUENCE{
                measurementControl-v4xyext  MeasurementControl-v4xyext-IEs,
                nonCriticalExtensions       SEQUENCE {}                OPTIONAL
            }
        }
    }
    OPTIONAL
},
later-than-r3      SEQUENCE {
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    criticalExtensions        CHOICE {
        r4      SEQUENCE {
            measurementControl-r4      MeasurementControl-r4-IEs,
            nonCriticalExtensions      SEQUENCE {}                OPTIONAL
        },
        criticalExtensions              SEQUENCE {}
    }
}
}

MeasurementControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    -- Measurement IEs
    measurementIdentity        MeasurementIdentity,
    -- TABULAR: The measurement type is included in MeasurementCommand.
    measurementCommand         MeasurementCommand,
    measurementReportingMode    MeasurementReportingMode    OPTIONAL,
    additionalMeasurementList   AdditionalMeasurementID-List  OPTIONAL,
    -- Physical channel IEs
    dpch-CompressedModeStatusInfo  DPCH-CompressedModeStatusInfo    OPTIONAL
}

MeasurementControl-v4xyext-IEs ::= SEQUENCE {
    ue-Positioning-OTDOA-AssistanceData-r4ext  UE-Positioning-OTDOA-AssistanceData-r4ext    OPTIONAL
}

MeasurementControl-v390ext ::= SEQUENCE {
    ue-Positioning-Measurement-v390ext  UE-Positioning-Measurement-v390ext    OPTIONAL
}

MeasurementControl-v3a0ext ::= SEQUENCE {
    sfn-Offset-Validity  SFN-Offset-Validity    OPTIONAL
}

MeasurementControl-r4-IEs ::= SEQUENCE {
    -- Measurement IEs
    measurementIdentity        MeasurementIdentity,
    -- TABULAR: The measurement type is included in measurementCommand.
    measurementCommand         MeasurementCommand-r4,
    measurementReportingMode    MeasurementReportingMode    OPTIONAL,
    additionalMeasurementList   AdditionalMeasurementID-List  OPTIONAL,
    -- Physical channel IEs
    dpch-CompressedModeStatusInfo  DPCH-CompressedModeStatusInfo    OPTIONAL
}

-- *****
--
-- MEASUREMENT CONTROL FAILURE
--
-- *****

MeasurementControlFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    failureCause               FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions      SEQUENCE {}                OPTIONAL
}

-- *****
--
-- MEASUREMENT REPORT
--
-- *****

MeasurementReport ::= SEQUENCE {

```



```

-- Measurement IEs
  measurementIdentity      MeasurementIdentity,
  measuredResults          MeasuredResults          OPTIONAL,
  measuredResultsOnRACH    MeasuredResultsOnRACH    OPTIONAL,
  additionalMeasuredResults MeasuredResultsList     OPTIONAL,
  eventResults             EventResults             OPTIONAL,
-- Non-critical extensions
  v390nonCriticalExtensions SEQUENCE {
    measurementReport-v390ext MeasurementReport-v390ext,
    v4xyNonCriticalExtensions SEQUENCE {
      measurementReport-v4xyext MeasurementReport-v4xyext-IEs,
      -- Extension mechanism for non-Rel4 information
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  } OPTIONAL
}

MeasurementReport-v390ext ::= SEQUENCE {
  measuredResults-v390ext MeasuredResults-v390ext OPTIONAL
}

MeasurementReport-v4xyext-IEs ::= SEQUENCE {
  interFreqEventResults-LCR InterFreqEventResults-LCR-r4-ext OPTIONAL,
  additionalMeasuredResults-LCR MeasuredResultsList-LCR-r4-ext OPTIONAL
}

-- *****
--
-- PAGING TYPE 1
--
-- *****

PagingType1 ::= SEQUENCE {
  -- User equipment IEs
  pagingRecordList      PagingRecordList      OPTIONAL,
  -- Other IEs
  bcch-ModificationInfo BCCH-ModificationInfo OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions SEQUENCE {} OPTIONAL
}

-- *****
--
-- PAGING TYPE 2
--
-- *****

PagingType2 ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  pagingCause              PagingCause,
  -- Core network IEs
  cn-DomainIdentity       CN-DomainIdentity,
  pagingRecordTypeID      PagingRecordTypeID,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions   SEQUENCE {} OPTIONAL
}

-- *****
--
-- PHYSICAL CHANNEL RECONFIGURATION
--
-- *****

PhysicalChannelReconfiguration ::= CHOICE {
  r3 SEQUENCE {
    physicalChannelReconfiguration-r3
      PhysicalChannelReconfiguration-r3-IEs,
    v3a0NonCriticalExtensions SEQUENCE {
      physicalChannelReconfiguration-v3a0ext PhysicalChannelReconfiguration-v3a0ext,
      v4xyNonCriticalExtensions SEQUENCE {
        physicalChannelReconfiguration-v4xyext
          PhysicalChannelReconfiguration-v4xyext-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      } OPTIONAL
    }
  } OPTIONAL
},
  later-than-r3 SEQUENCE {

```

```
rrc-TransactionIdentifier      RRC-TransactionIdentifier,
criticalExtensions             CHOICE {
    r4                         SEQUENCE {
        physicalChannelReconfiguration-r4
                                PhysicalChannelReconfiguration-r4-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
criticalExtensions             CHOICE {
    r5                         SEQUENCE {
        physicalChannelReconfiguration-r5
                                PhysicalChannelReconfiguration-r5-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
criticalExtensions             SEQUENCE {}
}
}
}
}
}
```

```
PhysicalChannelReconfiguration-r3-IEs ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo              CipheringModeInfo              OPTIONAL,
    activationTime                  ActivationTime                  OPTIONAL,
    new-U-RNTI                      U-RNTI                      OPTIONAL,
    new-C-RNTI                      C-RNTI                      OPTIONAL,
    rrc-StateIndicator              RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
    cn-InformationInfo              CN-InformationInfo              OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                    URA-Identity                    OPTIONAL,
-- Radio bearer IEs
    dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo  OPTIONAL,
-- Physical channel IEs
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power           OPTIONAL,
-- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
-- between UL DPCH info, CPCH SET info and CPCH set ID.
    ul-ChannelRequirement           UL-ChannelRequirementWithCPCH-SetID OPTIONAL,
    modeSpecificInfo               CHOICE {
        fdd                         SEQUENCE {
            dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
        },
        tdd                         NULL
    },
    dl-CommonInformation            DL-CommonInformation            OPTIONAL,
    dl-InformationPerRL-List        DL-InformationPerRL-List        OPTIONAL
}
}
```

```
PhysicalChannelReconfiguration-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI                  DSCH-RNTI                      OPTIONAL
}
}
```

```
PhysicalChannelReconfiguration-v4xyext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL                        SSdT-UL-r4                      OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List              CellIdentity-PerRL-List         OPTIONAL
}
}
```

```
PhysicalChannelReconfiguration-r4-IEs ::= SEQUENCE {
-- User equipment IEs
    integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo              CipheringModeInfo              OPTIONAL,
    activationTime                  ActivationTime                  OPTIONAL,
    new-U-RNTI                      U-RNTI                      OPTIONAL,
    new-C-RNTI                      C-RNTI                      OPTIONAL,
    new-DSCH-RNTI                  DSCH-RNTI                    OPTIONAL,
    rrc-StateIndicator              RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
    cn-InformationInfo              CN-InformationInfo              OPTIONAL,
-- UTRAN mobility IEs
```

```

ura-Identity                URA-Identity                OPTIONAL,
-- Radio bearer IEs
rb-WithPDCP-InfoList       RB-WithPDCP-InfoList       OPTIONAL,
-- Physical channel IEs
frequencyInfo               FrequencyInfo               OPTIONAL,
maxAllowedUL-TX-Power       MaxAllowedUL-TX-Power       OPTIONAL,
-- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r4 contains the choice
-- between UL DPCH info, CPCH SET info and CPCH set ID.
ul-ChannelRequirement       UL-ChannelRequirementWithCPCH-SetID-r4  OPTIONAL,
modeSpecificInfo           CHOICE {
    fdd                      SEQUENCE {
        dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL
    },
    tdd                      NULL
},
dl-CommonInformation        DL-CommonInformation-r4     OPTIONAL,
dl-InformationPerRL-List    DL-InformationPerRL-List-r4  OPTIONAL
}

```

```

PhysicalChannelReconfiguration-r5-IEs ::= SEQUENCE {
-- User equipment IEs
integrityProtectionModeInfo IntegrityProtectionModeInfo  OPTIONAL,
cipheringModeInfo          CipheringModeInfo            OPTIONAL,
activationTime              ActivationTime                OPTIONAL,
new-U-RNTI                  U-RNTI                      OPTIONAL,
new-C-RNTI                  C-RNTI                      OPTIONAL,
new-DSCH-RNTI              DSCH-RNTI                   OPTIONAL,
new-H-RNTI                  H-RNTI                      OPTIONAL,
rrc-StateIndicator          RRC-StateIndicator,
utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
cn-InformationInfo          CN-InformationInfo           OPTIONAL,
-- UTRAN mobility IEs
ura-Identity                URA-Identity                OPTIONAL,
-- Radio bearer IEs
rb-WithPDCP-InfoList       RB-WithPDCP-InfoList       OPTIONAL,
-- Physical channel IEs
frequencyInfo               FrequencyInfo               OPTIONAL,
maxAllowedUL-TX-Power       MaxAllowedUL-TX-Power       OPTIONAL,
-- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r4 contains the choice
-- between UL DPCH info, CPCH SET info and CPCH set ID.
ul-ChannelRequirement       UL-ChannelRequirementWithCPCH-SetID-r5  OPTIONAL,
modeSpecificInfo           CHOICE {
    fdd                      SEQUENCE {
        dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL
    },
    tdd                      NULL
},
dl-HSPDSCH-Information      DL-HSPDSCH-Information      OPTIONAL,
dl-CommonInformation        DL-CommonInformation-r4     OPTIONAL,
dl-InformationPerRL-List    DL-InformationPerRL-List-r5  OPTIONAL
}

```

```

-- *****
--
-- PHYSICAL CHANNEL RECONFIGURATION COMPLETE
--
-- *****

```

```

PhysicalChannelReconfigurationComplete ::= SEQUENCE {
-- User equipment IEs
rrc-TransactionIdentifier    RRC-TransactionIdentifier,
ul-IntegProtActivationInfo    IntegrityProtActivationInfo  OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
ul-TimingAdvance             UL-TimingAdvance            OPTIONAL,
-- Radio bearer IEs
count-C-ActivationTime        ActivationTime                OPTIONAL,
rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList    OPTIONAL,
ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo  OPTIONAL,
-- Extension mechanism for non- release99 information
nonCriticalExtensions         SEQUENCE {}                  OPTIONAL
}

```

```

-- *****
--
-- PHYSICAL CHANNEL RECONFIGURATION FAILURE
--
-- *****

```

```

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier      OPTIONAL,
  failureCause                   FailureCauseWithProtErr,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}          OPTIONAL
}

-- *****
--
-- PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)
--
-- *****

PhysicalSharedChannelAllocation ::= CHOICE {
  r3                             SEQUENCE {
    physicalSharedChannelAllocation-r3
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
  },
  later-than-r3                  SEQUENCE {
    dsch-RNTI                     DSCH-RNTI                     OPTIONAL,
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions             CHOICE {
      r4                           SEQUENCE {
        physicalSharedChannelAllocation-r4
        nonCriticalExtensions      SEQUENCE {}          OPTIONAL
      },
      criticalExtensions           SEQUENCE {}
    }
  }
}

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  dsch-RNTI                       DSCH-RNTI                       OPTIONAL,
  rrc-TransactionIdentifier        RRC-TransactionIdentifier,
  -- Physical channel IEs
  ul-TimingAdvance                UL-TimingAdvanceControl        OPTIONAL,
  pusch-CapacityAllocationInfo    PUSCH-CapacityAllocationInfo    OPTIONAL,
  pdsch-CapacityAllocationInfo    PDSCH-CapacityAllocationInfo    OPTIONAL,
  -- TABULAR: If the above value is not present, the default value "No Confirm"
  -- shall be used as specified in 10.2.25.
  confirmRequest                  ENUMERATED {
    confirmPDSCH, confirmPUSCH }    OPTIONAL,
  trafficVolumeReportRequest      INTEGER (0..255)                OPTIONAL,
  iscpTimeslotList               TimeslotList                    OPTIONAL,
  requestPCCPCHRSCP              BOOLEAN
}

PhysicalSharedChannelAllocation-r4-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- Physical channel IEs
  ul-TimingAdvance                UL-TimingAdvanceControl-r4      OPTIONAL,
  pusch-CapacityAllocationInfo    PUSCH-CapacityAllocationInfo-r4 OPTIONAL,
  pdsch-CapacityAllocationInfo    PDSCH-CapacityAllocationInfo-r4 OPTIONAL,
  -- TABULAR: If confirmRequest is not present, the default value "No Confirm"
  -- shall be used as specified in 10.2.25.
  confirmRequest                  ENUMERATED {
    confirmPDSCH, confirmPUSCH }    OPTIONAL,
  iscpTimeslotList               TimeslotList-r4                OPTIONAL,
  requestPCCPCHRSCP              BOOLEAN
}

-- *****
--
-- PUSCH CAPACITY REQUEST (TDD only)
--
-- *****

PUSCHCapacityRequest ::= SEQUENCE {
  -- User equipment IEs
  dsch-RNTI                       DSCH-RNTI                       OPTIONAL,
  -- Measurement IEs
  trafficVolume                   TrafficVolumeMeasuredResultsList,

```

```

timeslotListWithISCP          TimeslotListWithISCP          OPTIONAL,
primaryCCPCH-RSCP             PrimaryCCPCH-RSCP             OPTIONAL,
allocationConfirmation        CHOICE {
    pdschConfirmation          PDSCH-Identity,
    pusochConfirmation         PUSCH-Identity
}
protocolErrorIndicator        ProtocolErrorIndicatorWithMoreInfo,
-- Extension mechanism for non- release99 information
nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

-- *****
--
-- RADIO BEARER RECONFIGURATION
--
-- *****

RadioBearerReconfiguration ::= CHOICE {
    r3                          SEQUENCE {
        radioBearerReconfiguration-r3 RadioBearerReconfiguration-r3-IEs,
        v3a0NonCriticalExtensions    SEQUENCE {
            radioBearerReconfiguration-v3a0ext RadioBearerReconfiguration-v3a0ext,
            v4xyNonCriticalExtensions    SEQUENCE {
                radioBearerReconfiguration-v4xyext
                RadioBearerReconfiguration-v4xyext-IEs,
                nonCriticalExtensions    SEQUENCE {} OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3              SEQUENCE {
        rrc-TransactionIdentifier    RRC-TransactionIdentifier,
        criticalExtensions           CHOICE {
            r4                      SEQUENCE {
                radioBearerReconfiguration-r4 RadioBearerReconfiguration-r4-IEs,
                nonCriticalExtensions    SEQUENCE {} OPTIONAL
            },
            criticalExtensions       CHOICE {
                r5                  SEQUENCE {
                    radioBearerReconfiguration-r5 RadioBearerReconfiguration-r5-IEs,
                    nonCriticalExtensions    SEQUENCE {} OPTIONAL
                },
                criticalExtensions    SEQUENCE {}
            }
        }
    }
}

RadioBearerReconfiguration-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    integrityProtectionModeInfo  IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo           CipheringModeInfo              OPTIONAL,
    activationTime              ActivationTime                    OPTIONAL,
    new-U-RNTI                  U-RNTI                          OPTIONAL,
    new-C-RNTI                  C-RNTI                          OPTIONAL,
    rrc-StateIndicator          RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- Core network IEs
    cn-InformationInfo          CN-InformationInfo                OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                URA-Identity                    OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList  RAB-InformationReconfigList    OPTIONAL,
    -- NOTE: IE rb-InformationReconfigList should be optional in later versions
    -- of this message
    rb-InformationReconfigList  RB-InformationReconfigList,
    rb-InformationAffectedList  RB-InformationAffectedList    OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo        UL-CommonTransChInfo          OPTIONAL,
    ul-deletedTransChInfoList    UL-DeletedTransChInfoList      OPTIONAL,
    ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList    OPTIONAL,
    modeSpecificTransChInfo      CHOICE {
        fdd                        SEQUENCE {
            cpch-SetID              CPCH-SetID                    OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList  OPTIONAL
        },
        tdd                        NULL
    }
}

```

```

dl-CommonTransChInfo          DL-CommonTransChInfo          OPTIONAL,
dl-DeletedTransChInfoList     DL-DeletedTransChInfoList     OPTIONAL,
dl-AddReconfTransChInfoList   DL-AddReconfTransChInfo2List  OPTIONAL,
-- Physical channel IEs
frequencyInfo                 FrequencyInfo                 OPTIONAL,
maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power         OPTIONAL,
ul-ChannelRequirement         UL-ChannelRequirement         OPTIONAL,
modeSpecificPhysChInfo        CHOICE {
    fdd                        SEQUENCE {
        dl-PDSCH-Information   DL-PDSCH-Information         OPTIONAL
    },
    tdd                        NULL
},
dl-CommonInformation          DL-CommonInformation          OPTIONAL,
-- NOTE: IE dl-InformationPerRL-List should be optional in later versions
-- of this message
dl-InformationPerRL-List      DL-InformationPerRL-List
}

RadioBearerReconfiguration-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI              DSCH-RNTI                    OPTIONAL
}

RadioBearerReconfiguration-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- ssdt-UL extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                    SSdT-UL-r4                    OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List         CellIdentity-PerRL-List      OPTIONAL
}

RadioBearerReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo IntegrityProtectionModeInfo   OPTIONAL,
    cipheringModeInfo          CipheringModeInfo              OPTIONAL,
    activationTime              ActivationTime                  OPTIONAL,
    new-U-RNTI                  U-RNTI                        OPTIONAL,
    new-C-RNTI                  C-RNTI                        OPTIONAL,
    new-DSCH-RNTI              DSCH-RNTI                    OPTIONAL,
    rrc-StateIndicator          RRC-StateIndicator           OPTIONAL,
    utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- Core network IEs
    cn-InformationInfo          CN-InformationInfo            OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                URA-Identity                  OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList RAB-InformationReconfigList   OPTIONAL,
    rb-InformationReconfigList  RB-InformationReconfigList-r4  OPTIONAL,
    rb-InformationAffectedList  RB-InformationAffectedList     OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo        UL-CommonTransChInfo-r4       OPTIONAL,
    ul-deletedTransChInfoList   UL-DeletedTransChInfoList     OPTIONAL,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList   OPTIONAL,
    modeSpecificTransChInfo      CHOICE {
        fdd                    SEQUENCE {
            cpch-SetID          CPCH-SetID                    OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList  OPTIONAL
        },
        tdd                    NULL
    }
},
dl-CommonTransChInfo          DL-CommonTransChInfo-r4       OPTIONAL,
dl-DeletedTransChInfoList     DL-DeletedTransChInfoList     OPTIONAL,
dl-AddReconfTransChInfoList   DL-AddReconfTransChInfo2List  OPTIONAL,
-- Physical channel IEs
frequencyInfo                 FrequencyInfo                 OPTIONAL,
maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power         OPTIONAL,
ul-ChannelRequirement         UL-ChannelRequirement-r4      OPTIONAL,
modeSpecificPhysChInfo        CHOICE {
    fdd                        SEQUENCE {
        dl-PDSCH-Information   DL-PDSCH-Information         OPTIONAL
    },
    tdd                        NULL
},
dl-CommonInformation          DL-CommonInformation-r4       OPTIONAL,
dl-InformationPerRL-List      DL-InformationPerRL-List-r4   OPTIONAL
}

```

```

RadioBearerReconfiguration-r5-IEs ::= SEQUENCE {
  -- User equipment IEs
  integrityProtectionModeInfo      IntegrityProtectionModeInfo      OPTIONAL,
  cipheringModeInfo                CipheringModeInfo                  OPTIONAL,
  activationTime                    ActivationTime                      OPTIONAL,
  new-U-RNTI                        U-RNTI                            OPTIONAL,
  new-C-RNTI                        C-RNTI                            OPTIONAL,
  new-DSCH-RNTI                    DSCH-RNTI                         OPTIONAL,
  new-H-RNTI                        H-RNTI                            OPTIONAL,
  rrc-StateIndicator                RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff       UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- Core network IEs
  cn-InformationInfo                CN-InformationInfo                OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                      URA-Identity                      OPTIONAL,
  -- Radio bearer IEs
  rab-InformationReconfigList       RAB-InformationReconfigList       OPTIONAL,
  rb-InformationReconfigList        RB-InformationReconfigList-r5     OPTIONAL,
  rb-InformationAffectedList        RB-InformationAffectedList-r5     OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo             UL-CommonTransChInfo-r4          OPTIONAL,
  ul-deletedTransChInfoList        UL-DeletedTransChInfoList        OPTIONAL,
  ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList      OPTIONAL,
  modeSpecificTransChInfo          CHOICE {
    fdd                             SEQUENCE {
      cpch-SetID                    CPCH-SetID                        OPTIONAL,
      addReconfTransChDRAC-Info     DRAC-StaticInformationList       OPTIONAL
    },
    tdd                             NULL
  } OPTIONAL,
  dl-CommonTransChInfo             DL-CommonTransChInfo-r4          OPTIONAL,
  dl-DeletedTransChInfoList        DL-DeletedTransChInfoList-r5     OPTIONAL,
  dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList-r5   OPTIONAL,
  -- Physical channel IEs
  frequencyInfo                    FrequencyInfo                      OPTIONAL,
  maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power            OPTIONAL,
  ul-ChannelRequirement            UL-ChannelRequirement-r5         OPTIONAL,
  modeSpecificPhysChInfo          CHOICE {
    fdd                             SEQUENCE {
      dl-PDSCH-Information          DL-PDSCH-Information             OPTIONAL
    },
    tdd                             NULL
  },
  dl-HSPDSCH-Information           DL-HSPDSCH-Information           OPTIONAL,
  dl-CommonInformation             DL-CommonInformation-r4          OPTIONAL,
  dl-InformationPerRL-List         DL-InformationPerRL-List-r5     OPTIONAL
}

```

```

-- *****
--
-- RADIO BEARER RECONFIGURATION COMPLETE
--
-- *****

```

```

RadioBearerReconfigurationComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier         RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo        IntegrityProtActivationInfo       OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance                  UL-TimingAdvance                 OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime            ActivationTime                     OPTIONAL,
  rb-UL-CiphActivationTimeInfo      RB-ActivationTimeInfoList        OPTIONAL,
  ul-CounterSynchronisationInfo    UL-CounterSynchronisationInfo    OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions              SEQUENCE {} OPTIONAL
}

```

```

-- *****
--
-- RADIO BEARER RECONFIGURATION FAILURE
--
-- *****

```

```

RadioBearerReconfigurationFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier         RRC-TransactionIdentifier,

```

```

        failureCause                FailureCauseWithProtErr,
-- Radio bearer IEs
    potentiallySuccessfulBearerList  RB-IdentityList                OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions            SEQUENCE {} OPTIONAL
}

-- *****
--
-- RADIO BEARER RELEASE
--
-- *****

RadioBearerRelease ::= CHOICE {
    r3                SEQUENCE {
        radioBearerRelease-r3                RadioBearerRelease-r3-IEs,
        v3a0NonCriticalExtensions            SEQUENCE {
            radioBearerRelease-v3a0ext        RadioBearerRelease-v3a0ext,
            v4xyNonCriticalExtensions          SEQUENCE {
                radioBearerRelease-v4xyext    RadioBearerRelease-v4xyext-IEs,
                nonCriticalExtensions          SEQUENCE {} OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3     SEQUENCE {
        rrc-TransactionIdentifier            RRC-TransactionIdentifier,
        criticalExtensions                    CHOICE {
            r4                SEQUENCE {
                radioBearerRelease-r4        RadioBearerRelease-r4-IEs,
                nonCriticalExtensions          SEQUENCE {} OPTIONAL
            },
            criticalExtensions                CHOICE {
                r5                SEQUENCE {
                    radioBearerRelease-r5    RadioBearerRelease-r5-IEs,
                    nonCriticalExtensions      SEQUENCE {} OPTIONAL
                },
                criticalExtensions            SEQUENCE {}
            }
        }
    }
}

RadioBearerRelease-r3-IEs ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier            RRC-TransactionIdentifier,
    integrityProtectionModeInfo          IntegrityProtectionModeInfo        OPTIONAL,
    cipheringModeInfo                    CipheringModeInfo                    OPTIONAL,
    activationTime                        ActivationTime                        OPTIONAL,
    new-U-RNTI                            U-RNTI                            OPTIONAL,
    new-C-RNTI                            C-RNTI                            OPTIONAL,
    rrc-StateIndicator                    RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff            UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
-- Core network IEs
    cn-InformationInfo                    CN-InformationInfo                    OPTIONAL,
    signallingConnectionRelIndication      CN-DomainIdentity                    OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                          URA-Identity                          OPTIONAL,
-- Radio bearer IEs
    rab-InformationReconfigList            RAB-InformationReconfigList          OPTIONAL,
    rb-InformationReleaseList              RB-InformationReleaseList,
    rb-InformationAffectedList              RB-InformationAffectedList            OPTIONAL,
    dl-CounterSynchronisationInfo          DL-CounterSynchronisationInfo          OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo                  UL-CommonTransChInfo                  OPTIONAL,
    ul-deletedTransChInfoList              UL-DeletedTransChInfoList              OPTIONAL,
    ul-AddReconfTransChInfoList            UL-AddReconfTransChInfoList            OPTIONAL,
    modeSpecificTransChInfo                CHOICE {
        fdd                SEQUENCE {
            cpch-SetID            CPCH-SetID            OPTIONAL,
            addReconfTransChDRAC-Info    DRAC-StaticInformationList    OPTIONAL
        },
        tdd                NULL
    } OPTIONAL,
    dl-CommonTransChInfo                    DL-CommonTransChInfo                    OPTIONAL,
    dl-DeletedTransChInfoList                DL-DeletedTransChInfoList                OPTIONAL,
    dl-AddReconfTransChInfoList              DL-AddReconfTransChInfo2List              OPTIONAL,
-- Physical channel IEs
    frequencyInfo                            FrequencyInfo                            OPTIONAL,

```



```

maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power      OPTIONAL,
ul-ChannelRequirement      UL-ChannelRequirement      OPTIONAL,
modeSpecificPhysChInfo    CHOICE {
    fdd                      SEQUENCE {
        dl-PDSCH-Information  DL-PDSCH-Information      OPTIONAL
    },
    tdd                      NULL
},
dl-CommonInformation      DL-CommonInformation      OPTIONAL,
dl-InformationPerRL-List  DL-InformationPerRL-List  OPTIONAL
}

RadioBearerRelease-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI          DSCH-RNTI          OPTIONAL
}

RadioBearerRelease-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- IE ssdt-UL extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                SSDT-UL-r4          OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List     CellIdentity-PerRL-List  OPTIONAL
}

RadioBearerRelease-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo  IntegrityProtectionModeInfo  OPTIONAL,
    cipheringModeInfo            CipheringModeInfo             OPTIONAL,
    activationTime                ActivationTime                 OPTIONAL,
    new-U-RNTI                    U-RNTI                       OPTIONAL,
    new-C-RNTI                    C-RNTI                       OPTIONAL,
    new-DSCH-RNTI                DSCH-RNTI                   OPTIONAL,
    rrc-StateIndicator            RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    -- Core network IEs
    cn-InformationInfo            CN-InformationInfo                 OPTIONAL,
    signallingConnectionRelIndication  CN-DomainIdentity         OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                  URA-Identity                 OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList    RAB-InformationReconfigList  OPTIONAL,
    rb-InformationReleaseList      RB-InformationReleaseList,
    rb-InformationAffectedList     RB-InformationAffectedList   OPTIONAL,
    rb-WithPDCP-InfoList          RB-WithPDCP-InfoList        OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo          UL-CommonTransChInfo-r4     OPTIONAL,
    ul-deletedTransChInfoList     UL-DeletedTransChInfoList   OPTIONAL,
    ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList  OPTIONAL,
    modeSpecificTransChInfo       CHOICE {
        fdd                      SEQUENCE {
            cpch-SetID            CPCH-SetID                 OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
        },
        tdd                      NULL
    }
    dl-CommonTransChInfo          DL-CommonTransChInfo-r4     OPTIONAL,
    dl-DeletedTransChInfoList     DL-DeletedTransChInfoList   OPTIONAL,
    dl-AddReconfTransChInfoList   DL-AddReconfTransChInfo2List  OPTIONAL,
    -- Physical channel IEs
    frequencyInfo                 FrequencyInfo                 OPTIONAL,
    maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power       OPTIONAL,
    ul-ChannelRequirement          UL-ChannelRequirement-r4    OPTIONAL,
    modeSpecificPhysChInfo        CHOICE {
        fdd                      SEQUENCE {
            dl-PDSCH-Information  DL-PDSCH-Information      OPTIONAL
        },
        tdd                      NULL
    },
    dl-CommonInformation          DL-CommonInformation-r4     OPTIONAL,
    dl-InformationPerRL-List      DL-InformationPerRL-List-r4  OPTIONAL
}

RadioBearerRelease-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo  IntegrityProtectionModeInfo  OPTIONAL,
    cipheringModeInfo            CipheringModeInfo             OPTIONAL,

```

```

activationTime      ActivationTime      OPTIONAL,
new-U-RNTI         U-RNTI          OPTIONAL,
new-C-RNTI         C-RNTI          OPTIONAL,
new-DSCH-RNTI     DSCH-RNTI       OPTIONAL,
new-H-RNTI         H-RNTI          OPTIONAL,
rrc-StateIndicator RRC-StateIndicator,
utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
  cn-InformationInfo      CN-InformationInfo      OPTIONAL,
  signallingConnectionRelIndication CN-DomainIdentity      OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity           URA-Identity           OPTIONAL,
-- Radio bearer IEs
  rab-InformationReconfigList RAB-InformationReconfigList OPTIONAL,
  rb-InformationReleaseList  RB-InformationReleaseList,
  rb-InformationAffectedList RB-InformationAffectedList-r5      OPTIONAL,
  rb-WithPDCP-InfoList      RB-WithPDCP-InfoList      OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo      UL-CommonTransChInfo-r4      OPTIONAL,
  ul-deletedTransChInfoList UL-DeletedTransChInfoList    OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList  OPTIONAL,
  modeSpecificTransChInfo    CHOICE {
    fdd                      SEQUENCE {
      cpch-SetID             CPCH-SetID             OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd                      NULL
  }
  dl-CommonTransChInfo      DL-CommonTransChInfo-r4      OPTIONAL,
  dl-DeletedTransChInfoList DL-DeletedTransChInfoList-r5  OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5 OPTIONAL,
-- Physical channel IEs
  frequencyInfo            FrequencyInfo            OPTIONAL,
  maxAllowedUL-TX-Power     MaxAllowedUL-TX-Power     OPTIONAL,
  ul-ChannelRequirement     UL-ChannelRequirement-r5  OPTIONAL,
  modeSpecificPhysChInfo    CHOICE {
    fdd                      SEQUENCE {
      dl-PDSCH-Information   DL-PDSCH-Information   OPTIONAL
    },
    tdd                      NULL
  },
  dl-HSPDSCH-Information    DL-HSPDSCH-Information    OPTIONAL,
  dl-CommonInformation      DL-CommonInformation-r4    OPTIONAL,
  dl-InformationPerRL-List  DL-InformationPerRL-List-r5 OPTIONAL
}

```

```

-- *****
--
-- RADIO BEARER RELEASE COMPLETE
--
-- *****

```

```

RadioBearerReleaseComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo IntegrityProtActivationInfo      OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance         UL-TimingAdvance         OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime    ActivationTime            OPTIONAL,
  rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfoList OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions     SEQUENCE {}      OPTIONAL
}

```

```

-- *****
--
-- RADIO BEARER RELEASE FAILURE
--
-- *****

```

```

RadioBearerReleaseFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  failureCause              FailureCauseWithProtErr,
  -- Radio bearer IEs

```

```

    potentiallySuccessfulBearerList RB-IdentityList OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions SEQUENCE {} OPTIONAL
}

-- *****
--
-- RADIO BEARER SETUP
--
-- *****

RadioBearerSetup ::= CHOICE {
    r3 SEQUENCE {
        radioBearerSetup-r3 RadioBearerSetup-r3-IEs,
        v3a0NonCriticalExtensions SEQUENCE {
            radioBearerSetup-v3a0ext RadioBearerSetup-v3a0ext,
            v4xyNonCriticalExtensions SEQUENCE {
                radioBearerSetup-v4xyext RadioBearerSetup-v4xyext-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3 SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions CHOICE {
            r4 SEQUENCE {
                radioBearerSetup-r4 RadioBearerSetup-r4-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            },
            criticalExtensions CHOICE {
                r5 SEQUENCE {
                    radioBearerSetup-r5 RadioBearerSetup-r5-IEs,
                    nonCriticalExtensions SEQUENCE {} OPTIONAL
                },
                criticalExtensions SEQUENCE {}
            }
        }
    }
}

RadioBearerSetup-r3-IEs ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
    cipheringModeInfo CipheringModeInfo OPTIONAL,
    activationTime ActivationTime OPTIONAL,
    new-U-RNTI U-RNTI OPTIONAL,
    new-C-RNTI C-RNTI OPTIONAL,
    rrc-StateIndicator RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity URA-Identity OPTIONAL,
-- Core network IEs
    cn-InformationInfo CN-InformationInfo OPTIONAL,
-- Radio bearer IEs
    srb-InformationSetupList SRB-InformationSetupList OPTIONAL,
    rab-InformationSetupList RAB-InformationSetupList OPTIONAL,
    rb-InformationAffectedList RB-InformationAffectedList OPTIONAL,
    dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
    ul-deletedTransChInfoList UL-DeletedTransChInfoList OPTIONAL,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
    modeSpecificTransChInfo CHOICE {
        fdd SEQUENCE {
            cpch-SetID CPCH-SetID OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
        },
        tdd NULL
    }
    dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
    dl-DeletedTransChInfoList DL-DeletedTransChInfoList OPTIONAL,
    dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList OPTIONAL,
-- Physical channel IEs
    frequencyInfo FrequencyInfo OPTIONAL,
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    ul-ChannelRequirement UL-ChannelRequirement OPTIONAL,
    modeSpecificPhysChInfo CHOICE {

```

```

        fdd          dl-PDSCH-Information          SEQUENCE {          DL-PDSCH-Information          OPTIONAL
        },
        tdd          NULL
    },
    dl-CommonInformation          DL-CommonInformation          OPTIONAL,
    dl-InformationPerRL-List      DL-InformationPerRL-List      OPTIONAL
}

RadioBearerSetup-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI          DSCH-RNTI          OPTIONAL
}

RadioBearerSetup-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- ssdt-UL extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL          SSdT-UL-r4          OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List          CellIdentity-PerRL-List          OPTIONAL
}

RadioBearerSetup-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo          IntegrityProtectionModeInfo          OPTIONAL,
    cipheringModeInfo          CipheringModeInfo          OPTIONAL,
    activationTime          ActivationTime          OPTIONAL,
    new-U-RNTI          U-RNTI          OPTIONAL,
    new-C-RNTI          C-RNTI          OPTIONAL,
    new-DSCH-RNTI          DSCH-RNTI          OPTIONAL,
    rrc-StateIndicator          RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff          UTRAN-DRX-CycleLengthCoefficient          OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity          URA-Identity          OPTIONAL,
    -- Core network IEs
    cn-InformationInfo          CN-InformationInfo          OPTIONAL,
    -- Radio bearer IEs
    srb-InformationSetupList          SRB-InformationSetupList          OPTIONAL,
    rab-InformationSetupList          RAB-InformationSetupList-r4          OPTIONAL,
    rb-InformationAffectedList          RB-InformationAffectedList          OPTIONAL,
    rb-WithPDCP-InfoList          RB-WithPDCP-InfoList          OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo          UL-CommonTransChInfo-r4          OPTIONAL,
    ul-deletedTransChInfoList          UL-DeletedTransChInfoList          OPTIONAL,
    ul-AddReconfTransChInfoList          UL-AddReconfTransChInfoList          OPTIONAL,
    modeSpecificTransChInfo          CHOICE {
        fdd          SEQUENCE {
            cpch-SetID          CPCH-SetID          OPTIONAL,
            addReconfTransChDRAC-Info          DRAC-StaticInformationList          OPTIONAL
        },
        tdd          NULL
    }
    dl-CommonTransChInfo          DL-CommonTransChInfo-r4          OPTIONAL,
    dl-DeletedTransChInfoList          DL-DeletedTransChInfoList          OPTIONAL,
    dl-AddReconfTransChInfoList          DL-AddReconfTransChInfoList-r4          OPTIONAL,
    -- Physical channel IEs
    frequencyInfo          FrequencyInfo          OPTIONAL,
    maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power          OPTIONAL,
    ul-ChannelRequirement          UL-ChannelRequirement-r4          OPTIONAL,
    modeSpecificPhysChInfo          CHOICE {
        fdd          SEQUENCE {
            dl-PDSCH-Information          DL-PDSCH-Information          OPTIONAL
        },
        tdd          NULL
    },
    dl-CommonInformation          DL-CommonInformation-r4          OPTIONAL,
    dl-InformationPerRL-List          DL-InformationPerRL-List-r4          OPTIONAL
}

RadioBearerSetup-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo          IntegrityProtectionModeInfo          OPTIONAL,
    cipheringModeInfo          CipheringModeInfo          OPTIONAL,
    activationTime          ActivationTime          OPTIONAL,
    new-U-RNTI          U-RNTI          OPTIONAL,
    new-C-RNTI          C-RNTI          OPTIONAL,
    new-DSCH-RNTI          DSCH-RNTI          OPTIONAL,

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    new-H-RNTI                H-RNTI                OPTIONAL,
    rrc-StateIndicator        RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity              URA-Identity            OPTIONAL,
-- Core network IEs
    cn-InformationInfo        CN-InformationInfo      OPTIONAL,
-- Radio bearer IEs
    srb-InformationSetupList  SRB-InformationSetupList  OPTIONAL,
    rab-InformationSetupList  RAB-InformationSetupList-r4  OPTIONAL,
    rb-InformationAffectedList  RB-InformationAffectedList-r5  OPTIONAL,
    rb-WithPDCP-InfoList      RB-WithPDCP-InfoList        OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo     UL-CommonTransChInfo-r4     OPTIONAL,
    ul-deletedTransChInfoList  UL-DeletedTransChInfoList   OPTIONAL,
    ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList  OPTIONAL,
    modeSpecificTransChInfo     CHOICE {
        fdd                    SEQUENCE {
            cpch-SetID          CPCH-SetID                OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
        },
        tdd                    NULL
    }
    dl-CommonTransChInfo     DL-CommonTransChInfo-r4     OPTIONAL,
    dl-DeletedTransChInfoList  DL-DeletedTransChInfoList-r5  OPTIONAL,
    dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList-r5  OPTIONAL,
-- Physical channel IEs
    frequencyInfo            FrequencyInfo                OPTIONAL,
    maxAllowedUL-TX-Power     MaxAllowedUL-TX-Power        OPTIONAL,
    ul-ChannelRequirement     UL-ChannelRequirement-r5     OPTIONAL,
    modeSpecificPhysChInfo     CHOICE {
        fdd                    SEQUENCE {
            dl-PDSCH-Information  DL-PDSCH-Information        OPTIONAL
        },
        tdd                    NULL
    },
    dl-HSPDSCH-Information    DL-HSPDSCH-Information        OPTIONAL,
    dl-CommonInformation      DL-CommonInformation-r4        OPTIONAL,
    dl-InformationPerRL-List   DL-InformationPerRL-List-r5    OPTIONAL
}

-- *****
--
-- RADIO BEARER SETUP COMPLETE
--
-- *****

RadioBearerSetupComplete ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo  IntegrityProtActivationInfo  OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance           UL-TimingAdvance             OPTIONAL,
    start-Value                START-Value                 OPTIONAL,
-- Radio bearer IEs
    count-C-ActivationTime     ActivationTime                OPTIONAL,
    rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList    OPTIONAL,
    ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo  OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions      SEQUENCE {}                 OPTIONAL
}

-- *****
--
-- RADIO BEARER SETUP FAILURE
--
-- *****

RadioBearerSetupFailure ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    failureCause               FailureCauseWithProtErr,
-- Radio bearer IEs
    potentiallySuccessfulBearerList  RB-IdentityList             OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions      SEQUENCE {}                 OPTIONAL
}

```

```

-- *****
--
-- RRC CONNECTION REJECT
--
-- *****

RRCConnectionReject ::= CHOICE {
    r3                SEQUENCE {
        rrcConnectionReject-r3    RRCConnectionReject-r3-IEs,
        nonCriticalExtensions      SEQUENCE {} OPTIONAL
    },
    later-than-r3     SEQUENCE {
        initialUE-Identity        InitialUE-Identity,
        rrc-TransactionIdentifier  RRC-TransactionIdentifier,
        criticalExtensions         SEQUENCE {}
    }
}

RRCConnectionReject-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    initialUE-Identity        InitialUE-Identity,
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    rejectionCause            RejectionCause,
    waitTime                  WaitTime,
    redirectionInfo           RedirectionInfo           OPTIONAL
}

-- *****
--
-- RRC CONNECTION RELEASE
--
-- *****

RRCConnectionRelease ::= CHOICE {
    r3                SEQUENCE {
        rrcConnectionRelease-r3    RRCConnectionRelease-r3-IEs,
        nonCriticalExtensions      SEQUENCE {} OPTIONAL
    },
    later-than-r3     SEQUENCE {
        rrc-TransactionIdentifier  RRC-TransactionIdentifier,
        criticalExtensions         CHOICE {
            r4                SEQUENCE {
                rrcConnectionRelease-r4    RRCConnectionRelease-r4-IEs,
                nonCriticalExtensions      SEQUENCE {} OPTIONAL
            },
            criticalExtensions         SEQUENCE {}
        }
    }
}

RRCConnectionRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    -- n-308 is conditional on the UE state
    n-308                      N-308                      OPTIONAL,
    releaseCause                ReleaseCause,
    rplmn-information           Rplmn-Information           OPTIONAL
}

RRCConnectionRelease-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    -- n-308 is conditional on the UE state.
    n-308                      N-308                      OPTIONAL,
    releaseCause                ReleaseCause,
    rplmn-information           Rplmn-Information-r4       OPTIONAL
}

-- *****
--
-- RRC CONNECTION RELEASE for CCCH
--
-- *****

RRCConnectionRelease-CCCH ::= CHOICE {
    r3                SEQUENCE {
        rrcConnectionRelease-CCCH-r3    RRCConnectionRelease-CCCH-r3-IEs,
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
    }
}

```

```

    },
    later-than-r3
        SEQUENCE {
            u-RNTI
                U-RNTI,
            rrc-TransactionIdentifier
                RRC-TransactionIdentifier,
            criticalExtensions
                CHOICE {
                    r4
                        SEQUENCE {
                            rrcConnectionRelease-CCCH-r4
                                RRCConnectionRelease-CCCH-r4-IEs,
                            nonCriticalExtensions
                                SEQUENCE {} OPTIONAL
                        },
                    criticalExtensions
                        SEQUENCE {}
                }
        }
    }
}

RRCConnectionRelease-CCCH-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    u-RNTI
        U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
    rrcConnectionRelease
        RRCConnectionRelease-r3-IEs
}

RRCConnectionRelease-CCCH-r4-IEs ::= SEQUENCE {
    -- The rest of the message is identical to the one sent on DCCH.
    rrcConnectionRelease
        RRCConnectionRelease-r4-IEs
}

-- *****
--
-- RRC CONNECTION RELEASE COMPLETE
--
-- *****

RRCConnectionReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier
        RRC-TransactionIdentifier,
    errorIndication
        FailureCauseWithProtErr OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions
        SEQUENCE {} OPTIONAL
}

-- *****
--
-- RRC CONNECTION REQUEST
--
-- *****

RRCConnectionRequest ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    initialUE-Identity
        InitialUE-Identity,
    establishmentCause
        EstablishmentCause,
    -- protocolErrorIndicator is MD, but for compactness reasons no default value
    -- has been assigned to it.
    protocolErrorIndicator
        ProtocolErrorIndicator,
    -- Measurement IEs
    measuredResultsOnRACH
        MeasuredResultsOnRACH OPTIONAL,
    v4xyNonCriticalExtensions
        SEQUENCE {
            rrcConnectionRequest-v4xyext
                RRCConnectionRequest-v4xyext-IEs,
            -- Reserved for future non critical extension
            nonCriticalExtensions
                SEQUENCE {} OPTIONAL
        } OPTIONAL
}

RRCConnectionRequest-v4xyext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v4xyext
        UE-RadioAccessCapability-v4xyext
}

-- *****
--
-- RRC CONNECTION SETUP
--
-- *****

RRCConnectionSetup ::= CHOICE {
    r3
        SEQUENCE {
            rrcConnectionSetup-r3
                RRCConnectionSetup-r3-IEs,
            v4xyNonCriticalExtensions
                SEQUENCE {

```

```

    rrcConnectionSetup-v4xyext      RRCConnectionSetup-v4xyext-IEs,
-- Extension mechanism for non- release99 information
nonCriticalExtensions              SEQUENCE {}                OPTIONAL
} OPTIONAL
},
later-than-r3                      SEQUENCE {
  initialUE-Identity                InitialUE-Identity,
  rrc-TransactionIdentifier          RRC-TransactionIdentifier,
  criticalExtensions                 CHOICE {
    r4                               SEQUENCE {
      rrcConnectionSetup-r4        RRCConnectionSetup-r4-IEs,
      nonCriticalExtensions        SEQUENCE {}                OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
  }
}
}

RRCConnectionSetup-r3-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall not be performed on this message.
-- User equipment IEs
  initialUE-Identity                InitialUE-Identity,
  rrc-TransactionIdentifier          RRC-TransactionIdentifier,
  activationTime                    ActivationTime                OPTIONAL,
  new-U-RNTI                        U-RNTI,
  new-c-RNTI                        C-RNTI                    OPTIONAL,
  rrc-StateIndicator                RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff        UTRAN-DRX-CycleLengthCoefficient,
-- TABULAR: If capacityUpdateRequest is not present, the default value
-- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement        CapabilityUpdateRequirement    OPTIONAL,
-- Radio bearer IEs
  srb-InformationSetupList          SRB-InformationSetupList2,
-- Transport channel IEs
  ul-CommonTransChInfo              UL-CommonTransChInfo        OPTIONAL,
-- NOTE: ul-AddReconfTransChInfoList should be optional in later versions of
-- this message
  ul-AddReconfTransChInfoList       UL-AddReconfTransChInfoList,
  dl-CommonTransChInfo              DL-CommonTransChInfo        OPTIONAL,
-- NOTE: dl-AddReconfTransChInfoList should be optional in later versions
-- of this message
  dl-AddReconfTransChInfoList       DL-AddReconfTransChInfoList,
-- Physical channel IEs
  frequencyInfo                     FrequencyInfo                OPTIONAL,
  maxAllowedUL-TX-Power              MaxAllowedUL-TX-Power        OPTIONAL,
  ul-ChannelRequirement              UL-ChannelRequirement        OPTIONAL,
  dl-CommonInformation               DL-CommonInformation         OPTIONAL,
  dl-InformationPerRL-List           DL-InformationPerRL-List     OPTIONAL
}

RRCConnectionSetup-v4xyext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4-ext  CapabilityUpdateRequirement-r4-ext  OPTIONAL,
-- Physical channel IEs
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
  ssdt-UL                            SSdT-UL-r4                    OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
  cell-id-PerRL-List                  CellIdentity-PerRL-List        OPTIONAL
}

RRCConnectionSetup-r4-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall not be performed on this message.
  activationTime                      ActivationTime                OPTIONAL,
  new-U-RNTI                          U-RNTI,
  new-c-RNTI                          C-RNTI                    OPTIONAL,
  rrc-StateIndicator                  RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff          UTRAN-DRX-CycleLengthCoefficient,
-- TABULAR: If capabilityUpdateRequirements is not present, the default value
-- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement          CapabilityUpdateRequirement-r4    OPTIONAL,
-- Radio bearer IEs
  srb-InformationSetupList            SRB-InformationSetupList2,
-- Transport channel IEs
  ul-CommonTransChInfo                UL-CommonTransChInfo        OPTIONAL,
  ul-AddReconfTransChInfoList         UL-AddReconfTransChInfoList  OPTIONAL,
  dl-CommonTransChInfo                DL-CommonTransChInfo-r4      OPTIONAL,
  dl-AddReconfTransChInfoList         DL-AddReconfTransChInfoList  OPTIONAL,

```



```

-- Physical channel IEs
frequencyInfo          FrequencyInfo          OPTIONAL,
maxAllowedUL-TX-Power  MaxAllowedUL-TX-Power  OPTIONAL,
ul-ChannelRequirement  UL-ChannelRequirement-r4  OPTIONAL,
dl-CommonInformation   DL-CommonInformation-r4  OPTIONAL,
dl-InformationPerRL-List DL-InformationPerRL-List-r4  OPTIONAL
}

-- *****
--
-- RRC CONNECTION SETUP COMPLETE
--
-- *****

RRCConnectionSetupComplete ::= SEQUENCE {
-- TABULAR: Integrity protection shall not be performed on this message.
-- User equipment IEs
  rrc-TransactionIdentifier  RRC-TransactionIdentifier,
  startList                  STARTList,
  ue-RadioAccessCapability   UE-RadioAccessCapability   OPTIONAL,
-- Other IEs
  ue-RATSpecificCapability   InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
-- Non critical extensions
  v370NonCriticalExtensions  SEQUENCE {
    rrcConnectionSetupComplete-v370ext  RRCConnectionSetupComplete-v370ext,
    v380NonCriticalExtensions  SEQUENCE {
      rrcConnectionSetupComplete-v380ext  RRCConnectionSetupComplete-v380ext-IEs,
      -- Reserved for future non critical extension
      v3a0NonCriticalExtensions  SEQUENCE {
        rrcConnectionSetupComplete-v3a0ext  RRCConnectionSetupComplete-v3a0ext,
        v4xyNonCriticalExtensions  SEQUENCE {
          rrcConnectionSetupComplete-v4xyext  RRCConnectionSetupComplete-v4xyext-IEs,
          nonCriticalExtensions  SEQUENCE {}  OPTIONAL
        }
      }  OPTIONAL
    }  OPTIONAL
  }  OPTIONAL
}

RRCConnectionSetupComplete-v370ext ::= SEQUENCE {
-- User equipment IEs
  ue-RadioAccessCapability-v370ext  UE-RadioAccessCapability-v370ext  OPTIONAL
}

RRCConnectionSetupComplete-v380ext-IEs ::= SEQUENCE {
-- User equipment IEs
  ue-RadioAccessCapability-v380ext  UE-RadioAccessCapability-v380ext  OPTIONAL,
  dl-PhysChCapabilityFDD-v380ext  DL-PhysChCapabilityFDD-v380ext
}

RRCConnectionSetupComplete-v3a0ext ::= SEQUENCE {
-- User equipment IEs
  ue-RadioAccessCapability-v3a0ext  UE-RadioAccessCapability-v3a0ext  OPTIONAL
}

RRCConnectionSetupComplete-v4xyext-IEs ::= SEQUENCE {
-- User equipment IEs
  ue-RadioAccessCapability-r4-ext  UE-RadioAccessCapability-r4-ext  OPTIONAL
}

-- *****
--
-- RRC FAILURE INFO
--
-- *****

RRC-FailureInfo ::= CHOICE {
  r3  SEQUENCE {
    rRC-FailureInfo-r3  RRC-FailureInfo-r3-IEs,
    nonCriticalExtensions  SEQUENCE {}  OPTIONAL
  },
  criticalExtensions  SEQUENCE {}
}

RRC-FailureInfo-r3-IEs ::= SEQUENCE {
-- Non-RRC IEs
  failureCauseWithProtErr  FailureCauseWithProtErr
}

```

```

-- *****
--
-- RRC STATUS
--
-- *****

RRCStatus ::= SEQUENCE {
  -- Other IEs
  -- TABULAR: Identification of received message is nested in
  -- ProtocolErrorMoreInformation
  protocolErrorInformation      ProtocolErrorMoreInformation,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}      OPTIONAL
}

-- *****
--
-- SECURITY MODE COMMAND
--
-- *****

SecurityModeCommand ::= CHOICE {
  r3                             SEQUENCE {
    securityModeCommand-r3      SecurityModeCommand-r3-IEs,
    nonCriticalExtensions        SEQUENCE {}      OPTIONAL
  },
  later-than-r3                  SEQUENCE {
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    criticalExtensions           SEQUENCE {}
  }
}

SecurityModeCommand-r3-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  securityCapability             SecurityCapability,
  cipheringModeInfo             CipheringModeInfo             OPTIONAL,
  integrityProtectionModeInfo   IntegrityProtectionModeInfo  OPTIONAL,
  -- Core network IEs
  cn-DomainIdentity             CN-DomainIdentity,
  -- Other IEs
  ue-SystemSpecificSecurityCap  InterRAT-UE-SecurityCapList  OPTIONAL
}

-- *****
--
-- SECURITY MODE COMPLETE
--
-- *****

SecurityModeComplete ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.

  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo     IntegrityProtActivationInfo  OPTIONAL,
  -- Radio bearer IEs
  rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList  OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}      OPTIONAL
}

-- *****
--
-- SECURITY MODE FAILURE
--
-- *****

SecurityModeFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}      OPTIONAL
}

```

```

-- *****
--
-- SIGNALLING CONNECTION RELEASE
--
-- *****

SignallingConnectionRelease ::= CHOICE {
  r3                               SEQUENCE {
    signallingConnectionRelease-r3  SignallingConnectionRelease-r3-IEs,
    nonCriticalExtensions            SEQUENCE {}          OPTIONAL
  },
  later-than-r3                    SEQUENCE {
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    criticalExtensions               SEQUENCE {}
  }
}

SignallingConnectionRelease-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier        RRC-TransactionIdentifier,
  -- Core network IEs
  cn-DomainIdentity               CN-DomainIdentity
}

-- *****
--
-- SIGNALLING CONNECTION RELEASE INDICATION
--
-- *****

SignallingConnectionReleaseIndication ::= SEQUENCE {
  -- Core network IEs
  cn-DomainIdentity               CN-DomainIdentity,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions            SEQUENCE {}          OPTIONAL
}

-- *****
--
-- SYSTEM INFORMATION for BCH
--
-- *****

SystemInformation-BCH ::= SEQUENCE {
  -- Other information elements
  sfn-Prime                       SFN-Prime,
  payload                          CHOICE {
    noSegment                       NULL,
    firstSegment                    FirstSegment,
    subsequentSegment               SubsequentSegment,
    lastSegmentShort                LastSegmentShort,
    lastAndFirst                    SEQUENCE {
      lastSegmentShort              LastSegmentShort,
      firstSegment                  FirstSegmentShort
    },
    lastAndComplete                 SEQUENCE {
      lastSegmentShort              LastSegmentShort,
      completeSIB-List              CompleteSIB-List
    },
    lastAndCompleteAndFirst         SEQUENCE {
      lastSegmentShort              LastSegmentShort,
      completeSIB-List              CompleteSIB-List,
      firstSegment                  FirstSegmentShort
    },
    completeSIB-List                CompleteSIB-List,
    completeAndFirst                SEQUENCE {
      completeSIB-List              CompleteSIB-List,
      firstSegment                  FirstSegmentShort
    },
    completeSIB                     CompleteSIB,
    lastSegment                      LastSegment,
    spare5                           NULL,
    spare4                           NULL,
    spare3                           NULL,
    spare2                           NULL,
    spare1                           NULL
  }
}

```

```

-- *****
--
-- SYSTEM INFORMATION for FACH
--
-- *****

SystemInformation-FACH ::= SEQUENCE {
  -- Other information elements
  payload
    CHOICE {
      noSegment          NULL,
      firstSegment      FirstSegment,
      subsequentSegment SubsequentSegment,
      lastSegmentShort  LastSegmentShort,
      lastAndFirst      SEQUENCE {
        lastSegmentShort LastSegmentShort,
        firstSegment      FirstSegmentShort
      },
      lastAndComplete   SEQUENCE {
        lastSegmentShort LastSegmentShort,
        completeSIB-List CompleteSIB-List
      },
      lastAndCompleteAndFirst SEQUENCE {
        lastSegmentShort LastSegmentShort,
        completeSIB-List CompleteSIB-List,
        firstSegment      FirstSegmentShort
      },
      completeSIB-List  CompleteSIB-List,
      completeAndFirst  SEQUENCE {
        completeSIB-List CompleteSIB-List,
        firstSegment      FirstSegmentShort
      },
      completeSIB       CompleteSIB,
      lastSegment       LastSegment,
      spare5            NULL,
      spare4            NULL,
      spare3            NULL,
      spare2            NULL,
      spare1            NULL
    }
}

-- *****
--
-- First segment
--
-- *****

FirstSegment ::= SEQUENCE {
  -- Other information elements
  sib-Type          SIB-Type,
  seg-Count         SegCount,
  sib-Data-fixed    SIB-Data-fixed
}

-- *****
--
-- First segment (short)
--
-- *****

FirstSegmentShort ::= SEQUENCE {
  -- Other information elements
  sib-Type          SIB-Type,
  seg-Count         SegCount,
  sib-Data-variable SIB-Data-variable
}

-- *****
--
-- Subsequent segment
--
-- *****

SubsequentSegment ::= SEQUENCE {
  -- Other information elements
  sib-Type          SIB-Type,
  segmentIndex      SegmentIndex,
}

```

```

        sib-Data-fixed                SIB-Data-fixed
    }
-- *****
--
-- Last segment
--
-- *****

LastSegment ::=                               SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    segmentIndex            SegmentIndex,
    -- For sib-Data-fixed, 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
    sib-Data-fixed          SIB-Data-fixed
}

LastSegmentShort ::=                          SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    segmentIndex            SegmentIndex,
    sib-Data-variable       SIB-Data-variable
}

-- *****
--
-- Complete SIB
--
-- *****

CompleteSIB-List ::=                          SEQUENCE (SIZE (1..maxSIBperMsg)) OF
    CompleteSIBshort

CompleteSIB ::=                               SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    -- For sib-Data-fixed, 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
    sib-Data-fixed          BIT STRING (SIZE (226))
}

CompleteSIBshort ::=                          SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    sib-Data-variable       SIB-Data-variable
}

-- *****
--
-- SYSTEM INFORMATION CHANGE INDICATION
--
-- *****

SystemInformationChangeIndication ::=        SEQUENCE {
    -- Other IEs
    bcch-ModificationInfo   BCCH-ModificationInfo,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions   SEQUENCE {} OPTIONAL
}

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION
--
-- *****

TransportChannelReconfiguration ::=          CHOICE {
    r3                        SEQUENCE {
        transportChannelReconfiguration-r3
        TransportChannelReconfiguration-r3-IEs,
    v3a0NonCriticalExtensions SEQUENCE {
        transportChannelReconfiguration-v3a0ext
        TransportChannelReconfiguration-v3a0ext,
    v4xyNonCriticalExtensions SEQUENCE {
        transportChannelReconfiguration-v4xyext
        TransportChannelReconfiguration-v4xyext-IEs,
    nonCriticalExtensions   SEQUENCE {} OPTIONAL
}
}
}

```

```

    }
  } OPTIONAL
},
later-than-r3 SEQUENCE {
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  criticalExtensions CHOICE {
    r4 SEQUENCE {
      transportChannelReconfiguration-r4
      TransportChannelReconfiguration-r4-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions CHOICE {
      r5 SEQUENCE {
        transportChannelReconfiguration-r5
        TransportChannelReconfiguration-r5-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      },
      criticalExtensions SEQUENCE {}
    }
  }
}
}

TransportChannelReconfiguration-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
  cipheringModeInfo CipheringModeInfo OPTIONAL,
  activationTime ActivationTime OPTIONAL,
  new-U-RNTI U-RNTI OPTIONAL,
  new-C-RNTI C-RNTI OPTIONAL,
  rrc-StateIndicator RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  -- Core network IEs
  cn-InformationInfo CN-InformationInfo OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity URA-Identity OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
  modeSpecificTransChInfo CHOICE {
    fdd SEQUENCE {
      cpch-SetID CPCH-SetID OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd NULL
  } OPTIONAL,
  dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList OPTIONAL,
  -- Physical channel IEs
  frequencyInfo FrequencyInfo OPTIONAL,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  ul-ChannelRequirement UL-ChannelRequirement OPTIONAL,
  modeSpecificPhysChInfo CHOICE {
    fdd SEQUENCE {
      dl-PDSCH-Information DL-PDSCH-Information OPTIONAL
    },
    tdd NULL
  },
  dl-CommonInformation DL-CommonInformation OPTIONAL,
  dl-InformationPerRL-List DL-InformationPerRL-List OPTIONAL
}

TransportChannelReconfiguration-v3a0ext ::= SEQUENCE {
  new-DSCH-RNTI DSCH-RNTI OPTIONAL
}

TransportChannelReconfiguration-v4xyext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- ssdt-UL extends SSDT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL SSdT-UL-r4 OPTIONAL,
  -- The order of the RLs in IE cell-id-PerRL-List is the same as
  -- in IE DL-InformationPerRL-List included in this message
  cell-id-PerRL-List CellIdentity-PerRL-List OPTIONAL
}

```

```

TransportChannelReconfiguration-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo                OPTIONAL,
  activationTime                  ActivationTime                    OPTIONAL,
  new-U-RNTI                      U-RNTI                          OPTIONAL,
  new-C-RNTI                      C-RNTI                          OPTIONAL,
  new-DSCH-RNTI                  DSCH-RNTI                       OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  -- Core network IEs
  cn-InformationInfo              CN-InformationInfo                OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                    URA-Identity                    OPTIONAL,
  -- Radio bearer IEs
  rb-WithPDCP-InfoList            RB-WithPDCP-InfoList            OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo            UL-CommonTransChInfo-r4         OPTIONAL,
  ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList     OPTIONAL,
  modeSpecificTransChInfo         CHOICE {
    fdd                            SEQUENCE {
      cpch-SetID                  CPCH-SetID                      OPTIONAL,
      addReconfTransChDRAC-Info    DRAC-StaticInformationList      OPTIONAL
    },
    tdd                            NULL
  }
  dl-CommonTransChInfo            DL-CommonTransChInfo-r4         OPTIONAL,
  dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r4  OPTIONAL,
  -- Physical channel IEs
  frequencyInfo                   FrequencyInfo                     OPTIONAL,
  maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power           OPTIONAL,
  ul-ChannelRequirement            UL-ChannelRequirement-r4        OPTIONAL,
  modeSpecificPhysChInfo          CHOICE {
    fdd                            SEQUENCE {
      dl-PDSCH-Information        DL-PDSCH-Information            OPTIONAL
    },
    tdd                            NULL
  },
  dl-CommonInformation            DL-CommonInformation-r4         OPTIONAL,
  dl-InformationPerRL-List        DL-InformationPerRL-List-r4     OPTIONAL
}

```

```

TransportChannelReconfiguration-r5-IEs ::= SEQUENCE {
  -- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo                OPTIONAL,
  activationTime                  ActivationTime                    OPTIONAL,
  new-U-RNTI                      U-RNTI                          OPTIONAL,
  new-C-RNTI                      C-RNTI                          OPTIONAL,
  new-DSCH-RNTI                  DSCH-RNTI                       OPTIONAL,
  new-H-RNTI                      H-RNTI                          OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  -- Core network IEs
  cn-InformationInfo              CN-InformationInfo                OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                    URA-Identity                    OPTIONAL,
  -- Radio bearer IEs
  rb-WithPDCP-InfoList            RB-WithPDCP-InfoList            OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo            UL-CommonTransChInfo-r4         OPTIONAL,
  ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList     OPTIONAL,
  modeSpecificTransChInfo         CHOICE {
    fdd                            SEQUENCE {
      cpch-SetID                  CPCH-SetID                      OPTIONAL,
      addReconfTransChDRAC-Info    DRAC-StaticInformationList      OPTIONAL
    },
    tdd                            NULL
  }
  dl-CommonTransChInfo            DL-CommonTransChInfo-r4         OPTIONAL,
  dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5  OPTIONAL,
  -- Physical channel IEs
  frequencyInfo                   FrequencyInfo                     OPTIONAL,
  maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power           OPTIONAL,
  ul-ChannelRequirement            UL-ChannelRequirement-r5        OPTIONAL,
  modeSpecificPhysChInfo          CHOICE {
    fdd                            SEQUENCE {

```

```

        dl-PDSCH-Information          DL-PDSCH-Information          OPTIONAL
    },
    tdd                               NULL
},
dl-HSPDSCH-Information              DL-HSPDSCH-Information          OPTIONAL,
dl-CommonInformation                DL-CommonInformation-r4         OPTIONAL,
dl-InformationPerRL-List            DL-InformationPerRL-List-r5     OPTIONAL
}

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION COMPLETE
--
-- *****

TransportChannelReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo        IntegrityProtActivationInfo     OPTIONAL,
    -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance                 UL-TimingAdvance                 OPTIONAL,
    -- Radio bearer IEs
    count-C-ActivationTime            ActivationTime                  OPTIONAL,
    rb-UL-CiphActivationTimeInfo      RB-ActivationTimeInfoList     OPTIONAL,
    ul-CounterSynchronisationInfo     UL-CounterSynchronisationInfo  OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}                   OPTIONAL
}

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION FAILURE
--
-- *****

TransportChannelReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    failureCause                       FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}                   OPTIONAL
}

-- *****
--
-- TRANSPORT FORMAT COMBINATION CONTROL in AM or UM RLC mode
--
-- *****

TransportFormatCombinationControl ::= SEQUENCE {
    -- rrc-TransactionIdentifier is always included in this message
    rrc-TransactionIdentifier          RRC-TransactionIdentifier     OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                             NULL,
        tdd                             SEQUENCE {
            tfcs-ID                       TFCS-Identity     OPTIONAL
        }
    },
    dpch-TFCS-InUplink                 TFC-Subset,
    activationTimeForTFCSubset          ActivationTime                  OPTIONAL,
    tfc-ControlDuration                 TFC-ControlDuration           OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}                   OPTIONAL
}

-- *****
--
-- TRANSPORT FORMAT COMBINATION CONTROL FAILURE
--
-- *****

TransportFormatCombinationControlFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    failureCause                       FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}                   OPTIONAL
}

```



```

-- *****
--
-- UE CAPABILITY ENQUIRY
--
-- *****

UECapabilityEnquiry ::= CHOICE {
  r3                               SEQUENCE {
    ueCapabilityEnquiry-r3         UECapabilityEnquiry-r3-IEs,
    v4xyNonCriticalExtensions      SEQUENCE {
      ueCapabilityEnquiry-v4xyext  UECapabilityEnquiry-v4xyext-IEs,
      nonCriticalExtensions        SEQUENCE {}                OPTIONAL
    }
  },
  later-than-r3                   SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions             SEQUENCE {}
  }
}

UECapabilityEnquiry-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  capabilityUpdateRequirement    CapabilityUpdateRequirement
}

UECapabilityEnquiry-v4xyext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4-ext  CapabilityUpdateRequirement-r4-ext
}

-- *****
--
-- UE CAPABILITY INFORMATION
--
-- *****

UECapabilityInformation ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier      OPTIONAL,
  ue-RadioAccessCapability      UE-RadioAccessCapability        OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability      InterRAT-UE-RadioAccessCapabilityList
  OPTIONAL,
  v370NonCriticalExtensions      SEQUENCE {
    ueCapabilityInformation-v370ext  UECapabilityInformation-v370ext,
    v380NonCriticalExtensions      SEQUENCE {
      ueCapabilityInformation-v380ext  UECapabilityInformation-v380ext-IEs,
      v3a0NonCriticalExtensions      SEQUENCE {
        ueCapabilityInformation-v3a0ext  UECapabilityInformation-v3a0ext,
        -- Reserved for future non critical extension
        v4xyNonCriticalExtensions      SEQUENCE {
          ueCapabilityInformation-v4xyext  UECapabilityInformation-v4xyext,
          v5xyNonCriticalExtensions      SEQUENCE {
            ueCapabilityInformation-v5xyext  UECapabilityInformation-v5xyext,
            nonCriticalExtensions        SEQUENCE {}                OPTIONAL
          }
        }
      }
    }
  }
}

UECapabilityInformation-v370ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v370ext  UE-RadioAccessCapability-v370ext      OPTIONAL
}

UECapabilityInformation-v380ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v380ext  UE-RadioAccessCapability-v380ext
  OPTIONAL,
  dl-PhysChCapabilityFDD-v380ext    DL-PhysChCapabilityFDD-v380ext
}

UECapabilityInformation-v3a0ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v3a0ext  UE-RadioAccessCapability-v3a0ext      OPTIONAL
}

```

```

}

UECapabilityInformation-v4xyext ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-r4-ext    UE-RadioAccessCapability-r4-ext    OPTIONAL,
    ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}

UECapabilityInformation-v5xyext ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-r5-ext    UE-RadioAccessCapability-r5-ext    OPTIONAL
}

-- *****
--
-- UE CAPABILITY INFORMATION CONFIRM
--
-- *****

UECapabilityInformationConfirm ::= CHOICE {
    r3                SEQUENCE {
        ueCapabilityInformationConfirm-r3
        nonCriticalExtensions    SEQUENCE {}    OPTIONAL
    },
    later-than-r3     SEQUENCE {
        rrc-TransactionIdentifier    RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
}

UECapabilityInformationConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier    RRC-TransactionIdentifier
}

-- *****
--
-- UPLINK DIRECT TRANSFER
--
-- *****

UplinkDirectTransfer ::= SEQUENCE {
    -- Core network IEs
    cn-DomainIdentity            CN-DomainIdentity,
    nas-Message                    NAS-Message,
    -- Measurement IEs
    measuredResultsOnRACH        MeasuredResultsOnRACH    OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}    OPTIONAL
}

-- *****
--
-- UPLINK PHYSICAL CHANNEL CONTROL
--
-- *****

UplinkPhysicalChannelControl ::= CHOICE {
    r3                SEQUENCE {
        uplinkPhysicalChannelControl-r3    UplinkPhysicalChannelControl-r3-IEs,
        v4xyNonCriticalExtensions    SEQUENCE {
            uplinkPhysicalChannelControl-v4xyext    UplinkPhysicalChannelControl-v4xyext-IEs,
            -- Extension mechanism for non- release4 information
            noncriticalExtensions    SEQUENCE {}    OPTIONAL
        }    OPTIONAL
    },
    later-than-r3     SEQUENCE {
        rrc-TransactionIdentifier    RRC-TransactionIdentifier,
        criticalExtensions            CHOICE {
            r4                SEQUENCE {
                uplinkPhysicalChannelControl-r4    UplinkPhysicalChannelControl-r4-IEs,
                nonCriticalExtensions    SEQUENCE {}    OPTIONAL
            },
            criticalExtensions    SEQUENCE {}
        }
    }
}

```

```

UplinkPhysicalChannelControl-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- Physical channel IEs
  ccTrCH-PowerControlInfo        CCTrCH-PowerControlInfo          OPTIONAL,
  timingAdvance                  UL-TimingAdvanceControl          OPTIONAL,
  alpha                          Alpha                          OPTIONAL,
  specialBurstScheduling         SpecialBurstScheduling        OPTIONAL,
  prach-ConstantValue           ConstantValueTdd              OPTIONAL,
  pusch-ConstantValue           ConstantValueTdd              OPTIONAL
}

UplinkPhysicalChannelControl-v4xyext-IEs ::= SEQUENCE {
  -- In case of TDD, openLoopPowerControl-IPDL-TDD is included instead of IE
  -- up-IPDL-Parameters in up-OTDOA-AssistanceData
  openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL
}

UplinkPhysicalChannelControl-r4-IEs ::= SEQUENCE {
  -- Physical channel IEs
  ccTrCH-PowerControlInfo        CCTrCH-PowerControlInfo-r4          OPTIONAL,
  tddOption                      CHOICE {
    tdd384                       SEQUENCE {
      timingAdvance              UL-TimingAdvanceControl-r4  OPTIONAL,
      alpha                      Alpha                          OPTIONAL,
      prach-ConstantValue        ConstantValueTdd              OPTIONAL,
      pusch-ConstantValue        ConstantValueTdd              OPTIONAL,
      openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL
    },
    tdd128                       SEQUENCE {
      ul-SynchronisationParameters  UL-SynchronisationParameters-r4  OPTIONAL
    }
  }
}

-- *****
--
-- URA UPDATE
--
-- *****

URAUUpdate ::= SEQUENCE {
  -- User equipment IEs
  u-RNTI                          U-RNTI,
  ura-UpdateCause                 URA-UpdateCause,
  protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions           SEQUENCE {}          OPTIONAL
}

-- *****
--
-- URA UPDATE CONFIRM
--
-- *****

URAUUpdateConfirm ::= CHOICE {
  r3                               SEQUENCE {
    uraUpdateConfirm-r3          URAUpdateConfirm-r3-IEs,
    nonCriticalExtensions        SEQUENCE {}          OPTIONAL
  },
  later-than-r3                  SEQUENCE {
    rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    criticalExtensions            SEQUENCE {}
  }
}

URAUUpdateConfirm-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo    IntegrityProtectionModeInfo        OPTIONAL,
  cipheringModeInfo             CipheringModeInfo                   OPTIONAL,
  new-U-RNTI                    U-RNTI                              OPTIONAL,
  new-C-RNTI                    C-RNTI                              OPTIONAL,
  rrc-StateIndicator            RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- CN information elements
}

```

```

        cn-InformationInfo          CN-InformationInfo          OPTIONAL,
-- UTRAN mobility IEs
        ura-Identity                URA-Identity                OPTIONAL,
-- Radio bearer IEs
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo  OPTIONAL
    }
-- *****
--
-- URA UPDATE CONFIRM for CCCH
--
-- *****

URAUUpdateConfirm-CCCH ::= CHOICE {
    r3
        uraUpdateConfirm-CCCH-r3    URAUpdateConfirm-CCCH-r3-IEs,
        nonCriticalExtensions        SEQUENCE {} OPTIONAL
    },
    later-than-r3
        u-RNTI                       U-RNTI,
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions             SEQUENCE {}
    }
}

URAUUpdateConfirm-CCCH-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    u-RNTI                           U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
    uraUpdateConfirm                 URAUpdateConfirm-r3-IEs
}
-- *****
--
-- UTRAN MOBILITY INFORMATION
--
-- *****

UTRANMobilityInformation ::= CHOICE {
    r3
        uranMobilityInformation-r3    UTRANMobilityInformation-r3-IEs,
        v3a0NonCriticalExtensions      SEQUENCE {
            uranMobilityInformation-v3a0ext UTRANMobilityInformation-v3a0ext-IEs,
            nonCriticalExtensions        SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions             SEQUENCE {}
    }
}

UTRANMobilityInformation-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier         RRC-TransactionIdentifier,
    integrityProtectionModeInfo      IntegrityProtectionModeInfo          OPTIONAL,
    cipheringModeInfo                CipheringModeInfo                      OPTIONAL,
    new-U-RNTI                        U-RNTI                                OPTIONAL,
    new-C-RNTI                        C-RNTI                                OPTIONAL,
    ue-ConnTimersAndConstants         UE-ConnTimersAndConstants            OPTIONAL,
    -- CN information elements
    cn-InformationInfo                CN-InformationInfoFull                OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                      URA-Identity                          OPTIONAL,
    -- Radio bearer IEs
    dl-CounterSynchronisationInfo     DL-CounterSynchronisationInfo        OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {} OPTIONAL
}

UTRANMobilityInformation-v3a0ext-IEs ::= SEQUENCE {
    ue-ConnTimersAndConstants-v3a0ext UE-ConnTimersAndConstants-v3a0ext
}
-- *****
--
-- UTRAN MOBILITY INFORMATION CONFIRM
--
--

```

```

-- *****
UTRANMobilityInformationConfirm ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo     IntegrityProtActivationInfo      OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime        ActivationTime                OPTIONAL,
  rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList     OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo  OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions         SEQUENCE {}          OPTIONAL
}

-- *****
--
-- UTRAN MOBILITY INFORMATION FAILURE
--
-- *****

UTRANMobilityInformationFailure ::= SEQUENCE {
  -- UE information elements
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions         SEQUENCE {}          OPTIONAL
}

END

```

11.3 Information element definitions

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

```

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

```

```
BEGIN
```

```
IMPORTS
```

```

  hiPDSCHidentities,
  hiPUSCHidentities,
  hiRM,
  maxAC,
  maxAdditionalMeas,
  maxASC,
  maxASCmap,
  maxASCpersist,
  maxCCTrCH,
  maxCellMeas,
  maxCellMeas-1,
  maxCNdomains,
  maxCPCHsets,
  maxDPCH-DLchan,
  maxDPDCH-UL,
  maxDRACclasses,
  maxFACHPCH,
  maxFreq,
  maxFreqBandsFDD,
  maxFreqBandsTDD,
  maxFreqBandsGSM,
  maxHProcesses,
  maxHSDSCHTBIndex,
  maxHSDSCHTBIndex-tdd384,
  maxHSSCCHs,
  maxInterSysMessages,
  maxLoCHperRLC,
  maxMAC-d-PDU sizes,
  maxMeasEvent,
  maxMeasIntervals,
  maxMeasParEvent,
  maxNumCDMA2000Freqs,
  maxNumFDDFreqs,
  maxNumGSMFreqRanges,

```

```

maxNumTDDFreqs,
maxOtherRAT,
maxOtherRAT-16,
maxPage1,
maxPCPCH-APsig,
maxPCPCH-APsubCh,
maxPCPCH-CDSig,
maxPCPCH-CDsubCh,
maxPCPCH-SF,
maxPCPCHs,
maxPDCPAlgoType,
maxPDSCH,
maxPDSCH-TFCIgroups,
maxPRACH,
maxPRACH-FPACH,
maxPredefConfig,
maxPUSCH,
maxQueueIDs,
maxRABsetup,
maxRAT,
maxRB,
maxRBallRABs,
maxRBMuxOptions,
maxRBperRAB,
maxReportedGSMCells,
maxSRBsetup,
maxRL,
maxRL-1,
maxROHC-PacketSizes-r4,
maxROHC-Profile-r4,
maxSCCPCH,
maxSat,
maxSIB,
maxSIB-FACH,
maxSystemCapability,
maxTF,
maxTF-CPCH,
maxTFC,
maxTFCsub,
maxTFCI-2-Combs,
maxTGPS,
maxTrCH,
maxTrCHpreconf,
maxTS,
maxTS-1,
maxTS-LCR,
maxTS-LCR-1,
maxURA
FROM Constant-definitions;

Ansi-41-IDNNS ::=                                BIT STRING (SIZE (14))

CN-DomainIdentity ::=                            ENUMERATED {
                                                cs-domain,
                                                ps-domain }

CN-DomainInformation ::=                        SEQUENCE {
  cn-DomainIdentity
  cn-DomainSpecificNAS-Info
}
                                                NAS-SystemInformationGSM-MAP

CN-DomainInformationFull ::=                   SEQUENCE {
  cn-DomainIdentity
  cn-DomainSpecificNAS-Info
  cn-DRX-CycleLengthCoeff
}
                                                CN-SystemInformationGSM-MAP,
                                                CN-DRX-CycleLengthCoefficient

CN-DomainInformationList ::=                   SEQUENCE (SIZE (1..maxCNdomains)) OF
                                                CN-DomainInformation

CN-DomainInformationListFull ::=               SEQUENCE (SIZE (1..maxCNdomains)) OF
                                                CN-DomainInformationFull

CN-DomainSysInfo ::=                           SEQUENCE {
  cn-DomainIdentity
  cn-Type
    gsm-MAP
    ansi-41
},
                                                CN-SystemInformationGSM-MAP,
                                                NAS-SystemInformationANSI-41

```

```

    cn-DRX-CycleLengthCoeff          CN-DRX-CycleLengthCoefficient
}

CN-DomainSysInfoList ::=
SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainSysInfo

CN-InformationInfo ::=
SEQUENCE {
    plmn-Identity                    PLMN-Identity                    OPTIONAL,
    cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP    OPTIONAL,
    cn-DomainInformationList        CN-DomainInformationList        OPTIONAL
}

CN-InformationInfoFull ::=
SEQUENCE {
    plmn-Identity                    PLMN-Identity                    OPTIONAL,
    cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP    OPTIONAL,
    cn-DomainInformationListFull    CN-DomainInformationListFull    OPTIONAL
}

Digit ::=
INTEGER (0..9)

Gsm-map-IDNNS ::=
SEQUENCE {
    routingbasis                     CHOICE {
        localPTMSI                  SEQUENCE {
            routingparameter
        },
        tMSIofsamePLMN              SEQUENCE {
            routingparameter
        },
        tMSIofdifferentPLMN         SEQUENCE {
            routingparameter
        },
        iMSIresponsetopaging         SEQUENCE {
            routingparameter
        },
        iMSIUEinitiatedEvent        SEQUENCE {
            routingparameter
        },
        iMEI                         SEQUENCE {
            routingparameter
        },
        spare1                       SEQUENCE {
            routingparameter
        },
        spare2                       SEQUENCE {
            routingparameter
        }
    },
    enteredparameter                BOOLEAN
}

IMEI ::=
SEQUENCE (SIZE (15)) OF
    IMEI-Digit

IMEI-Digit ::=
INTEGER (0..15)

IMSI-GSM-MAP ::=
SEQUENCE (SIZE (6..15)) OF
    Digit

IntraDomainNasNodeSelector ::=
SEQUENCE {
    version                          CHOICE {
        release99                   SEQUENCE {
            cn-Type                  CHOICE {
                gsm-Map-IDNNS
                ansi-41-IDNNS
            }
        },
        later                        SEQUENCE {
            futurecoding              BIT STRING (SIZE (15))
        }
    }
}

LAI ::=
SEQUENCE {
    plmn-Identity                    PLMN-Identity,
    lac                              BIT STRING (SIZE (16))
}

MCC ::=
SEQUENCE (SIZE (3)) OF

```

```

Digit
MNC ::= SEQUENCE (SIZE (2..3)) OF
Digit
NAS-Message ::= OCTET STRING (SIZE (1..4095))
NAS-Synchronisation-Indicator ::= BIT STRING(SIZE(4))
NAS-SystemInformationGSM-MAP ::= OCTET STRING (SIZE (1..8))
P-TMSI-GSM-MAP ::= BIT STRING (SIZE (32))
PagingRecordTypeID ::= ENUMERATED {
imsi-GSM-MAP,
tmsi-GSM-MAP-P-TMSI,
imsi-DS-41,
tmsi-DS-41 }
PLMN-Identity ::= SEQUENCE {
mcc MCC,
mnc MNC
}
PLMN-Type ::= CHOICE {
gsm-MAP SEQUENCE {
plmn-Identity
},
ansi-41 SEQUENCE {
p-REV P-REV,
min-P-REV Min-P-REV,
sid SID,
nid NID
},
gsm-MAP-and-ANSI-41 SEQUENCE {
plmn-Identity,
p-REV P-REV,
min-P-REV Min-P-REV,
sid SID,
nid NID
},
spare NULL
}
RAB-Identity ::= CHOICE {
gsm-MAP-RAB-Identity BIT STRING (SIZE (8)),
ansi-41-RAB-Identity BIT STRING (SIZE (8))
}
RAI ::= SEQUENCE {
lai LAI,
rac RoutingAreaCode
}
RoutingAreaCode ::= BIT STRING (SIZE (8))
RoutingParameter ::= BIT STRING (SIZE (10))
TMSI-GSM-MAP ::= BIT STRING (SIZE (32))
-- *****
--
-- UTRAN MOBILITY INFORMATION ELEMENTS (10.3.2)
--
-- *****
AccessClassBarred ::= ENUMERATED {
barred, notBarred }
AccessClassBarredList ::= SEQUENCE (SIZE (maxAC)) OF
AccessClassBarred
AllowedIndicator ::= ENUMERATED {
allowed, notAllowed }
CellAccessRestriction ::= SEQUENCE {
cellBarred CellBarred,
cellReservedForOperatorUse ReservedIndicator,

```



```

    cellReservationExtension          ReservedIndicator,
    accessClassBarredList             AccessClassBarredList             OPTIONAL
}

CellBarred ::=
    barred                            CHOICE {
        intraFreqCellReselectionInd  SEQUENCE {
            t-Barred                  AllowedIndicator,
                                     T-Barred
        },
        notBarred                     NULL
    }

CellIdentity ::=                     BIT STRING (SIZE (28))

CellIdentity-PerRL-List ::=          SEQUENCE (SIZE (1..maxRL)) OF CellIdentity

CellSelectReselectInfoSIB-3-4 ::=   SEQUENCE {
    mappingInfo                       MappingInfo                       OPTIONAL,
    cellSelectQualityMeasure           CHOICE {
        cpich-Ec-N0                   SEQUENCE {
            -- Default value for q-HYST-2-S is q-HYST-1-S
            q-HYST-2-S                 Q-Hyst-S                       OPTIONAL
            -- Default value for q-HYST-2-S is q-HYST-1-S
        },
        cpich-RSCP                     NULL
    },
    modeSpecificInfo                  CHOICE {
        fdd                             SEQUENCE {
            s-Intrasearch              S-SearchQual                   OPTIONAL,
            s-Intersearch              S-SearchQual                   OPTIONAL,
            s-SearchHCS                 S-SearchRXLEV                  OPTIONAL,
            rat-List                    RAT-FDD-InfoList                OPTIONAL,
            q-QualMin                   Q-QualMin,
            q-RxlevMin                  Q-RxlevMin
        },
        tdd                             SEQUENCE {
            s-Intrasearch              S-SearchRXLEV                   OPTIONAL,
            s-Intersearch              S-SearchRXLEV                   OPTIONAL,
            s-SearchHCS                 S-SearchRXLEV                   OPTIONAL,
            rat-List                    RAT-TDD-InfoList                OPTIONAL,
            q-RxlevMin                  Q-RxlevMin
        }
    },
    q-Hyst-1-S                         Q-Hyst-S,
    t-Reselection-S                    T-Reselection-S,
    hcs-ServingCellInformation          HCS-ServingCellInformation      OPTIONAL,
    maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power
}

MapParameter ::=                    INTEGER (0..99)

Mapping ::=                           SEQUENCE {
    rat                                 RAT,
    mappingFunctionParameterList       MappingFunctionParameterList
}

Mapping-LCR-r4 ::=                   SEQUENCE {
    mappingFunctionParameterList       MappingFunctionParameterList
}

MappingFunctionParameter ::=         SEQUENCE {
    functionType                       MappingFunctionType,
    mapParameter1                      MapParameter                     OPTIONAL,
    mapParameter2                      MapParameter,
    -- The presence of upperLimit is conditional on the number of repetition
    upperLimit                          UpperLimit                       OPTIONAL
}

MappingFunctionParameterList ::=     SEQUENCE (SIZE (1..maxMeasIntervals)) OF
    MappingFunctionParameter

MappingFunctionType ::=              ENUMERATED {
    linear,
    functionType2,
    functionType3,
    functionType4 }

```

-- In MappingInfo list, mapping for FDD and 3.84Mcps TDD is defined.

```

-- For 1.28Mcps TDD, Mapping-LCR-r4 is used instead.
MappingInfo ::= SEQUENCE (SIZE (1..maxRAT)) OF
                 Mapping

-- Actual value Q-Hyst-S = IE value * 2
Q-Hyst-S ::= INTEGER (0..20)

RAT ::= ENUMERATED {
         ultra-FDD,
         ultra-TDD,
         gsm,
         cdma2000 }

RAT-FDD-Info ::= SEQUENCE {
         rat-Identifier
         RAT-Identifier,
         s-SearchRAT
         S-SearchQual,
         s-HCS-RAT
         S-SearchRXLEV
         S-SearchQual
         OPTIONAL,
}

RAT-FDD-InfoList ::= SEQUENCE (SIZE (1..maxOtherRAT)) OF
                    RAT-FDD-Info

RAT-Identifier ::= ENUMERATED {
                   gsm, cdma2000 }

RAT-TDD-Info ::= SEQUENCE {
         rat-Identifier
         RAT-Identifier,
         s-SearchRAT
         S-SearchRXLEV,
         s-HCS-RAT
         S-SearchRXLEV
         S-SearchRXLEV
         OPTIONAL,
}

RAT-TDD-InfoList ::= SEQUENCE (SIZE (1..maxOtherRAT)) OF
                    RAT-TDD-Info

ReservedIndicator ::= ENUMERATED {
                       reserved,
                       notReserved }

-- Actual value S-SearchedQual = IE value * 2
S-SearchQual ::= INTEGER (-16..10)

-- Actual value S-SearchRXLEV = (IE value * 2) + 1
S-SearchRXLEV ::= INTEGER (-53..45)

T-Barred ::= ENUMERATED {
              s10, s20, s40, s80,
              s160, s320, s640, s1280 }

T-Reselection-S ::= INTEGER (0..31)

-- For UpperLimit, the used range depends on the RAT used.
UpperLimit ::= INTEGER (1..91)

URA-Identity ::= BIT STRING (SIZE (16))

URA-IdentityList ::= SEQUENCE (SIZE (1..maxURA)) OF
                    URA-Identity

-- *****
--
--     USER EQUIPMENT INFORMATION ELEMENTS (10.3.3)
--
-- *****

AccessStratumReleaseIndicator ::= ENUMERATED {
         rel-4, spare15, spare14, spare13,
         spare12, spare11, spare10, spare9, spare8,
         spare7, spare6, spare5, spare4, spare3,
         spare2, spare1 }

-- TABULAR : for ActivationTime, value 'now' always appear as default, and is encoded
-- by absence of the field
ActivationTime ::= INTEGER (0..255)

BackoffControlParams ::= SEQUENCE {
         n-AP-RetransMax
         N-AP-RetransMax,

```

```

n-AccessFails          N-AccessFails,
nf-BO-NoAICH           NF-BO-NoAICH,
ns-BO-Busy             NS-BO-Busy,
nf-BO-AllBusy         NF-BO-AllBusy,
nf-BO-Mismatch        NF-BO-Mismatch,
t-CPCH                T-CPCH
}

C-RNTI ::=              BIT STRING (SIZE (16))

CapabilityUpdateRequirement ::= SEQUENCE {
    ue-RadioCapabilityFDDUpdateRequirement-FDD    BOOLEAN,
    -- ue-RadioCapabilityTDDUpdateRequirement-TDD is for 3.84Mcps TDD update requirement
    ue-RadioCapabilityTDDUpdateRequirement-TDD    BOOLEAN,
    systemSpecificCapUpdateReqList               SystemSpecificCapUpdateReqList    OPTIONAL
}

CapabilityUpdateRequirement-r4-ext ::= SEQUENCE {
    ue-RadioCapabilityUpdateRequirement-TDD128    BOOLEAN
}

CapabilityUpdateRequirement-r4 ::= SEQUENCE {
    ue-RadioCapabilityFDDUpdateRequirement-FDD    BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement-TDD384  BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement-TDD128  BOOLEAN,
    systemSpecificCapUpdateReqList               SystemSpecificCapUpdateReqList    OPTIONAL
}

CellUpdateCause ::=    ENUMERATED {
    cellReselection,
    periodicalCellUpdate,
    uplinkDataTransmission,
    utran-pagingResponse,
    re-enteredServiceArea,
    radiolinkFailure,
    rlc-unrecoverableError,
    spare1 }

ChipRateCapability ::=    ENUMERATED {
    mcps3-84, mcps1-28 }

CipheringAlgorithm ::=    ENUMERATED {
    uea0, uea1 }

CipheringModeCommand ::=    CHOICE {
    startRestart           CipheringAlgorithm,
    stopCiphering          NULL
}

CipheringModeInfo ::=      SEQUENCE {
    -- TABULAR: The ciphering algorithm is included in the CipheringModeCommand.
    cipheringModeCommand   CipheringModeCommand,
    activationTimeForDPCH   ActivationTime                OPTIONAL,
    rb-DL-CiphActivationTimeInfo RB-ActivationTimeInfoList    OPTIONAL
}

CN-DRX-CycleLengthCoefficient ::= INTEGER (6..9)

CN-PagedUE-Identity ::=    CHOICE {
    imsi-GSM-MAP           IMSI-GSM-MAP,
    tmsi-GSM-MAP           TMSI-GSM-MAP,
    p-TMSI-GSM-MAP        P-TMSI-GSM-MAP,
    imsi-DS-41            IMSI-DS-41,
    tmsi-DS-41            TMSI-DS-41,
    spare3                 NULL,
    spare2                 NULL,
    spare1                 NULL
}

CompressedModeMeasCapability ::= SEQUENCE {
    fdd-Measurements       BOOLEAN,
    -- TABULAR: The IEs tdd-Measurements, gsm-Measurements and multiCarrierMeasurements
    -- are made optional since they are conditional based on another information element.
    -- Their absence corresponds to the case where the condition is not true.
    tdd-Measurements       BOOLEAN                OPTIONAL,
    gsm-Measurements       GSM-Measurements       OPTIONAL,
    multiCarrierMeasurements BOOLEAN                OPTIONAL
}

```

```

CompressedModeMeasCapability-LCR-r4 ::= SEQUENCE {
    tdd128-Measurements          BOOLEAN          OPTIONAL
}

CompressedModeMeasCapabFDDList ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    CompressedModeMeasCapabFDD

CompressedModeMeasCapabFDD ::= SEQUENCE {
    radioFrequencyBandFDD      RadioFrequencyBandFDD  OPTIONAL,
    dl-MeasurementsFDD         BOOLEAN,
    ul-MeasurementsFDD         BOOLEAN
}

CompressedModeMeasCapabTDDList ::= SEQUENCE (SIZE (1..maxFreqBandsTDD)) OF
    CompressedModeMeasCapabTDD

CompressedModeMeasCapabTDD ::= SEQUENCE {
    radioFrequencyBandTDD      RadioFrequencyBandTDD,
    dl-MeasurementsTDD         BOOLEAN,
    ul-MeasurementsTDD         BOOLEAN
}

CompressedModeMeasCapabGSMList ::= SEQUENCE (SIZE (1..maxFreqBandsGSM)) OF
    CompressedModeMeasCapabGSM

CompressedModeMeasCapabGSM ::= SEQUENCE {
    radioFrequencyBandGSM      RadioFrequencyBandGSM,
    dl-MeasurementsGSM         BOOLEAN,
    ul-MeasurementsGSM         BOOLEAN
}

CompressedModeMeasCapabMC ::= SEQUENCE {
    dl-MeasurementsMC          BOOLEAN,
    ul-MeasurementsMC          BOOLEAN
}

CPCH-Parameters ::= SEQUENCE {
    initialPriorityDelayList    InitialPriorityDelayList  OPTIONAL,
    backoffControlParams        BackoffControlParams,
    -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    powerControlAlgorithm        PowerControlAlgorithm,
    dl-DPCCH-BER                 DL-DPCCH-BER
}

DL-DPCCH-BER ::= INTEGER (0..63)

DL-PhysChCapabilityFDD ::= SEQUENCE {
    maxNoDPCH-PDSCH-Codes        INTEGER (1..8),
    maxNoPhysChBitsReceived      MaxNoPhysChBitsReceived,
    supportForSF-512              BOOLEAN,
    supportOfPDSCH                BOOLEAN,
    simultaneousSCCPCH-DPCH-Reception SimultaneousSCCPCH-DPCH-Reception
}

DL-PhysChCapabilityFDD-v380ext ::= SEQUENCE {
    supportOfDedicatedPilotsForChEstimation SupportOfDedicatedPilotsForChEstimation  OPTIONAL
}

SupportOfDedicatedPilotsForChEstimation ::= ENUMERATED { true }

DL-PhysChCapabilityTDD ::= SEQUENCE {
    maxTS-PerFrame                MaxTS-PerFrame,
    maxPhysChPerFrame              MaxPhysChPerFrame,
    minimumSF                       MinimumSF-DL,
    supportOfPDSCH                  BOOLEAN,
    maxPhysChPerTS                  MaxPhysChPerTS
}

DL-PhysChCapabilityTDD-LCR-r4 ::= SEQUENCE {
    maxTS-PerSubFrame              MaxTS-PerSubFrame-r4,
    maxPhysChPerSubFrame-r4        MaxPhysChPerSubFrame-r4,
    minimumSF                       MinimumSF-DL,
    supportOfPDSCH                  BOOLEAN,
    maxPhysChPerTS                  MaxPhysChPerTS,
    supportOf8PSK                    BOOLEAN
}

```



```

rrc-TransactionIdentifier      RRC-TransactionIdentifier,
failureCause                   FailureCauseWithProtErr
}

GSM-Measurements ::=          SEQUENCE {
    gsm900                      BOOLEAN,
    dcs1800                     BOOLEAN,
    gsm1900                     BOOLEAN
}

H-RNTI ::=                     BIT STRING (SIZE (16))

HSDSCH-capability-class ::=   INTEGER (0..63)

IMSI-and-ESN-DS-41 ::=        SEQUENCE {
    imsi-DS-41                  IMSI-DS-41,
    esn-DS-41                   ESN-DS-41
}

IMSI-DS-41 ::=                OCTET STRING (SIZE (5..7))

InitialPriorityDelayList ::=  SEQUENCE (SIZE (1..maxASC)) OF
                               NS-IP

InitialUE-Identity ::=        CHOICE {
    imsi                        IMSI-GSM-MAP,
    tmsi-and-LAI                TMSI-and-LAI-GSM-MAP,
    p-TMSI-and-RAI              P-TMSI-and-RAI-GSM-MAP,
    imei                        IMEI,
    esn-DS-41                  ESN-DS-41,
    imsi-DS-41                 IMSI-DS-41,
    imsi-and-ESN-DS-41         IMSI-and-ESN-DS-41,
    tmsi-DS-41                 TMSI-DS-41
}

IntegrityCheckInfo ::=        SEQUENCE {
    messageAuthenticationCode    MessageAuthenticationCode,
    rrc-MessageSequenceNumber    RRC-MessageSequenceNumber
}

IntegrityProtActivationInfo ::= SEQUENCE {
    rrc-MessageSequenceNumberList RRC-MessageSequenceNumberList
}

IntegrityProtectionAlgorithm ::= ENUMERATED {
    uia1 }

IntegrityProtectionModeCommand ::= CHOICE {
    startIntegrityProtection      SEQUENCE {
        integrityProtInitNumber    IntegrityProtInitNumber
    },
    modify                        SEQUENCE {
        dl-IntegrityProtActivationInfo IntegrityProtActivationInfo
    }
}

IntegrityProtectionModeInfo ::= SEQUENCE {
    -- TABULAR: DL integrity protection activation info and Integrity
    -- protection intialisation number have been nested inside
    -- IntegrityProtectionModeCommand.
    integrityProtectionModeCommand IntegrityProtectionModeCommand,
    integrityProtectionAlgorithm    IntegrityProtectionAlgorithm    OPTIONAL
}

IntegrityProtInitNumber ::=    BIT STRING (SIZE (32))

MAC-hs-Capability ::= SEQUENCE {
totalBufferSize TotalBufferSize
}

MaxHcContextSpace ::=          ENUMERATED {
    by512, by1024, by2048, by4096,
    by8192 }

MaxROHC-ContextSessions-r4 ::= ENUMERATED {
    s2, s4, s8, s12, s16, s24, s32, s48,

```

```

s64, s128, s256, s512, s1024, s16384 }

MaximumAM-EntityNumberRLC-Cap ::= ENUMERATED {
    am3, am4, am5, am6,
    am8, am16, am30 }

-- Actual value MaximumBitRate = IE value * 16
MaximumBitRate ::= INTEGER (0..32)

MaximumRLC-WindowSize ::= ENUMERATED { mws2047, mws4095 }

MaxNoDPDCH-BitsTransmitted ::= ENUMERATED {
    b600, b1200, b2400, b4800,
    b9600, b19200, b28800, b38400,
    b48000, b57600 }

MaxNoBits ::= ENUMERATED {
    b640, b1280, b2560, b3840, b5120,
    b6400, b7680, b8960, b10240,
    b20480, b40960, b81920, b163840 }

MaxNoPhysChBitsReceived ::= ENUMERATED {
    b600, b1200, b2400, b3600,
    b4800, b7200, b9600, b14400,
    b19200, b28800, b38400, b48000,
    b57600, b67200, b76800 }

MaxNoSCCPCH-RL ::= ENUMERATED {
    r11 }

MaxNumberOfTF ::= ENUMERATED {
    tf32, tf64, tf128, tf256,
    tf512, tf1024 }

MaxNumberOfTFC-DL ::= ENUMERATED {
    tfc16, tfc32, tfc48, tfc64, tfc96,
    tfc128, tfc256, tfc512, tfc1024 }

MaxNumberOfTFC-UL ::= ENUMERATED {
    tfc4, tfc8, tfc16, tfc32, tfc48, tfc64,
    tfc96, tfc128, tfc256, tfc512, tfc1024 }

MaxPhysChPerFrame ::= INTEGER (1..224)

MaxPhysChPerSubFrame-r4 ::= INTEGER (1..96)

MaxPhysChPerTimeslot ::= ENUMERATED {
    ts1, ts2 }

MaxPhysChPerTS ::= INTEGER (1..16)

MaxSimultaneousCCTrCH-Count ::= INTEGER (1..8)

MaxSimultaneousTransChsDL ::= ENUMERATED {
    e4, e8, e16, e32 }

MaxSimultaneousTransChsUL ::= ENUMERATED {
    e2, e4, e8, e16, e32 }

MaxTransportBlocksDL ::= ENUMERATED {
    tb4, tb8, tb16, tb32, tb48,
    tb64, tb96, tb128, tb256, tb512 }

MaxTransportBlocksUL ::= ENUMERATED {
    tb2, tb4, tb8, tb16, tb32, tb48,
    tb64, tb96, tb128, tb256, tb512 }

MaxTS-PerFrame ::= INTEGER (1..14)

MaxTS-PerSubFrame-r4 ::= INTEGER (1..6)

-- TABULAR: MeasurementCapability contains dependencies to UE-MultiModeRAT-Capability,
-- the conditional fields have been left mandatory for now.
MeasurementCapability ::= SEQUENCE {
    downlinkCompressedMode          CompressedModeMeasCapability,
    uplinkCompressedMode            CompressedModeMeasCapability
}

```

```

MeasurementCapability-v370 ::= SEQUENCE {
    compressedModeMeasCapabFDDList    CompressedModeMeasCapabFDDList,
    compressedModeMeasCapabTDDList    CompressedModeMeasCapabTDDList OPTIONAL,
    compressedModeMeasCapabGSMLList   CompressedModeMeasCapabGSMLList OPTIONAL,
    compressedModeMeasCapabMC         CompressedModeMeasCapabMC     OPTIONAL
}

MeasurementCapability-r4-ext ::= SEQUENCE {
    downlinkCompressedMode-LCR        CompressedModeMeasCapability-LCR-r4,
    uplinkCompressedMode-LCR         CompressedModeMeasCapability-LCR-r4
}

MessageAuthenticationCode ::= BIT STRING (SIZE (32))

MinimumSF-DL ::= ENUMERATED {
    sf1, sf16 }

MinimumSF-UL ::= ENUMERATED {
    sf1, sf2, sf4, sf8, sf16 }

MultiModeCapability ::= ENUMERATED {
    tdd, fdd, fdd-tdd }

MultiRAT-Capability ::= SEQUENCE {
    supportOfGSM          BOOLEAN,
    supportOfMulticarrier BOOLEAN
}

N-300 ::= INTEGER (0..7)
N-301 ::= INTEGER (0..7)
N-302 ::= INTEGER (0..7)
N-304 ::= INTEGER (0..7)
N-308 ::= INTEGER (1..8)
N-310 ::= INTEGER (0..7)
N-312 ::= ENUMERATED {
    s1, s50, s100, s200, s400,
    s600, s800, s1000 }
N-312ext ::= ENUMERATED {
    s2, s4, s10, s20 }
N-313 ::= ENUMERATED {
    s1, s2, s4, s10, s20,
    s50, s100, s200 }
N-315 ::= ENUMERATED {
    s1, s50, s100, s200, s400,
    s600, s800, s1000 }
N-315ext ::= ENUMERATED {
    s2, s4, s10, s20 }
N-AccessFails ::= INTEGER (1..64)
N-AP-RetransMax ::= INTEGER (1..64)
NetworkAssistedGPS-Supported ::= ENUMERATED {
    networkBased,
    ue-Based,
    bothNetworkAndUE-Based,
    noNetworkAssistedGPS }
NF-BO-AllBusy ::= INTEGER (0..31)
NF-BO-NoAICH ::= INTEGER (0..31)
NF-BO-Mismatch ::= INTEGER (0..127)
NS-BO-Busy ::= INTEGER (0..63)
NS-IP ::= INTEGER (0..28)

```



```

P-TMSI-and-RAI-GSM-MAP ::=          SEQUENCE {
    p-TMSI                          P-TMSI-GSM-MAP,
    rai                              RAI
}

PagingCause ::=                     ENUMERATED {
    terminatingConversationalCall,
    terminatingStreamingCall,
    terminatingInteractiveCall,
    terminatingBackgroundCall,
    terminatingHighPrioritySignalling,
    terminatingLowPrioritySignalling,
    terminatingCauseUnknown,
    spare
}

PagingRecord ::=                    CHOICE {
    cn-Identity                       SEQUENCE {
        pagingCause                  PagingCause,
        cn-DomainIdentity            CN-DomainIdentity,
        cn-pagedUE-Identity          CN-PagedUE-Identity
    },
    utran-Identity                    SEQUENCE {
        u-RNTI                       U-RNTI,
        cn-OriginatedPage-connectedMode-UE SEQUENCE {
            pagingCause              PagingCause,
            cn-DomainIdentity        CN-DomainIdentity,
            pagingRecordTypeID       PagingRecordTypeID
        }
    }
} OPTIONAL

PagingRecordList ::=                SEQUENCE (SIZE (1..maxPage1)) OF
    PagingRecord

PDCP-Capability ::=                SEQUENCE {
    losslessSRNS-RelocationSupport   BOOLEAN,
    supportForRfc2507                 CHOICE {
        notSupported                 NULL,
        supported                     MaxHcContextSpace
    }
}

PDCP-Capability-r4-ext ::=          SEQUENCE {
    supportForRfc3095                 CHOICE {
        notSupported                 NULL,
        supported                     SEQUENCE {
            maxROHC-ContextSessions  MaxROHC-ContextSessions-r4  DEFAULT s16,
            reverseCompressionDepth   INTEGER (0..65535)          DEFAULT 0
        }
    }
}

PhysicalChannelCapability ::=        SEQUENCE {
    fddPhysChCapability                SEQUENCE {
        downlinkPhysChCapability     DL-PhysChCapabilityFDD,
        uplinkPhysChCapability       UL-PhysChCapabilityFDD
    } OPTIONAL,
    -- tddPhysChCapability describes the 3.84Mcps TDD physical channel capability
    tddPhysChCapability                SEQUENCE {
        downlinkPhysChCapability     DL-PhysChCapabilityTDD,
        uplinkPhysChCapability       UL-PhysChCapabilityTDD
    } OPTIONAL
}

-- PhysicalChannelCapability-LCR-r4 describes the 1.28Mcps TDD physical channel capability
PhysicalChannelCapability-LCR-r4 ::= SEQUENCE {
    tdd128-PhysChCapability            SEQUENCE {
        downlinkPhysChCapability     DL-PhysChCapabilityTDD-LCR-r4,
        uplinkPhysChCapability       UL-PhysChCapabilityTDD-LCR-r4
    } OPTIONAL
}

-- PhysicalChannelCapability-hspdsch-r5 describes the HS-PDSCH physical channel capability
PhysicalChannelCapability-hspdsch-r5 ::= SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                           SEQUENCE {
            hspdsch-supported         CHOICE {

```



```

        gsm900P,
        gsm900E,
        gsm1800,
        gsm1900,
        spare9, spare8, spare7, spare6, spare5,
        spare4, spare3, spare2, spare1}

Rb-timer-indicator ::=
    t314-expired
    t315-expired
SEQUENCE {
    BOOLEAN,
    BOOLEAN }

Re-EstablishmentTimer ::=
}
ENUMERATED {
    useT314, useT315
}

RedirectionInfo ::=
    frequencyInfo
    interRATInfo
CHOICE {
    FrequencyInfo,
    InterRATInfo
}

RejectionCause ::=
ENUMERATED {
    congestion,
    unspecified }

ReleaseCause ::=
ENUMERATED {
    normalEvent,
    unspecified,
    pre-emptiveRelease,
    congestion,
    re-establishmentReject,
    directedsignallingconnectionre-establishment,
    userInactivity,
    spare }

RF-Capability ::=
    fddRF-Capability
        ue-PowerClass
        txRxFrequencySeparation
    }
    tddRF-Capability
        ue-PowerClass
        radioFrequencyBandTDDList
        chipRateCapability
    }
}
SEQUENCE {
    SEQUENCE {
        UE-PowerClass,
        TxRxFrequencySeparation
    }
    OPTIONAL,
    SEQUENCE {
        UE-PowerClass,
        RadioFrequencyBandTDDList,
        ChipRateCapability
    }
    OPTIONAL
}

RF-Capability-r4-ext ::=
    tddRF-Capability
        ue-PowerClass
        radioFrequencyBandTDDList
        chipRateCapability
}
SEQUENCE {
    SEQUENCE {
        UE-PowerClass,
        RadioFrequencyBandTDDList,
        ChipRateCapability
    }
    OPTIONAL
}

RLC-Capability ::=
    totalRLC-AM-BufferSize
    maximumRLC-WindowSize
    maximumAM-EntityNumber
}
SEQUENCE {
    TotalRLC-AM-BufferSize,
    MaximumRLC-WindowSize,
    MaximumAM-EntityNumberRLC-Cap
}

RRC-MessageSequenceNumber ::=
INTEGER (0..15)

RRC-MessageSequenceNumberList ::=
SEQUENCE (SIZE (4..5)) OF
RRC-MessageSequenceNumber

RRC-StateIndicator ::=
ENUMERATED {
    cell-DCH, cell-FACH, cell-PCH, ura-PCH }

RRC-TransactionIdentifier ::=
INTEGER (0..3)

S-RNTI ::=
BIT STRING (SIZE (20))

S-RNTI-2 ::=
BIT STRING (SIZE (10))

SecurityCapability ::=
    cipheringAlgorithmCap
SEQUENCE {
    BIT STRING {

```

```

        spare15(0),
        spare14(1),
        spare13(2),
        spare12(3),
        spare11(4),
        spare10(5),
        spare9(6),
        spare8(7),
        spare7(8),
        spare6(9),
        spare5(10),
        spare4(11),
        spare3(12),
        spare2(13),
        ueal(14),
        uea0(15)
    } (SIZE (16)),
integrityProtectionAlgorithmCap BIT STRING {
    spare15(0),
    spare14(1),
    spare13(2),
    spare12(3),
    spare11(4),
    spare10(5),
    spare9(6),
    spare8(7),
    spare7(8),
    spare6(9),
    spare5(10),
    spare4(11),
    spare3(12),
    spare2(13),
    uial(14),
    spare0(15)
} (SIZE (16))
}

SimultaneousSCCPCH-DPCH-Reception ::= CHOICE {
    notSupported          NULL,
    supported             SEQUENCE {
        maxNoSCCPCH-RL      MaxNoSCCPCH-RL,
        -- simultaneousSCCPCH-DPCH-DPDCH-Reception is applicable only if
        -- the IE Support of PDSCH = TRUE
        simultaneousSCCPCH-DPCH-DPDCH-Reception    BOOLEAN
    }
}

SRNC-Identity ::=          BIT STRING (SIZE (12))

START-Value ::=          BIT STRING (SIZE (20))

STARTList ::=          SEQUENCE (SIZE (1..maxCNdomains)) OF
                        STARTSingle

STARTSingle ::=          SEQUENCE {
    cn-DomainIdentity      CN-DomainIdentity,
    start-Value            START-Value
}

SystemSpecificCapUpdateReq ::=          ENUMERATED {
    gsm }

SystemSpecificCapUpdateReqList ::= SEQUENCE (SIZE (1..maxSystemCapability)) OF
    SystemSpecificCapUpdateReq

T-300 ::=          ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,
    ms1800, ms2000, ms3000, ms4000,
    ms6000, ms8000 }

T-301 ::=          ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,
    ms1800, ms2000, ms3000, ms4000,
    ms6000, ms8000, spare }

```

```

T-302 ::=
    ENUMERATED {
        ms100, ms200, ms400, ms600, ms800,
        ms1000, ms1200, ms1400, ms1600,
        ms1800, ms2000, ms3000, ms4000,
        ms6000, ms8000, spare }

T-304 ::=
    ENUMERATED {
        ms100, ms200, ms400,
        ms1000, ms2000, spare3, spare2, spare1 }

T-305 ::=
    ENUMERATED {
        noUpdate, m5, m10, m30,
        m60, m120, m360, m720 }

T-307 ::=
    ENUMERATED {
        s5, s10, s15, s20,
        s30, s40, s50, spare }

T-308 ::=
    ENUMERATED {
        ms40, ms80, ms160, ms320 }

T-309 ::=
    INTEGER (1..8)

T-310 ::=
    ENUMERATED {
        ms40, ms80, ms120, ms160,
        ms200, ms240, ms280, ms320 }

T-311 ::=
    ENUMERATED {
        ms250, ms500, ms750, ms1000,
        ms1250, ms1500, ms1750, ms2000 }

-- The value 0 for T-312 is not used in this version of the specification
T-312 ::=
    INTEGER (0..15)

T-313 ::=
    INTEGER (0..15)

T-314 ::=
    ENUMERATED {
        s0, s2, s4, s6, s8,
        s12, s16, s20 }

T-315 ::=
    ENUMERATED {
        s0, s10, s30, s60, s180,
        s600, s1200, s1800 }

T-316 ::=
    ENUMERATED {
        s0, s10, s20, s30, s40,
        s50, s-inf, spare }

T-317 ::=
    ENUMERATED {
        s0, s10, s30, s60, s180,
        s600, s1200, s1800 }

T-CPCH ::=
    ENUMERATED {
        ct0, ct1 }

TMSI-and-LAI-GSM-MAP ::=
    SEQUENCE {
        tmsi      TMSI-GSM-MAP,
        lai       LAI
    }

TMSI-DS-41 ::=
    OCTET STRING (SIZE (2..17))

TotalRLC-AM-BufferSize ::=
    ENUMERATED {
        kb2, kb10, kb50, kb100,
        kb150, kb500, kb1000, spare }

TotalBufferSize ::=
    ENUMERATED {
        kb50, kb100, kb150, kb200,
        kb300, spare3, spare2, spare1 }

-- Actual value TransmissionProbability = IE value * 0.125
TransmissionProbability ::=
    INTEGER (1..8)

TransportChannelCapability ::=
    SEQUENCE {
        dl-TransChCapability  DL-TransChCapability,
        ul-TransChCapability  UL-TransChCapability
    }

```

```

TurboSupport ::=
    notSupported
    supported
}
CHOICE {
    NULL,
    MaxNoBits
}

TxRxFrequencySeparation ::=
    mhz190, mhz174-8-205-2,
    mhz134-8-245-2
}
ENUMERATED {

U-RNTI ::=
    srnc-Identity
    s-RNTI
}
SEQUENCE {
    SRNC-Identity,
    S-RNTI

U-RNTI-Short ::=
    srnc-Identity
    s-RNTI-2
}
SEQUENCE {
    SRNC-Identity,
    S-RNTI-2

UE-ConnTimersAndConstants ::=
    SEQUENCE {
-- Optional is used also for parameters for which the default value is the last one read in SIB1
-- t-301 and n-301 should not be used by the UE in this version of the specification
    t-301 T-301 DEFAULT ms2000,
    n-301 N-301 DEFAULT 2,
    t-302 T-302 DEFAULT ms4000,
    n-302 N-302 DEFAULT 3,
    t-304 T-304 DEFAULT ms2000,
    n-304 N-304 DEFAULT 2,
    t-305 T-305 DEFAULT m30,
    t-307 T-307 DEFAULT s30,
    t-308 T-308 DEFAULT ms160,
    t-309 T-309 DEFAULT 5,
    t-310 T-310 DEFAULT ms160,
    n-310 N-310 DEFAULT 4,
    t-311 T-311 DEFAULT ms2000,
    t-312 T-312 DEFAULT 1,
    -- n-312 shall be ignored if n-312 in UE-ConnTimersAndConstants-v3a0ext is present, and the
    -- value of that element shall be used instead.
    n-312 N-312 DEFAULT s1,
    t-313 T-313 DEFAULT 3,
    n-313 N-313 DEFAULT s20,
    t-314 T-314 DEFAULT s12,
    t-315 T-315 DEFAULT s180,
    -- n-315 shall be ignored if n-315 in UE-ConnTimersAndConstants-v3a0ext is present, and the
    -- value of that element shall be used instead.
    n-315 N-315 DEFAULT s1,
    t-316 T-316 DEFAULT s30,
    t-317 T-317 DEFAULT s180
}

UE-ConnTimersAndConstants-v3a0ext ::=
    SEQUENCE {
    n-312 N-312ext OPTIONAL,
    n-315 N-315ext OPTIONAL
}

UE-IdleTimersAndConstants ::=
    SEQUENCE {
    t-300 T-300,
    n-300 N-300,
    t-312 T-312,
    -- n-312 shall be ignored if n-312 in UE-IdleTimersAndConstants-v3a0ext is present, and the
    -- value of that element shall be used instead.
    n-312 N-312
}

UE-IdleTimersAndConstants-v3a0ext ::=
    SEQUENCE {
    n-312 N-312ext OPTIONAL
}

UE-MultiModeRAT-Capability ::=
    SEQUENCE {
    multiRAT-CapabilityList MultiRAT-Capability,
    multiModeCapability MultiModeCapability
}

UE-PowerClass ::=
    INTEGER (1..4)

UE-PowerClass-v370 ::=
    ENUMERATED {class1, class2, class3, class4,
    spare4, spare3, spare2, spare1 }

```

```

UE-RadioAccessCapability ::= SEQUENCE {
    pdcp-Capability          PDCP-Capability,
    rlc-Capability           RLC-Capability,
    transportChannelCapability TransportChannelCapability,
    rf-Capability            RF-Capability,
    physicalChannelCapability PhysicalChannelCapability,
    ue-MultiModeRAT-Capability UE-MultiModeRAT-Capability,
    securityCapability       SecurityCapability,
    ue-positioning-Capability UE-Positioning-Capability,
    measurementCapability    MeasurementCapability OPTIONAL
}

UE-RadioAccessCapabilityInfo ::= SEQUENCE {
    ue-RadioAccessCapability UE-RadioAccessCapability,
    ue-RadioAccessCapability-v370ext UE-RadioAccessCapability-v370ext
}

UE-RadioAccessCapability-v370ext ::= SEQUENCE {
    ue-RadioAccessCapabBandFDDList UE-RadioAccessCapabBandFDDList
}

UE-RadioAccessCapability-v380ext ::= SEQUENCE {
    ue-PositioningCapabilityExt-v380 UE-PositioningCapabilityExt-v380
}

UE-RadioAccessCapability-v3a0ext ::= SEQUENCE {
    ue-PositioningCapabilityExt-v3a0 UE-PositioningCapabilityExt-v3a0
}

UE-PositioningCapabilityExt-v380 ::= SEQUENCE {
    rx-tx-TimeDifferenceType2Capable BOOLEAN
}

UE-PositioningCapabilityExt-v3a0 ::= SEQUENCE {
    validity-CellPCH-UraPCH ENUMERATED { true }
}

UE-RadioAccessCapabBandFDDList ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    UE-RadioAccessCapabBandFDD

UE-RadioAccessCapabBandFDD ::= SEQUENCE{
    radioFrequencyBandFDD RadioFrequencyBandFDD,
    fddRF-Capability      SEQUENCE {
        ue-PowerClass      UE-PowerClass-v370,
        txRxFrequencySeparation TxRxFrequencySeparation
    } OPTIONAL,
    measurementCapability MeasurementCapability-v370
}

UE-RadioAccessCapability-r4-ext ::= SEQUENCE {
    pdcp-Capability-r4-ext PDCP-Capability-r4-ext,
    rf-Capability          RF-Capability-r4-ext,
    physicalChannelCapability-LCR PhysicalChannelCapability-LCR-r4,
    measurementCapability-r4-ext MeasurementCapability-r4-ext OPTIONAL
}

UE-RadioAccessCapability-v4xyext ::= SEQUENCE {
    -- R99 UEs shall include IE "ue-TestLevelIndicator"
    accessStratumReleaseIndicator AccessStratumReleaseIndicator
}

UE-RadioAccessCapability-r5-ext ::= SEQUENCE {
    pdcp-Capability-r4-ext PDCP-Capability-r4-ext,
    rf-Capability          RF-Capability-r4-ext,
mac-hs-Capability        MAC-hs-Capability,
    physicalChannelCapability PhysicalChannelCapability-hspdsch-r5,
    measurementCapability-r4-ext MeasurementCapability-r4-ext OPTIONAL
}

UL-PhysChCapabilityFDD ::= SEQUENCE {
    maxNoDPDCH-BitsTransmitted MaxNoDPDCH-BitsTransmitted,
    supportOfPCPCH             BOOLEAN
}

UL-PhysChCapabilityTDD ::= SEQUENCE {
    maxTS-PerFrame            MaxTS-PerFrame,
    maxPhysChPerTimeslot      MaxPhysChPerTimeslot,

```

```

    minimumSF                               MinimumSF-UL,
    supportOfPUSCH                           BOOLEAN
}

UL-PhysChCapabilityTDD-LCR-r4 ::= SEQUENCE {
    maxTS-PerSubFrame                       MaxTS-PerSubFrame-r4,
    maxPhysChPerTimeslot                    MaxPhysChPerTimeslot,
    minimumSF                               MinimumSF-UL,
    supportOfPUSCH                           BOOLEAN,
    supportOf8PSK                           BOOLEAN
}

UL-TransChCapability ::= SEQUENCE {
    maxNoBitsTransmitted                    MaxNoBits,
    maxConvCodeBitsTransmitted              MaxNoBits,
    turboEncodingSupport                    TurboSupport,
    maxSimultaneousTransChs                 MaxSimultaneousTransChsUL,
    modeSpecificInfo                        CHOICE {
        fdd                                  NULL,
        tdd                                  SEQUENCE {
            maxSimultaneousCCTrCH-Count      MaxSimultaneousCCTrCH-Count
        }
    },
    maxTransmittedBlocks                    MaxTransportBlocksUL,
    maxNumberOfTFC                          MaxNumberOfTFC-UL,
    maxNumberOfTF                            MaxNumberOfTF
}

UE-Positioning-Capability ::= SEQUENCE {
    standaloneLocMethodsSupported           BOOLEAN,
    ue-BasedOTDOA-Supported                 BOOLEAN,
    networkAssistedGPS-Supported            NetworkAssistedGPS-Supported,
    supportForUE-GPS-TimingOfCellFrames     BOOLEAN,
    supportForIPDL                           BOOLEAN
}

UE-SecurityInformation ::= SEQUENCE {
    start-CS                                START-Value
}

URA-UpdateCause ::= ENUMERATED {
    changeOfURA,
    periodicURAUpdate,
    dummy,
    spare1 }

UTRAN-DRX-CycleLengthCoefficient ::= INTEGER (3..9)

WaitTime ::= INTEGER (0..15)

-- *****
--
-- RADIO BEARER INFORMATION ELEMENTS (10.3.4)
--
-- *****

AlgorithmSpecificInfo ::= CHOICE {
    rfc2507-Info                RFC2507-Info
}

AlgorithmSpecificInfo-r4 ::= CHOICE {
    rfc2507-Info                RFC2507-Info,
    rfc3095-Info                RFC3095-Info-r4
}

CID-InclusionInfo-r4 ::= ENUMERATED {
    pdcp-Header,
    rfc3095-PacketFormat }

-- Upper limit COUNT-C is 2^32 - 1
COUNT-C ::= INTEGER (0..4294967295)

-- Upper limit COUNT-C-MSB is 2^25 - 1
COUNT-C-MSB ::= INTEGER (0..33554431)

DefaultConfigIdentity ::= INTEGER (0..9)

DefaultConfigMode ::= ENUMERATED {

```



```

        fdd,
        tdd }

DL-AM-RLC-Mode ::= SEQUENCE {
    inSequenceDelivery      BOOLEAN,
    receivingWindowSize    ReceivingWindowSize,
    dl-RLC-StatusInfo      DL-RLC-StatusInfo
}

DL-CounterSynchronisationInfo ::= SEQUENCE {
    rB-WithPDCP-InfoList  RB-WithPDCP-InfoList  OPTIONAL
}

DL-LogicalChannelMapping ::= SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType DL-TransportChannelType,
    logicalChannelIdentity  LogicalChannelIdentity          OPTIONAL
}

DL-LogicalChannelMapping-r5 ::= SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType DL-TransportChannelType-r5,
    logicalChannelIdentity  LogicalChannelIdentity          OPTIONAL
}

DL-LogicalChannelMappingList ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
    DL-LogicalChannelMapping

DL-LogicalChannelMappingList-r5 ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
    DL-LogicalChannelMapping-r5

DL-RLC-Mode ::= CHOICE {
    dl-AM-RLC-Mode      DL-AM-RLC-Mode,
    dl-UM-RLC-Mode      NULL,
    dl-TM-RLC-Mode      DL-TM-RLC-Mode
}

DL-RLC-StatusInfo ::= SEQUENCE {
    timerStatusProhibit TimerStatusProhibit          OPTIONAL,
    timerEPC             TimerEPC                    OPTIONAL,
    missingPDU-Indicator BOOLEAN,
    timerStatusPeriodic TimerStatusPeriodic          OPTIONAL
}

DL-TM-RLC-Mode ::= SEQUENCE {
    segmentationIndication  BOOLEAN
}

DL-TransportChannelType ::= CHOICE {
    dch      TransportChannelIdentity,
    fach     NULL,
    dsch     TransportChannelIdentity,
    dch-and-dsch TransportChannelIdentityDCHandDSCH
}

DL-TransportChannelType-r5 ::= CHOICE {
    dch      TransportChannelIdentity,
    fach     NULL,
    dsch     TransportChannelIdentity,
    dch-and-dsch TransportChannelIdentityDCHandDSCH,
    hsdSCH   Mac-d-FlowIdentity,
    dch-and-hsdSCH Mac-d-FlowIdentityDCHandHSDSCH
}

ExpectReordering ::= ENUMERATED {
    reorderingNotExpected,
    reorderingExpected }

ExplicitDiscard ::= SEQUENCE {
    timerMRW      TimerMRW,
    timerDiscard  TimerDiscard,
    maxMRW        MaxMRW
}

HeaderCompressionInfo ::= SEQUENCE {
    algorithmSpecificInfo  AlgorithmSpecificInfo
}

```

```

HeaderCompressionInfoList ::= SEQUENCE (SIZE (1..maxPDCPALgoType)) OF
                                HeaderCompressionInfo

HeaderCompressionInfo-r4 ::= SEQUENCE {
                                algorithmSpecificInfo
                                AlgorithmSpecificInfo-r4
                                }

HeaderCompressionInfoList-r4 ::= SEQUENCE (SIZE (1..maxPDCPALgoType)) OF
                                HeaderCompressionInfo-r4

LogicalChannelIdentity ::= INTEGER (1..15)

LosslessSRNS-RelocSupport ::= CHOICE {
                                supported
                                MaxPDCP-SN-WindowSize,
                                notSupported
                                NULL
                                }

MAC-LogicalChannelPriority ::= INTEGER (1..8)

MaxDAT ::= ENUMERATED {
                                dat1, dat2, dat3, dat4, dat5, dat6,
                                dat7, dat8, dat9, dat10, dat15, dat20,
                                dat25, dat30, dat35, dat40 }

MaxDAT-Retransmissions ::= SEQUENCE {
                                maxDAT
                                MaxDAT,
                                timerMRW
                                TimerMRW,
                                maxMRW
                                MaxMRW
                                }

MaxMRW ::= ENUMERATED {
                                mmm1, mmm4, mmm6, mmm8, mmm12, mmm16,
                                mmm24, mmm32 }

MaxPDCP-SN-WindowSize ::= ENUMERATED {
                                sn255, sn65535 }

MaxRST ::= ENUMERATED {
                                rst1, rst4, rst6, rst8, rst12,
                                rst16, rst24, rst32 }

NoExplicitDiscard ::= ENUMERATED {
                                dt10, dt20, dt30, dt40, dt50,
                                dt60, dt70, dt80, dt90, dt100 }

PDCP-Info ::= SEQUENCE {
                                losslessSRNS-RelocSupport
                                LosslessSRNS-RelocSupport OPTIONAL,
                                -- TABULAR: pdcP-PDU-Header is MD in the tabular format and it can be encoded
                                -- in one bit, so the OPTIONAL is removed for compactness.
                                pdcP-PDU-Header
                                PDCP-PDU-Header,
                                headerCompressionInfoList
                                HeaderCompressionInfoList OPTIONAL
                                }

PDCP-Info-r4 ::= SEQUENCE {
                                losslessSRNS-RelocSupport
                                LosslessSRNS-RelocSupport OPTIONAL,
                                -- TABULAR: pdcP-PDU-Header is MD in the tabular format and it can be encoded
                                -- in one bit, so the OPTIONAL is removed for compactness.
                                pdcP-PDU-Header
                                PDCP-PDU-Header,
                                headerCompressionInfoList
                                HeaderCompressionInfoList-r4 OPTIONAL
                                }

PDCP-InfoReconfig ::= SEQUENCE {
                                pdcP-Info
                                PDCP-Info,
                                -- dummy is not used in this version of the specification and
                                -- it should be ignored.
                                dummy
                                INTEGER (0..65535)
                                }

PDCP-InfoReconfig-r4 ::= SEQUENCE {
                                pdcP-Info
                                PDCP-Info-r4
                                }

PDCP-PDU-Header ::= ENUMERATED {
                                present, absent }

PDCP-SN-Info ::= INTEGER (0..65535)

Poll-PDU ::= ENUMERATED {

```

```

        pdu1, pdu2, pdu4, pdu8, pdu16,
        pdu32, pdu64, pdu128 }

Poll-SDU ::= ENUMERATED {
    sdu1, sdu4, sdu16, sdu64 }

PollingInfo ::= SEQUENCE {
    timerPollProhibit TimerPollProhibit OPTIONAL,
    timerPoll TimerPoll OPTIONAL,
    poll-PDU Poll-PDU OPTIONAL,
    poll-SDU Poll-SDU OPTIONAL,
    lastTransmissionPDU-Poll BOOLEAN,
    lastRetransmissionPDU-Poll BOOLEAN,
    pollWindow PollWindow OPTIONAL,
    timerPollPeriodic TimerPollPeriodic OPTIONAL
}

PollWindow ::= ENUMERATED {
    pw50, pw60, pw70, pw80, pw85,
    pw90, pw95, pw99 }

PredefinedConfigIdentity ::= INTEGER (0..15)

PredefinedConfigValueTag ::= INTEGER (0..15)

PredefinedRB-Configuration ::= SEQUENCE {
    re-EstablishmentTimer Re-EstablishmentTimer,
    srb-InformationList SRB-InformationSetupList,
    rb-InformationList RB-InformationSetupList
}

PreDefRadioConfiguration ::= SEQUENCE {
    -- Radio bearer IEs
    predefinedRB-Configuration PredefinedRB-Configuration,
    -- Transport channel IEs
    preDefTransChConfiguration PreDefTransChConfiguration,
    -- Physical channel IEs
    preDefPhyChConfiguration PreDefPhyChConfiguration
}

PredefinedConfigStatusList ::= SEQUENCE (SIZE (maxPredefConfig)) OF
    PredefinedConfigStatusInfo

PredefinedConfigStatusInfo ::= CHOICE {
    storedWithValueTagSameAsPrevious NULL,
    other CHOICE {
        notStored NULL,
        storedWithDifferentValueTag PredefinedConfigValueTag
    }
}

RAB-Info ::= SEQUENCE {
    rab-Identity RAB-Identity,
    cn-DomainIdentity CN-DomainIdentity,
    nas-Synchronisation-Indicator NAS-Synchronisation-Indicator OPTIONAL,
    re-EstablishmentTimer Re-EstablishmentTimer
}

RAB-InformationList ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
    RAB-Info

RAB-InformationReconfigList ::= SEQUENCE (SIZE (1.. maxRABsetup)) OF
    RAB-InformationReconfig

RAB-InformationReconfig ::= SEQUENCE {
    rab-Identity RAB-Identity,
    cn-DomainIdentity CN-DomainIdentity,
    nas-Synchronisation-Indicator NAS-Synchronisation-Indicator
}

RAB-Info-Post ::= SEQUENCE {
    rab-Identity RAB-Identity,
    cn-DomainIdentity CN-DomainIdentity,
    nas-Synchronisation-Indicator NAS-Synchronisation-Indicator OPTIONAL
}

RAB-InformationSetup ::= SEQUENCE {
    rab-Info RAB-Info,
    rb-InformationSetupList RB-InformationSetupList
}

```

```

}

RAB-InformationSetup-r4 ::= SEQUENCE {
    rab-Info                RAB-Info,
    rb-InformationSetupList RB-InformationSetupList-r4
}

RAB-InformationSetupList ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
    RAB-InformationSetup

RAB-InformationSetupList-r4 ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
    RAB-InformationSetup-r4

RB-ActivationTimeInfo ::= SEQUENCE {
    rb-Identity            RB-Identity,
    rlc-SequenceNumber    RLC-SequenceNumber
}

RB-ActivationTimeInfoList ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-ActivationTimeInfo

RB-COUNT-C-Information ::= SEQUENCE {
    rb-Identity            RB-Identity,
    count-C-UL             COUNT-C,
    count-C-DL             COUNT-C
}

RB-COUNT-C-InformationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
    RB-COUNT-C-Information

RB-COUNT-C-MSB-Information ::= SEQUENCE {
    rb-Identity            RB-Identity,
    count-C-MSB-UL        COUNT-C-MSB,
    count-C-MSB-DL        COUNT-C-MSB
}

RB-COUNT-C-MSB-InformationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
    RB-COUNT-C-MSB-Information

RB-Identity ::= INTEGER (1..32)

RB-IdentityList ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-Identity

RB-InformationAffected ::= SEQUENCE {
    rb-Identity            RB-Identity,
    rb-MappingInfo        RB-MappingInfo
}

RB-InformationAffected-r5 ::= SEQUENCE {
    rb-Identity            RB-Identity,
    rb-MappingInfo        RB-MappingInfo
}

RB-InformationAffectedList ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-InformationAffected

RB-InformationAffectedList-r5 ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-InformationAffected-r5

RB-InformationReconfig ::= SEQUENCE {
    rb-Identity            RB-Identity,
    pdcp-Info              PDCP-InfoReconfig                OPTIONAL,
    pdcp-SN-Info           PDCP-SN-Info                OPTIONAL,
    rlc-Info                RLC-Info                    OPTIONAL,
    rb-MappingInfo          RB-MappingInfo              OPTIONAL,
    rb-StopContinue         RB-StopContinue             OPTIONAL
}

RB-InformationReconfig-r4 ::= SEQUENCE {
    rb-Identity            RB-Identity,
    pdcp-Info              PDCP-InfoReconfig-r4        OPTIONAL,
    rlc-Info                RLC-Info                    OPTIONAL,
    rb-MappingInfo          RB-MappingInfo              OPTIONAL,
    rb-StopContinue         RB-StopContinue             OPTIONAL
}

RB-InformationReconfig-r5 ::= SEQUENCE {

```

```

    rb-Identity          RB-Identity,
    pdcp-Info           PDCP-InfoReconfig-r4
    rlc-Info            RLC-Info
    rb-MappingInfo     RB-MappingInfo-r5
    rb-StopContinue    RB-StopContinue
}
}
RB-InformationReconfigList ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-InformationReconfig
RB-InformationReconfigList-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-InformationReconfig-r4
RB-InformationReconfigList-r5 ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-InformationReconfig-r5
RB-InformationReleaseList ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-Identity
RB-InformationSetup ::= SEQUENCE {
    rb-Identity          RB-Identity,
    pdcp-Info           PDCP-Info
    rlc-InfoChoice      RLC-InfoChoice,
    rb-MappingInfo     RB-MappingInfo
}
}
RB-InformationSetup-r4 ::= SEQUENCE {
    rb-Identity          RB-Identity,
    pdcp-Info           PDCP-Info-r4
    rlc-Info            RLC-Info,
    rb-MappingInfo     RB-MappingInfo
}
}
RB-InformationSetupList ::= SEQUENCE (SIZE (1..maxRBperRAB)) OF
    RB-InformationSetup
RB-InformationSetupList-r4 ::= SEQUENCE (SIZE (1..maxRBperRAB)) OF
    RB-InformationSetup-r4
RB-MappingInfo ::= SEQUENCE (SIZE (1..maxRBMuxOptions)) OF
    RB-MappingOption
RB-MappingInfo-r5 ::= SEQUENCE (SIZE (1..maxRBMuxOptions)) OF
    RB-MappingOption-r5
RB-MappingOption ::= SEQUENCE {
    ul-LogicalChannelMappings UL-LogicalChannelMappings
    dl-LogicalChannelMappingList DL-LogicalChannelMappingList
}
}
RB-MappingOption-r5 ::= SEQUENCE {
    ul-LogicalChannelMappings UL-LogicalChannelMappings
    dl-LogicalChannelMappingList-r5 DL-LogicalChannelMappingList-r5
}
}
RB-StopContinue ::= ENUMERATED {
    stopRB, continueRB }
RB-WithPDCP-Info ::= SEQUENCE {
    rb-Identity          RB-Identity,
    pdcp-SN-Info        PDCP-SN-Info
}
}
RB-WithPDCP-InfoList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
    RB-WithPDCP-Info
ReceivingWindowSize ::= ENUMERATED {
    rw1, rw8, rw16, rw32, rw64, rw128, rw256,
    rw512, rw768, rw1024, rw1536, rw2047,
    rw2560, rw3072, rw3584, rw4095 }
RFC2507-Info ::= SEQUENCE {
    f-MAX-PERIOD        INTEGER (1..65535)
    f-MAX-TIME          INTEGER (1..255)
    max-HEADER          INTEGER (60..65535)
    tcp-SPACE           INTEGER (3..255)
    non-TCP-SPACE       INTEGER (3..65535)
    -- TABULAR: expectReordering has only two possible values, so using Optional or Default

```

```

-- would be wasteful
expectReordering
}

RFC3095-Info-r4 ::=
  cid-InclusionInfo
  max-CID
  rohcProfileList
  mrru
  rohcPacketSizeList
  reverseDecompressionDepth
}

SEQUENCE {
  CID-InclusionInfo-r4,
  INTEGER (1..16383)
  ROHC-ProfileList-r4,
  INTEGER (0..65535)
  ROHC-PacketSizeList-r4,
  INTEGER (0..65535)
}
  EXPECT REORDERING
  DEFAULT 15,
  DEFAULT 0,
  DEFAULT 0

RLC-Info ::=
  ul-RLC-Mode
  dl-RLC-Mode
}

SEQUENCE {
  UL-RLC-Mode
  DL-RLC-Mode
}
  OPTIONAL,
  OPTIONAL

RLC-InfoChoice ::=
  rlc-Info
  same-as-RB
}

CHOICE {
  RLC-Info,
  RB-Identity
}

RLC-SequenceNumber ::=
  INTEGER (0..4095)

RLC-SizeInfo ::=
  rlc-SizeIndex
}

SEQUENCE {
  INTEGER (1..maxTF)
}

RLC-SizeExplicitList ::=
  SEQUENCE (SIZE (1..maxTF)) OF
  RLC-SizeInfo

ROHC-Profile-r4 ::=
  INTEGER (1..3)

ROHC-ProfileList-r4 ::=
  SEQUENCE (SIZE (1..maxROHC-Profile-r4)) OF
  ROHC-Profile-r4

ROHC-PacketSize-r4 ::=
  INTEGER (2..1500)

ROHC-PacketSizeList-r4 ::=
  SEQUENCE (SIZE (1..maxROHC-PacketSizes-r4)) OF
  ROHC-PacketSize-r4

SRB-InformationSetup ::=
  -- The default value for rb-Identity is the smallest value not used yet.
  rb-Identity
  rlc-InfoChoice
  rb-MappingInfo
}

SEQUENCE {
  RB-Identity
  RLC-InfoChoice,
  RB-MappingInfo
}
  OPTIONAL,

SRB-InformationSetupList ::=
  SEQUENCE (SIZE (1..maxSRBsetup)) OF
  SRB-InformationSetup

SRB-InformationSetupList2 ::=
  SEQUENCE (SIZE (3..4)) OF
  SRB-InformationSetup

TimerDiscard ::=
  ENUMERATED {
    td0-1, td0-25, td0-5, td0-75,
    td1, td1-25, td1-5, td1-75,
    td2, td2-5, td3, td3-5, td4,
    td4-5, td5, td7-5 }

TimerEPC ::=
  ENUMERATED {
    te50, te60, te70, te80, te90,
    te100, te120, te140, te160, te180,
    te200, te300, te400, te500, te700,
    te900 }

TimerMRW ::=
  ENUMERATED {
    te50, te60, te70, te80, te90, te100,
    te120, te140, te160, te180, te200,
    te300, te400, te500, te700, te900 }

TimerPoll ::=
  ENUMERATED {
    tp10, tp20, tp30, tp40, tp50,
    tp60, tp70, tp80, tp90, tp100,
    tp110, tp120, tp130, tp140, tp150,
    tp160, tp170, tp180, tp190, tp200,
    tp210, tp220, tp230, tp240, tp250,

```

```

        tp260, tp270, tp280, tp290, tp300,
        tp310, tp320, tp330, tp340, tp350,
        tp360, tp370, tp380, tp390, tp400,
        tp410, tp420, tp430, tp440, tp450,
        tp460, tp470, tp480, tp490, tp500,
        tp510, tp520, tp530, tp540, tp550,
        tp600, tp650, tp700, tp750, tp800,
        tp850, tp900, tp950, tp1000 }

TimerPollPeriodic ::=          ENUMERATED {
                                tper100, tper200, tper300, tper400,
                                tper500, tper750, tper1000, tper2000 }

TimerPollProhibit ::=         ENUMERATED {
                                tpp10, tpp20, tpp30, tpp40, tpp50,
                                tpp60, tpp70, tpp80, tpp90, tpp100,
                                tpp110, tpp120, tpp130, tpp140, tpp150,
                                tpp160, tpp170, tpp180, tpp190, tpp200,
                                tpp210, tpp220, tpp230, tpp240, tpp250,
                                tpp260, tpp270, tpp280, tpp290, tpp300,
                                tpp310, tpp320, tpp330, tpp340, tpp350,
                                tpp360, tpp370, tpp380, tpp390, tpp400,
                                tpp410, tpp420, tpp430, tpp440, tpp450,
                                tpp460, tpp470, tpp480, tpp490, tpp500,
                                tpp510, tpp520, tpp530, tpp540, tpp550,
                                tpp600, tpp650, tpp700, tpp750, tpp800,
                                tpp850, tpp900, tpp950, tpp1000 }

TimerRST ::=                  ENUMERATED {
                                tr50, tr100, tr150, tr200, tr250, tr300,
                                tr350, tr400, tr450, tr500, tr550,
                                tr600, tr700, tr800, tr900, tr1000 }

TimerStatusPeriodic ::=      ENUMERATED {
                                tsp100, tsp200, tsp300, tsp400, tsp500,
                                tsp750, tsp1000, tsp2000 }

TimerStatusProhibit ::=      ENUMERATED {
                                tsp10, tsp20, tsp30, tsp40, tsp50,
                                tsp60, tsp70, tsp80, tsp90, tsp100,
                                tsp110, tsp120, tsp130, tsp140, tsp150,
                                tsp160, tsp170, tsp180, tsp190, tsp200,
                                tsp210, tsp220, tsp230, tsp240, tsp250,
                                tsp260, tsp270, tsp280, tsp290, tsp300,
                                tsp310, tsp320, tsp330, tsp340, tsp350,
                                tsp360, tsp370, tsp380, tsp390, tsp400,
                                tsp410, tsp420, tsp430, tsp440, tsp450,
                                tsp460, tsp470, tsp480, tsp490, tsp500,
                                tsp510, tsp520, tsp530, tsp540, tsp550,
                                tsp600, tsp650, tsp700, tsp750, tsp800,
                                tsp850, tsp900, tsp950, tsp1000 }

TransmissionRLC-Discard ::=  CHOICE {
    timerBasedExplicit          ExplicitDiscard,
    timerBasedNoExplicit        NoExplicitDiscard,
    maxDAT-Retransmissions      MaxDAT-Retransmissions,
    noDiscard                    MaxDAT
}

TransmissionWindowSize ::=   ENUMERATED {
                                tw1, tw8, tw16, tw32, tw64, tw128, tw256,
                                tw512, tw768, tw1024, tw1536, tw2047,
                                tw2560, tw3072, tw3584, tw4095 }

UL-AM-RLC-Mode ::=          SEQUENCE {
    transmissionRLC-Discard      TransmissionRLC-Discard,
    transmissionWindowSize        TransmissionWindowSize,
    timerRST                      TimerRST,
    max-RST                        MaxRST,
    pollingInfo                    PollingInfo                                OPTIONAL
}

UL-CounterSynchronisationInfo ::= SEQUENCE {
    rB-WithPDCP-InfoList          RB-WithPDCP-InfoList    OPTIONAL,
    startList                      STARTList
}

UL-LogicalChannelMapping ::= SEQUENCE {

```

```

-- TABULAR: UL-TransportChannelType contains TransportChannelIdentity as well.
ul-TransportChannelType      UL-TransportChannelType,
logicalChannelIdentity        LogicalChannelIdentity          OPTIONAL,
rlc-SizeList                  CHOICE {
    allSizes                   NULL,
    configured                  NULL,
    explicitList                RLC-SizeExplicitList
},
mac-LogicalChannelPriority     MAC-LogicalChannelPriority
}

UL-LogicalChannelMappingList ::= SEQUENCE {
-- rlc-LogicalChannelMappingIndicator shall be set to TRUE in this version
-- of the specification
rlc-LogicalChannelMappingIndicator  BOOLEAN,
ul-LogicalChannelMapping            SEQUENCE (SIZE (maxLoCHperRLC)) OF
                                     UL-LogicalChannelMapping
}

UL-LogicalChannelMappings ::= CHOICE {
    oneLogicalChannel      UL-LogicalChannelMapping,
    twoLogicalChannels     UL-LogicalChannelMappingList
}

UL-RLC-Mode ::= CHOICE {
    ul-AM-RLC-Mode        UL-AM-RLC-Mode,
    ul-UM-RLC-Mode        UL-UM-RLC-Mode,
    ul-TM-RLC-Mode        UL-TM-RLC-Mode,
    spare                  NULL
}

UL-TM-RLC-Mode ::= SEQUENCE {
    transmissionRLC-Discard  TransmissionRLC-Discard  OPTIONAL,
    segmentationIndication  BOOLEAN
}

UL-UM-RLC-Mode ::= SEQUENCE {
    transmissionRLC-Discard  TransmissionRLC-Discard  OPTIONAL
}

UL-TransportChannelType ::= CHOICE {
    dch                     TransportChannelIdentity,
    rach                     NULL,
    cpch                     NULL,
    usch                     TransportChannelIdentity
}

-- *****
--
-- TRANSPORT CHANNEL INFORMATION ELEMENTS (10.3.5)
--
-- *****

AddOrReconfMAC-dFlow ::= SEQUENCE {
    MAC-hs-Queue-List  OPTIONAL,
}

AllowedTFC-List ::= SEQUENCE (SIZE (1..maxTFC)) OF
    TFC-Value

AllowedTFI-List ::= SEQUENCE (SIZE (1..maxTF)) OF
    INTEGER (0..31)

BitModeRLC-SizeInfo ::= CHOICE {
    sizeType1              INTEGER (0..127),
    sizeType2              SEQUENCE {
        -- Actual size = (part1 * 8) + 128 + part2
        part1               INTEGER (0..15),
        part2               INTEGER (1..7)
    },
    sizeType3              SEQUENCE {
        -- Actual size = (part1 * 16) + 256 + part2
        part1               INTEGER (0..47),
        part2               INTEGER (1..15)
    },
    sizeType4              SEQUENCE {

```



```

    -- Actual size = (part1 * 64) + 1024 + part2
    part1           INTEGER (0..62),
    part2           INTEGER (1..63)
  }
}

-- Actual value BLER-QualityValue = IE value * 0.1
BLER-QualityValue ::= INTEGER (-63..0)

ChannelCodingType ::= CHOICE {
  -- noCoding is only used for TDD in this version of the specification,
  -- otherwise it should be ignored
  noCoding           NULL,
  convolutional      CodingRate,
  turbo              NULL
}

CodingRate ::= ENUMERATED {
  half,
  third }

CommonDynamicTF-Info ::= SEQUENCE {
  rlc-Size           CHOICE {
    fdd              SEQUENCE {
      octetModeRLC-SizeInfoType2  OctetModeRLC-SizeInfoType2
    },
    tdd              SEQUENCE {
      commonTDD-Choice  CHOICE {
        bitModeRLC-SizeInfo  BitModeRLC-SizeInfo,
        octetModeRLC-SizeInfoType1  OctetModeRLC-SizeInfoType1
      }
    }
  },
  numberOfTbSizeList SEQUENCE (SIZE (1..maxTF)) OF
    NumberOfTransportBlocks,
  logicalChannelList LogicalChannelList
}

CommonDynamicTF-Info-DynamicTTI ::= SEQUENCE {
  commonTDD-Choice  CHOICE {
    bitModeRLC-SizeInfo  BitModeRLC-SizeInfo,
    octetModeRLC-SizeInfoType1  OctetModeRLC-SizeInfoType1
  },
  numberOfTbSizeAndTTIList  NumberOfTbSizeAndTTIList,
  logicalChannelList  LogicalChannelList
}

CommonDynamicTF-InfoList ::= SEQUENCE (SIZE (1..maxTF)) OF
  CommonDynamicTF-Info

CommonDynamicTF-InfoList-DynamicTTI ::= SEQUENCE (SIZE (1..maxTF)) OF
  CommonDynamicTF-Info-DynamicTTI

CommonTransChTFS ::= SEQUENCE {
  tti              CHOICE {
    tti10          CommonDynamicTF-InfoList,
    tti20          CommonDynamicTF-InfoList,
    tti40          CommonDynamicTF-InfoList,
    tti80          CommonDynamicTF-InfoList,
    dynamic        CommonDynamicTF-InfoList-DynamicTTI
  },
  semistaticTF-Information  SemistaticTF-Information
}

CommonTransChTFS-LCR ::= SEQUENCE {
  tti              CHOICE {
    tti5           CommonDynamicTF-InfoList,
    tti10          CommonDynamicTF-InfoList,
    tti20          CommonDynamicTF-InfoList,
    tti40          CommonDynamicTF-InfoList,
    tti80          CommonDynamicTF-InfoList,
    dynamic        CommonDynamicTF-InfoList-DynamicTTI
  },
  semistaticTF-Information  SemistaticTF-Information
}

CPCH-SetID ::= INTEGER (1..maxCPCHsets)

```

```

CRC-Size ::=
    ENUMERATED {
        crc0, crc8, crc12, crc16, crc24 }

DedicatedDynamicTF-Info ::=
    SEQUENCE {
        rlc-Size
            CHOICE {
                bitMode
                    BitModeRLC-SizeInfo,
                octetModeType1
                    OctetModeRLC-SizeInfoType1
            },
        numberOfTbSizeList
            SEQUENCE (SIZE (1..maxTF)) OF
        NumberOfTransportBlocks,
        logicalChannelList
            LogicalChannelList
    }

DedicatedDynamicTF-Info-DynamicTTI ::= SEQUENCE {
    rlc-Size
        CHOICE {
            bitMode
                BitModeRLC-SizeInfo,
            octetModeType1
                OctetModeRLC-SizeInfoType1
        },
    numberOfTbSizeAndTTIList
        NumberOfTbSizeAndTTIList,
    logicalChannelList
        LogicalChannelList
}

DedicatedDynamicTF-InfoList ::= SEQUENCE (SIZE (1..maxTF)) OF
    DedicatedDynamicTF-Info

DedicatedDynamicTF-InfoList-DynamicTTI ::= SEQUENCE (SIZE (1..maxTF)) OF
    DedicatedDynamicTF-Info-DynamicTTI

DedicatedTransChTFS ::= SEQUENCE {
    tti
        CHOICE {
            tti10
                DedicatedDynamicTF-InfoList,
            tti20
                DedicatedDynamicTF-InfoList,
            tti40
                DedicatedDynamicTF-InfoList,
            tti80
                DedicatedDynamicTF-InfoList,
            dynamic
                DedicatedDynamicTF-InfoList-DynamicTTI
        },
    semistaticTF-Information
        SemistaticTF-Information
}

-- The maximum allowed size of DL-AddReconfTransChInfo2List sequence is 16
DL-AddReconfTransChInfo2List ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation2

-- The maximum allowed size of DL-AddReconfTransChInfoList sequence is 16
DL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation

-- The maximum allowed size of DL-AddReconfTransChInfoList-r4 sequence is 16
DL-AddReconfTransChInfoList-r4 ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation-r4

-- The maximum allowed size of DL-AddReconfTransChInfoList-r5 sequence is 16
DL-AddReconfTransChInfoList-r5 ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation-r5

-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of messages other than: Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation ::= SEQUENCE {
    dl-TransportChannelType
        DL-TrCH-Type,
    dl-transportChannelIdentity
        TransportChannelIdentity,
    tfs-SignallingMode
        CHOICE {
            explicit-config
                TransportFormatSet,
            sameAsULTrCH
                UL-TransportChannelIdentity
        },
    dch-QualityTarget
        QualityTarget
        OPTIONAL,
    -- dummy is not used in this version of the specification and should be ignored.
    dummy
        TM-SignallingInfo
        OPTIONAL
}

DL-AddReconfTransChInformation-r4 ::= SEQUENCE {
    dl-TransportChannelType
        DL-TrCH-Type,
    dl-transportChannelIdentity
        TransportChannelIdentity,
    tfs-SignallingMode
        CHOICE {
            explicit-config
                TransportFormatSet,
            sameAsULTrCH
                UL-TransportChannelIdentity
        },
}

```

```

    dch-QualityTarget          QualityTarget          OPTIONAL
  }

DL-AddReconfTransChInformation-r5 ::= SEQUENCE {
  dl-TransportChannelType      DL-TrCH-Type-r5,
  dl-transportChannelIdentity  TransportChannelIdentity,
  tfs-SignallingMode          CHOICE {
    explicit-config           TransportFormatSet,
    sameAsULTrCH             UL-TransportChannelIdentity,
    hsdSCH                   HSDSCH-Info
  },
  dch-QualityTarget          QualityTarget          OPTIONAL
}

-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation2 ::= SEQUENCE {
  dl-TransportChannelType      DL-TrCH-Type,
  transportChannelIdentity     TransportChannelIdentity,
  tfs-SignallingMode          CHOICE {
    explicit-config           TransportFormatSet,
    sameAsULTrCH             UL-TransportChannelIdentity
  },
  qualityTarget              QualityTarget          OPTIONAL
}

DL-CommonTransChInfo ::= SEQUENCE {
  sccpch-TFCS                 TFCS                 OPTIONAL,
  -- modeSpecificInfo should be optional. A new version of this IE should be defined
  -- to be used in later versions of messages using this IE
  modeSpecificInfo            CHOICE {
    fdd                        SEQUENCE {
      dl-Parameters           CHOICE {
        dl-DCH-TFCS           TFCS,
        sameAsUL              NULL
      }
    },
    tdd                        SEQUENCE {
      individualDL-CCTrCH-InfoList IndividualDL-CCTrCH-InfoList
    }
  }
}

DL-CommonTransChInfo-r4 ::= SEQUENCE {
  sccpch-TFCS                 TFCS                 OPTIONAL,
  modeSpecificInfo            CHOICE {
    fdd                        SEQUENCE {
      dl-Parameters           CHOICE {
        dl-DCH-TFCS           SEQUENCE {
          tfcs                 TFCS
        },
        sameAsUL              NULL
      }
    },
    tdd                        SEQUENCE {
      individualDL-CCTrCH-InfoList IndividualDL-CCTrCH-InfoList
    }
  }
} OPTIONAL

DL-DeletedTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
  DL-TransportChannelIdentity

DL-DeletedTransChInfoList-r5 ::= SEQUENCE (SIZE (1..maxTrCH)) OF
  DL-TransportChannelIdentity-r5

DL-TransportChannelIdentity ::= SEQUENCE {
  dl-TransportChannelType      DL-TrCH-Type,
  dl-TransportChannelIdentity  TransportChannelIdentity
}

DL-TransportChannelIdentity-r5 ::= SEQUENCE {
  dl-TransportChannelType      DL-TrCH-Type-r5
}

```

```

DL-TrCH-Type ::= ENUMERATED {dch, dsch}

DL-TrCH-Type-r5 ::= CHOICE {
    dch                TransportChannelIdentity,
    dsch               TransportChannelIdentity,
    hsdSCH             Mac-d-FlowIdentity
}

DRAC-ClassIdentity ::= INTEGER (1..maxDRACclasses)

DRAC-StaticInformation ::= SEQUENCE {
    transmissionTimeValidity    TransmissionTimeValidity,
    timeDurationBeforeRetry     TimeDurationBeforeRetry,
    drac-ClassIdentity          DRAC-ClassIdentity
}

DRAC-StaticInformationList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    DRAC-StaticInformation

ExplicitTFCS-Configuration ::= CHOICE {
    complete            TFCS-ReconfAdd,
    addition            TFCS-ReconfAdd,
    removal             TFCS-RemovalList,
    replacement        SEQUENCE {
        tfcsRemoval    TFCS-RemovalList,
        tfcsAdd        TFCS-ReconfAdd
    }
}

GainFactor ::= INTEGER (0..15)

GainFactorInformation ::= CHOICE {
    signalledGainFactors    SignalledGainFactors,
    computedGainFactors     ReferenceTFC-ID
}

HSDSCH-Info ::= SEQUENCE {
transportFormatSet-HSDSCH TransportFormatSet-HSDSCH,
    harqInfo                HARQ-Info OPTIONAL,
    mac-hsResetIndicator    BOOLEAN,
    addOrReconfMAC-dFlow   AddOrReconfMAC-dFlow OPTIONAL
}

HARQ-Info ::= SEQUENCE {
    numberOfProcesses        INTEGER (1..68),
    memoryPartitioning      CHOICE {
        implicit             NULL,
        explicit             SEQUENCE (SIZE (1..maxHProcesses)) OF
            HARQMemorySize
    }
reorderingReleaseTimer SEQUENCE (SIZE (1..maxQueueIDs)) OF
T1-ReleaseTimer
}

--memory size range is FFS.
HARQMemorySize ::= INTEGER (1..10000)

IndividualDL-CCTrCH-Info ::= SEQUENCE {
    dl-TFCS-Identity        TFCS-Identity,
    tfcs-SignallingMode    CHOICE {
        explicit-config     TFCS,
        sameAsUL            TFCS-Identity
    }
}

IndividualDL-CCTrCH-InfoList ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
    IndividualDL-CCTrCH-Info

IndividualUL-CCTrCH-Info ::= SEQUENCE {
    ul-TFCS-Identity        TFCS-Identity,
    ul-TFCS                 TFCS,
    tfc-Subset              TFC-Subset
}

IndividualUL-CCTrCH-InfoList ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
    IndividualUL-CCTrCH-Info

LogicalChannelByRB ::= SEQUENCE {

```

```

    rb-Identity                RB-Identity,
    logChOfRb                  INTEGER (0..1)
}
                                OPTIONAL

LogicalChannelList ::=      CHOICE {
    allSizes                   NULL,
    configured                  NULL,
    explicitList                SEQUENCE (SIZE (1..15)) OF
                                LogicalChannelByRB
}

Mac-d-FlowIdentityDCHandHSDSCH ::= SEQUENCE {
    dch-transport-ch-id        TransportChannelIdentity,
    hsdSCH-transport-ch-id     Mac-d-FlowIdentity
}

Mac-d-FlowIdentity ::=      INTEGER (±0..87)

MAC-d-PDU-SizeInfo-List ::= SEQUENCE (SIZE(1.. maxMAC-d-PDU-sizes))
                             MAC-d-PDUsizeInfo

--Mac-d-Pdu sizes need to be defined
MAC-d-PDUsizeInfos ::=      SEQUENCE{
                             mac-d-PDU-Size      INTEGER (1..105000)
                             mac-d-PDU-Index     INTEGER(0..7)
}

MAC-hs-Queue-List ::=      SEQUENCE (SIZE(1..maxQueueIDs)) OF
                             MAC-hs-Queue

MAC-hs-Queue ::=           SEQUENCE {
                             mac-hsQueueId      INTEGER(1..8),
                             mac-dFlowId       MAC-d-FlowIdentity,
                             reorderingReleaseTimer T1-ReleaseTimer,
                             mac-d-PDU-SizeInfo-List MAC-d-PDU-SizeInfo-List
}

NumberOfTbSizeAndTTIList ::= SEQUENCE (SIZE (1..maxTF)) OF SEQUENCE {
    numberOfTransportBlocks    NumberOfTransportBlocks,
    transmissionTimeInterval    TransmissionTimeInterval
}

MessType ::=               ENUMERATED {
    transportFormatCombinationControl }

Non-allowedTFC-List ::=    SEQUENCE (SIZE (1..maxTFC)) OF
    TFC-Value

NumberOfTransportBlocks ::= CHOICE {
    zero                       NULL,
    one                       NULL,
    small                     INTEGER (2..17),
    large                     INTEGER (18..512)
}

OctetModeRLC-SizeInfoType1 ::= CHOICE {
    -- Actual size = (8 * sizeType1) + 16
    sizeType1                 INTEGER (0..31),
    sizeType2                 SEQUENCE {
        -- Actual size = (32 * part1) + 272 + (part2 * 8)
        part1                 INTEGER (0..23),
        part2                 INTEGER (1..3)
    },
    sizeType3                 SEQUENCE {
        -- Actual size = (64 * part1) + 1040 + (part2 * 8)
        part1                 INTEGER (0..61),
        part2                 INTEGER (1..7)
    }
}
                                OPTIONAL

OctetModeRLC-SizeInfoType2 ::= CHOICE {
    -- Actual size = (sizeType1 * 8) + 48
    sizeType1                 INTEGER (0..31),
    -- Actual size = (sizeType2 * 16) + 312
    sizeType2                 INTEGER (0..63),
    -- Actual size = (sizeType3 * 64) + 1384
    sizeType3                 INTEGER (0..56)
}

```

```

PowerOffsetInformation ::=          SEQUENCE {
    gainFactorInformation            GainFactorInformation,
    -- PowerOffsetPp-m is always absent in TDD
    powerOffsetPp-m                 PowerOffsetPp-m                OPTIONAL
}

PowerOffsetPp-m ::=                INTEGER (-5..10)

PreDefTransChConfiguration ::=     SEQUENCE {
    ul-CommonTransChInfo            UL-CommonTransChInfo,
    ul-AddReconfTrChInfoList        UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo            DL-CommonTransChInfo,
    dl-TrChInfoList                 DL-AddReconfTransChInfoList
}

QualityTarget ::=                  SEQUENCE {
    bler-QualityValue                BLER-QualityValue
}

RateMatchingAttribute ::=          INTEGER (1..hiRM)

ReferenceTFC-ID ::=                INTEGER (0..3)

RestrictedTrChInfo ::=              SEQUENCE {
    ul-TransportChannelType          UL-TrCH-Type,
    restrictedTrChIdentity            TransportChannelIdentity,
    allowedTFI-List                  AllowedTFI-List                OPTIONAL
}

RestrictedTrChInfoList ::=          SEQUENCE (SIZE (1..maxTrCH)) OF
    RestrictedTrChInfo

SemistaticTF-Information ::=        SEQUENCE {
    -- TABULAR: Transmission time interval has been included in the IE CommonTransChTFS.
    channelCodingType                ChannelCodingType,
    rateMatchingAttribute              RateMatchingAttribute,
    crc-Size                           CRC-Size
}

SignalledGainFactors ::=            SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            gainFactorBetaC              GainFactor
        },
        tdd                            NULL
    },
    gainFactorBetaD                    GainFactor,
    referenceTFC-ID                    ReferenceTFC-ID                OPTIONAL
}

SplitTFCSI-Signalling ::=           SEQUENCE {
    splitType                          SplitType                OPTIONAL,
    tfci-Field2-Length                 INTEGER (1..10)            OPTIONAL,
    tfci-Field1-Information             ExplicitTFCS-Configuration OPTIONAL,
    tfci-Field2-Information             TFCI-Field2-Information   OPTIONAL
}

SplitType ::=                       ENUMERATED {
    hardSplit, logicalSplit }

--Range for releasetimer is FFS.
T1-ReleaseTimer ::=                 INTEGER (1..100)

TFC-Subset ::=                       CHOICE {
    minimumAllowedTFC-Number           TFC-Value,
    allowedTFC-List                     AllowedTFC-List,
    non-allowedTFC-List                 Non-allowedTFC-List,
    restrictedTrChInfoList              RestrictedTrChInfoList,
    fullTFCS                            NULL
}

TFC-Subset-ID-With3b ::=             INTEGER (0..7)

TFC-Subset-ID-With5b ::=             INTEGER (0..31)

TFC-Subset-ID-With10b ::=            INTEGER (0..1023)

```

```

TFC-SubsetList ::=
  modeSpecificInfo
    fdd
    tdd
      tfcs-ID
    }
  },
  tfc-Subset
}

TFC-Value ::=
  INTEGER (0..1023)

TFCI-Field2-Information ::=
  tfci-Range
  explicit-config
}

TFCI-Range ::=
  maxTFCIField2Value
  tfcs-InfoForDSCH
}

TFCI-RangeList ::=
  SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
  TFCI-Range

TFCS ::=
  normalTFCS-Signalling
  splitTFCS-Signalling
}

TFCS-Identity ::=
  tfcs-ID
  sharedChannelIndicator
}

TFCS-IdentityPlain ::=
  INTEGER (1..8)

TFCS-InfoForDSCH ::=
  ctfc2bit
  ctfc4bit
  ctfc6bit
  ctfc8bit
  ctfc12bit
  ctfc16bit
  ctfc24bit
}

TFCS-ReconfAdd ::=
  ctfcSize
  CHOICE {
    ctfc2Bit
      ctfc2
      powerOffsetInformation
    },
    ctfc4Bit
      ctfc4
      powerOffsetInformation
    },
    ctfc6Bit
      ctfc6
      powerOffsetInformation
    },
    ctfc8Bit
      ctfc8
      powerOffsetInformation
    },
    ctfc12Bit
      ctfc12
      powerOffsetInformation
    },
    ctfc16Bit
      ctfc16
      powerOffsetInformation
    },
    ctfc24Bit
      ctfc24
      powerOffsetInformation
  }
  SEQUENCE {
    SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
      CHOICE {
        NULL,
        SEQUENCE {
          TFC-Identity
        }
      }
    }
  }
  OPTIONAL

  SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    INTEGER (0..3),
    PowerOffsetInformation
  }
  OPTIONAL

  SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    INTEGER (0..15),
    PowerOffsetInformation
  }
  OPTIONAL

  SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    INTEGER (0..63),
    PowerOffsetInformation
  }
  OPTIONAL

  SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    INTEGER (0..255),
    PowerOffsetInformation
  }
  OPTIONAL

  SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    INTEGER (0..4095),
    PowerOffsetInformation
  }
  OPTIONAL

  SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    INTEGER (0..65535),
    PowerOffsetInformation
  }
  OPTIONAL

  SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    INTEGER (0..1677215),
    PowerOffsetInformation
  }
  OPTIONAL
}

```

```

}
}
TFCS-Removal ::=
    tfci
}
SEQUENCE {
    INTEGER (0..1023)
}
TFCS-RemovalList ::=
    SEQUENCE (SIZE (1..maxTFC)) OF
        TFCS-Removal
TimeDurationBeforeRetry ::=
    INTEGER (1..256)
TM-SignallingInfo ::=
    messtype
    tm-SignallingMode
        model
        mode2
        -- in ul-controlledTrChList, TrCH-Type is always DCH
        ul-controlledTrChList
}
SEQUENCE {
    Messtype,
    CHOICE {
        NULL,
        SEQUENCE {
            UL-ControlledTrChList
        }
    }
}
TransmissionTimeInterval ::=
    ENUMERATED {
        tti10, tti20, tti40, tti80 }
TransmissionTimeValidity ::=
    INTEGER (1..256)
--Range of TB size for hsdSCH is ffs.
TransportBlockSize-r5 ::=
    INTEGER (1..64000)
TransportChannelIdentity ::=
    INTEGER (1..32)
TransportChannelIdentityDCHandDSCH ::= SEQUENCE {
    dch-transport-ch-id
    dsch-transport-ch-id
}
TransportChannelIdentity
TransportFormatSet ::=
    dedicatedTransChTFS
    commonTransChTFS
}
CHOICE {
    DedicatedTransChTFS,
    CommonTransChTFS
}
TransportFormatSet-LCR ::=
    dedicatedTransChTFS
    commonTransChTFS-LCR
}
CHOICE {
    DedicatedTransChTFS,
    CommonTransChTFS-LCR
}
TransportFormatSet-HSDSCH ::= SEQUENCE {
    dynamicTransportFormatInfo r5 CHOICE {
        fdd SEQUENCE (SIZE (1..maxHSDSCHTBIndex)) OF
            TransportBlockSize-r5,
        tdd SEQUENCE (SIZE (1..maxHSDSCHTBIndex-tdd384)) OF
            TransportBlockSize-r5
    },
    mac-d-PDU-Size-Info SEQUENCE (SIZE (1..maxMAC-d-PDU-sizes)) OF
        MAC-d-PDU-sizes
}
-- The maximum allowed size of UL-AddReconfTransChInfoList sequence is 16
UL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    UL-AddReconfTransChInformation
UL-AddReconfTransChInformation ::= SEQUENCE {
    ul-TransportChannelType
    transportChannelIdentity
    transportFormatSet
}
UL-TrCH-Type,
TransportChannelIdentity,
TransportFormatSet
UL-CommonTransChInfo ::= SEQUENCE {
    -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
    -- CCTrCH Info.
    tfc-Subset
    prach-TFCS
    modeSpecificInfo
        fdd
        ul-TFCS
}
TFC-Subset
TFCS
CHOICE {
    SEQUENCE {
        TFCS
    }
}
OPTIONAL,
OPTIONAL,
TFCS

```



```

    },
    tdd
        SEQUENCE {
            individualUL-CCTrCH-InfoList IndividualUL-CCTrCH-InfoList OPTIONAL
        }
    }
}

UL-CommonTransChInfo-r4 ::= SEQUENCE {
    -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
    -- CCTrCH Info.
    tfc-Subset TFC-Subset OPTIONAL,
    prach-TFCS TFCS OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            ul-TFCS TFCS
        },
        tdd SEQUENCE {
            individualUL-CCTrCH-InfoList IndividualUL-CCTrCH-InfoList OPTIONAL
        }
    }
    tfc-SubsetList TFC-SubsetList OPTIONAL,
}

-- In UL-ControlledTrChList, TrCH-Type is always DCH
UL-ControlledTrChList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    TransportChannelIdentity

UL-DeletedTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    UL-TransportChannelIdentity

UL-TransportChannelIdentity ::= SEQUENCE {
    ul-TransportChannelType UL-TrCH-Type,
    ul-TransportChannelIdentity TransportChannelIdentity
}

UL-TrCH-Type ::= ENUMERATED {dch, usch}

-- *****
--
-- PHYSICAL CHANNEL INFORMATION ELEMENTS (10.3.6)
--
-- *****

AC-To-ASC-Mapping ::= INTEGER (0..7)

AC-To-ASC-MappingTable ::= SEQUENCE (SIZE (maxASCmap)) OF
    AC-To-ASC-Mapping

AccessServiceClass-FDD ::= SEQUENCE {
    availableSignatureStartIndex INTEGER (0..15),
    availableSignatureEndIndex INTEGER (0..15),

    assignedSubChannelNumber BIT STRING {
        b3(0),
        b2(1),
        b1(2),
        b0(3)
    } (SIZE(4))
}

AccessServiceClass-TDD ::= SEQUENCE {
    channelisationCodeIndices BIT STRING {
        chCodeIndex7(0),
        chCodeIndex6(1),
        chCodeIndex5(2),
        chCodeIndex4(3),
        chCodeIndex3(4),
        chCodeIndex2(5),
        chCodeIndex1(6),
        chCodeIndex0(7)
    } (SIZE(8)) OPTIONAL,

    subchannelSize CHOICE {
        size1 NULL,
        size2 SEQUENCE {
            -- subch0 means bitstring '01' in the tabular, subch1 means bitstring '10'
            subchannels ENUMERATED { subch0, subch1 } OPTIONAL
        }
    }
}

```

```

    },
    size4
        subchannels
        SEQUENCE {
            BIT STRING {
                subCh3(0),
                subCh2(1),
                subCh1(2),
                subCh0(3)
            } (SIZE(4))
        } OPTIONAL
    },
    size8
        subchannels
        SEQUENCE {
            BIT STRING {
                subCh7(0),
                subCh6(1),
                subCh5(2),
                subCh4(3),
                subCh3(4),
                subCh2(5),
                subCh1(6),
                subCh0(7)
            } (SIZE(8))
        } OPTIONAL
    }
}

AccessServiceClass-TDD-LCR-r4 ::= SEQUENCE {
    availableSYNC-UlCodesIndics
        BIT STRING {
            sulCodeIndex7(0),
            sulCodeIndex6(1),
            sulCodeIndex5(2),
            sulCodeIndex4(3),
            sulCodeIndex3(4),
            sulCodeIndex2(5),
            sulCodeIndex1(6),
            sulCodeIndex0(7)
        } (SIZE(8))
        OPTIONAL,
    subchannelSize
        CHOICE {
            size1
                NULL,
            size2
                SEQUENCE {
                    -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
                    subchannels
                        ENUMERATED { subch0, subch1 }
                } OPTIONAL
        },
        size4
            subchannels
            SEQUENCE {
                BIT STRING {
                    subCh3(0),
                    subCh2(1),
                    subCh1(2),
                    subCh0(3)
                } (SIZE(4))
            } OPTIONAL
    },
    size8
        subchannels
        SEQUENCE {
            BIT STRING {
                subCh7(0),
                subCh6(1),
                subCh5(2),
                subCh4(3),
                subCh3(4),
                subCh2(5),
                subCh1(6),
                subCh0(7)
            } (SIZE(8))
        } OPTIONAL
    }
}

AICH-Info ::= SEQUENCE {
    channelisationCode256
        ChannelisationCode256,
    sttd-Indicator
        BOOLEAN,
    aich-TransmissionTiming
        AICH-TransmissionTiming
}

AICH-PowerOffset ::= INTEGER (-22..5)

AICH-TransmissionTiming ::= ENUMERATED {
    e0, e1 }

AllocationPeriodInfo ::= SEQUENCE {
    allocationActivationTime
        INTEGER (0..255),

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    allocationDuration                INTEGER (1..256)
}
-- Actual value Alpha = IE value * 0.125
Alpha ::=                             INTEGER (0..8)
AP-AICH-ChannelisationCode ::=        INTEGER (0..255)
AP-PreambleScramblingCode ::=         INTEGER (0..79)
AP-Signature ::=                       INTEGER (0..15)
AP-Signature-VCAM ::=                  SEQUENCE {
    ap-Signature                       AP-Signature,
    availableAP-SubchannelList          AvailableAP-SubchannelList OPTIONAL
}
AP-Subchannel ::=                      INTEGER (0..11)
ASCSetting-FDD ::=                     SEQUENCE {
    -- TABULAR: accessServiceClass-FDD is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available signature and sub-channels
    accessServiceClass-FDD              AccessServiceClass-FDD OPTIONAL
}
ASCSetting-TDD ::=                     SEQUENCE {
    -- TABULAR: accessServiceClass-TDD is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available channelisation codes and
    -- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD              AccessServiceClass-TDD OPTIONAL
}
ASCSetting-TDD-LCR-r4 ::=              SEQUENCE {
    -- TABULAR: accessServiceClass-TDD-LCR is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available SYNC_UL codes and
    -- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD-LCR          AccessServiceClass-TDD-LCR-r4 OPTIONAL
}
AvailableAP-Signature-VCAMList ::=     SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
    AP-Signature-VCAM
AvailableAP-SignatureList ::=          SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
    AP-Signature
AvailableAP-SubchannelList ::=         SEQUENCE (SIZE (1..maxPCPCH-APsubCh)) OF
    AP-Subchannel
AvailableMinimumSF-ListVCAM ::=        SEQUENCE (SIZE (1..maxPCPCH-SF)) OF
    AvailableMinimumSF-VCAM
AvailableMinimumSF-VCAM ::=            SEQUENCE {
    minimumSpreadingFactor              MinimumSpreadingFactor,
    nf-Max                               NF-Max,
    maxAvailablePCPCH-Number            MaxAvailablePCPCH-Number,
    availableAP-Signature-VCAMList      AvailableAP-Signature-VCAMList
}
AvailableSignatures ::=                 BIT STRING {
    signature15(0),
    signature14(1),
    signature13(2),
    signature12(3),
    signature11(4),
    signature10(5),
    signature9(6),
    signature8(7),
    signature7(8),
    signature6(9),
    signature5(10),
    signature4(11),
    signature3(12),
    signature2(13),
    signature1(14),
    signature0(15)
}

```

```

} (SIZE(16))

AvailableSubChannelNumbers ::= BIT STRING {
    subCh11(0),
    subCh10(1),
    subCh9(2),
    subCh8(3),
    subCh7(4),
    subCh6(5),
    subCh5(6),
    subCh4(7),
    subCh3(8),
    subCh2(9),
    subCh1(10),
    subCh0(11)
} (SIZE(12))

BurstType ::= ENUMERATED {
    short1, long2 }

-- Actual value Bler-Target = IE value * 0.05
Bler-Target ::= INTEGER (-63..0)

CCTrCH-PowerControlInfo ::= SEQUENCE {
    tfcs-Identity          TFCS-Identity          OPTIONAL,
    ul-DPCH-PowerControlInfo  UL-DPCH-PowerControlInfo
}

CCTrCH-PowerControlInfo-r4 ::= SEQUENCE {
    tfcs-Identity          TFCS-Identity          OPTIONAL,
    ul-DPCH-PowerControlInfo-r4  UL-DPCH-PowerControlInfo-r4
}

CD-AccessSlotSubchannel ::= INTEGER (0..11)

CD-AccessSlotSubchannelList ::= SEQUENCE (SIZE (1..maxPCPCH-CDsubCh)) OF
    CD-AccessSlotSubchannel

CD-CA-ICH-ChannelisationCode ::= INTEGER (0..255)

CD-PreambleScramblingCode ::= INTEGER (0..79)

CD-SignatureCode ::= INTEGER (0..15)

CD-SignatureCodeList ::= SEQUENCE (SIZE (1..maxPCPCH-CDsig)) OF
    CD-SignatureCode

CellAndChannelIdentity ::= SEQUENCE {
    burstType          BurstType,
    midambleShift      MidambleShiftLong,
    timeslot           TimeslotNumber,
    cellParametersID   CellParametersID
}

CellParametersID ::= INTEGER (0..127)

Cfntargetsfnframeoffset ::= INTEGER(0..255)

ChannelAssignmentActive ::= CHOICE {
    notActive          NULL,
    isActive           AvailableMinimumSF-ListVCAM
}

ChannelisationCode256 ::= INTEGER (0..255)

ChannelReqParamsForUCSM ::= SEQUENCE {
    availableAP-SignatureList  AvailableAP-SignatureList,
    availableAP-SubchannelList AvailableAP-SubchannelList          OPTIONAL
}

ClosedLoopTimingAdjMode ::= ENUMERATED {
    slot1, slot2 }

CodeNumberDSCH ::= INTEGER (0..255)

CodeRange ::= SEQUENCE {
    pdsch-CodeMapList  PDSCH-CodeMapList
}

```

```

CodeWordSet ::=
    ENUMERATED {
        longCWS,
        mediumCWS,
        shortCWS,
        ssdtOff }

CommonTimeslotInfo ::=
    SEQUENCE {
        -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
        -- bit it is not defined as OPTIONAL.
        secondInterleavingMode      SecondInterleavingMode,
        tfci-Coding                  TFCI-Coding                      OPTIONAL,
        puncturingLimit              PuncturingLimit,
        repetitionPeriodAndLength    RepetitionPeriodAndLength    OPTIONAL
    }

CommonTimeslotInfoSCCPCH ::=
    SEQUENCE {
        -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
        -- bit it is not defined as OPTIONAL.
        secondInterleavingMode      SecondInterleavingMode,
        tfci-Coding                  TFCI-Coding                      OPTIONAL,
        puncturingLimit              PuncturingLimit,
        repetitionPeriodLengthAndOffset RepetitionPeriodLengthAndOffset    OPTIONAL
    }

ConstantValue ::=
    INTEGER (-35..-10)

ConstantValueTdd ::=
    INTEGER (-35..10)

CPCH-PersistenceLevels ::=
    SEQUENCE {
        cpch-SetID                  CPCH-SetID,
        dynamicPersistenceLevelTF-List DynamicPersistenceLevelTF-List
    }

CPCH-PersistenceLevelsList ::=
    SEQUENCE (SIZE (1..maxCPCHsets)) OF
        CPCH-PersistenceLevels

CPCH-SetInfo ::=
    SEQUENCE {
        cpch-SetID                  CPCH-SetID,
        transportFormatSet          TransportFormatSet,
        tfcs                         TFCS,
        ap-PreambleScramblingCode    AP-PreambleScramblingCode,
        ap-AICH-ChannelisationCode    AP-AICH-ChannelisationCode,
        cd-PreambleScramblingCode     CD-PreambleScramblingCode,
        cd-CA-ICH-ChannelisationCode  CD-CA-ICH-ChannelisationCode,
        cd-AccessSlotSubchannelList   CD-AccessSlotSubchannelList    OPTIONAL,
        cd-SignatureCodeList          CD-SignatureCodeList           OPTIONAL,
        deltaPp-m                    DeltaPp-m,
        ul-DPCCH-SlotFormat           UL-DPCCH-SlotFormat,
        n-StartMessage                N-StartMessage,
        n-EOT                          N-EOT,
        -- TABULAR: VCAM info has been nested inside ChannelAssignmentActive,
        -- which in turn is mandatory since it's only a binary choice.
        channelAssignmentActive        ChannelAssignmentActive,
        cpch-StatusIndicationMode     CPCH-StatusIndicationMode,
        pcpch-ChannelInfoList         PCPCH-ChannelInfoList
    }

CPCH-SetInfoList ::=
    SEQUENCE (SIZE (1..maxCPCHsets)) OF
        CPCH-SetInfo

CPCH-StatusIndicationMode ::=
    ENUMERATED {
        pa-mode,
        pamsf-mode }

CSICH-PowerOffset ::=
    INTEGER (-10..5)

-- DefaultDPCH-OffsetValueFDD and DefaultDPCH-OffsetValueTDD corresponds to
-- IE "Default DPCH Offset Value" depending on the mode.
-- Actual value DefaultDPCH-OffsetValueFDD = IE value * 512
DefaultDPCH-OffsetValueFDD ::=
    INTEGER (0..599)

DefaultDPCH-OffsetValueTDD ::=
    INTEGER (0..7)

DeltaPp-m ::=
    INTEGER (-10..10)

-- Actual value DeltaSIR = IE value * 0.1
DeltaSIR ::=
    INTEGER (0..30)

```

```

DL-CCTrCh ::=
    tfcs-ID                SEQUENCE {
                           TFCS-IdentityPlain          DEFAULT 1,
                           TimeInfo,
                           CommonTimeslotInfo          OPTIONAL,
                           dl-CCTrCH-TimeslotsCodes    OPTIONAL,
                           ul-CCTrChTPCList            OPTIONAL
    }

DL-CCTrCh-r4 ::=
    tfcs-ID                SEQUENCE {
                           TFCS-IdentityPlain          DEFAULT 1,
                           TimeInfo,
                           CommonTimeslotInfo          OPTIONAL,
                           tddOption                  CHOICE {
                               tdd384
                                   dl-CCTrCH-TimeslotsCodes    OPTIONAL
                               },
                               tdd128
                                   dl-CCTrCH-TimeslotsCodes    OPTIONAL
                           },
                           ul-CCTrChTPCList            UL-CCTrChTPCList    OPTIONAL
    }

DL-CCTrChList ::=
    SEQUENCE (SIZE (1..maxCCTrCh)) OF
        DL-CCTrCh

DL-CCTrChList-r4 ::=
    SEQUENCE (SIZE (1..maxCCTrCh)) OF
        DL-CCTrCh-r4

DL-CCTrChTPCList ::=
    SEQUENCE (SIZE (0..maxCCTrCh)) OF
        TFCS-Identity

DL-ChannelisationCode ::=
    secondaryScramblingCode    SEQUENCE {
                                SF512-AndCodeNumber,
                                scramblingCodeChange    OPTIONAL
    }

DL-ChannelisationCodeList ::=
    SEQUENCE (SIZE (1..maxDPCH-DLchan)) OF
        DL-ChannelisationCode

DL-CommonInformation ::=
    dl-DPCH-InfoCommon          SEQUENCE {
                                DL-DPCH-InfoCommon      OPTIONAL,
                                modeSpecificInfo        CHOICE {
                                    fdd
                                        SEQUENCE {
                                            defaultDPCH-OffsetValue    DefaultDPCH-OffsetValueFDD    OPTIONAL,
                                            dpch-CompressedModeInfo    DPCH-CompressedModeInfo      OPTIONAL,
                                            tx-DiversityMode            TX-DiversityMode              OPTIONAL,
                                            ssdt-Information            SSDT-Information              OPTIONAL
                                        },
                                    tdd
                                        SEQUENCE {
                                            defaultDPCH-OffsetValue    DefaultDPCH-OffsetValueTDD    OPTIONAL
                                        }
                                }
    }

DL-CommonInformation-r4 ::=
    dl-DPCH-InfoCommon          SEQUENCE {
                                DL-DPCH-InfoCommon      OPTIONAL,
                                modeSpecificInfo        CHOICE {
                                    fdd
                                        SEQUENCE {
                                            defaultDPCH-OffsetValue    DefaultDPCH-OffsetValueFDD    OPTIONAL,
                                            dpch-CompressedModeInfo    DPCH-CompressedModeInfo      OPTIONAL,
                                            tx-DiversityMode            TX-DiversityMode              OPTIONAL,
                                            ssdt-Information            SSDT-Information-r4          OPTIONAL
                                        },
                                    tdd
                                        SEQUENCE {
                                            tddOption                  CHOICE {
                                                tdd384
                                                    NULL,
                                                tdd128
                                                    SEQUENCE {
                                                        tstd-Indicator    BOOLEAN
                                                    }
                                                },
                                            defaultDPCH-OffsetValue    DefaultDPCH-OffsetValueTDD    OPTIONAL
                                        }
                                }
    }

```

```

DL-CommonInformationPost ::=          SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommonPost
}

DL-CommonInformationPredef ::=        SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommonPredef    OPTIONAL
}

DL-CompressedModeMethod ::=          ENUMERATED {
    puncturing, sf-2,
    higherLayerScheduling }

DL-DPCH-InfoCommon ::=               SEQUENCE {
    cfnHandling                        CHOICE {
        maintain                        NULL,
        initialise                       SEQUENCE {
            cfnTargetsSfnFrameOffset    CfnTargetsSfnFrameOffset    OPTIONAL
        }
    },
    modeSpecificInfo                   CHOICE {
        fdd                             SEQUENCE {
            dl-DPCH-PowerControlInfo    DL-DPCH-PowerControlInfo    OPTIONAL,
            powerOffsetPilot-pdpdch     PowerOffsetPilot-pdpdch,
            dl-rate-matching-restriction Dl-rate-matching-restriction    OPTIONAL,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot     SF512-AndPilot,
            positionFixedOrFlexible     PositionFixedOrFlexible,
            tfci-Existence              BOOLEAN
        },
        tdd                             SEQUENCE {
            dl-DPCH-PowerControlInfo    DL-DPCH-PowerControlInfo    OPTIONAL
        }
    }
}

DL-DPCH-InfoCommonPost ::=           SEQUENCE {
    dl-DPCH-PowerControlInfo          DL-DPCH-PowerControlInfo    OPTIONAL
}

DL-DPCH-InfoCommonPredef ::=         SEQUENCE {
    modeSpecificInfo                   CHOICE {
        fdd                             SEQUENCE {
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot     SF512-AndPilot,
            positionFixedOrFlexible     PositionFixedOrFlexible,
            tfci-Existence              BOOLEAN
        },
        tdd                             SEQUENCE {
            commonTimeslotInfo          CommonTimeslotInfo
        }
    }
}

DL-DPCH-InfoPerRL ::=                CHOICE {
    fdd                                SEQUENCE {
        pCPICH-UsageForChannelEst      PCPICH-UsageForChannelEst,
        dpch-FrameOffset               DPCH-FrameOffset,
        secondaryCPICH-Info            SecondaryCPICH-Info          OPTIONAL,
        dl-ChannelisationCodeList      DL-ChannelisationCodeList,
        tpc-CombinationIndex           TPC-CombinationIndex,
        ssdt-CellIdentity              SSDT-CellIdentity           OPTIONAL,
        closedLoopTimingAdjMode        ClosedLoopTimingAdjMode     OPTIONAL
    },
    tdd                                DL-CCTrChList
}

DL-DPCH-InfoPerRL-r4 ::=             CHOICE {
    fdd                                SEQUENCE {
        pCPICH-UsageForChannelEst      PCPICH-UsageForChannelEst,
        dpch-FrameOffset               DPCH-FrameOffset,
        secondaryCPICH-Info            SecondaryCPICH-Info          OPTIONAL,
        dl-ChannelisationCodeList      DL-ChannelisationCodeList,
        tpc-CombinationIndex           TPC-CombinationIndex,
        ssdt-CellIdentity              SSDT-CellIdentity           OPTIONAL,
        closedLoopTimingAdjMode        ClosedLoopTimingAdjMode     OPTIONAL
    },
    tdd                                DL-CCTrChList-r4
}

```

```

DL-DPCH-InfoPerRL-PostFDD ::=
    pCPICH-UsageForChannelEst
    dl-ChannelisationCode
    tpc-CombinationIndex
}
SEQUENCE {
    PCPICH-UsageForChannelEst,
    DL-ChannelisationCode,
    TPC-CombinationIndex
}

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

DL-DPCH-InfoPerRL-PostTDD-LCR-r4 ::=
    dl-CCTrCH-TimeslotsCodes
}
SEQUENCE {
    DownlinkTimeslotsCodes-LCR-r4
}

DL-DPCH-PowerControlInfo ::=
    modeSpecificInfo
    fdd
        dpc-Mode
    },
    tdd
        tpc-StepSizeTDD
}
}
SEQUENCE {
    CHOICE {
        SEQUENCE {
            DPC-Mode
        }
        SEQUENCE {
            TPC-StepSizeTDD
        }
    }
}
OPTIONAL

DL-FrameType ::=
    dl-FrameTypeA, dl-FrameTypeB
}
ENUMERATED {
    dl-FrameTypeA, dl-FrameTypeB
}

DL-HSPDSCH-Information ::=
    hs-scch-Info
    modeSpecificInfo
    fdd
        measurement-feedback-Info
    },
    tdd
        NULL
}
}
SEQUENCE {
    HS-SCCH-Info,
    CHOICE {
        SEQUENCE {
            Measurement-Feedback-Info
        }
        NULL
    }
}
OPTIONAL

DL-InformationPerRL ::=
    modeSpecificInfo
    fdd
        primaryCPICH-Info
        pdsch-SHO-DCH-Info
        pdsch-CodeMapping
    },
    tdd
        PrimaryCCPCH-Info
},
dl-DPCH-InfoPerRL
sccpch-InfoForFACH
}
DL-DPCH-InfoPerRL
SCCPCH-InfoForFACH
}
OPTIONAL,
OPTIONAL

DL-InformationPerRL-r4 ::=
    modeSpecificInfo
    fdd
        primaryCPICH-Info
        pdsch-SHO-DCH-Info
        pdsch-CodeMapping
    },
    tdd
        PrimaryCCPCH-Info-r4
},
dl-DPCH-InfoPerRL
sccpch-InfoForFACH
cell-id
}
SEQUENCE {
    CHOICE {
        SEQUENCE {
            PrimaryCPICH-Info,
            PDSCH-SHO-DCH-Info
        }
        PrimaryCCPCH-Info-r4
    }
    DL-DPCH-InfoPerRL-r4
    SCCPCH-InfoForFACH-r4
    CellIdentity
}
OPTIONAL,
OPTIONAL,
OPTIONAL

DL-InformationPerRL-r5 ::=
    modeSpecificInfo
    fdd
        primaryCPICH-Info
        pdsch-SHO-DCH-Info
        pdsch-CodeMapping
        servingHSDSCH-RL-indicator
    },
    tdd
        PrimaryCCPCH-Info-r4
},
dl-DPCH-InfoPerRL
sccpch-InfoForFACH
}
SEQUENCE {
    CHOICE {
        SEQUENCE {
            PrimaryCPICH-Info,
            PDSCH-SHO-DCH-Info,
            PDSCH-CodeMapping
        }
        BOOLEAN
        PrimaryCCPCH-Info-r4
    }
    DL-DPCH-InfoPerRL-r4
    SCCPCH-InfoForFACH-r4
}
OPTIONAL,
OPTIONAL,
OPTIONAL

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    cell-id                               CellIdentity                               OPTIONAL
}

DL-InformationPerRL-List ::=              SEQUENCE (SIZE (1..maxRL)) OF
                                          DL-InformationPerRL

DL-InformationPerRL-List-r4 ::=           SEQUENCE (SIZE (1..maxRL)) OF
                                          DL-InformationPerRL-r4

DL-InformationPerRL-List-r5 ::=           SEQUENCE (SIZE (1..maxRL)) OF
                                          DL-InformationPerRL-r5

DL-InformationPerRL-ListPostFDD ::=       SEQUENCE (SIZE (1..maxRL)) OF
                                          DL-InformationPerRL-PostFDD

DL-InformationPerRL-PostFDD ::=           SEQUENCE {
    primaryCPICH-Info                     PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL                     DL-DPCH-InfoPerRL-PostFDD
}

DL-InformationPerRL-PostTDD ::=           SEQUENCE {
    primaryCCPCH-Info                     PrimaryCCPCH-InfoPost,
    dl-DPCH-InfoPerRL                     DL-DPCH-InfoPerRL-PostTDD
}

DL-InformationPerRL-PostTDD-LCR-r4 ::=    SEQUENCE {
    primaryCCPCH-Info                     PrimaryCCPCH-InfoPostTDD-LCR-r4,
    dl-DPCH-InfoPerRL                     DL-DPCH-InfoPerRL-PostTDD-LCR-r4
}

DL-PDSCH-Information ::=                 SEQUENCE {
    pdsch-SHO-DCH-Info                   PDSCH-SHO-DCH-Info                               OPTIONAL,
    pdsch-CodeMapping                     PDSCH-CodeMapping                               OPTIONAL
}

Dl-rate-matching-restriction ::=         SEQUENCE {
    restrictedTrCH-InfoList                RestrictedTrCH-InfoList                           OPTIONAL
}

DL-TS-ChannelisationCode ::=             ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

DL-TS-ChannelisationCodesShort ::=       SEQUENCE {
    codesRepresentation                   CHOICE {
        consecutive                       SEQUENCE {
            firstChannelisationCode        DL-TS-ChannelisationCode,
            lastChannelisationCode         DL-TS-ChannelisationCode
        },
        bitmap                             BIT STRING {
            chCode16-SF16(0),
            chCode15-SF16(1),
            chCode14-SF16(2),
            chCode13-SF16(3),
            chCode12-SF16(4),
            chCode11-SF16(5),
            chCode10-SF16(6),
            chCode9-SF16(7),
            chCode8-SF16(8),
            chCode7-SF16(9),
            chCode6-SF16(10),
            chCode5-SF16(11),
            chCode4-SF16(12),
            chCode3-SF16(13),
            chCode2-SF16(14),
            chCode1-SF16(15)
        } (SIZE (16))
    }
}

DownlinkAdditionalTimeslots ::=           SEQUENCE {
    parameters                             CHOICE {
        sameAsLast                         SEQUENCE {
            timeslotNumber                 TimeslotNumber
        },
        newParameters                       SEQUENCE {

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        individualTimeslotInfo      IndividualTimeslotInfo,
        dl-TS-ChannelisationCodesShort  DL-TS-ChannelisationCodesShort
    }
}

DownlinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters          CHOICE {
        sameAsLast      SEQUENCE {
            timeslotNumber      TimeslotNumber-LCR-r4
        },
        newParameters    SEQUENCE {
            individualTimeslotInfo      IndividualTimeslotInfo-LCR-r4,
            dl-TS-ChannelisationCodesShort  DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkTimeslotsCodes ::= SEQUENCE {
    firstIndividualTimeslotInfo      IndividualTimeslotInfo,
    dl-TS-ChannelisationCodesShort  DL-TS-ChannelisationCodesShort,
    moreTimeslots                    CHOICE {
        noMore                        NULL,
        additionalTimeslots            CHOICE {
            consecutive                INTEGER (1..maxTS-1),
            timeslotList                SEQUENCE (SIZE (1..maxTS-1)) OF
                DownlinkAdditionalTimeslots
        }
    }
}

DownlinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {
    firstIndividualTimeslotInfo      IndividualTimeslotInfo-LCR-r4,
    dl-TS-ChannelisationCodesShort  DL-TS-ChannelisationCodesShort,
    moreTimeslots                    CHOICE {
        noMore                        NULL,
        additionalTimeslots            CHOICE {
            consecutive                INTEGER (1..maxTS-LCR-1),
            timeslotList                SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                DownlinkAdditionalTimeslots-LCR-r4
        }
    }
}

DPC-Mode ::= ENUMERATED {
    singleTPC,
    tpcTripletInSoft }

-- Actual value DPCCH-PowerOffset = IE value * 2
DPCCH-PowerOffset ::= INTEGER (-82..-3)

-- Actual value DPCCH-PowerOffset = 2 + (IE value * 4)
DPCCH-PowerOffset2 ::= INTEGER (-28..-13)

DPCH-CompressedModeInfo ::= SEQUENCE {
    tgp-SequenceList      TGP-SequenceList
}

DPCH-CompressedModeStatusInfo ::= SEQUENCE {
    tgps-Reconfiguration-CFN      TGPS-Reconfiguration-CFN,
    tgp-SequenceShortList          SEQUENCE (SIZE (1..maxTGPS)) OF
        TGP-SequenceShort
}

-- Actual value DPCH-FrameOffset = IE value * 256
DPCH-FrameOffset ::= INTEGER (0..149)

DSCH-Mapping ::= SEQUENCE {
    maxTFCI-Field2Value      MaxTFCI-Field2Value,
    spreadingFactor          SF-PDSCH,
    codeNumber                CodeNumberDSCH,
    multiCodeInfo            MultiCodeInfo
}

DSCH-MappingList ::= SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
    DSCH-Mapping

```

```

DSCH-RadioLinkIdentifier ::=      INTEGER (0..511)
DurationTimeInfo ::=             INTEGER (1..4096)
DynamicPersistenceLevel ::=      INTEGER (1..8)
DynamicPersistenceLevelList ::=  SEQUENCE (SIZE (1..maxPRACH)) OF
                                DynamicPersistenceLevel
DynamicPersistenceLevelTF-List ::= SEQUENCE (SIZE (1..maxTF-CPCH)) OF
                                DynamicPersistenceLevel

FACH-PCH-Information ::=        SEQUENCE {
    transportFormatSet          TransportFormatSet,
    transportChannelIdentity    TransportChannelIdentity,
    ctch-Indicator              BOOLEAN
}

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

--Range of Feedback-cycle is FFS.
Feedback-cycle ::=              ENUMERATED {
                                fc0, fc1, fc5, fc10, fc20, fc40, fc80 }

--Range of Feedback-offset is FFS.
Feedback-offset ::=             INTEGER (1..5)

FPACH-Info-r4 ::=               SEQUENCE {
    timeslot                    TimeslotNumber-LCR-r4,
    channelisationCode          TDD-FPACH-CCode16-r4,
    midambleShiftAndBurstType  MidambleShiftAndBurstType-LCR-r4,
    wi                          Wi-LCR
}

FrequencyInfo ::=               SEQUENCE {
    modeSpecificInfo            CHOICE {
        fdd                      FrequencyInfoFDD,
        tdd                      FrequencyInfoTDD }
}

FrequencyInfoFDD ::=            SEQUENCE {
    uarfcn-UL                   UARFCN                OPTIONAL,
    uarfcn-DL                   UARFCN
}

FrequencyInfoTDD ::=            SEQUENCE {
    uarfcn-Nt                   UARFCN
}

HS-ChannelisationCode ::=      ENUMERATED {
                                cc16-1, cc16-2, cc16-3, cc16-4,
                                cc16-5, cc16-6, cc16-7, cc16-8,
                                cc16-9, cc16-10, cc16-11, cc16-12,
                                cc16-13, cc16-14, cc16-15, cc16-16 }

HS-ChannelisationCode-LCR ::=  ENUMERATED {
                                cc16-1, cc16-2, cc16-3, cc16-4,
                                cc16-5, cc16-6, cc16-7, cc16-8,
                                cc16-9, cc16-10, cc16-11, cc16-12,
                                cc16-13, cc16-14, cc16-15, cc16-16 }

HS-SCCH-Info ::=               SEQUENCE {
    modeSpecificInfo            CHOICE {
        fdd                      SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                HS-SCCH-Codes,
        tdd                      CHOICE {
            tdd384                SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                HS-SCCH-TDD384,
            tdd128                SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                HS-SCCH-TDD128
        }
    }
}

HS-SCCH-Codes ::=              INTEGER (0..127)
HS-SCCH-TDD128 ::=             SEQUENCE (SIZE (1..maxHSSCCHs)) OF

```

HS-SCCH-TDD128List

```

HS-SCCH-TDD128List ::= SEQUENCE {
    timeslotNumber          TimeslotNumber-LCR-r4,
    firstChannelisationCode HS-ChannelisationCode-LCR,
    secondChannelisationCode HS-ChannelisationCode-LCR,
    midambleAllocationMode CHOICE {
        defaultMidamble      NULL,
        commonMidamble       NULL
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration  INTEGER (1..8),
    bler-target             Bler-Target,
    hs-sich-configuration  HS-SICH-Configuration-TDD384
}

HS-SICH-Configuration-TDD128 ::= SEQUENCE {
    timeslotNumber          TimeslotNumber-LCR-r4,
    channelisationCode      HS-ChannelisationCode-LCR,
    midambleAllocationMode CHOICE {
        defaultMidamble      NULL,
        ueSpecificMidamble   SEQUENCE {
            midambleShift    MidambleShiftLong
        }
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration  INTEGER (1..8),
    nack-ack-power-offset  INTEGER (0..7),
    power-level-HSSICH     INTEGER (-120..-58),
    tpc-step-size          ENUMERATED { s1, s2, s3 , spare1}
}

HS-SCCH-TDD384 ::= SEQUENCE (SIZE (1..maxHSSCCHs)) OF
    HS-SCCH-TDD384List

HS-SCCH-TDD384List ::= SEQUENCE {
    timeslotNumber          TimeslotNumber,
    channelisationCode      HS-ChannelisationCode,
    midambleAllocationMode CHOICE {
        defaultMidamble      NULL,
        commonMidamble       NULL
    },
    midambleconfiguration  MidambleConfiguration,
    bler-target             Bler-Target,
    hs-sich-configuration  HS-SICH-Configuration-TDD384
}

HS-SICH-Configuration-TDD384 ::= SEQUENCE {
    timeslotNumber          TimeslotNumber,
    channelisationCode      HS-ChannelisationCode,
    midambleAllocationMode CHOICE {
        defaultMidamble      NULL,
        ueSpecificMidamble   SEQUENCE {
            midambleShift    MidambleShiftLong
        }
    },
    midambleconfiguration  MidambleConfiguration,
    nack-ack-power-offset  INTEGER (0..7),
    -- Actual value ul-target-SIR = IE value * 0.5
    ul-target-SIR          INTEGER (-22..40)
}

IndividualTimeslotInfo ::= SEQUENCE {
    timeslotNumber          TimeslotNumber,
    tfci-Existence         BOOLEAN,
    midambleShiftAndBurstType MidambleShiftAndBurstType
}

IndividualTimeslotInfo-LCR-r4 ::= SEQUENCE {
    timeslotNumber          TimeslotNumber-LCR-r4,
    tfci-Existence         BOOLEAN,
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR-r4,
    modulation              ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols         ENUMERATED { zero, one, sixteenOverSF }
}

```

```

IndividualTimeslotInfo-LCR-r4-ext ::= SEQUENCE {
-- timeslotNumber and tfci-Existence is taken from IndividualTimeslotInfo.
-- midambleShiftAndBurstType in IndividualTimeslotInfo shall be ignored.
  midambleShiftAndBurstType      MidambleShiftAndBurstType-LCR-r4,
  modulation                      ENUMERATED { mod-QPSK, mod-8PSK },
  ss-TPC-Symbols                  ENUMERATED { zero, one, sixteenOverSF }
}

IndividualTS-Interference ::= SEQUENCE {
  timeslot                        TimeslotNumber,
  ul-TimeslotInterference         TDD-UL-Interference
}

IndividualTS-Interference-LCR-r4 ::= SEQUENCE {
  timeslot                        TimeslotNumber-LCR-r4,
  ul-TimeslotInterference         UL-Interference
}

IndividualTS-InterferenceList ::= SEQUENCE (SIZE (1..maxTS)) OF
  IndividualTS-Interference

IndividualTS-InterferenceList-r4 ::= CHOICE {
  tdd384                          SEQUENCE (SIZE (1..maxTS)) OF
    IndividualTS-Interference,
  tdd128                          SEQUENCE (SIZE (1..maxTS-LCR)) OF
    IndividualTS-Interference-LCR-r4
}

ITP ::= ENUMERATED {
  mode0, mode1 }

NidentifyAbort ::= INTEGER (1..128)

MaxAllowedUL-TX-Power ::= INTEGER (-50..33)

MaxAvailablePCPCH-Number ::= INTEGER (1..64)

MaxPowerIncrease-r4 ::= INTEGER (0..3)

MaxTFCI-Field2Value ::= INTEGER (1..1023)

Measurement-Feedback-Info ::= SEQUENCE {
-- bler-threshold
  modeSpecificInfo              CHOICE {
    fdd                          SEQUENCE {
--      pohsdsch                  Po-hsdsch
--      feedback-cycle            Feedback-cycle
--      feedback-offset           Feedback-offset
    },
    tdd                          NULL
  }
}

MidambleConfiguration ::= ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstTypeand3 ::= ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstType2 ::= ENUMERATED {ms3, ms6}

MidambleShiftAndBurstType ::= SEQUENCE {
  burstType                      CHOICE {
    type1                        SEQUENCE {
      midambleConfigurationBurstTypeand3 MidambleConfigurationBurstTypeand3,
      midambleAllocationMode             CHOICE {
        defaultMidamble                 NULL,
        commonMidamble                  NULL,
        ueSpecificMidamble              SEQUENCE {
          midambleShift                  MidambleShiftLong
        }
      }
    },
    type2                          SEQUENCE {
      midambleConfigurationBurstType2   MidambleConfigurationBurstType2,
      midambleAllocationMode             CHOICE {
        defaultMidamble                 NULL,
        commonMidamble                  NULL,
        ueSpecificMidamble              SEQUENCE {
          midambleShift                  MidambleShiftShort
        }
      }
    }
  }
}

```

```

    }
  },
  type3
    SEQUENCE {
      midambleConfigurationBurstTypeand3 MidambleConfigurationBurstTypeand3,
      midambleAllocationMode CHOICE {
        defaultMidamble NULL,
        ueSpecificMidamble SEQUENCE {
          midambleShift MidambleShiftLong
        }
      }
    }
  }
}

MidambleShiftAndBurstType-LCR-r4 ::= SEQUENCE {
  midambleAllocationMode CHOICE {
    defaultMidamble NULL,
    commonMidamble NULL,
    ueSpecificMidamble SEQUENCE {
      midambleShift INTEGER (0..15)
    }
  },
  -- Actual value midambleConfiguration = IE value * 2
  midambleConfiguration INTEGER (1..8)
}

MidambleShiftLong ::= INTEGER (0..15)

MidambleShiftShort ::= INTEGER (0..5)

MinimumSpreadingFactor ::= ENUMERATED {
  sf4, sf8, sf16, sf32,
  sf64, sf128, sf256 }

MultiCodeInfo ::= INTEGER (1..16)

N-EOT ::= INTEGER (0..7)

N-GAP ::= ENUMERATED {
  f2, f4, f8 }

N-PCH ::= INTEGER (1..8)

N-StartMessage ::= INTEGER (1..8)

NB01 ::= INTEGER (0..50)

NF-Max ::= INTEGER (1..64)

NumberOfDPDCH ::= INTEGER (1..maxDPDCH-UL)

NumberOfFBI-Bits ::= INTEGER (1..2)

OpenLoopPowerControl-TDD ::= SEQUENCE {
  primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power,
  -- alpha, prach-ConstantValue, dpch-ConstantValue and pusch-ConstantValue
  -- shall be ignored in 1.28Mcps TDD mode.
  alpha Alpha OPTIONAL,
  prach-ConstantValue ConstantValueTdd,
  dpch-ConstantValue ConstantValueTdd,
  pusch-ConstantValue ConstantValueTdd OPTIONAL
}

OpenLoopPowerControl-IPDL-TDD-r4 ::= SEQUENCE {
  ipdl-alpha Alpha,
  maxPowerIncrease MaxPowerIncrease-r4
}

PagingIndicatorLength ::= ENUMERATED {
  pi4, pi8, pi16 }

PC-Preamble ::= INTEGER (0..7)

PCP-Length ::= ENUMERATED {
  as0, as8 }

```

```

PCPCH-ChannelInfo ::=
    pcpch-UL-ScramblingCode
    pcpch-DL-ChannelisationCode
    pcpch-DL-ScramblingCode
    pcp-Length
    ucsM-Info
SEQUENCE {
    INTEGER (0..79),
    INTEGER (0..511),
    SecondaryScramblingCode
    PCP-Length,
    UCSM-Info
OPTIONAL,
OPTIONAL
}

PCPCH-ChannelInfoList ::=
SEQUENCE (SIZE (1..maxPCPCHs)) OF
    PCPCH-ChannelInfo

PCPICH-UsageForChannelEst ::=
ENUMERATED {
    mayBeUsed,
    shallNotBeUsed
}

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

PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
    pdsch-AllocationPeriodInfo
    configuration
        old-Configuration
            tfcs-ID
            pdsch-Identity
        },
        new-Configuration
            pdsch-Info
            pdsch-Identity
            pdsch-PowerControlInfo
    }
}

PDSCH-CodeInfo ::=
    spreadingFactor
    codeNumber
    multiCodeInfo
SEQUENCE {
    SF-PDSCH,
    CodeNumberDSCH,
    MultiCodeInfo
}

PDSCH-CodeInfoList ::=
SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
    PDSCH-CodeInfo

PDSCH-CodeMap ::=
    spreadingFactor
    multiCodeInfo
    codeNumberStart
    codeNumberStop
SEQUENCE {
    SF-PDSCH,
    MultiCodeInfo,
    CodeNumberDSCH,
    CodeNumberDSCH
}

PDSCH-CodeMapList ::=
SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
    PDSCH-CodeMap

PDSCH-CodeMapping ::=
    dl-ScramblingCode
    signallingMethod
    codeRange
    tfci-Range
    explicit-config
    replace
SEQUENCE {
    SecondaryScramblingCode
    CHOICE {
        CodeRange,
        DSCH-MappingList,
        PDSCH-CodeInfoList,
        ReplacedPDSCH-CodeInfoList
    }
}

PDSCH-Identity ::=
INTEGER (1..hiPDSCHidentities)

```

PDSCH-Info ::=	SEQUENCE {	
tfcs-ID	TFCS-IdentityPlain	DEFAULT 1,
commonTimeslotInfo	CommonTimeslotInfo	OPTIONAL,
pdsch-TimeslotsCodes	DownlinkTimeslotsCodes	OPTIONAL
}		
PDSCH-Info-r4 ::=	SEQUENCE {	
tfcs-ID	TFCS-IdentityPlain	DEFAULT 1,
commonTimeslotInfo	CommonTimeslotInfo	OPTIONAL,
tddOption	CHOICE {	
tdd384	SEQUENCE {	
pdsch-TimeslotsCodes	DownlinkTimeslotsCodes	OPTIONAL
},		
tdd128	SEQUENCE {	
pdsch-TimeslotsCodes	DownlinkTimeslotsCodes-LCR-r4	OPTIONAL
}		
}		
PDSCH-Info-LCR-r4 ::=	SEQUENCE {	
tfcs-ID	TFCS-IdentityPlain	DEFAULT 1,
commonTimeslotInfo	CommonTimeslotInfo	OPTIONAL,
pdsch-TimeslotsCodes	DownlinkTimeslotsCodes-LCR-r4	OPTIONAL
}		
PDSCH-PowerControlInfo ::=	SEQUENCE {	
tpc-StepSizeTDD	TPC-StepSizeTDD	OPTIONAL,
ul-CCTrChTPCList	UL-CCTrChTPCList	OPTIONAL
}		
PDSCH-SHO-DCH-Info ::=	SEQUENCE {	
dsch-RadioLinkIdentifier	DSCH-RadioLinkIdentifier,	
rl-IdentifierList	RL-IdentifierList	OPTIONAL
}		
PDSCH-SysInfo ::=	SEQUENCE {	
pdsch-Identity	PDSCH-Identity,	
pdsch-Info	PDSCH-Info,	
dsch-TFS	TransportFormatSet	OPTIONAL,
dsch-TFCS	TFCS	OPTIONAL
}		
PDSCH-SysInfo-LCR-r4 ::=	SEQUENCE {	
pdsch-Identity	PDSCH-Identity,	
pdsch-Info	PDSCH-Info-LCR-r4,	
dsch-TFS	TransportFormatSet	OPTIONAL,
dsch-TFCS	TFCS	OPTIONAL
}		
PDSCH-SysInfoList ::=	SEQUENCE (SIZE (1..maxPDSCH)) OF	
	PDSCH-SysInfo	
PDSCH-SysInfoList-LCR-r4 ::=	SEQUENCE (SIZE (1..maxPDSCH)) OF	
	PDSCH-SysInfo-LCR-r4	
PDSCH-SysInfoList-SFN ::=	SEQUENCE (SIZE (1..maxPDSCH)) OF	
	SEQUENCE {	
pdsch-SysInfo	PDSCH-SysInfo,	
sfn-TimeInfo	SFN-TimeInfo	OPTIONAL
}		
PDSCH-SysInfoList-SFN-LCR-r4 ::=	SEQUENCE (SIZE (1..maxPDSCH)) OF	
	SEQUENCE {	
pdsch-SysInfo	PDSCH-SysInfo-LCR-r4,	
sfn-TimeInfo	SFN-TimeInfo	OPTIONAL
}		
PersistenceScalingFactor ::=	ENUMERATED {	
	psf0-9, psf0-8, psf0-7, psf0-6,	
	psf0-5, psf0-4, psf0-3, psf0-2 }	
PersistenceScalingFactorList ::=	SEQUENCE (SIZE (1..maxASCPersist)) OF	
	PersistenceScalingFactor	
PI-CountPerFrame ::=	ENUMERATED {	
	e18, e36, e72, e144 }	


```

PichChannelisationCodeList-LCR-r4 ::= SEQUENCE (SIZE (1..2)) OF
                                         DL-TS-ChannelisationCode

PICH-Info ::= CHOICE {
  fdd
    channelisationCode256
    pi-CountPerFrame
    sttd-Indicator
  },
  tdd
    channelisationCode
    timeslot
    midambleShiftAndBurstType
    repetitionPeriodLengthOffset
    pagingIndicatorLength
    n-GAP
    n-PCH
}

PICH-Info-LCR-r4 ::= SEQUENCE {
  timeslot TimeslotNumber-LCR-r4 OPTIONAL,
  pichChannelisationCodeList-LCR-r4 PichChannelisationCodeList-LCR-r4,
  midambleShiftAndBurstType MidambleShiftAndBurstType-LCR-r4,
  repetitionPeriodLengthOffset RepPerLengthOffset-PICH OPTIONAL,
  pagingIndicatorLength PagingIndicatorLength DEFAULT pi4,
  n-GAP N-GAP DEFAULT f4,
  n-PCH N-PCH DEFAULT 2
}

PICH-PowerOffset ::= INTEGER (-10..5)

PilotBits128 ::= ENUMERATED {
  pb4, pb8 }

PilotBits256 ::= ENUMERATED {
  pb2, pb4, pb8 }

--Range of po-hsdsch is FFS.
Po-hsdsch ::= INTEGER (-10..0)

PositionFixedOrFlexible ::= ENUMERATED {
  fixed,
  flexible }

PowerControlAlgorithm ::= CHOICE {
  algorithm1
  algorithm2
  NULL
}

PowerOffsetPilot-pdpdch ::= INTEGER (0..24)

PowerRampStep ::= INTEGER (1..8)

PRACH-ChanCodes-LCR-r4 ::= SEQUENCE (SIZE (1..4)) OF
  TDD-PRACH-CCode-LCR-r4

PRACH-Definition-LCR-r4 ::= SEQUENCE {
  timeslot TimeslotNumber-PRACH-LCR-r4,
  prach-ChanCodes-LCR PRACH-ChanCodes-LCR-r4,
  midambleShiftAndBurstType MidambleShiftAndBurstType-LCR-r4,
  fpach-Info FPACH-Info-r4
}

PRACH-Midamble ::= ENUMERATED {
  direct,
  direct-Inverted }

PRACH-Partitioning ::= CHOICE {
  fdd
    SEQUENCE (SIZE (1..maxASC)) OF
      ASCSetting-FDD,
  tdd
    SEQUENCE (SIZE (1..maxASC)) OF
      ASCSetting-TDD
}

PRACH-Partitioning-LCR-r4 ::= SEQUENCE (SIZE (1..maxASC)) OF
  ASCSetting-TDD-LCR-r4

```

```

PRACH-PowerOffset ::=
    powerRampStep
    preambleRetransMax
}

PRACH-RACH-Info ::=
    modeSpecificInfo
    fdd
        availableSignatures
        availableSF
        preambleScramblingCodeWordNumber
        puncturingLimit
        availableSubChannelNumbers
    },
    tdd
        timeslot
        channelisationCodeList
        prach-Midamble
}

PRACH-RACH-Info-LCR-r4 ::=
    sync-UL-Info
    prach-DefinitionList
}

PRACH-SystemInformation ::=
    prach-RACH-Info
    transportChannelIdentity
    rach-TransportFormatSet
    rach-TFCS
    prach-Partitioning
    persistenceScalingFactorList
    ac-To-ASC-MappingTable
    modeSpecificInfo
    fdd
        primaryCPICH-TX-Power
        constantValue
        prach-PowerOffset
        rach-TransmissionParameters
        aich-Info
    },
    tdd
        NULL
}

PRACH-SystemInformation-LCR-r4 ::= SEQUENCE {
    prach-RACH-Info-LCR
    rach-TransportFormatSet-LCR
    prach-Partitioning-LCR
}

PRACH-SystemInformationList ::= SEQUENCE (SIZE (1..maxPRACH)) OF
    PRACH-SystemInformation

PRACH-SystemInformationList-LCR-r4 ::= SEQUENCE (SIZE (1..maxPRACH)) OF
    PRACH-SystemInformation-LCR-r4

PreambleRetransMax ::= INTEGER (1..64)

PreambleScramblingCodeWordNumber ::= INTEGER (0..15)

PreDefPhyChConfiguration ::= SEQUENCE {
    ul-DPCH-InfoPredef
    dl-CommonInformationPredef
}

PrimaryCCPCH-Info ::= CHOICE {
    fdd
        tx-DiversityIndicator
    },
    tdd
        -- syncCase should be ignored for 1.28Mcps TDD mode
        syncCase
        syncCase1
}

```

```

        timeslot
    },
    syncCase2
        timeslotSync2
    }
    cellParametersID
    sctd-Indicator
}

PrimaryCCPCH-Info-r4 ::= CHOICE {
    fdd
        tx-DiversityIndicator
    },
    tdd
        tddOption
            tdd384
                syncCase
                    syncCase1
                        timeslot
                    },
                    syncCase2
                        timeslotSync2
                }
            },
            tdd128
                tstd-Indicator
            }
        },
        cellParametersID
        blockSTTD-Indicator
    }
}

PrimaryCCPCH-Info-LCR-r4 ::= SEQUENCE {
    tstd-Indicator
    cellParametersID
    blockSTTD-Indicator
}

-- For 1.28Mcps TDD, the following IE includes elements for the PCCPCH Info additional to those
-- in PrimaryCCPCH-Info
PrimaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
    tstd-Indicator
}

PrimaryCCPCH-InfoPost ::= SEQUENCE {
    syncCase
        syncCase1
            timeslot
        },
        syncCase2
            timeslotSync2
    },
    cellParametersID
    sctd-Indicator
}

PrimaryCCPCH-InfoPostTDD-LCR-r4 ::= SEQUENCE {
    tstd-Indicator
    cellParametersID
    blockSTTD-Indicator
}

PrimaryCCPCH-TX-Power ::= INTEGER (6..43)

PrimaryCPICH-Info ::= SEQUENCE {
    primaryScramblingCode
}

PrimaryCPICH-TX-Power ::= INTEGER (-10..50)

PrimaryScramblingCode ::= INTEGER (0..511)

PuncturingLimit ::= ENUMERATED {
    TimeslotNumber
    SEQUENCE {
        TimeslotSync2
    }
    OPTIONAL,
    OPTIONAL,
    BOOLEAN
    SEQUENCE {
        BOOLEAN
    }
    CHOICE {
        SEQUENCE {
            CHOICE {
                SEQUENCE {
                    CHOICE {
                        SEQUENCE {
                            TimeslotNumber
                            SEQUENCE {
                                TimeslotSync2
                            }
                        }
                    }
                }
            }
        }
        SEQUENCE {
            BOOLEAN
        }
    }
    OPTIONAL,
    BOOLEAN
    SEQUENCE {
        BOOLEAN
    }
    SEQUENCE {
        BOOLEAN,
        CellParametersID
        BOOLEAN
    }
    SEQUENCE {
        BOOLEAN,
        CellParametersID
        BOOLEAN
    }
    SEQUENCE {
        CellParametersID,
        BOOLEAN
    }
    SEQUENCE {
        BOOLEAN,
        CellParametersID,
        BOOLEAN
    }
    INTEGER (6..43)
    SEQUENCE {
        PrimaryScramblingCode
    }
    INTEGER (-10..50)
    INTEGER (0..511)
    ENUMERATED {

```

p10-40, p10-44, p10-48, p10-52, p10-56,
 p10-60, p10-64, p10-68, p10-72, p10-76,
 p10-80, p10-84, p10-88, p10-92, p10-96, p11 }

```

PUSCH-CapacityAllocationInfo ::= SEQUENCE {
  pusch-Allocation CHOICE {
    pusch-AllocationPending NULL,
    pusch-AllocationAssignment SEQUENCE {
      pusch-AllocationPeriodInfo AllocationPeriodInfo,
      pusch-PowerControlInfo UL-TargetSIR OPTIONAL,
      configuration CHOICE {
        old-Configuration SEQUENCE {
          tfcs-ID TFCS-IdentityPlain DEFAULT 1,
          pusch-Identity PUSCH-Identity
        },
        new-Configuration SEQUENCE {
          pusch-Info PUSCH-Info,
          pusch-Identity PUSCH-Identity OPTIONAL
        }
      }
    }
  }
}

```

```

PUSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
  pusch-Allocation CHOICE {
    pusch-AllocationPending NULL,
    pusch-AllocationAssignment SEQUENCE {
      pusch-AllocationPeriodInfo AllocationPeriodInfo,
      pusch-PowerControlInfo PUSCH-PowerControlInfo-r4 OPTIONAL,
      configuration CHOICE {
        old-Configuration SEQUENCE {
          tfcs-ID TFCS-IdentityPlain DEFAULT 1,
          pusch-Identity PUSCH-Identity
        },
        new-Configuration SEQUENCE {
          pusch-Info PUSCH-Info-r4,
          pusch-Identity PUSCH-Identity OPTIONAL
        }
      }
    }
  }
}

```

```

PUSCH-Identity ::= INTEGER (1..hiPUSCHidentities)

```

```

PUSCH-Info ::= SEQUENCE {
  tfcs-ID TFCS-IdentityPlain DEFAULT 1,
  commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
  pusch-TimeslotsCodes UplinkTimeslotsCodes OPTIONAL
}

```

```

PUSCH-Info-r4 ::= SEQUENCE {
  tfcs-ID TFCS-IdentityPlain DEFAULT 1,
  commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
  tddOption CHOICE {
    tdd384 SEQUENCE {
      pusch-TimeslotsCodes UplinkTimeslotsCodes OPTIONAL
    },
    tdd128 SEQUENCE {
      pusch-TimeslotsCodes UplinkTimeslotsCodes-LCR-r4 OPTIONAL
    }
  }
}

```

```

PUSCH-Info-LCR-r4 ::= SEQUENCE {
  tfcs-ID TFCS-IdentityPlain DEFAULT 1,

  commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
  pusch-TimeslotsCodes UplinkTimeslotsCodes-LCR-r4 OPTIONAL
}

```

```

PUSCH-PowerControlInfo-r4 ::= SEQUENCE {
  -- The IE ul-TargetSIR corresponds to PRX-PUSCHdes for 1.28Mcps TDD
  -- Actual value PRX-PUSCHdes = (value of IE "ul-TargetSIR" - 120)
  ul-TargetSIR UL-TargetSIR,
  tddOption CHOICE {
    tdd384 NULL,

```

```

        tdd128
            tpc-StepSize
            dl-CCTrChTPCList
        }
    }

PUSCH-SysInfo ::=
    pusch-Identity
    pusch-Info
    usch-TFS
    usch-TFCS
}

PUSCH-SysInfo-LCR-r4 ::=
    pusch-Identity
    pusch-Info
    usch-TFS
    usch-TFCS
}

PUSCH-SysInfoList ::=
    SEQUENCE (SIZE (1..maxPUSCH)) OF
        PUSCH-SysInfo

PUSCH-SysInfoList-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxPUSCH)) OF
        PUSCH-SysInfo-LCR-r4

PUSCH-SysInfoList-SFN ::=
    SEQUENCE (SIZE (1..maxPUSCH)) OF
        SEQUENCE {
            pusch-SysInfo
            sfn-TimeInfo
        }
}

PUSCH-SysInfoList-SFN-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxPUSCH)) OF
        SEQUENCE {
            pusch-SysInfo
            sfn-TimeInfo
        }
}

RACH-TransmissionParameters ::=
    mmax
    nb01Min
    nb01Max
}

ReducedScramblingCodeNumber ::=
    INTEGER (0..8191)

RepetitionPeriodAndLength ::=
    CHOICE {
        repetitionPeriod1
            NULL,
        -- repetitionPeriod2 could just as well be NULL also.
        repetitionPeriod2
            INTEGER (1..1),
        repetitionPeriod4
            INTEGER (1..3),
        repetitionPeriod8
            INTEGER (1..7),
        repetitionPeriod16
            INTEGER (1..15),
        repetitionPeriod32
            INTEGER (1..31),
        repetitionPeriod64
            INTEGER (1..63)
    }

RepetitionPeriodLengthAndOffset ::= CHOICE {
    repetitionPeriod1
        NULL,
    repetitionPeriod2
        SEQUENCE {
            length
                NULL,
            offset
                INTEGER (0..1)
        },
    repetitionPeriod4
        SEQUENCE {
            length
                INTEGER (1..3),
            offset
                INTEGER (0..3)
        },
    repetitionPeriod8
        SEQUENCE {
            length
                INTEGER (1..7),
            offset
                INTEGER (0..7)
        },
    repetitionPeriod16
        SEQUENCE {
            length
                INTEGER (1..15),
            offset
                INTEGER (0..15)
        },
    repetitionPeriod32
        SEQUENCE {
            length
                INTEGER (1..31),
}

```

```

        offset                INTEGER (0..31)
    },
    repetitionPeriod64        SEQUENCE {
        length                INTEGER (1..63),
        offset                INTEGER (0..63)
    }
}

ReplacedPDSCH-CodeInfo ::= SEQUENCE {
    tfci-Field2              MaxTFCI-Field2Value,
    spreadingFactor          SF-PDSCH,
    codeNumber               CodeNumberDSCH,
    multiCodeInfo            MultiCodeInfo
}

ReplacedPDSCH-CodeInfoList ::= SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
    ReplacedPDSCH-CodeInfo

RepPerLengthOffset-PICH ::= CHOICE {
    rpp4-2                   INTEGER (0..3),
    rpp8-2                   INTEGER (0..7),
    rpp8-4                   INTEGER (0..7),
    rpp16-2                  INTEGER (0..15),
    rpp16-4                  INTEGER (0..15),
    rpp32-2                  INTEGER (0..31),
    rpp32-4                  INTEGER (0..31),
    rpp64-2                  INTEGER (0..63),
    rpp64-4                  INTEGER (0..63)
}

RestrictedTrCH ::= SEQUENCE {
    dl-restrictedTrCh-Type   DL-TrCH-Type,
    restrictedDL-TrCH-Identity TransportChannelIdentity,
    allowedTFIList           AllowedTFI-List
}

RestrictedTrCH-InfoList ::= SEQUENCE (SIZE(1..maxTrCH)) OF
    RestrictedTrCH

RL-AdditionInformation ::= SEQUENCE {
    primaryCPICH-Info        PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL        DL-DPCH-InfoPerRL,
    tfci-CombiningIndicator  BOOLEAN,
    sccpch-InfoForFACH        SCCPCH-InfoForFACH
} OPTIONAL

RL-AdditionInformationList ::= SEQUENCE (SIZE (1..maxRL)) OF
    RL-AdditionInformation

RL-IdentifierList ::= SEQUENCE (SIZE (1..maxRL)) OF
    PrimaryCPICH-Info

RL-RemovalInformationList ::= SEQUENCE (SIZE (1..maxRL)) OF
    PrimaryCPICH-Info

RPP ::= ENUMERATED {
    mode0, mode1
}

S-Field ::= ENUMERATED {
    e1bit, e2bits
}

SCCPCH-ChannelisationCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16
}

SCCPCH-ChannelisationCodeList ::= SEQUENCE (SIZE (1..16)) OF
    SCCPCH-ChannelisationCode

SCCPCH-InfoForFACH ::= SEQUENCE {
    secondaryCCPCH-Info      SecondaryCCPCH-Info,
    tfcs                      TFCS,
    modeSpecificInfo         CHOICE {
        fdd                   SEQUENCE {
            fach-PCH-InformationList FACH-PCH-InformationList,
            sib-ReferenceListFACH     SIB-ReferenceListFACH
        },

```

```

        tdd                SEQUENCE {
            fach-PCH-InformationList    FACH-PCH-InformationList
        }
    }
}

SCCPCH-InfoForFACH-r4 ::=          SEQUENCE {
    secondaryCCPCH-Info            SecondaryCCPCH-Info-r4,
    tfcs                            TFCS,
    fach-PCH-InformationList        FACH-PCH-InformationList,
    modeSpecificInfo                CHOICE {
        fdd                        SEQUENCE {
            sib-ReferenceListFACH    SIB-ReferenceListFACH
        },
        tdd                        NULL
    }
}

SCCPCH-SystemInformation ::=      SEQUENCE {
    secondaryCCPCH-Info            SecondaryCCPCH-Info,
    tfcs                            TFCS                                OPTIONAL,
    fach-PCH-InformationList        FACH-PCH-InformationList          OPTIONAL,
    pich-Info                        PICH-Info                            OPTIONAL
}

SCCPCH-SystemInformation-LCR-r4-ext ::= SEQUENCE {
    secondaryCCPCH-LCR-Extensions    SecondaryCCPCH-Info-LCR-r4-ext,
    -- pich-Info in the SCCPCH-SystemInformation IE shall be absent,
    -- and instead the following used.
    pich-Info                        PICH-Info-LCR-r4                    OPTIONAL
}

SCCPCH-SystemInformationList ::=  SEQUENCE (SIZE (1..maxSCCPCH)) OF
    SCCPCH-SystemInformation

-- SCCPCH-SystemInformationList-LCR-r4-ext includes elements additional to those in
-- SCCPCH-SystemInformationList for the 1.28Mcps TDD. The order of the IEs
-- indicates which SCCPCH-SystemInformation-LCR-r4-ext IE extends which
-- SCCPCH-SystemInformation IE.
SCCPCH-SystemInformationList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
    SCCPCH-SystemInformation-LCR-r4-ext

ScramblingCodeChange ::=         ENUMERATED {
    codeChange, noCodeChange }

ScramblingCodeType ::=          ENUMERATED {
    shortSC,
    longSC }

SecondaryCCPCH-Info ::=         SEQUENCE {
    modeSpecificInfo                CHOICE {
        fdd                        SEQUENCE {
            -- dummy1 is not used in this version of the specification and should be ignored.
            dummy1                    PCPICH-UsageForChannelEst,
            -- dummy2 is not used in this version of the specification. It should not
            -- be sent and if received it should be ignored.
            dummy2                    SecondaryCPICH-Info                OPTIONAL,
            secondaryScramblingCode    SecondaryScramblingCode          OPTIONAL,
            sttd-Indicator              BOOLEAN,
            sf-AndCodeNumber            SF256-AndCodeNumber,
            pilotSymbolExistence        BOOLEAN,
            tfci-Existence              BOOLEAN,
            positionFixedOrFlexible     PositionFixedOrFlexible,
            timingOffset                TimingOffset                        DEFAULT 0
        },
        tdd                        SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
            commonTimeslotInfo          CommonTimeslotInfoSCCPCH,
            individualTimeslotInfo      IndividualTimeslotInfo,
            channelisationCode          SCCPCH-ChannelisationCodeList
        }
    }
}

SecondaryCCPCH-Info-r4 ::=       SEQUENCE {
    modeSpecificInfo                CHOICE {
        fdd                        SEQUENCE {
            secondaryScramblingCode    SecondaryScramblingCode          OPTIONAL,

```

```

        sttd-Indicator                BOOLEAN,
        sf-AndCodeNumber              SF256-AndCodeNumber,
        pilotSymbolExistence          BOOLEAN,
        tfci-Existence                BOOLEAN,
        positionFixedOrFlexible       PositionFixedOrFlexible,
        timingOffset                   TimingOffset                                DEFAULT 0
    },
    tdd                                SEQUENCE {
        -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
        commonTimeslotInfo             CommonTimeslotInfoSCCPCH,
        tddOption                       CHOICE {
            tdd384                      SEQUENCE {
                individualTimeslotInfo  IndividualTimeslotInfo
            },
            tdd128                      SEQUENCE {
                individualTimeslotInfo  IndividualTimeslotInfo-LCR-r4
            }
        },
        channelisationCode             SCCPCH-ChannelisationCodeList
    }
}

SecondaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
    individualTimeslotLCR-Ext          IndividualTimeslotInfo-LCR-r4-ext
}

SecondaryCPICH-Info ::= SEQUENCE {
    secondaryDL-ScramblingCode        SecondaryScramblingCode                OPTIONAL,
    channelisationCode                 ChannelisationCode256
}

SecondaryScramblingCode ::= INTEGER (1..15)

SecondInterleavingMode ::= ENUMERATED {
    frameRelated, timeslotRelated }

-- SF256-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF256-AndCodeNumber ::= CHOICE {
    sf4                                INTEGER (0..3),
    sf8                                INTEGER (0..7),
    sf16                               INTEGER (0..15),
    sf32                               INTEGER (0..31),
    sf64                               INTEGER (0..63),
    sf128                              INTEGER (0..127),
    sf256                              INTEGER (0..255)
}

-- SF512-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF512-AndCodeNumber ::= CHOICE {
    sf4                                INTEGER (0..3),
    sf8                                INTEGER (0..7),
    sf16                               INTEGER (0..15),
    sf32                               INTEGER (0..31),
    sf64                               INTEGER (0..63),
    sf128                              INTEGER (0..127),
    sf256                              INTEGER (0..255),
    sf512                              INTEGER (0..511)
}

-- SF512-AndPilot encodes both "Spreading factor" and "Number of bits for Pilot bits"
SF512-AndPilot ::= CHOICE {
    sfd4                               NULL,
    sfd8                               NULL,
    sfd16                              NULL,
    sfd32                              NULL,
    sfd64                              NULL,
    sfd128                             PilotBits128,
    sfd256                             PilotBits256,
    sfd512                             NULL
}

SF-PDSCH ::= ENUMERATED {
    sfp4, sfp8, sfp16, sfp32,
    sfp64, sfp128, sfp256 }

SF-PRACH ::= ENUMERATED {
    sfpr32, sfpr64, sfpr128, sfpr256 }

```



```

SFN-TimeInfo ::=
    activationTimeSFN
    physChDuration
}
SEQUENCE {
    INTEGER (0..4095),
    DurationTimeInfo
}

SpecialBurstScheduling ::=
    INTEGER (0..7)

SpreadingFactor ::=
    ENUMERATED {
        sf4, sf8, sf16, sf32,
        sf64, sf128, sf256 }

SRB-delay ::=
    INTEGER (0..7)

SSDT-CellIdentity ::=
    ENUMERATED {
        ssdt-id-a, ssdt-id-b, ssdt-id-c,
        ssdt-id-d, ssdt-id-e, ssdt-id-f,
        ssdt-id-g, ssdt-id-h }

SSDT-Information ::=
    s-Field
    codeWordSet
}
SEQUENCE {
    S-Field,
    CodeWordSet
}

SSDT-Information-r4 ::=
    s-Field
    codeWordSet
    ssdt-UL
}
SEQUENCE {
    S-Field,
    CodeWordSet,
    SSDT-UL-r4
}
OPTIONAL

-- SSDT-UL-r4 is used to extend the
-- SSDT-Information IE from Release 4 onwards.
SSDT-UL-r4 ::=
    ENUMERATED {
        ul, ul-AndDL }

SynchronisationParameters-r4 ::=
    sync-UL-CodesBitmap
}
SEQUENCE {
    BIT STRING {
        code7(0),
        code6(1),
        code5(2),
        code4(3),
        code3(4),
        code2(5),
        code1(6),
        code0(7)
    } (SIZE (8))
    OPTIONAL,
    fpach-Info
    sync-UL-Procedure
}
FPACH-Info-r4,
SYNC-UL-Procedure-r4
OPTIONAL

SYNC-UL-Procedure-r4 ::=
    max-SYNC-UL-Transmissions
    powerRampStep
}
SEQUENCE {
    ENUMERATED { tr1, tr2, tr4, tr8 },
    INTEGER (0..3)
}

SYNC-UL-Info-r4 ::=
    sync-UL-Codes-Bitmap
}
SEQUENCE {
    BIT STRING {
        code7(0),
        code6(1),
        code5(2),
        code4(3),
        code3(4),
        code2(5),
        code1(6),
        code0(7)
    } (SIZE (8)),
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes
    powerRampStep
    max-SYNC-UL-Transmissions
    mmax
}
INTEGER (0..62),
INTEGER (0..3),
ENUMERATED { tr1, tr2, tr4, tr8 } ,
INTEGER(1..32)

TDD-FPACH-CCode16-r4 ::=
    ENUMERATED {
        cc16-1, cc16-2, cc16-3, cc16-4,
        cc16-5, cc16-6, cc16-7, cc16-8,
        cc16-9, cc16-10, cc16-11, cc16-12,
        cc16-13, cc16-14, cc16-15, cc16-16 }
}

```

```

TDD-UL-Interference ::= INTEGER (-110..-52)

TDD-PICH-CCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode8 ::= ENUMERATED {
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8 }

TDD-PRACH-CCode16 ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode-LCR-r4 ::= ENUMERATED {
    cc4-1, cc4-2, cc4-3, cc4-4,
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8,
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCodeList ::= CHOICE {
    sf8 SEQUENCE (SIZE (1..8)) OF
        TDD-PRACH-CCode8,
    sf16 SEQUENCE (SIZE (1..8)) OF
        TDD-PRACH-CCode16
}

TFC-ControlDuration ::= ENUMERATED {
    tfc-cd1, tfc-cd2, tfc-cd4, tfc-cd8,
    tfc-cd16, tfc-cd24, tfc-cd32,
    tfc-cd48, tfc-cd64, tfc-cd128,
    tfc-cd192, tfc-cd256, tfc-cd512 }

TFCI-Coding ::= ENUMERATED {
    tfci-bits-4, tfci-bits-8,
    tfci-bits-16, tfci-bits-32 }

TGCFN ::= INTEGER (0..255)

-- In TGD, value 270 represents "undefined" in the tabular description.
TGD ::= INTEGER (15..270)

TGL ::= INTEGER (1..14)

TGMP ::= ENUMERATED {
    tdd-Measurement, fdd-Measurement,
    gsm-CarrierRSSIMeasurement,
    gsm-initialBSICIdentification, gsmBSICReconfirmation,
    multi-carrier }

TGP-Sequence ::= SEQUENCE {
    tgpsi TGPSI,
    tgps-Status CHOICE {
        activate SEQUENCE {
            tgcfn TGCFN
        },
        deactivate NULL
    },
    tgps-ConfigurationParams TGPS-ConfigurationParams OPTIONAL
}

TGPS-Reconfiguration-CFN ::= INTEGER (0..255)

TGP-SequenceList ::= SEQUENCE (SIZE (1..maxTGPS)) OF
    TGP-Sequence

TGP-SequenceShort ::= SEQUENCE {
    tgpsi TGPSI,
    tgps-Status CHOICE {
        activate SEQUENCE {
            tgcfn TGCFN
        }
    }
}

```

```

    },
    deactivate
  }
}

TGPL ::=
    INTEGER (1..144)

-- TABULAR: In TGPRC, value 0 represents "infinity" in the tabular description.
TGPRC ::=
    INTEGER (0..511)

TGPS-ConfigurationParams ::=
    SEQUENCE {
        tgmp
            TGMP,
        tgprc
            TGPRC,
        tgsn
            TGSN,
        tgl1
            TGL,
        tgl2
            TGL
            OPTIONAL,
        tgd
            TGD,
        tgpl1
            TGPL,
        tgpl2
            TGPL
            OPTIONAL,
        rpp
            RPP,
        itp
            ITP,
        -- TABULAR: Compressed mode method is nested inside UL-DL-Mode
        ul-DL-Mode
            UL-DL-Mode,
        dl-FrameType
            DL-FrameType,
        deltaSIR1
            DeltaSIR,
        deltaSIRAfter1
            DeltaSIR,
        deltaSIR2
            DeltaSIR
            OPTIONAL,
        deltaSIRAfter2
            DeltaSIR
            OPTIONAL,
        nidentifyAbort
            NidentifyAbort
            OPTIONAL,
        treconfirmAbort
            TreconfirmAbort
            OPTIONAL
    }

TGPSI ::=
    INTEGER (1..maxTGPS)

TGSN ::=
    INTEGER (0..14)

TimeInfo ::=
    SEQUENCE {
        activationTime
            ActivationTime
            OPTIONAL,
        durationTimeInfo
            DurationTimeInfo
            OPTIONAL
    }

TimeslotList ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotNumber

TimeslotList-r4 ::=
    CHOICE {
        tdd384
            SEQUENCE (SIZE (1..maxTS)) OF
                TimeslotNumber,
        tdd128
            SEQUENCE (SIZE (1..maxTS-LCR)) OF
                TimeslotNumber-LCR-r4
    }

-- If TimeslotNumber is included for a 1.28Mcps TDD description, it shall take values from 0..6
TimeslotNumber ::=
    INTEGER (0..14)

TimeslotNumber-LCR-r4 ::=
    INTEGER (0..6)

TimeslotNumber-PRACH-LCR-r4 ::=
    INTEGER (1..6)

TimeslotSync2 ::=
    INTEGER (0..6)

-- Actual value TimingOffset = IE value * 256
TimingOffset ::=
    INTEGER (0..149)

TPC-CombinationIndex ::=
    INTEGER (0..5)

TPC-StepSizeFDD ::=
    INTEGER (0..1)

-- Actual value TPC-StepSizeTDD = IE value + 1
TPC-StepSizeTDD ::=
    INTEGER (1..3)

-- Actual value TreconfirmAbort = IE value * 0.5 seconds
TreconfirmAbort ::=
    INTEGER (1..20)

TX-DiversityMode ::=
    ENUMERATED {
        noDiversity,
        sttd,
        closedLoopMode1,
        closedLoopMode2 }

```

```

UARFCN ::= INTEGER (0..16383)

UCSM-Info ::= SEQUENCE {
    minimumSpreadingFactor MinimumSpreadingFactor,
    nf-Max NF-Max,
    channelReqParamsForUCSM ChannelReqParamsForUCSM
}

UL-CCTrCH ::= SEQUENCE {
    tfcs-ID TFCS-IdentityPlain DEFAULT 1,
    ul-TargetSIR UL-TargetSIR,
    timeInfo TimeInfo,
    commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
    ul-CCTrCH-TimeslotsCodes UplinkTimeslotsCodes OPTIONAL
}

UL-CCTrCH-r4 ::= SEQUENCE {
    tfcs-ID TFCS-IdentityPlain DEFAULT 1,
    ul-TargetSIR UL-TargetSIR,
    timeInfo TimeInfo,
    commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
    tddOption CHOICE {
        tdd384 SEQUENCE {
            ul-CCTrCH-TimeslotsCodes UplinkTimeslotsCodes OPTIONAL
        },
        tdd128 SEQUENCE {
            ul-CCTrCH-TimeslotsCodes UplinkTimeslotsCodes-LCR-r4 OPTIONAL
        }
    }
}

UL-CCTrCHList ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
    UL-CCTrCH

UL-CCTrCHList-r4 ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
    UL-CCTrCH-r4

UL-CCTrChTPCList ::= SEQUENCE (SIZE (0..maxCCTrCH)) OF
    TFCS-Identity

UL-ChannelRequirement ::= CHOICE {
    ul-DPCH-Info UL-DPCH-Info,
    cpch-SetInfo CPCH-SetInfo
}

UL-ChannelRequirement-r4 ::= CHOICE {
    ul-DPCH-Info UL-DPCH-Info-r4,
    cpch-SetInfo CPCH-SetInfo
}

UL-ChannelRequirement-r5 ::= CHOICE {
    ul-DPCH-Info UL-DPCH-Info-r5,
    cpch-SetInfo CPCH-SetInfo
}

UL-ChannelRequirementWithCPCH-SetID ::= CHOICE {
    ul-DPCH-Info UL-DPCH-Info,
    cpch-SetInfo CPCH-SetInfo,
    cpch-SetID CPCH-SetID
}

UL-ChannelRequirementWithCPCH-SetID-r4 ::= CHOICE {
    ul-DPCH-Info UL-DPCH-Info-r4,
    cpch-SetInfo CPCH-SetInfo,
    cpch-SetID CPCH-SetID
}

UL-ChannelRequirementWithCPCH-SetID-r5 ::= CHOICE {
    ul-DPCH-Info UL-DPCH-Info-r5,
    cpch-SetInfo CPCH-SetInfo,
    cpch-SetID CPCH-SetID
}

UL-CompressedModeMethod ::= ENUMERATED {
    sf-2,
    higherLayerScheduling }

```

```

UL-DL-Mode ::=
    ul
    dl
    ul-and-dl
        ul
        dl
    }
}

UL-DPCCH-SlotFormat ::=
    ENUMERATED {
        slf0, slf1, slf2 }

UL-DPCH-Info ::=
    SEQUENCE {
        ul-DPCH-PowerControlInfo
        modeSpecificInfo
            fdd
                scramblingCodeType
                scramblingCode
                numberOfDPDCH
                spreadingFactor
                tfci-Existence
                -- numberOfFBI-Bits is conditional based on history
                numberOfFBI-Bits
                puncturingLimit
            },
            tdd
                ul-TimingAdvance
                ul-CCTrCHList
        }
    }

UL-DPCH-Info-r4 ::=
    SEQUENCE {
        ul-DPCH-PowerControlInfo
        modeSpecificInfo
            fdd
                scramblingCodeType
                scramblingCode
                numberOfDPDCH
                spreadingFactor
                tfci-Existence
                -- numberOfFBI-Bits is conditional based on history
                numberOfFBI-Bits
                puncturingLimit
            },
            tdd
                ul-TimingAdvance
                ul-CCTrCHList
        }
    }

UL-DPCH-Info-r5 ::=
    SEQUENCE {
        ul-DPCH-PowerControlInfo
        modeSpecificInfo
            fdd
                scramblingCodeType
                scramblingCode
                numberOfDPDCH
                spreadingFactor
                tfci-Existence
                -- numberOfFBI-Bits is conditional based on history
                numberOfFBI-Bits
                puncturingLimit
            },
            tdd
                ul-TimingAdvance
                ul-CCTrCHList
        }
    }

UL-DPCH-InfoPostFDD ::=
    SEQUENCE {
        ul-DPCH-PowerControlInfo
        scramblingCodeType
        reducedScramblingCodeNumber
        spreadingFactor
    }
}

```

```

UL-DPCH-InfoPostTDD ::=          SEQUENCE {
    ul-DPCH-PowerControlInfo      UL-DPCH-PowerControlInfoPostTDD,
    ul-TimingAdvance              UL-TimingAdvanceControl           OPTIONAL,
    ul-CCTrCH-TimeslotsCodes      UplinkTimeslotsCodes
}

UL-DPCH-InfoPostTDD-LCR-r4 ::=  SEQUENCE {
    ul-DPCH-PowerControlInfo      UL-DPCH-PowerControlInfoPostTDD-LCR-r4,
    ul-TimingAdvance              UL-TimingAdvanceControl-LCR-r4       OPTIONAL,
    ul-CCTrCH-TimeslotsCodes      UplinkTimeslotsCodes-LCR-r4
}

UL-DPCH-InfoPredef ::=          SEQUENCE {
    ul-DPCH-PowerControlInfo      UL-DPCH-PowerControlInfoPredef,
    modeSpecificInfo              CHOICE {
        fdd                       SEQUENCE {
            tfci-Existence        BOOLEAN,
            puncturingLimit       PuncturingLimit
        },
        tdd                       SEQUENCE {
            commonTimeslotInfo    CommonTimeslotInfo
        }
    }
}

UL-DPCH-PowerControlInfo ::=    CHOICE {
    fdd                            SEQUENCE {
        dpch-PowerOffset         DPCCCH-PowerOffset,
        pc-Preamble              PC-Preamble,
        sRB-delay                SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm    PowerControlAlgorithm
    },
    tdd                            SEQUENCE {
        ul-TargetSIR             UL-TargetSIR                 OPTIONAL,
        ul-OL-PC-Signalling      CHOICE {
            broadcast-UL-OL-PC-info NULL,
            handoverGroup        SEQUENCE {
                individualTS-InterferenceList IndividualTS-InterferenceList,
                dpch-ConstantValue ConstantValueTdd,
                primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
            }
        }
    }
}

UL-DPCH-PowerControlInfo-r4 ::= CHOICE {
    fdd                            SEQUENCE {
        dpch-PowerOffset         DPCCCH-PowerOffset,
        pc-Preamble              PC-Preamble,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm    PowerControlAlgorithm
    },
    tdd                            SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
        -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
        ul-TargetSIR             UL-TargetSIR                 OPTIONAL,
        ul-OL-PC-Signalling      CHOICE {
            broadcast-UL-OL-PC-info NULL,
            handoverGroup        SEQUENCE {
                tddOption        CHOICE {
                    tdd384      SEQUENCE {
                        individualTS-InterferenceList IndividualTS-InterferenceList,
                        dpch-ConstantValue ConstantValue
                    },
                    tdd128      SEQUENCE {
                        tpc-StepSize TPC-StepSizeTDD
                    }
                }
            },
            primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
        }
    }
}

UL-DPCH-PowerControlInfo-r5 ::= CHOICE {
    fdd                            SEQUENCE {

```

```

    dpcch-PowerOffset          DPCCH-PowerOffset,
    pc-Preamble                PC-Preamble,
    -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    powerControlAlgorithm      PowerControlAlgorithm,
    dpcch-2-offset             INTEGER (-164 ..-6)
  },
  tdd                          SEQUENCE {
    -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
    -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
    ul-TargetSIR                UL-TargetSIR                                OPTIONAL,
    ul-OL-PC-Signalling          CHOICE {
      broadcast-UL-OL-PC-info    NULL,
      handoverGroup              SEQUENCE {
        tddOption                CHOICE {
          tdd384                  SEQUENCE {
            individualTS-InterferenceList IndividualTS-InterferenceList,
            dpch-ConstantValue      ConstantValue
          },
          tdd128                  SEQUENCE {
            tpc-StepSize           TPC-StepSizeTDD
          }
        }
      },
      primaryCCPCH-TX-Power      PrimaryCCPCH-TX-Power
    }
  }
}

UL-DPCH-PowerControlInfoPostFDD ::= SEQUENCE {
  -- DPCCH-PowerOffset2 has a smaller range to save bits
  dpcch-PowerOffset          DPCCH-PowerOffset2,
  pc-Preamble                 PC-Preamble,
  sRB-delay                   SRB-delay
}

UL-DPCH-PowerControlInfoPostTDD ::= SEQUENCE {
  ul-TargetSIR                UL-TargetSIR,
  ul-TimeslotInterference      TDD-UL-Interference
}

UL-DPCH-PowerControlInfoPostTDD-LCR-r4 ::= SEQUENCE {
  ul-TargetSIR                UL-TargetSIR
}

UL-DPCH-PowerControlInfoPredef ::= CHOICE {
  fdd                          SEQUENCE {
    -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    powerControlAlgorithm      PowerControlAlgorithm
  },
  tdd                          SEQUENCE {
    -- dpch-ConstantValue shall be ignored if in 1.28Mcps TDD mode.
    dpch-ConstantValue         ConstantValueTdd
  }
}

UL-Interference ::= INTEGER (-110..-70)

UL-ScramblingCode ::= INTEGER (0..16777215)

UL-SynchronisationParameters-r4 ::= SEQUENCE {
  stepSize                     INTEGER (1..8),
  frequency                     INTEGER (1..8)
}

-- Actual value UL-TargetSIR = (IE value * 0.5) - 11
UL-TargetSIR ::= INTEGER (0..62)

UL-TimingAdvance ::= INTEGER (0..63)

UL-TimingAdvanceControl ::= CHOICE {
  disabled                      NULL,
  enabled                        SEQUENCE {
    ul-TimingAdvance            UL-TimingAdvance                                OPTIONAL,
    activationTime              ActivationTime                                OPTIONAL
  }
}

```

```

UL-TimingAdvanceControl-r4 ::= CHOICE {
    disabled          NULL,
    enabled           SEQUENCE {
        tddOption    CHOICE {
            tdd384   SEQUENCE {
                ul-TimingAdvance          UL-TimingAdvance          OPTIONAL,
                activationTime            ActivationTime            OPTIONAL
            },
            tdd128   SEQUENCE {
                ul-SynchronisationParameters  UL-SynchronisationParameters-r4 OPTIONAL,
                synchronisationParameters      SynchronisationParameters-r4 OPTIONAL
            }
        }
    }
}

UL-TimingAdvanceControl-LCR-r4 ::= CHOICE {
    disabled          NULL,
    enabled           SEQUENCE {
        ul-SynchronisationParameters  UL-SynchronisationParameters-r4 OPTIONAL,
        synchronisationParameters      SynchronisationParameters-r4  OPTIONAL
    }
}

UL-TS-ChannelisationCode ::= ENUMERATED {
    cc1-1, cc2-1, cc2-2,
    cc4-1, cc4-2, cc4-3, cc4-4,
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8,
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

UL-TS-ChannelisationCodeList ::= SEQUENCE (SIZE (1..2)) OF
    UL-TS-ChannelisationCode

UplinkAdditionalTimeslots ::= SEQUENCE {
    parameters          CHOICE {
        sameAsLast      SEQUENCE {
            timeslotNumber  TimeslotNumber
        },
        newParameters    SEQUENCE {
            individualTimeslotInfo  IndividualTimeslotInfo,
            ul-TS-ChannelisationCodeList  UL-TS-ChannelisationCodeList
        }
    }
}

UplinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters          CHOICE {
        sameAsLast      SEQUENCE {
            timeslotNumber  TimeslotNumber
        },
        newParameters    SEQUENCE {
            individualTimeslotInfo  IndividualTimeslotInfo-LCR-r4,
            ul-TS-ChannelisationCodeList  UL-TS-ChannelisationCodeList
        }
    }
}

UplinkTimeslotsCodes ::= SEQUENCE {
    dynamicSFusage      BOOLEAN,
    firstIndividualTimeslotInfo  IndividualTimeslotInfo,
    ul-TS-ChannelisationCodeList  UL-TS-ChannelisationCodeList,
    moreTimeslots       CHOICE {
        noMore          NULL,
        additionalTimeslots  CHOICE {
            consecutive  SEQUENCE {
                numAdditionalTimeslots  INTEGER (1..maxTS-1)
            },
            timeslotList  SEQUENCE (SIZE (1..maxTS-1)) OF
                UplinkAdditionalTimeslots
        }
    }
}

UplinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {

```



```

dynamicSFusage                BOOLEAN,
firstIndividualTimeslotInfo    IndividualTimeslotInfo-LCR-r4,
ul-TS-ChannelisationCodeList  UL-TS-ChannelisationCodeList,
moreTimeslots                 CHOICE {
    noMore                     NULL,
    additionalTimeslots        CHOICE {
        consecutive            SEQUENCE {
            numAdditionalTimeslots  INTEGER (1..maxTS-LCR-1)
        },
        timeslotList           SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                                UplinkAdditionalTimeslots-LCR-r4
    }
}
}

Wi-LCR ::=                                                              INTEGER(1..4)

-- *****
--
--     MEASUREMENT INFORMATION ELEMENTS (10.3.7)
--
-- *****

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

AcquisitionSatInfoList ::=      SEQUENCE (SIZE (1..maxSat)) OF
                                AcquisitionSatInfo

AdditionalMeasurementID-List ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                MeasurementIdentity

AlmanacSatInfo ::=             SEQUENCE {
    dataID                      INTEGER (0..3),
    satID                       SatID,
    e                            BIT STRING (SIZE (16)),
    t-oa                        BIT STRING (SIZE (8)),
    deltaI                      BIT STRING (SIZE (16)),
    omegaDot                    BIT STRING (SIZE (16)),
    satHealth                   BIT STRING (SIZE (8)),
    a-Sqrt                      BIT STRING (SIZE (24)),
    omega0                      BIT STRING (SIZE (24)),
    m0                          BIT STRING (SIZE (24)),
    omega                       BIT STRING (SIZE (24)),
    af0                         BIT STRING (SIZE (11)),
    af1                         BIT STRING (SIZE (11))
}

AlmanacSatInfoList ::=         SEQUENCE (SIZE (1..maxSat)) OF
                                AlmanacSatInfo

AverageRLC-BufferPayload ::=   ENUMERATED {
    pla0, pla4, pla8, pla16, pla32,
    pla64, pla128, pla256, pla512,
    pla1024, pla2k, pla4k, pla8k, pla16k,
    pla32k, pla64k, pla128k, pla256k,
    pla512k, pla1024k, spare12, spare11,
    spare10, spare9, spare8, spare7, spare6,
    spare5, spare4, spare3, spare2, spare1 }

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

BadSatList ::=                 SEQUENCE (SIZE (1..maxSat)) OF

```

```

                                INTEGER (0..63)

Frequency-Band ::=                ENUMERATED {
                                dcs1800BandUsed, pcs1900BandUsed }

BCCH-ARFCN ::=                    INTEGER (0..1023)

BLER-MeasurementResults ::=       SEQUENCE {
    transportChannelIdentity        TransportChannelIdentity,
    dl-TransportChannelBLER         DL-TransportChannelBLER           OPTIONAL
}

BLER-MeasurementResultsList ::=   SEQUENCE (SIZE (1..maxTrCH)) OF
                                BLER-MeasurementResults

BLER-TransChIdList ::=           SEQUENCE (SIZE (1..maxTrCH)) OF
                                TransportChannelIdentity

BSIC-VerificationRequired ::=     ENUMERATED {
                                required, notRequired }

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

BurstModeParameters ::=          SEQUENCE {
    burstStart                      INTEGER (0..15),
    burstLength                    INTEGER (10..25),
    burstFreq                      INTEGER (1..16)
}

CellDCH-ReportCriteria ::=       CHOICE {
    intraFreqReportingCriteria     IntraFreqReportingCriteria,
    periodicalReportingCriteria    PeriodicalReportingCriteria
}

CellDCH-ReportCriteria-LCR-r4 ::= CHOICE {
    intraFreqReportingCriteria     IntraFreqReportingCriteria-LCR-r4,
    periodicalReportingCriteria    PeriodicalReportingCriteria
}

-- Actual value CellIndividualOffset = IE value * 0.5
CellIndividualOffset ::=         INTEGER (-20..20)

CellInfo ::=                     SEQUENCE {
    cellIndividualOffset            CellIndividualOffset           DEFAULT 0,
    referenceTimeDifferenceToCell   ReferenceTimeDifferenceToCell  OPTIONAL,
    modeSpecificInfo               CHOICE {
        fdd                        SEQUENCE {
            primaryCPICH-Info      PrimaryCPICH-Info           OPTIONAL,
            primaryCPICH-TX-Power  PrimaryCPICH-TX-Power      OPTIONAL,
            readSFN-Indicator      BOOLEAN,
            tx-DiversityIndicator  BOOLEAN
        },
        tdd                        SEQUENCE {
            primaryCCPCH-Info      PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power  PrimaryCCPCH-TX-Power      OPTIONAL,
            timeslotInfoList       TimeslotInfoList           OPTIONAL,
            readSFN-Indicator      BOOLEAN
        }
    }
}

CellInfo-r4 ::=                 SEQUENCE {
    cellIndividualOffset            CellIndividualOffset           DEFAULT 0,
    referenceTimeDifferenceToCell   ReferenceTimeDifferenceToCell  OPTIONAL,
    modeSpecificInfo               CHOICE {
        fdd                        SEQUENCE {
            primaryCPICH-Info      PrimaryCPICH-Info           OPTIONAL,
            primaryCPICH-TX-Power  PrimaryCPICH-TX-Power      OPTIONAL,
            readSFN-Indicator      BOOLEAN,
            tx-DiversityIndicator  BOOLEAN
        },
        tdd                        SEQUENCE {
            primaryCCPCH-Info      PrimaryCCPCH-Info-r4,

```

<pre> primaryCCPCH-TX-Power timeslotInfoList readSFN-Indicator } } </pre>	<pre> PrimaryCCPCH-TX-Power TimeslotInfoList-r4 BOOLEAN </pre>	<pre> OPTIONAL, OPTIONAL, </pre>
<pre> CellInfoSI-RSCP ::= cellIndividualOffset referenceTimeDifferenceToCell modeSpecificInfo fdd primaryCPICH-Info primaryCPICH-TX-Power readSFN-Indicator tx-DiversityIndicator }, tdd primaryCCPCH-Info primaryCCPCH-TX-Power timeslotInfoList readSFN-Indicator } }, cellSelectionReselectionInfo } </pre>	<pre> SEQUENCE { CellIndividualOffset ReferenceTimeDifferenceToCell CHOICE { SEQUENCE { PrimaryCPICH-Info PrimaryCPICH-TX-Power BOOLEAN, BOOLEAN } SEQUENCE { PrimaryCCPCH-Info, PrimaryCCPCH-TX-Power TimeslotInfoList BOOLEAN } } CellSelectReselectInfoSIB-11-12-RSCP } </pre>	<pre> DEFAULT 0, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL </pre>
<pre> CellInfoSI-RSCP-LCR-r4 ::= cellIndividualOffset referenceTimeDifferenceToCell primaryCCPCH-Info primaryCCPCH-TX-Power timeslotInfoList readSFN-Indicator cellSelectionReselectionInfo } </pre>	<pre> SEQUENCE { CellIndividualOffset ReferenceTimeDifferenceToCell PrimaryCCPCH-Info-LCR-r4, PrimaryCCPCH-TX-Power TimeslotInfoList-LCR-r4 CellSelectReselectInfoSIB-11-12-RSCP } </pre>	<pre> DEFAULT 0, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL </pre>
<pre> CellInfoSI-ECN0 ::= cellIndividualOffset referenceTimeDifferenceToCell modeSpecificInfo fdd primaryCPICH-Info primaryCPICH-TX-Power readSFN-Indicator tx-DiversityIndicator }, tdd primaryCCPCH-Info primaryCCPCH-TX-Power timeslotInfoList readSFN-Indicator } }, cellSelectionReselectionInfo } </pre>	<pre> SEQUENCE { CellIndividualOffset ReferenceTimeDifferenceToCell CHOICE { SEQUENCE { PrimaryCPICH-Info PrimaryCPICH-TX-Power BOOLEAN, BOOLEAN } SEQUENCE { PrimaryCCPCH-Info, PrimaryCCPCH-TX-Power TimeslotInfoList BOOLEAN } } CellSelectReselectInfoSIB-11-12-ECN0 } </pre>	<pre> DEFAULT 0, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL </pre>
<pre> CellInfoSI-ECN0-LCR-r4 ::= cellIndividualOffset referenceTimeDifferenceToCell primaryCCPCH-Info primaryCCPCH-TX-Power timeslotInfoList readSFN-Indicator cellSelectionReselectionInfo } </pre>	<pre> SEQUENCE { CellIndividualOffset ReferenceTimeDifferenceToCell PrimaryCCPCH-Info-LCR-r4, PrimaryCCPCH-TX-Power TimeslotInfoList-LCR-r4 CellSelectReselectInfoSIB-11-12-ECN0 } </pre>	<pre> DEFAULT 0, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL </pre>
<pre> CellInfoSI-HCS-RSCP ::= cellIndividualOffset referenceTimeDifferenceToCell modeSpecificInfo fdd primaryCPICH-Info primaryCPICH-TX-Power readSFN-Indicator tx-DiversityIndicator }, } </pre>	<pre> SEQUENCE { CellIndividualOffset ReferenceTimeDifferenceToCell CHOICE { SEQUENCE { PrimaryCPICH-Info PrimaryCPICH-TX-Power BOOLEAN, BOOLEAN } } } </pre>	<pre> DEFAULT 0, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL </pre>

```

    tdd
      primaryCCPCH-Info
      primaryCCPCH-TX-Power
      timeslotInfoList
      readSFN-Indicator
    },
  },
  cellSelectionReselectionInfo      CellSelectReselectInfoSIB-11-12-HCS-RSCP      OPTIONAL
}

CellInfoSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
  cellIndividualOffset              CellIndividualOffset              DEFAULT 0,
  referenceTimeDifferenceToCell     ReferenceTimeDifferenceToCell     OPTIONAL,
  primaryCCPCH-Info                PrimaryCCPCH-Info-LCR-r4,
  primaryCCPCH-TX-Power            PrimaryCCPCH-TX-Power            OPTIONAL,
  timeslotInfoList                 TimeslotInfoList-LCR-r4         OPTIONAL,
  readSFN-Indicator                BOOLEAN,
  cellSelectionReselectionInfo      CellSelectReselectInfoSIB-11-12-HCS-RSCP      OPTIONAL
}

CellInfoSI-HCS-ECN0 ::= SEQUENCE {
  cellIndividualOffset              CellIndividualOffset              DEFAULT 0,
  referenceTimeDifferenceToCell     ReferenceTimeDifferenceToCell     OPTIONAL,
  modeSpecificInfo                 CHOICE {
    fdd                             SEQUENCE {
      primaryCPICH-Info            PrimaryCPICH-Info              OPTIONAL,
      primaryCPICH-TX-Power        PrimaryCPICH-TX-Power         OPTIONAL,
      readSFN-Indicator            BOOLEAN,
      tx-DiversityIndicator        BOOLEAN
    },
    tdd                             SEQUENCE {
      primaryCCPCH-Info            PrimaryCCPCH-Info,
      primaryCCPCH-TX-Power        PrimaryCCPCH-TX-Power         OPTIONAL,
      timeslotInfoList             TimeslotInfoList              OPTIONAL,
      readSFN-Indicator            BOOLEAN
    }
  },
  cellSelectionReselectionInfo      CellSelectReselectInfoSIB-11-12-HCS-ECN0      OPTIONAL
}

CellInfoSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
  cellIndividualOffset              CellIndividualOffset              DEFAULT 0,
  referenceTimeDifferenceToCell     ReferenceTimeDifferenceToCell     OPTIONAL,
  primaryCCPCH-Info                PrimaryCCPCH-Info-LCR-r4,
  primaryCCPCH-TX-Power            PrimaryCCPCH-TX-Power            OPTIONAL,
  timeslotInfoList                 TimeslotInfoList-LCR-r4         OPTIONAL,
  readSFN-Indicator                BOOLEAN,
  cellSelectionReselectionInfo      CellSelectReselectInfoSIB-11-12-HCS-ECN0      OPTIONAL
}

CellMeasuredResults ::= SEQUENCE {
  cellIdentity                      CellIdentity                      OPTIONAL,
  sfm-SFM-ObsTimeDifference         SFM-SFM-ObsTimeDifference         OPTIONAL,
  cellSynchronisationInfo          CellSynchronisationInfo           OPTIONAL,
  modeSpecificInfo                 CHOICE {
    fdd                             SEQUENCE {
      primaryCPICH-Info            PrimaryCPICH-Info,
      cpich-Ec-N0                  CPICH-Ec-N0                    OPTIONAL,
      cpich-RSCP                    CPICH-RSCP                      OPTIONAL,
      pathloss                       Pathloss                        OPTIONAL
    },
    tdd                             SEQUENCE {
      cellParametersID             CellParametersID,
      proposedTGSN                  TGSN                            OPTIONAL,
      primaryCCPCH-RSCP             PrimaryCCPCH-RSCP               OPTIONAL,
      pathloss                       Pathloss                        OPTIONAL,
      timeslotISCP-List             TimeslotISCP-List              OPTIONAL
    }
  }
}

CellMeasurementEventResults ::= CHOICE {
  fdd                               SEQUENCE (SIZE (1..maxCellMeas)) OF
    PrimaryCPICH-Info,
  tdd                               SEQUENCE (SIZE (1..maxCellMeas)) OF
    PrimaryCCPCH-Info
}

```

```

CellMeasurementEventResults-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    PrimaryCCPCH-Info-LCR-r4

CellReportingQuantities ::= SEQUENCE {
    sfm-SFN-OTD-Type SFN-SFN-OTD-Type,
    cellIdentity-reportingIndicator BOOLEAN,
    cellSynchronisationInfoReportingIndicator BOOLEAN,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            cpich-Ec-N0-reportingIndicator BOOLEAN,
            cpich-RSCP-reportingIndicator BOOLEAN,
            pathloss-reportingIndicator BOOLEAN
        },
        tdd SEQUENCE {
            timeslotISCP-reportingIndicator BOOLEAN,
            proposedTGSN-ReportingRequired BOOLEAN,
            primaryCCPCH-RSCP-reportingIndicator BOOLEAN,
            pathloss-reportingIndicator BOOLEAN
        }
    }
}

CellSelectReselectInfoSIB-11-12 ::= SEQUENCE {
    q-Offset1S-N Q-OffsetS-N DEFAULT 0,
    q-Offset2S-N Q-OffsetS-N OPTIONAL,
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    hcs-NeighbouringCellInformation-RSCP HCS-NeighbouringCellInformation-RSCP
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            q-QualMin Q-QualMin OPTIONAL,
            q-RxlevMin Q-RxlevMin OPTIONAL
        },
        tdd SEQUENCE {
            q-RxlevMin Q-RxlevMin OPTIONAL
        },
        gsm SEQUENCE {
            q-RxlevMin Q-RxlevMin OPTIONAL
        }
    }
}

CellSelectReselectInfoSIB-11-12-RSCP ::= SEQUENCE {
    q-OffsetS-N Q-OffsetS-N DEFAULT 0,
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            q-QualMin Q-QualMin OPTIONAL,
            q-RxlevMin Q-RxlevMin OPTIONAL
        },
        tdd SEQUENCE {
            q-RxlevMin Q-RxlevMin OPTIONAL
        },
        gsm SEQUENCE {
            q-RxlevMin Q-RxlevMin OPTIONAL
        }
    }
}

CellSelectReselectInfoSIB-11-12-ECN0 ::= SEQUENCE {
    q-Offset1S-N Q-OffsetS-N DEFAULT 0,
    q-Offset2S-N Q-OffsetS-N DEFAULT 0,
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            q-QualMin Q-QualMin OPTIONAL,
            q-RxlevMin Q-RxlevMin OPTIONAL
        },
        tdd SEQUENCE {
            q-RxlevMin Q-RxlevMin OPTIONAL
        },
        gsm SEQUENCE {
            q-RxlevMin Q-RxlevMin OPTIONAL
        }
    }
}

CellSelectReselectInfoSIB-11-12-HCS-RSCP ::= SEQUENCE {

```

```

q-OffsetS-N          Q-OffsetS-N          DEFAULT 0,
maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
hcs-NeighbouringCellInformation-RSCP HCS-NeighbouringCellInformation-RSCP
OPTIONAL,
modeSpecificInfo    CHOICE {
  fdd                SEQUENCE {
    q-QualMin        Q-QualMin          OPTIONAL,
    q-RxlevMin       Q-RxlevMin        OPTIONAL
  },
  tdd                SEQUENCE {
    q-RxlevMin       Q-RxlevMin        OPTIONAL
  },
  gsm                SEQUENCE {
    q-RxlevMin       Q-RxlevMin        OPTIONAL
  }
}
}

CellSelectReselectInfoSIB-11-12-HCS-ECNO ::= SEQUENCE {
  q-Offset1S-N      Q-OffsetS-N          DEFAULT 0,
  q-Offset2S-N      Q-OffsetS-N          DEFAULT 0,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  hcs-NeighbouringCellInformation-ECNO HCS-NeighbouringCellInformation-ECNO
OPTIONAL,
modeSpecificInfo    CHOICE {
  fdd                SEQUENCE {
    q-QualMin        Q-QualMin          OPTIONAL,
    q-RxlevMin       Q-RxlevMin        OPTIONAL
  },
  tdd                SEQUENCE {
    q-RxlevMin       Q-RxlevMin        OPTIONAL
  },
  gsm                SEQUENCE {
    q-RxlevMin       Q-RxlevMin        OPTIONAL
  }
}
}

CellsForInterFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  InterFreqCellID
CellsForInterRATMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  InterRATCellID
CellsForIntraFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  IntraFreqCellID

CellSynchronisationInfo ::= SEQUENCE {
  modeSpecificInfo  CHOICE {
    fdd              SEQUENCE {
      countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL,
      tm              INTEGER(0..38399)
    },
    tdd              SEQUENCE {
      countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL
    }
  }
}

CellToReport ::= SEQUENCE {
  bsicReported     BSICReported
}

CellToReportList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  CellToReport

CodePhaseSearchWindow ::= ENUMERATED {
  w1023, w1, w2, w3, w4, w6, w8,
  w12, w16, w24, w32, w48, w64,
  w96, w128, w192 }

CountC-SFN-Frame-difference ::= SEQUENCE {
  -- Actual value countC-SFN-High = IE value * 256
  countC-SFN-High  INTEGER(0..15),
  off              INTEGER(0..255)
}

-- SPARE: CPICH-Ec-No, Max = 49
-- Values above Max are spare
CPICH-Ec-N0 ::= INTEGER (0..63)

```

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-- SPARE: CPICH- RSCP, Max = 91
-- Values above Max are spare
CPICH-RSCP ::= INTEGER (0..127)

DeltaPRC ::= INTEGER (-127..127)

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

DGPS-CorrectionSatInfo ::= SEQUENCE {
    satID          SatID,
    iode           IODE,
    udre           UDRE,
    prc            PRC,
    rrc            RRC,
    deltaPRC2     DeltaPRC,
    deltaRRC2     DeltaRRC,
    deltaPRC3     DeltaPRC OPTIONAL,
    deltaRRC3     DeltaRRC   OPTIONAL
}

DGPS-CorrectionSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
    DGPS-CorrectionSatInfo

DiffCorrectionStatus ::= ENUMERATED {
    udre-1-0, udre-0-75, udre-0-5, udre-0-3,
    udre-0-2, udre-0-1, noData, invalidData }

DL-TransportChannelBLER ::= INTEGER (0..63)

DopplerUncertainty ::= ENUMERATED {
    hz12-5, hz25, hz50, hz100, hz200,
    spare3, spare2, spare1 }

EllipsoidPoint ::= SEQUENCE {
    latitudeSign  ENUMERATED { north, south },
    latitude      INTEGER (0..8388607),
    longitude     INTEGER (-8388608..8388607)
}

EllipsoidPointAltitude ::= SEQUENCE {
    latitudeSign  ENUMERATED { north, south },
    latitude      INTEGER (0..8388607),
    longitude     INTEGER (-8388608..8388607),
    altitudeDirection  ENUMERATED {height, depth},
    altitude      INTEGER (0..32767)
}

EllipsoidPointAltitudeEllipsoide ::= SEQUENCE {
    latitudeSign  ENUMERATED { north, south },
    latitude      INTEGER (0..8388607),
    longitude     INTEGER (-8388608..8388607),
    altitudeDirection  ENUMERATED {height, depth},
    altitude      INTEGER (0..32767),
    uncertaintySemiMajor  INTEGER (0..127),
    uncertaintySemiMinor  INTEGER (0..127),
    orientationMajorAxis  INTEGER (0..89),
    uncertaintyAltitude   INTEGER (0..127),
    confidence            INTEGER (0..100)
}

EllipsoidPointUncertCircle ::= SEQUENCE {
    latitudeSign  ENUMERATED { north, south },
    latitude      INTEGER (0..8388607),
    longitude     INTEGER (-8388608..8388607),
    uncertaintyCode  INTEGER (0..127)
}

EllipsoidPointUncertEllipse ::= SEQUENCE {
    latitudeSign  ENUMERATED { north, south },
    latitude      INTEGER (0..8388607),
    longitude     INTEGER (-8388608..8388607),

```

```

uncertaintySemiMajor      INTEGER (0..127),
uncertaintySemiMinor      INTEGER (0..127),
orientationMajorAxis      INTEGER (0..89),
confidence                 INTEGER (0..100)
}

EnvironmentCharacterisation ::=      ENUMERATED {
    possibleHeavyMultipathNLOS,
    lightMultipathLOS,
    notDefined,
    spare }

Event1a ::=                    SEQUENCE {
    triggeringCondition        TriggeringCondition2,
    reportingRange            ReportingRange,
    forbiddenAffectCellList    ForbiddenAffectCellList          OPTIONAL,
    w                          W,
    reportDeactivationThreshold ReportDeactivationThreshold,
    reportingAmount           ReportingAmount,
    reportingInterval         ReportingInterval
}

Event1a-r4 ::=                 SEQUENCE {
    triggeringCondition        TriggeringCondition2,
    reportingRange            ReportingRange,
    forbiddenAffectCellList    ForbiddenAffectCellList-r4        OPTIONAL,
    w                          W,
    reportDeactivationThreshold ReportDeactivationThreshold,
    reportingAmount           ReportingAmount,
    reportingInterval         ReportingInterval
}

Event1a-LCR-r4 ::=            SEQUENCE {
    triggeringCondition        TriggeringCondition2,
    reportingRange            ReportingRange,
    forbiddenAffectCellList    ForbiddenAffectCellList-LCR-r4    OPTIONAL,
    w                          W,
    reportDeactivationThreshold ReportDeactivationThreshold,
    reportingAmount           ReportingAmount,
    reportingInterval         ReportingInterval
}

Event1b ::=                    SEQUENCE {
    triggeringCondition        TriggeringCondition1,
    reportingRange            ReportingRange,
    forbiddenAffectCellList    ForbiddenAffectCellList          OPTIONAL,
    w                          W
}

Event1b-r4 ::=                 SEQUENCE {
    triggeringCondition        TriggeringCondition1,
    reportingRange            ReportingRange,
    forbiddenAffectCellList    ForbiddenAffectCellList-r4        OPTIONAL,
    w                          W
}

Event1b-LCR-r4 ::=            SEQUENCE {
    triggeringCondition        TriggeringCondition1,
    reportingRange            ReportingRange,
    forbiddenAffectCellList    ForbiddenAffectCellList-LCR-r4    OPTIONAL,
    w                          W
}

Event1c ::=                    SEQUENCE {
    replacementActivationThreshold ReplacementActivationThreshold,
    reportingAmount           ReportingAmount,
    reportingInterval         ReportingInterval
}

Event1e ::=                    SEQUENCE {
    triggeringCondition        TriggeringCondition2,
    thresholdUsedFrequency    ThresholdUsedFrequency
}

Event1f ::=                    SEQUENCE {
    triggeringCondition        TriggeringCondition1,
    thresholdUsedFrequency    ThresholdUsedFrequency
}

```



```

}

Event2a ::=                               SEQUENCE {
  -- dummy is not used in this version of the specification and should be ignored
  dummy                               Threshold,
  usedFreqW                            W,
  hysteresis                           HysteresisInterFreq,
  timeToTrigger                         TimeToTrigger,
  reportingCellStatus                   ReportingCellStatus           OPTIONAL,
  nonUsedFreqParameterList              NonUsedFreqParameterList     OPTIONAL
}

Event2b ::=                               SEQUENCE {
  usedFreqThreshold                     Threshold,
  usedFreqW                              W,
  hysteresis                            HysteresisInterFreq,
  timeToTrigger                         TimeToTrigger,
  reportingCellStatus                   ReportingCellStatus           OPTIONAL,
  nonUsedFreqParameterList              NonUsedFreqParameterList     OPTIONAL
}

Event2c ::=                               SEQUENCE {
  hysteresis                            HysteresisInterFreq,
  timeToTrigger                         TimeToTrigger,
  reportingCellStatus                   ReportingCellStatus           OPTIONAL,
  nonUsedFreqParameterList              NonUsedFreqParameterList     OPTIONAL
}

Event2d ::=                               SEQUENCE {
  usedFreqThreshold                     Threshold,
  usedFreqW                              W,
  hysteresis                            HysteresisInterFreq,
  timeToTrigger                         TimeToTrigger,
  reportingCellStatus                   ReportingCellStatus           OPTIONAL
}

Event2e ::=                               SEQUENCE {
  hysteresis                            HysteresisInterFreq,
  timeToTrigger                         TimeToTrigger,
  reportingCellStatus                   ReportingCellStatus           OPTIONAL,
  nonUsedFreqParameterList              NonUsedFreqParameterList     OPTIONAL
}

Event2f ::=                               SEQUENCE {
  usedFreqThreshold                     Threshold,
  usedFreqW                              W,
  hysteresis                            HysteresisInterFreq,
  timeToTrigger                         TimeToTrigger,
  reportingCellStatus                   ReportingCellStatus           OPTIONAL
}

Event3a ::=                               SEQUENCE {
  thresholdOwnSystem                    Threshold,
  w                                      W,
  thresholdOtherSystem                  Threshold,
  hysteresis                            Hysteresis,
  timeToTrigger                         TimeToTrigger,
  reportingCellStatus                   ReportingCellStatus           OPTIONAL
}

Event3b ::=                               SEQUENCE {
  thresholdOtherSystem                  Threshold,
  hysteresis                            Hysteresis,
  timeToTrigger                         TimeToTrigger,
  reportingCellStatus                   ReportingCellStatus           OPTIONAL
}

Event3c ::=                               SEQUENCE {
  thresholdOtherSystem                  Threshold,
  hysteresis                            Hysteresis,
  timeToTrigger                         TimeToTrigger,
  reportingCellStatus                   ReportingCellStatus           OPTIONAL
}

Event3d ::=                               SEQUENCE {
  hysteresis                            Hysteresis,
  timeToTrigger                         TimeToTrigger,

```

```

    reportingCellStatus          ReportingCellStatus          OPTIONAL
}

EventIDInterFreq ::=          ENUMERATED {
    e2a, e2b, e2c, e2d, e2e, e2f, spare2, spare1 }

EventIDInterRAT ::=          ENUMERATED {
    e3a, e3b, e3c, e3d }

EventIDIntraFreq ::=          ENUMERATED {
    e1a, e1b, e1c, e1d, e1e,
    e1f, e1g, e1h, e1i, spare7,
    spare6, spare5, spare4, spare3, spare2,
    spare1 }

EventResults ::=             CHOICE {
    intraFreqEventResults      IntraFreqEventResults,
    interFreqEventResults      InterFreqEventResults,
    interRATEventResults       InterRATEventResults,
    trafficVolumeEventResults   TrafficVolumeEventResults,
    qualityEventResults         QualityEventResults,
    ue-InternalEventResults     UE-InternalEventResults,
    ue-positioning-MeasurementEventResults UE-Positioning-MeasurementEventResults,
    spare                        NULL
}

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

FACH-MeasurementOccasionInfo ::= SEQUENCE {
    fACH-meas-occasion-coeff    INTEGER (1..12)          OPTIONAL,
    inter-freq-FDD-meas-ind     BOOLEAN,
    -- inter-freq-TDD-meas-ind is for 3.84Mcps TDD. For 1.28Mcps TDD, the IE in
    -- FACH-MeasurementOccasionInfo-LCR-r4-ext is used.
    inter-freq-TDD-meas-ind     BOOLEAN,
    inter-RAT-meas-ind          SEQUENCE (SIZE (1..maxOtherRAT)) OF
                                RAT-Type          OPTIONAL
}

FACH-MeasurementOccasionInfo-LCR-r4-ext ::= SEQUENCE {
    inter-freq-TDD128-meas-ind  BOOLEAN
}

FilterCoefficient ::=          ENUMERATED {
    fc0, fc1, fc2, fc3, fc4, fc5,
    fc6, fc7, fc8, fc9, fc11, fc13,
    fc15, fc17, fc19, spare1 }

-- Actual value FineSFN-SFN = IE value * 0.0625
FineSFN-SFN ::=              INTEGER (0..15)

ForbiddenAffectCell ::=        CHOICE {
    fdd                         PrimaryCPICH-Info,
    tdd                         PrimaryCCPCH-Info
}

ForbiddenAffectCell-r4 ::=      CHOICE {
    fdd                         PrimaryCPICH-Info,
    tdd                         PrimaryCCPCH-Info-r4
}

ForbiddenAffectCell-LCR-r4 ::= SEQUENCE {
    tdd                         PrimaryCCPCH-Info-LCR-r4
}

ForbiddenAffectCellList ::=     SEQUENCE (SIZE (1..maxCellMeas)) OF
                                ForbiddenAffectCell

ForbiddenAffectCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                ForbiddenAffectCell-r4

ForbiddenAffectCellList-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                ForbiddenAffectCell-LCR-r4

FreqQualityEstimateQuantity-FDD ::= ENUMERATED {

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        cpich-Ec-N0,
        cpich-RSCP }

FreqQualityEstimateQuantity-TDD ::= ENUMERATED {
    primaryCCPCH-RSCP }

GPS-MeasurementParam ::= SEQUENCE {
    satelliteID          INTEGER (0..63),
    c-N0                 INTEGER (0..63),
    doppler              INTEGER (-32768..32768),
    wholeGPS-Chips       INTEGER (0..1023),
    fractionalGPS-Chips  INTEGER (0..1023),
    multipathIndicator    MultipathIndicator,
    pseudorangeRMS-Error INTEGER (0..63)
}

GPS-MeasurementParamList ::= SEQUENCE (SIZE (1..maxSat)) OF
    GPS-MeasurementParam

GSM-CarrierRSSI ::= BIT STRING (SIZE (6))

GSM-MeasuredResults ::= SEQUENCE {
    gsm-CarrierRSSI          GSM-CarrierRSSI          OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy                    INTEGER (46..173)        OPTIONAL,
    bsicReported             BSICReported,
    observedTimeDifferenceToGSM ObservedTimeDifferenceToGSM OPTIONAL
}

GSM-MeasuredResultsList ::= SEQUENCE (SIZE (1..maxReportedGSMCells)) OF
    GSM-MeasuredResults

GPS-TOW-1msec ::= INTEGER (0..604799999)

GPS-TOW-Assist ::= SEQUENCE {
    satID          SatID,
    tlm-Message    BIT STRING (SIZE (14)),
    tlm-Reserved   BIT STRING (SIZE (2)),
    alert          BOOLEAN,
    antiSpooF     BOOLEAN
}

GPS-TOW-AssistList ::= SEQUENCE (SIZE (1..maxSat)) OF
    GPS-TOW-Assist

HCS-CellReselectInformation-RSCP ::= SEQUENCE {
    -- TABULAR: The default value for penaltyTime is "notUsed"
    -- Temporary offset is nested inside PenaltyTime-RSCP
    penaltyTime          PenaltyTime-RSCP
}

HCS-CellReselectInformation-ECN0 ::= SEQUENCE {
    -- TABULAR: The default value for penaltyTime is "notUsed"
    -- Temporary offset is nested inside PenaltyTime-ECN0
    penaltyTime          PenaltyTime-ECN0
}

HCS-NeighbouringCellInformation-RSCP ::= SEQUENCE {
    hcs-PRIO             HCS-PRIO          DEFAULT 0,
    q-HCS                Q-HCS            DEFAULT 0,
    hcs-CellReselectInformation HCS-CellReselectInformation-RSCP
}

HCS-NeighbouringCellInformation-ECN0 ::= SEQUENCE {
    hcs-PRIO             HCS-PRIO          DEFAULT 0,
    q-HCS                Q-HCS            DEFAULT 0,
    hcs-CellReselectInformation HCS-CellReselectInformation-ECN0
}

HCS-PRIO ::= INTEGER (0..7)

HCS-ServingCellInformation ::= SEQUENCE {
    hcs-PRIO             HCS-PRIO          DEFAULT 0,
    q-HCS                Q-HCS            DEFAULT 0,
    t-CR-Max             T-CR-Max         OPTIONAL
}

```

```

-- Actual value Hysteresis = IE value * 0.5
Hysteresis ::= INTEGER (0..15)

-- Actual value HysteresisInterFreq = IE value * 0.5
HysteresisInterFreq ::= INTEGER (0..29)

InterFreqCell ::= SEQUENCE {
    frequencyInfo          FrequencyInfo,
    nonFreqRelatedEventResults CellMeasurementEventResults
}

InterFreqCell-LCR-r4 ::= SEQUENCE {
    frequencyInfo          FrequencyInfo,
    nonFreqRelatedEventResults CellMeasurementEventResults-LCR-r4
}

InterFreqCellID ::= INTEGER (0..maxCellMeas-1)

InterFreqCellInfoList ::= SEQUENCE {
    removedInterFreqCellList    RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList        NewInterFreqCellList        OPTIONAL,
    cellsForInterFreqMeasList    CellsForInterFreqMeasList    OPTIONAL
}

InterFreqCellInfoList-r4 ::= SEQUENCE {
    removedInterFreqCellList    RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList        NewInterFreqCellList-r4    OPTIONAL
}

InterFreqCellInfoSI-List-RSCP ::= SEQUENCE {
    removedInterFreqCellList    RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList        NewInterFreqCellSI-List-RSCP    OPTIONAL
}

InterFreqCellInfoSI-List-ECNO ::= SEQUENCE {
    removedInterFreqCellList    RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList        NewInterFreqCellSI-List-ECNO    OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
    removedInterFreqCellList    RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList        NewInterFreqCellSI-List-HCS-RSCP    OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECNO ::= SEQUENCE {
    removedInterFreqCellList    RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList        NewInterFreqCellSI-List-HCS-ECNO    OPTIONAL
}

InterFreqCellInfoSI-List-RSCP-LCR ::= SEQUENCE {
    removedInterFreqCellList    RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList        NewInterFreqCellSI-List-RSCP-LCR-r4    OPTIONAL
}

InterFreqCellInfoSI-List-ECNO-LCR ::= SEQUENCE {
    removedInterFreqCellList    RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList        NewInterFreqCellSI-List-ECNO-LCR-r4    OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP-LCR ::= SEQUENCE {
    removedInterFreqCellList    RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList        NewInterFreqCellSI-List-HCS-RSCP-LCR-r4    OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECNO-LCR ::= SEQUENCE {
    removedInterFreqCellList    RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList        NewInterFreqCellSI-List-HCS-ECNO-LCR-r4    OPTIONAL
}

InterFreqCellList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell

InterFreqCellList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell-LCR-r4

InterFreqCellMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

InterFreqEvent ::= CHOICE {

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event2a          Event2a,
event2b          Event2b,
event2c          Event2c,
event2d          Event2d,
event2e          Event2e,
event2f          Event2f
}

InterFreqEventList ::=          SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                InterFreqEvent

InterFreqEventResults ::=      SEQUENCE {
    eventID          EventIDInterFreq,
    interFreqCellList InterFreqCellList          OPTIONAL
}

InterFreqEventResults-LCR-r4-ext ::= SEQUENCE {
    eventID          EventIDInterFreq,
    interFreqCellList InterFreqCellList-LCR-r4-ext  OPTIONAL
}

InterFreqMeasQuantity ::=      SEQUENCE {
    reportingCriteria CHOICE {
        intraFreqReportingCriteria SEQUENCE {
            intraFreqMeasQuantity IntraFreqMeasQuantity
        },
        interFreqReportingCriteria SEQUENCE {
            filterCoefficient FilterCoefficient          DEFAULT fc0,
            modeSpecificInfo CHOICE {
                fdd SEQUENCE {
                    freqQualityEstimateQuantity-FDD FreqQualityEstimateQuantity-FDD
                },
                tdd SEQUENCE {
                    freqQualityEstimateQuantity-TDD FreqQualityEstimateQuantity-TDD
                }
            }
        }
    }
}

InterFreqMeasuredResults ::=    SEQUENCE {
    frequencyInfo      FrequencyInfo          OPTIONAL,
    ultra-CarrierRSSI  UTRA-CarrierRSSI       OPTIONAL,
    interFreqCellMeasuredResultsList InterFreqCellMeasuredResultsList  OPTIONAL
}

InterFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxFreq)) OF
                                InterFreqMeasuredResults

InterFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-RSCP  OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-ECN0  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-HCS-RSCP  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-HCS-ECN0  OPTIONAL
}

InterFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-RSCP-LCR  OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-ECN0-LCR  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-HCS-RSCP-LCR  OPTIONAL
}

```

```

InterFreqMeasurementSysInfo-HCS-ECNO-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-ECNO-LCR  OPTIONAL
}

InterFreqReportCriteria ::= CHOICE {
    intraFreqReportingCriteria      IntraFreqReportingCriteria,
    interFreqReportingCriteria      InterFreqReportingCriteria,
    periodicalReportingCriteria     PeriodicalWithReportingCellStatus,
    noReporting                     ReportingCellStatusOpt
}

InterFreqReportCriteria-r4 ::= CHOICE {
    intraFreqReportingCriteria-r4   IntraFreqReportingCriteria-r4,
    interFreqReportingCriteria-r4   InterFreqReportingCriteria-r4,
    periodicalReportingCriteria     PeriodicalWithReportingCellStatus,
    noReporting                     ReportingCellStatusOpt
}

InterFreqReportingCriteria ::= SEQUENCE {
    interFreqEventList              InterFreqEventList  OPTIONAL
}

InterFreqReportingQuantity ::= SEQUENCE {
    ultra-Carrier-RSSI              BOOLEAN,
    frequencyQualityEstimate        BOOLEAN,
    nonFreqRelatedQuantities       CellReportingQuantities
}

InterFrequencyMeasurement ::= SEQUENCE {
    interFreqCellInfoList           InterFreqCellInfoList,
    interFreqMeasQuantity           InterFreqMeasQuantity  OPTIONAL,
    interFreqReportingQuantity      InterFreqReportingQuantity  OPTIONAL,
    measurementValidity             MeasurementValidity  OPTIONAL,
    interFreqSetUpDate             UE-AutonomousUpdateMode  OPTIONAL,
    reportCriteria                  InterFreqReportCriteria
}

InterFrequencyMeasurement-r4 ::= SEQUENCE {
    interFreqCellInfoList-r4       InterFreqCellInfoList-r4,
    interFreqMeasQuantity           InterFreqMeasQuantity  OPTIONAL,
    interFreqReportingQuantity      InterFreqReportingQuantity  OPTIONAL,
    measurementValidity             MeasurementValidity  OPTIONAL,
    interFreqSetUpDate             UE-AutonomousUpdateMode  OPTIONAL,
    reportCriteria                  InterFreqReportCriteria-r4
}

InterRAT-TargetCellDescription ::= SEQUENCE {
    technologySpecificInfo          CHOICE {
        gsm                          SEQUENCE {
            bsic                      BSIC,
            frequency-band            Frequency-Band,
            bcch-ARFCN               BCCH-ARFCN,
            ncMode                    NC-Mode  OPTIONAL
        },
        is-2000                       NULL,
        spare2                         NULL,
        spare1                         NULL
    }
}

InterRATCellID ::= INTEGER (0..maxCellMeas-1)

InterRATCellInfoList ::= SEQUENCE {
    removedInterRATCellList        RemovedInterRATCellList,
    -- NOTE: Future revisions of dedicated messages including IE newInterRATCellList
    -- should use a corrected version of this IE
    newInterRATCellList            NewInterRATCellList,
    cellsForInterRATMeasList       CellsForInterRATMeasList  OPTIONAL
}

InterRATCellInfoList-B ::= SEQUENCE {
    removedInterRATCellList        RemovedInterRATCellList,
    -- NOTE: IE newInterRATCellList should be optional. However, system information
    -- does not support message versions. Hence, this can not be corrected
    newInterRATCellList            NewInterRATCellList-B
}

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InterRATCellInfoList-r4 ::= SEQUENCE {
    removedInterRATCellList      RemovedInterRATCellList,
    newInterRATCellList           NewInterRATCellList           OPTIONAL,
    cellsForInterRATMeasList      CellsForInterRATMeasList      OPTIONAL
}

InterRATCellIndividualOffset ::= INTEGER (-50..50)

InterRATEvent ::= CHOICE {
    event3a      Event3a,
    event3b      Event3b,
    event3c      Event3c,
    event3d      Event3d
}

InterRATEventList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    InterRATEvent

InterRATEventResults ::= SEQUENCE {
    eventID      EventIDInterRAT,
    cellToReportList CellToReportList
}

InterRATInfo ::= ENUMERATED {
    gsm
}

InterRATMeasQuantity ::= SEQUENCE {
    measQuantityUTRAN-QualityEstimate      IntraFreqMeasQuantity      OPTIONAL,
    ratSpecificInfo                       CHOICE {
        gsm                       SEQUENCE {
            measurementQuantity      MeasurementQuantityGSM,
            filterCoefficient         FilterCoefficient         DEFAULT fc0,
            bsic-VerificationRequired BSIC-VerificationRequired
        },
        is-2000                     SEQUENCE {
            tadd-EcIo                 INTEGER (0..63),
            tcomp-EcIo                INTEGER (0..15),
            softSlope                  INTEGER (0..63)      OPTIONAL,
            addIntercept               INTEGER (0..63)      OPTIONAL
        }
    }
}

InterRATMeasuredResults ::= CHOICE {
    gsm      GSM-MeasuredResultsList,
    spare    NULL
}

InterRATMeasuredResultsList ::= SEQUENCE (SIZE (1..maxOtherRAT-16)) OF
    InterRATMeasuredResults

InterRATMeasurement ::= SEQUENCE {
    interRATCellInfoList      InterRATCellInfoList      OPTIONAL,
    interRATMeasQuantity      InterRATMeasQuantity      OPTIONAL,
    interRATReportingQuantity InterRATReportingQuantity      OPTIONAL,
    reportCriteria            InterRATReportCriteria
}

InterRATMeasurement-r4 ::= SEQUENCE {
    interRATCellInfoList-r4      InterRATCellInfoList-r4      OPTIONAL,
    interRATMeasQuantity         InterRATMeasQuantity         OPTIONAL,
    interRATReportingQuantity    InterRATReportingQuantity    OPTIONAL,
    reportCriteria               InterRATReportCriteria
}

InterRATMeasurementSysInfo ::= SEQUENCE {
    interRATCellInfoList      InterRATCellInfoList      OPTIONAL
}

InterRATMeasurementSysInfo-B ::= SEQUENCE {
    interRATCellInfoList-B    InterRATCellInfoList-B    OPTIONAL
}

InterRATReportCriteria ::= CHOICE {
    interRATReportingCriteria      InterRATReportingCriteria,
    periodicalReportingCriteria    PeriodicalWithReportingCellStatus,
    noReporting                     ReportingCellStatusOpt
}

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InterRATReportingCriteria ::= SEQUENCE {
    interRATEventList      InterRATEventList      OPTIONAL
}

InterRATReportingQuantity ::= SEQUENCE {
    utran-EstimatedQuality  BOOLEAN,
    ratSpecificInfo        CHOICE {
        gsm                 SEQUENCE {
            dummy           BOOLEAN,
            observedTimeDifferenceGSM  BOOLEAN,
            gsm-Carrier-RSSI  BOOLEAN
        }
    }
}

IntraFreqCellID ::= INTEGER (0..maxCellMeas-1)

IntraFreqCellInfoList ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList      NewIntraFreqCellList          OPTIONAL,
    cellsForIntraFreqMeasList CellsForIntraFreqMeasList    OPTIONAL
}

IntraFreqCellInfoList-r4 ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList-r4  NewIntraFreqCellList-r4      OPTIONAL,
    cellsForIntraFreqMeasList CellsForIntraFreqMeasList    OPTIONAL
}

IntraFreqCellInfoSI-List-RSCP ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList      NewIntraFreqCellSI-List-RSCP
}

IntraFreqCellInfoSI-List-ECNO ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList      NewIntraFreqCellSI-List-ECNO
}

IntraFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList      NewIntraFreqCellSI-List-HCS-RSCP
}

IntraFreqCellInfoSI-List-HCS-ECNO ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList      NewIntraFreqCellSI-List-HCS-ECNO
}

IntraFreqCellInfoSI-List-RSCP-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList      NewIntraFreqCellSI-List-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-ECNO-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList      NewIntraFreqCellSI-List-ECNO-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList      NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-ECNO-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList      NewIntraFreqCellSI-List-HCS-ECNO-LCR-r4
}

IntraFreqEvent ::= CHOICE {
    e1a      Event1a,
    e1b      Event1b,
    e1c      Event1c,
    e1d      NULL,
    e1e      Event1e,
    e1f      Event1f,
    e1g      NULL,
}

```



```

    e1h                ThresholdUsedFrequency,
    e1i                ThresholdUsedFrequency
}

IntraFreqEvent-r4 ::= CHOICE {
    e1a                Event1a-r4,
    e1b                Event1b-r4,
    e1c                Event1c,
    e1d                NULL,
    e1e                Event1e,
    e1f                Event1f,
    e1g                NULL,
    e1h                ThresholdUsedFrequency,
    e1i                ThresholdUsedFrequency
}

IntraFreqEvent-LCR-r4 ::= CHOICE {
    e1a                Event1a-LCR-r4,
    e1b                Event1b-LCR-r4,
    e1c                Event1c,
    e1d                NULL,
    e1e                Event1e,
    e1f                Event1f,
    e1g                NULL,
    e1h                ThresholdUsedFrequency,
    e1i                ThresholdUsedFrequency
}

IntraFreqEventCriteria ::= SEQUENCE {
    event              IntraFreqEvent,
    hysteresis         Hysteresis,
    timeToTrigger      TimeToTrigger,
    reportingCellStatus ReportingCellStatus           OPTIONAL
}

IntraFreqEventCriteria-r4 ::= SEQUENCE {
    event              IntraFreqEvent-r4,
    hysteresis         Hysteresis,
    timeToTrigger      TimeToTrigger,
    reportingCellStatus ReportingCellStatus           OPTIONAL
}

IntraFreqEventCriteria-LCR-r4 ::= SEQUENCE {
    event              IntraFreqEvent-LCR-r4,
    hysteresis         Hysteresis,
    timeToTrigger      TimeToTrigger,
    reportingCellStatus ReportingCellStatus           OPTIONAL
}

IntraFreqEventCriteriaList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria

IntraFreqEventCriteriaList-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria-r4

IntraFreqEventCriteriaList-LCR-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria-LCR-r4

IntraFreqEventResults ::= SEQUENCE {
    eventID            EventIDIntraFreq,
    cellMeasurementEventResults CellMeasurementEventResults
}

IntraFreqMeasQuantity ::= SEQUENCE {
    filterCoefficient FilterCoefficient           DEFAULT fc0,
    modeSpecificInfo   CHOICE {
        fdd             SEQUENCE {
            intraFreqMeasQuantity-FDD IntraFreqMeasQuantity-FDD
        },
        tdd             SEQUENCE {
            intraFreqMeasQuantity-TDDList IntraFreqMeasQuantity-TDDList
        }
    }
}

-- If IntraFreqMeasQuantity-FDD is used in InterRATMeasQuantity, then only
-- cpich-Ec-N0 and cpich-RSCP are allowed.
-- If IntraFreqMeasQuantity-FDD is used in InterFreqMeasQuantity, then

```

```

-- ultra-CarrierRSSI is not allowed.
IntraFreqMeasQuantity-FDD ::=      ENUMERATED {
                                     cpich-Ec-N0,
                                     cpich-RSCP,
                                     pathloss,
                                     ultra-CarrierRSSI }

-- If IntraFreqMeasQuantity-TDD is used in InterFreqMeasQuantity, then
-- ultra-CarrierRSSI is not allowed.
IntraFreqMeasQuantity-TDD ::=      ENUMERATED {
                                     primaryCCPCH-RSCP,
                                     pathloss,
                                     timeslotISCP,
                                     ultra-CarrierRSSI }

IntraFreqMeasQuantity-TDDList ::=  SEQUENCE (SIZE (1..4)) OF
                                     IntraFreqMeasQuantity-TDD

IntraFreqMeasuredResultsList ::=   SEQUENCE (SIZE (1..maxCellMeas)) OF
                                     CellMeasuredResults

IntraFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    intraFreqMeasurementID           MeasurementIdentity           DEFAULT 1,
    intraFreqCellInfoSI-List         IntraFreqCellInfoSI-List-RSCP  OPTIONAL,
    intraFreqMeasQuantity            IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH           MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH        OPTIONAL
}

IntraFreqMeasurementSysInfo-ECN0 ::= SEQUENCE {
    intraFreqMeasurementID           MeasurementIdentity           DEFAULT 1,
    intraFreqCellInfoSI-List         IntraFreqCellInfoSI-List-ECN0  OPTIONAL,
    intraFreqMeasQuantity            IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH           MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH        OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    intraFreqMeasurementID           MeasurementIdentity           DEFAULT 1,
    intraFreqCellInfoSI-List         IntraFreqCellInfoSI-List-HCS-RSCP  OPTIONAL,
    intraFreqMeasQuantity            IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH           MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH        OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECN0 ::= SEQUENCE {
    intraFreqMeasurementID           MeasurementIdentity           DEFAULT 1,
    intraFreqCellInfoSI-List         IntraFreqCellInfoSI-List-HCS-ECN0  OPTIONAL,
    intraFreqMeasQuantity            IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH           MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH        OPTIONAL
}

IntraFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID           MeasurementIdentity           DEFAULT 1,
    intraFreqCellInfoSI-List         IntraFreqCellInfoSI-List-RSCP-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity            IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH           MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID           MeasurementIdentity           DEFAULT 1,
    intraFreqCellInfoSI-List         IntraFreqCellInfoSI-List-ECN0-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity            IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH           MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID           MeasurementIdentity           DEFAULT 1,
    intraFreqCellInfoSI-List         IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4  OPTIONAL,

```

```

    intraFreqMeasQuantity          IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH OPTIONAL,
    maxReportedCellsOnRACH         MaxReportedCellsOnRACH         OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECNO-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-ECNO-LCR-r4 OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity      OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH OPTIONAL,
    maxReportedCellsOnRACH         MaxReportedCellsOnRACH     OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH-LCR-r4 OPTIONAL
}

IntraFreqReportCriteria ::= CHOICE {
    intraFreqReportingCriteria      IntraFreqReportingCriteria,
    periodicalReportingCriteria     PeriodicalWithReportingCellStatus,
    noReporting                     ReportingCellStatusOpt
}

IntraFreqReportCriteria-r4 ::= CHOICE {
    intraFreqReportingCriteria-r4   IntraFreqReportingCriteria-r4,
    periodicalReportingCriteria     PeriodicalWithReportingCellStatus,
    noReporting                     ReportingCellStatusOpt
}

IntraFreqReportingCriteria ::= SEQUENCE {
    eventCriteriaList              IntraFreqEventCriteriaList OPTIONAL
}

IntraFreqReportingCriteria-r4 ::= SEQUENCE {
    eventCriteriaList              IntraFreqEventCriteriaList-r4 OPTIONAL
}

IntraFreqReportingCriteria-LCR-r4 ::= SEQUENCE {
    eventCriteriaList              IntraFreqEventCriteriaList-LCR-r4 OPTIONAL
}

IntraFreqReportingQuantity ::= SEQUENCE {
    activeSetReportingQuantities    CellReportingQuantities,
    monitoredSetReportingQuantities CellReportingQuantities,
    detectedSetReportingQuantities  CellReportingQuantities      OPTIONAL
}

IntraFreqReportingQuantityForRACH ::= SEQUENCE {
    sfn-SFN-OTD-Type              SFN-SFN-OTD-Type,
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            intraFreqRepQuantityRACH-FDD IntraFreqRepQuantityRACH-FDD
        },
        tdd                        SEQUENCE {
            intraFreqRepQuantityRACH-TDDList IntraFreqRepQuantityRACH-TDDList
        }
    }
}

IntraFreqRepQuantityRACH-FDD ::= ENUMERATED {
    cpich-EcN0, cpich-RSCP,
    pathloss, noReport }

IntraFreqRepQuantityRACH-TDD ::= ENUMERATED {
    timeslotISCP,
    primaryCCPCH-RSCP,
    noReport }

IntraFreqRepQuantityRACH-TDDList ::= SEQUENCE (SIZE (1..2)) OF
    IntraFreqRepQuantityRACH-TDD

IntraFrequencyMeasurement ::= SEQUENCE {
    intraFreqCellInfoList          IntraFreqCellInfoList      OPTIONAL,
    intraFreqMeasQuantity          IntraFreqMeasQuantity      OPTIONAL,
    intraFreqReportingQuantity     IntraFreqReportingQuantity OPTIONAL,
    measurementValidity            MeasurementValidity         OPTIONAL,
    reportCriteria                 IntraFreqReportCriteria    OPTIONAL
}

IntraFrequencyMeasurement-r4 ::= SEQUENCE {

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    intraFreqCellInfoList          IntraFreqCellInfoList-r4          OPTIONAL,
    intraFreqMeasQuantity          IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantity     IntraFreqReportingQuantity     OPTIONAL,
    measurementValidity            MeasurementValidity            OPTIONAL,
    reportCriteria                 IntraFreqReportCriteria-r4     OPTIONAL
}

IODE ::=                          INTEGER (0..255)

IP-Length ::=                     ENUMERATED {
    ip15, ip110 }

IP-PCCPCH-r4 ::=                 BOOLEAN

IP-Spacing ::=                   ENUMERATED {
    e5, e7, e10, e15, e20,
    e30, e40, e50 }

IP-Spacing-TDD ::=              ENUMERATED {
    e30, e40, e50, e70, e100}

IS-2000SpecificMeasInfo ::=     ENUMERATED {
    frequency, timeslot, colourcode,
    outputpower, pn-Offset }

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 }

MaxReportedCellsOnRACH ::=      ENUMERATED {
    noReport,
    currentCell,
    currentAnd-1-BestNeighbour,
    currentAnd-2-BestNeighbour,
    currentAnd-3-BestNeighbour,
    currentAnd-4-BestNeighbour,
    currentAnd-5-BestNeighbour,
    currentAnd-6-BestNeighbour }

MeasuredResults ::=             CHOICE {
    intraFreqMeasuredResultsList   IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList   InterFreqMeasuredResultsList,
    interRATMeasuredResultsList    InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults          QualityMeasuredResults,
    ue-InternalMeasuredResults      UE-InternalMeasuredResults,
    ue-positioning-MeasuredResults  UE-Positioning-MeasuredResults,
    spare                            NULL
}

MeasuredResults-v390ext ::=     SEQUENCE {
    ue-positioning-MeasuredResults-v390ext    UE-Positioning-MeasuredResults-v390ext
}

MeasuredResults-LCR-r4 ::=     CHOICE {
    intraFreqMeasuredResultsList   IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList   InterFreqMeasuredResultsList,
    interRATMeasuredResultsList    InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults          QualityMeasuredResults,
    ue-InternalMeasuredResults      UE-InternalMeasuredResults-LCR-r4,
    ue-positioning-MeasuredResults  UE-Positioning-MeasuredResults,
    spare                            NULL
}

MeasuredResultsList ::=        SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasuredResults

```

```

MeasuredResultsList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasuredResults-LCR-r4

MeasuredResultsOnRACH ::= SEQUENCE {
    currentCell SEQUENCE {
        modeSpecificInfo CHOICE {
            fdd SEQUENCE {
                measurementQuantity CHOICE {
                    cpich-Ec-N0 CPICH-Ec-N0,
                    cpich-RSCP CPICH-RSCP,
                    pathloss Pathloss,
                    spare NULL
                }
            },
            tdd SEQUENCE {
                timeslotISCP TimeslotISCP-List OPTIONAL,
                primaryCCPCH-RSCP PrimaryCCPCH-RSCP OPTIONAL
            }
        },
        monitoredCells MonitoredCellRACH-List OPTIONAL
    }

MeasurementCommand ::= CHOICE {
    setup MeasurementType,
    modify SEQUENCE {
        measurementType MeasurementType OPTIONAL
    },
    release NULL
}

MeasurementCommand-r4 ::= CHOICE {
    setup MeasurementType-r4,
    modify SEQUENCE {
        measurementType MeasurementType-r4 OPTIONAL
    },
    release NULL
}

MeasurementControlSysInfo ::= SEQUENCE {
    use-of-HCS CHOICE {
        hcs-not-used SEQUENCE {
            cellSelectQualityMeasure CHOICE {
                cpich-RSCP SEQUENCE {
                    intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-RSCP
                },
                interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-RSCP OPTIONAL
            },
            cpich-Ec-N0 SEQUENCE {
                intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-ECN0
            },
            interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-ECN0 OPTIONAL
        },
        interRATMeasurementSysInfo InterRATMeasurementSysInfo-B OPTIONAL
    },
    hcs-used SEQUENCE {
        cellSelectQualityMeasure CHOICE {
            cpich-RSCP SEQUENCE {
                intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-RSCP
            },
            interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-RSCP
        },
        cpich-Ec-N0 SEQUENCE {
            intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-ECN0
            },
            interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-ECN0
        }
    },
    interRATMeasurementSysInfo InterRATMeasurementSysInfo OPTIONAL
},
    trafficVolumeMeasSysInfo TrafficVolumeMeasSysInfo OPTIONAL,
    ue-InternalMeasurementSysInfo UE-InternalMeasurementSysInfo OPTIONAL
}

```

```

MeasurementControlSysInfo-LCR-r4-ext ::= SEQUENCE {
  -- CHOICE use-of-HCS shall have the same value as the use-of-HCS
  -- in MeasurementControlSysInfo
  use-of-HCS CHOICE {
    hcs-not-used SEQUENCE {
      -- CHOICE cellSelectQualityMeasure shall have the same value as the
      -- cellSelectQualityMeasure in MeasurementControlSysInfo
      cellSelectQualityMeasure CHOICE {
        cpich-RSCP SEQUENCE {
          intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL,
          interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL
        },
        cpich-Ec-N0 SEQUENCE {
          intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL,
          interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL
        }
      }
    },
    hcs-used SEQUENCE {
      -- CHOICE cellSelectQualityMeasure shall have the same value as the
      -- cellSelectQualityMeasure in MeasurementControlSysInfo
      cellSelectQualityMeasure CHOICE {
        cpich-RSCP SEQUENCE {
          intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4
OPTIONAL,
          interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 OPTIONAL
        },
        cpich-Ec-N0 SEQUENCE {
          intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-ECN0-LCR-r4
OPTIONAL,
          interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 OPTIONAL
        }
      }
    }
  }
}

MeasurementIdentity ::= INTEGER (1..16)

MeasurementQuantityGSM ::= ENUMERATED {
  gsm-CarrierRSSI,
  dummy }

MeasurementReportingMode ::= SEQUENCE {
  measurementReportTransferMode TransferMode,
  periodicalOrEventTrigger PeriodicalOrEventTrigger
}

MeasurementType ::= CHOICE {
  intraFrequencyMeasurement IntraFrequencyMeasurement,
  interFrequencyMeasurement InterFrequencyMeasurement,
  interRATMeasurement InterRATMeasurement,
  ue-positioning-Measurement UE-Positioning-Measurement,
  trafficVolumeMeasurement TrafficVolumeMeasurement,
  qualityMeasurement QualityMeasurement,
  ue-InternalMeasurement UE-InternalMeasurement
}

MeasurementType-r4 ::= CHOICE {
  intraFrequencyMeasurement-r4 IntraFrequencyMeasurement-r4,
  interFrequencyMeasurement-r4 InterFrequencyMeasurement-r4,
  interRATMeasurement-r4 InterRATMeasurement-r4,
  up-Measurement UE-Positioning-Measurement-r4,
  trafficVolumeMeasurement-r4 TrafficVolumeMeasurement-r4,
  qualityMeasurement-r4 QualityMeasurement-r4,
  ue-InternalMeasurement-r4 UE-InternalMeasurement-r4
}

MeasurementValidity ::= SEQUENCE {
  ue-State ENUMERATED {
    cell-DCH, all-But-Cell-DCH, all-States }
}

MonitoredCellRACH-List ::= SEQUENCE (SIZE (1..8)) OF
  MonitoredCellRACH-Result

MonitoredCellRACH-Result ::= SEQUENCE {
  sfn-SFN-ObsTimeDifference SFN-SFN-ObsTimeDifference OPTIONAL,

```

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modeSpecificInfo
  fdd
    primaryCPICH-Info
    measurementQuantity
      cpich-Ec-NO
      cpich-RSCP
      pathloss
      spare
    }
  },
  tdd
    cellParametersID
    primaryCCPCH-RSCP
  }
}

MultipathIndicator ::=
    ENUMERATED {
        nm,
        low,
        medium,
        high }

N-CR-T-CRMaxHyst ::=
    SEQUENCE {
        n-CR
        t-CRMaxHyst
    }
    DEFAULT 8,

NavigationModelSatInfo ::=
    SEQUENCE {
        satID
        satelliteStatus
        ephemerisParameter
    }
    OPTIONAL

NavigationModelSatInfoList ::=
    SEQUENCE (SIZE (1..maxSat)) OF
        NavigationModelSatInfo

EphemerisParameter ::=
    SEQUENCE {
        codeOnL2
        uraIndex
        satHealth
        iodc
        l2Pflag
        sflRevd
        t-GD
        t-oc
        af2
        af1
        af0
        c-rs
        delta-n
        m0
        c-uc
        e
        c-us
        a-Sqrt
        t-oe
        fitInterval
        aodo
        c-ic
        omega0
        c-is
        i0
        c-rc
        omega
        omegaDot
        iDot
    }

NC-Mode ::=
    BIT STRING (SIZE (3))

Neighbour ::=
    SEQUENCE {
        modeSpecificInfo
            fdd
                neighbourIdentity
                ue-RX-TX-TimeDifferenceType2Info
            },
            tdd
                neighbourAndChannelIdentity
            }
        CHOICE {
            SEQUENCE {
                PrimaryCPICH-Info
                UE-RX-TX-TimeDifferenceType2Info
            }
            SEQUENCE {
                CellAndChannelIdentity
            }
        }
        OPTIONAL,
        OPTIONAL
        OPTIONAL

```

```

    },
    neighbourQuality                NeighbourQuality,
    sfN-SFN-ObsTimeDifference2      SFN-SFN-ObsTimeDifference2}

Neighbour-v390ext ::=
    modeSpecificInfo
    fdd
        frequencyInfo
    },
    tdd
}

NeighbourList ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
        Neighbour

-- The order of the cells in IE NeighbourList-v390ext shall be the
-- same as the order in IE NeighbourList
NeighbourList-v390ext ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
        Neighbour-v390ext

NeighbourQuality ::=
    ue-Positioning-OTDOA-Quality
}

NewInterFreqCell ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCell-r4 ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCellList ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
        NewInterFreqCell

NewInterFreqCellList-r4 ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
        NewInterFreqCell-r4

NewInterFreqCellSI-RSCP ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCellSI-ECN0 ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCellSI-HCS-RSCP ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCellSI-HCS-ECN0 ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCellSI-RSCP-LCR-r4 ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

NewInterFreqCellSI-ECN0-LCR-r4 ::=
    interFreqCellID
    frequencyInfo
    cellInfo
}

```



```

}

NewInterFreqCellSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellID          InterFreqCellID          OPTIONAL,
    frequencyInfo            FrequencyInfo          OPTIONAL,
    cellInfo                 CellInfoSI-HCS-RSCP-LCR-r4
}

NewInterFreqCellSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellID          InterFreqCellID          OPTIONAL,
    frequencyInfo            FrequencyInfo          OPTIONAL,
    cellInfo                 CellInfoSI-HCS-ECN0-LCR-r4
}

NewInterFreqCellSI-List-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-ECN0

NewInterFreqCellSI-List-HCS-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-HCS-RSCP

NewInterFreqCellSI-List-HCS-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-HCS-ECN0

NewInterFreqCellSI-List-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-RSCP

NewInterFreqCellSI-List-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-ECN0-LCR-r4

NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-HCS-RSCP-LCR-r4

NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-HCS-ECN0-LCR-r4

NewInterFreqCellSI-List-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-RSCP-LCR-r4

NewInterRATCell ::= SEQUENCE {
    interRATCellID          InterRATCellID          OPTIONAL,
    technologySpecificInfo CHOICE {
        gsm SEQUENCE {
            cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12 OPTIONAL,
            interRATCellIndividualOffset InterRATCellIndividualOffset,
            bsic BSIC,
            frequency-band Frequency-Band,
            bcch-ARFCN BCCH-ARFCN,
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
            dummy NULL OPTIONAL
        },
        is-2000 SEQUENCE {
            is-2000SpecificMeasInfo IS-2000SpecificMeasInfo
        },
        -- ASN.1 inconsistency: NewInterRATCellList should be optional within
        -- InterRATCellInfoList. The UE shall consider IE NewInterRATCell with
        -- technologySpecificInfo set to "none" as valid and handle the
        -- message as if the IE NewInterRATCell was absent
        none NULL,
        spare1 NULL
    }
}

NewInterRATCell-r4 ::= SEQUENCE {
    interRATCellID          InterRATCellID          OPTIONAL,
    technologySpecificInfo CHOICE {
        gsm SEQUENCE {
            cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12 OPTIONAL,
            interRATCellIndividualOffset InterRATCellIndividualOffset,
            bsic BSIC,
            frequency-band Frequency-Band,
            bcch-ARFCN BCCH-ARFCN
        },
        is-2000 SEQUENCE {
            is-2000SpecificMeasInfo IS-2000SpecificMeasInfo
        },
        spare1 NULL
    }
}

```

```

}

NewInterRATCell-B ::=          SEQUENCE {
    interRATCellID              InterRATCellID              OPTIONAL,
    technologySpecificInfo      CHOICE {
        gsm                     SEQUENCE {
            cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12  OPTIONAL,
            interRATCellIndividualOffset InterRATCellIndividualOffset,
            bsic                  BSIC,
            frequency-band        Frequency-Band,
            bcch-ARFCN            BCCH-ARFCN,
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
            dummy                 NULL                      OPTIONAL
        },
        is-2000                  SEQUENCE {
            is-2000SpecificMeasInfo      IS-2000SpecificMeasInfo
        },
        -- ASN.1 inconsistency: NewInterRATCellList-B should be optional within
        -- InterRATCellInfoList-B. The UE shall consider IE NewInterRATCell-B with
        -- technologySpecificInfo set to "none" as valid and handle the
        -- message as if the IE NewInterRATCell-B was absent
        none                      NULL,
        spare1                    NULL
    }
}

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

NewInterRATCellList-r4 ::=      SEQUENCE (SIZE (1..maxCellMeas)) OF
                                NewInterRATCell-r4

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

NewIntraFreqCell ::=           SEQUENCE {
    intraFreqCellID             IntraFreqCellID              OPTIONAL,
    cellInfo                    CellInfo
}

NewIntraFreqCell-r4 ::=        SEQUENCE {
    intraFreqCellID             IntraFreqCellID              OPTIONAL,
    cellInfo                    CellInfo-r4
}

NewIntraFreqCellList ::=       SEQUENCE (SIZE (1..maxCellMeas)) OF
                                NewIntraFreqCell

NewIntraFreqCellList-r4 ::=    SEQUENCE (SIZE (1..maxCellMeas)) OF
                                NewIntraFreqCell-r4

NewIntraFreqCellSI-RSCP ::=    SEQUENCE {
    intraFreqCellID             IntraFreqCellID              OPTIONAL,
    cellInfo                    CellInfoSI-RSCP
}

NewIntraFreqCellSI-ECN0 ::=    SEQUENCE {
    intraFreqCellID             IntraFreqCellID              OPTIONAL,
    cellInfo                    CellInfoSI-ECN0
}

NewIntraFreqCellSI-HCS-RSCP ::= SEQUENCE {
    intraFreqCellID             IntraFreqCellID              OPTIONAL,
    cellInfo                    CellInfoSI-HCS-RSCP
}

NewIntraFreqCellSI-HCS-ECN0 ::= SEQUENCE {
    intraFreqCellID             IntraFreqCellID              OPTIONAL,
    cellInfo                    CellInfoSI-HCS-ECN0
}

NewIntraFreqCellSI-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqCellID             IntraFreqCellID              OPTIONAL,
    cellInfo                    CellInfoSI-RSCP-LCR-r4
}

NewIntraFreqCellSI-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqCellID             IntraFreqCellID              OPTIONAL,

```

```

    cellInfo                CellInfoSI-ECN0-LCR-r4
}
NewIntraFreqCellSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqCellID        IntraFreqCellID                OPTIONAL,
    cellInfo                CellInfoSI-HCS-RSCP-LCR-r4
}

NewIntraFreqCellSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqCellID        IntraFreqCellID                OPTIONAL,
    cellInfo                CellInfoSI-HCS-ECN0-LCR-r4
}

NewIntraFreqCellSI-List-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-RSCP

NewIntraFreqCellSI-List-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-ECN0

NewIntraFreqCellSI-List-HCS-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-RSCP

NewIntraFreqCellSI-List-HCS-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-ECN0

NewIntraFreqCellSI-List-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-RSCP-LCR-r4

NewIntraFreqCellSI-List-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-ECN0-LCR-r4

NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-RSCP-LCR-r4

NewIntraFreqCellSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-ECN0-LCR-r4

-- 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"
NonUsedFreqParameter ::= SEQUENCE {
    nonUsedFreqThreshold    Threshold,
    nonUsedFreqW            W
}

NonUsedFreqParameterList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    NonUsedFreqParameter

ObservedTimeDifferenceToGSM ::= INTEGER (0..4095)

OTDOA-SearchWindowSize ::= ENUMERATED {
    c20, c40, c80, c160, c320,
    c640, c1280, moreThan1280 }

-- SPARE: Pathloss, Max = 158
-- Values above Max are spare
Pathloss ::= INTEGER (46..173)

PenaltyTime-RSCP ::= CHOICE {
    notUsed                NULL,
    pt10                   TemporaryOffset1,
    pt20                   TemporaryOffset1,
    pt30                   TemporaryOffset1,
    pt40                   TemporaryOffset1,
    pt50                   TemporaryOffset1,
    pt60                   TemporaryOffset1
}

PenaltyTime-ECN0 ::= CHOICE {
    notUsed                NULL,
    pt10                   TemporaryOffsetList,
    pt20                   TemporaryOffsetList,
    pt30                   TemporaryOffsetList,
    pt40                   TemporaryOffsetList,
    pt50                   TemporaryOffsetList,
    pt60                   TemporaryOffsetList
}

```

```

}
PendingTimeAfterTrigger ::=          ENUMERATED {
    ptat0-25, ptat0-5, ptat1,
    ptat2, ptat4, ptat8, ptat16 }
PeriodicalOrEventTrigger ::=          ENUMERATED {
    periodical,
    eventTrigger }
PeriodicalReportingCriteria ::=       SEQUENCE {
    reportingAmount                    ReportingAmount                DEFAULT ra-Infinity,
    reportingInterval                  ReportingIntervalLong
}
PeriodicalWithReportingCellStatus ::= SEQUENCE {
    periodicalReportingCriteria        PeriodicalReportingCriteria,
    reportingCellStatus                ReportingCellStatus            OPTIONAL
}
PLMNIIdentitiesOfNeighbourCells ::= SEQUENCE {
    plmnsOfIntraFreqCellsList         PLMNsOfIntraFreqCellsList     OPTIONAL,
    plmnsOfInterFreqCellsList         PLMNsOfInterFreqCellsList     OPTIONAL,
    plmnsOfInterRATCellsList          PLMNsOfInterRATCellsList      OPTIONAL
}
PLMNsOfInterFreqCellsList ::=         SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity                 PLMN-Identity                 OPTIONAL
    }
PLMNsOfIntraFreqCellsList ::=         SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity                 PLMN-Identity                 OPTIONAL
    }
PLMNsOfInterRATCellsList ::=         SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity                 PLMN-Identity                 OPTIONAL
    }
PositionEstimate ::=                  CHOICE {
    ellipsoidPoint                    EllipsoidPoint,
    ellipsoidPointUncertCircle        EllipsoidPointUncertCircle,
    ellipsoidPointUncertEllipse       EllipsoidPointUncertEllipse,
    ellipsoidPointAltitude            EllipsoidPointAltitude,
    ellipsoidPointAltitudeEllipsoide EllipsoidPointAltitudeEllipsoide
}
PositioningMethod ::=                 ENUMERATED {
    otdoa,
    gps,
    otdoaOrGPS, cellID }
-- Actual value PRC = IE value * 0.32
PRC ::=                                INTEGER (-2047..2047)
-- SPARE: PrimaryCCPCH-RSCP, Max = 91
-- Values above Max are spare
PrimaryCCPCH-RSCP ::=                 INTEGER (0..127)
Q-HCS ::=                              INTEGER (0..99)
Q-OffsetS-N ::=                       INTEGER (-50..50)
Q-QualMin ::=                          INTEGER (-24..0)
-- Actual value Q-RxlevMin = (IE value * 2) + 1
Q-RxlevMin ::=                        INTEGER (-58..-13)
QualityEventResults ::=               SEQUENCE (SIZE (1..maxTrCH)) OF
    TransportChannelIdentity
QualityMeasuredResults ::=             SEQUENCE {
    blerMeasurementResultsList        BLER-MeasurementResultsList   OPTIONAL,
    modeSpecificInfo                  CHOICE {
        fdd                            NULL,
        tdd                            SEQUENCE {

```

```

        sir-MeasurementResults          SIR-MeasurementList          OPTIONAL
    }
}

QualityMeasurement ::=
    qualityReportingQuantity          SEQUENCE {
        qualityReportingQuantity      OPTIONAL,
        reportCriteria                QualityReportCriteria
    }

QualityReportCriteria ::=
    qualityReportingCriteria          CHOICE {
        qualityReportingCriteria,
        periodicalReportingCriteria,
        noReporting                   NULL
    }

QualityReportingCriteria ::=
    SEQUENCE (SIZE (1..maxTrCH)) OF
        QualityReportingCriteriaSingle

QualityReportingCriteriaSingle ::=
    SEQUENCE {
        transportChannelIdentity      TransportChannelIdentity,
        totalCRC                       INTEGER (1..512),
        badCRC                         INTEGER (1..512),
        pendingAfterTrigger            INTEGER (1..512)
    }

QualityReportingQuantity ::=
    SEQUENCE {
        dl-TransChBLER                BOOLEAN,
        bler-dl-TransChIdList         BLER-TransChIdList          OPTIONAL,
        modeSpecificInfo              CHOICE {
            fdd                        NULL,
            tdd                        SEQUENCE {
                sir-TFCS-List          OPTIONAL
            }
        }
    }
}

RAT-Type ::=
    ENUMERATED {
        gsm, is2000
    }

ReferenceCellPosition ::=
    CHOICE {
        ellipsoidPoint                EllipsoidPoint,
        ellipsoidPointWithAltitude    EllipsoidPointAltitude
    }

-- ReferenceLocation, as defined in 23.032
ReferenceLocation ::=
    SEQUENCE {
        ellipsoidPointAltitudeEllipsoide EllipsoidPointAltitudeEllipsoide
    }

ReferenceSFN ::=
    INTEGER (0..4095)

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

RemovedInterFreqCellList ::=
    CHOICE {
        removeAllInterFreqCells        NULL,
        removeSomeInterFreqCells       SEQUENCE (SIZE (1..maxCellMeas)) OF
            InterFreqCellID,
        removeNoInterFreqCells         NULL
    }

RemovedInterRATCellList ::=
    CHOICE {
        removeAllInterRATCells          NULL,
        removeSomeInterRATCells         SEQUENCE (SIZE (1..maxCellMeas)) OF
            InterRATCellID,
        removeNoInterRATCells          NULL
    }

RemovedIntraFreqCellList ::=
    CHOICE {
        removeAllIntraFreqCells         NULL,
        removeSomeIntraFreqCells        SEQUENCE (SIZE (1..maxCellMeas)) OF
    }

```

```

        IntraFreqCellID,
    removeNoIntraFreqCells      NULL
}

ReplacementActivationThreshold ::= ENUMERATED {
    notApplicable, t1, t2,
    t3, t4, t5, t6, t7 }

ReportDeactivationThreshold ::= ENUMERATED {
    notApplicable, t1, t2,
    t3, t4, t5, t6, t7 }

ReportingAmount ::= ENUMERATED {
    ra1, ra2, ra4, ra8, ra16, ra32,
    ra64, ra-Infinity }

ReportingCellStatus ::= CHOICE{
    withinActiveSet                MaxNumberOfReportingCellsType1,
    withinMonitoredSetUsedFreq     MaxNumberOfReportingCellsType1,
    withinActiveAndOrMonitoredUsedFreq MaxNumberOfReportingCellsType1,
    withinDetectedSetUsedFreq     MaxNumberOfReportingCellsType1,
    withinMonitoredAndOrDetectedUsedFreq
    allActiveplusMonitoredSet     MaxNumberOfReportingCellsType3,
    allActivePlusDetectedSet      MaxNumberOfReportingCellsType3,
    allActivePlusMonitoredAndOrDetectedSet
    withinVirtualActSet           MaxNumberOfReportingCellsType1,
    withinMonitoredSetNonUsedFreq MaxNumberOfReportingCellsType1,
    withinMonitoredAndOrVirtualActiveSetNonUsedFreq
    allVirtualActSetplusMonitoredSetNonUsedFreq
    withinActSetOrVirtualActSet-InterRATcells
    withinActSetAndOrMonitoredUsedFreqOrVirtualActSetAndOrMonitoredNonUsedFreq
}

ReportingCellStatusOpt ::= SEQUENCE {
    reportingCellStatus      ReportingCellStatus      OPTIONAL
}

ReportingInfoForCellDCH ::= SEQUENCE {
    intraFreqReportingQuantity      IntraFreqReportingQuantity,
    measurementReportingMode        MeasurementReportingMode,
    reportCriteria                  CellDCH-ReportCriteria
}

ReportingInfoForCellDCH-LCR-r4 ::= SEQUENCE {
    intraFreqReportingQuantity      IntraFreqReportingQuantity,
    measurementReportingMode        MeasurementReportingMode,
    reportCriteria                  CellDCH-ReportCriteria-LCR-r4
}

ReportingInterval ::= ENUMERATED {
    noPeriodicalreporting, ri0-25,
    ri0-5, ril, ri2, ri4, ri8, ril6 }

ReportingIntervalLong ::= ENUMERATED {
    ril0, ril0-25, ril0-5, ril1,
    ril2, ril3, ril4, ril6, ril8,
    ril12, ril16, ril20, ril24,
    ril28, ril32, ril64 }

-- Actual value ReportingRange = IE value * 0.5
ReportingRange ::= INTEGER (0..29)

RL-AdditionInfoList ::= SEQUENCE (SIZE (1..maxRL)) OF
    PrimaryCPICH-Info

RL-InformationLists ::= SEQUENCE {
    rl-AdditionInfoList      RL-AdditionInfoList      OPTIONAL,
    rl-RemovalInformationList RL-RemovalInformationList  OPTIONAL
}

RLC-BuffersPayload ::= ENUMERATED {

```

```

        pl0, pl4, pl8, pl16, pl32,
        pl64, pl128, pl256, pl512, pl1024,
        pl2k, pl4k, pl8k, pl16k, pl32k,
        pl64k, pl128k, pl256k, pl512k, pl1024k,
        spare12, spare11, spare10, spare9, spare8,
        spare7, spare6, spare5, spare4, spare3,
        spare2, spare1 }

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

SatData ::=
    SEQUENCE {
        satID      SatID,
        iode       IODE
    }

SatDataList ::=
    SEQUENCE (SIZE (0..maxSat)) OF
        SatData

SatelliteStatus ::=
    ENUMERATED {
        ns-NN-U,
        es-SN,
        es-NN-U,
        rev2,
        rev }

SatID ::=
    INTEGER (0..63)

SFN-Offset-Validity ::=
    ENUMERATED { false }

SFN-SFN-Drift ::=
    ENUMERATED {
        sfnsfndrift0, sfnsfndrift1, sfnsfndrift2,
        sfnsfndrift3, sfnsfndrift4, sfnsfndrift5,
        sfnsfndrift8, sfnsfndrift10, sfnsfndrift15,
        sfnsfndrift25, sfnsfndrift35, sfnsfndrift50,
        sfnsfndrift65, sfnsfndrift80, sfnsfndrift100,
        sfnsfndrift-1, sfnsfndrift-2, sfnsfndrift-3,
        sfnsfndrift-4, sfnsfndrift-5, sfnsfndrift-8,
        sfnsfndrift-10, sfnsfndrift-15, sfnsfndrift-25,
        sfnsfndrift-35, sfnsfndrift-50, sfnsfndrift-65,
        sfnsfndrift-80, sfnsfndrift-100}

SFN-SFN-ObsTimeDifference ::=
    CHOICE {
        type1      SFN-SFN-ObsTimeDifference1,
        type2      SFN-SFN-ObsTimeDifference2
    }

-- SPARE: SFN-SFN-ObsTimeDifference1, Max = 9830399
-- Values above Max are spare
SFN-SFN-ObsTimeDifference1 ::=
    INTEGER (0..16777215)

-- SPARE: SFN-SFN-ObsTimeDifference2, Max = 40961
-- Values above Max are spare
SFN-SFN-ObsTimeDifference2 ::=
    INTEGER (0..65535)

SFN-SFN-OTD-Type ::=
    ENUMERATED {
        noReport,
        type1,
        type2 }

SFN-SFN-RelTimeDifference1 ::=
    SEQUENCE {
        sfn-Offset      INTEGER (0 .. 4095),
        sfn-sfn-ReltimeDifference
                        INTEGER (0.. 38399)
    }

SFN-TOW-Uncertainty ::=
    ENUMERATED {
        lessThan10,
        moreThan10 }

SIR ::=
    INTEGER (0..63)

SIR-MeasurementList ::=
    SEQUENCE (SIZE (1..maxCCTrCH)) OF
        SIR-MeasurementResults

SIR-MeasurementResults ::=
    SEQUENCE {
        tfcs-ID      TFCS-IdentityPlain,

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sir-TimeslotList          SIR-TimeslotList
}

SIR-TFCS ::=              TFCS-IdentityPlain

SIR-TFCS-List ::=        SEQUENCE (SIZE (1..maxCCTrCH)) OF
                          SIR-TFCS

SIR-TimeslotList ::=     SEQUENCE (SIZE (1..maxTS)) OF
                          SIR

-- SubFrame1Reserved, reserved bits in subframe 1 of the GPS navigation message
SubFrame1Reserved ::=   SEQUENCE {
    reserved1             BIT STRING (SIZE (23)),
    reserved2             BIT STRING (SIZE (24)),
    reserved3             BIT STRING (SIZE (24)),
    reserved4             BIT STRING (SIZE (16))
}

T-ADVinfo ::=           SEQUENCE {
    t-ADV                 INTEGER(0..2047),
    sfn                   INTEGER(0..4095)
}

T-CRMax ::=             CHOICE {
    notUsed               NULL,
    t30                   N-CR-T-CRMaxHyst,
    t60                   N-CR-T-CRMaxHyst,
    t120                  N-CR-T-CRMaxHyst,
    t180                  N-CR-T-CRMaxHyst,
    t240                  N-CR-T-CRMaxHyst
}

T-CRMaxHyst ::=        ENUMERATED {
    notUsed, t10, t20, t30,
    t40, t50, t60, t70 }

TemporaryOffset1 ::=   ENUMERATED {
    to3, to6, to9, to12, to15,
    to18, to21, infinite }

TemporaryOffset2 ::=   ENUMERATED {
    to2, to3, to4, to6, to8,
    to10, to12, infinite }

TemporaryOffsetList ::= SEQUENCE {
    temporaryOffset1     TemporaryOffset1,
    temporaryOffset2     TemporaryOffset2
}

Threshold ::=          INTEGER (-115..0)

ThresholdPositionChange ::= ENUMERATED {
    pc10, pc20, pc30, pc40, pc50,
    pc100, pc200, pc300, pc500,
    pc1000, pc2000, pc5000, pc10000,
    pc20000, pc50000, pc100000 }

ThresholdSFN-GPS-TOW ::= ENUMERATED {
    ms1, ms2, ms3, ms5, ms10,
    ms20, ms50, ms100 }

ThresholdSFN-SFN-Change ::= ENUMERATED {
    c0-25, c0-5, c1, c2, c3, c4, c5,
    c10, c20, c50, c100, c200, c500,
    c1000, c2000, c5000 }

ThresholdUsedFrequency ::= INTEGER (-115..165)

-- Actual value TimeInterval = IE value * 20.
TimeInterval ::=      INTEGER (1..13)

TimeslotInfo ::=      SEQUENCE {
    timeslotNumber        TimeslotNumber,
    burstType             BurstType
}

```



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}

TimeslotInfo-LCR-r4 ::=
    timeslotNumber
}

TimeslotInfoList ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotInfo

TimeslotInfoList-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxTS-LCR)) OF
        TimeslotInfo-LCR-r4

TimeslotInfoList-r4 ::=
    tdd384
    CHOICE {
        SEQUENCE (SIZE (1..maxTS)) OF
            TimeslotInfo,
        SEQUENCE (SIZE (1..maxTS-LCR)) OF
            TimeslotInfo-LCR-r4
    }

-- SPARE: TimeslotISCP, Max = 91
-- Values above Max are spare
TimeslotISCP ::=
    INTEGER (0..127)

-- TimeslotISCP-List shall not include more than 6 elements in 1.28Mcps TDD mode.
TimeslotISCP-List ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotISCP

TimeslotListWithISCP ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotWithISCP

TimeslotWithISCP ::=
    timeslot
    timeslotISCP
}

TimeToTrigger ::=
    ENUMERATED {
        ttt0, ttt10, ttt20, ttt40, ttt60,
        ttt80, ttt100, ttt120, ttt160,
        ttt200, ttt240, ttt320, ttt640,
        ttt1280, ttt2560, ttt5000 }

TrafficVolumeEventParam ::=
    eventID
    reportingThreshold
    timeToTrigger
    pendingTimeAfterTrigger
    tx-InterruptionAfterTrigger
}

TrafficVolumeEventResults ::=
    ul-transportChannelCausingEvent
    trafficVolumeEventIdentity
}

TrafficVolumeEventType ::=
    ENUMERATED {
        e4a,
        e4b }

TrafficVolumeMeasQuantity ::=
    rlc-BufferPayload
    averageRLC-BufferPayload
    varianceOfRLC-BufferPayload
}

TrafficVolumeMeasSysInfo ::=
    trafficVolumeMeasurementID
    trafficVolumeMeasurementObjectList
    trafficVolumeMeasQuantity
    trafficVolumeReportingQuantity
    -- dummy is not used in this version of specification, it should
    -- not be sent and if received it should be ignored.
    dummy
    measurementValidity
    measurementReportingMode
    reportCriteriaSysInf
}

```

```

TrafficVolumeMeasuredResults ::= SEQUENCE {
    rb-Identity                RB-Identity,
    rlc-BuffersPayload         RLC-BuffersPayload           OPTIONAL,
    averageRLC-BufferPayload   AverageRLC-BufferPayload   OPTIONAL,
    varianceOfRLC-BufferPayload VarianceOfRLC-BufferPayload   OPTIONAL
}

TrafficVolumeMeasuredResultsList ::= SEQUENCE (SIZE (1..maxRB)) OF
    TrafficVolumeMeasuredResults

TrafficVolumeMeasurement ::= SEQUENCE {
    trafficVolumeMeasurementObjectList TrafficVolumeMeasurementObjectList OPTIONAL,
    trafficVolumeMeasQuantity          TrafficVolumeMeasQuantity   OPTIONAL,
    trafficVolumeReportingQuantity     TrafficVolumeReportingQuantity OPTIONAL,
    measurementValidity                MeasurementValidity         OPTIONAL,
    reportCriteria                     TrafficVolumeReportCriteria
}

TrafficVolumeMeasurementObjectList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    UL-TrCH-Identity

TrafficVolumeReportCriteria ::= CHOICE {
    trafficVolumeReportingCriteria TrafficVolumeReportingCriteria,
    periodicalReportingCriteria    PeriodicalReportingCriteria,
    noReporting                     NULL
}

TrafficVolumeReportCriteriaSysInfo ::= CHOICE {
    trafficVolumeReportingCriteria TrafficVolumeReportingCriteria,
    periodicalReportingCriteria    PeriodicalReportingCriteria
}

TrafficVolumeReportingCriteria ::= SEQUENCE {
    -- NOTE: transChCriteriaList should be mandatory in later versions of this message
    transChCriteriaList           TransChCriteriaList         OPTIONAL
}

TrafficVolumeReportingQuantity ::= SEQUENCE {
    rlc-RB-BufferPayload          BOOLEAN,
    rlc-RB-BufferPayloadAverage   BOOLEAN,
    rlc-RB-BufferPayloadVariance  BOOLEAN
}

TrafficVolumeThreshold ::= ENUMERATED {
    th8, th16, th32, th64, th128,
    th256, th512, th1024, th2k, th3k,
    th4k, th6k, th8k, th12k, th16k,
    th24k, th32k, th48k, th64k, th96k,
    th128k, th192k, th256k, th384k,
    th512k, th768k }

TransChCriteria ::= SEQUENCE {
    ul-transportChannelID        UL-TrCH-Identity           OPTIONAL,
    eventSpecificParameters      SEQUENCE (SIZE (1..maxMeasParEvent)) OF
        TrafficVolumeEventParam OPTIONAL
}

TransChCriteriaList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    TransChCriteria

TransferMode ::= ENUMERATED {
    acknowledgedModeRLC,
    unacknowledgedModeRLC }

TransmittedPowerThreshold ::= INTEGER (-50..33)

TriggeringCondition1 ::= ENUMERATED {
    activeSetCellsOnly,
    monitoredSetCellsOnly,
    activeSetAndMonitoredSetCells }

TriggeringCondition2 ::= ENUMERATED {
    activeSetCellsOnly,
    monitoredSetCellsOnly,
    activeSetAndMonitoredSetCells,
    detectedSetCellsOnly,
    detectedSetAndMonitoredSetCells }

```

```

TX-InterruptionAfterTrigger ::=      ENUMERATED {
                                        txiat0-25, txiat0-5, txiat1,
                                        txiat2, txiat4, txiat8, txiat16 }

UDRE ::=                              ENUMERATED {
                                        lessThan1,
                                        between1-and-4,
                                        between4-and-8,
                                        over8 }

UE-6AB-Event ::=                      SEQUENCE {
    timeToTrigger                      TimeToTrigger,
    transmittedPowerThreshold          TransmittedPowerThreshold
}

UE-6FG-Event ::=                      SEQUENCE {
    timeToTrigger                      TimeToTrigger,
    -- in 1.28 Mcps TDD ue-RX-TX-TimeDifferenceThreshold corresponds to TADV Threshold
    ue-RX-TX-TimeDifferenceThreshold  UE-RX-TX-TimeDifferenceThreshold
}

UE-AutonomousUpdateMode ::=          CHOICE {
    on                                  NULL,
    onWithNoReporting                 NULL,
    off                                RL-InformationLists
}

UE-InternalEventParam ::=            CHOICE {
    event6a                           UE-6AB-Event,
    event6b                           UE-6AB-Event,
    event6c                           TimeToTrigger,
    event6d                           TimeToTrigger,
    event6e                           TimeToTrigger,
    event6f                           UE-6FG-Event,
    event6g                           UE-6FG-Event
}

UE-InternalEventParamList ::=        SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                        UE-InternalEventParam

UE-InternalEventResults ::=          CHOICE {
    event6a                           NULL,
    event6b                           NULL,
    event6c                           NULL,
    event6d                           NULL,
    event6e                           NULL,
    event6f                           PrimaryCPICH-Info,
    event6g                           PrimaryCPICH-Info,
    spare                              NULL
}

UE-InternalMeasQuantity ::=          SEQUENCE {
    measurementQuantity                UE-MeasurementQuantity,
    filterCoefficient                  FilterCoefficient                DEFAULT fc0
}

UE-InternalMeasuredResults ::=       SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            ue-TransmittedPowerFDD      UE-TransmittedPower          OPTIONAL,
            ue-RX-TX-ReportEntryList    UE-RX-TX-ReportEntryList     OPTIONAL
        },
        tdd                            SEQUENCE {
            ue-TransmittedPowerTDD-List UE-TransmittedPowerTDD-List  OPTIONAL,
            appliedTA                    UL-TimingAdvance              OPTIONAL
        }
    }
}

UE-InternalMeasuredResults-LCR-r4 ::= SEQUENCE {
    ue-TransmittedPowerTDD-List        UE-TransmittedPowerTDD-List    OPTIONAL,
    t-ADVinfo                          T-ADVinfo                       OPTIONAL
}

UE-InternalMeasurement ::=           SEQUENCE {
    ue-InternalMeasQuantity            UE-InternalMeasQuantity        OPTIONAL,
    ue-InternalReportingQuantity        UE-InternalReportingQuantity   OPTIONAL,
}

```

```

    reportCriteria                UE-InternalReportCriteria
  }

UE-InternalMeasurement-r4 ::= SEQUENCE {
    ue-InternalMeasQuantity      UE-InternalMeasQuantity      OPTIONAL,
    ue-InternalReportingQuantity UE-InternalReportingQuantity-r4  OPTIONAL,
    reportCriteria                UE-InternalReportCriteria
}

UE-InternalMeasurementSysInfo ::= SEQUENCE {
    ue-InternalMeasurementID     MeasurementIdentity      DEFAULT 5,
    ue-InternalMeasQuantity      UE-InternalMeasQuantity
}

UE-InternalReportCriteria ::= CHOICE {
    ue-InternalReportingCriteria UE-InternalReportingCriteria,
    periodicalReportingCriteria  PeriodicalReportingCriteria,
    noReporting                   NULL
}

UE-InternalReportingCriteria ::= SEQUENCE {
    ue-InternalEventParamList    UE-InternalEventParamList  OPTIONAL
}

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

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

-- TABULAR: UE-MeasurementQuantity, for 3.84 Mcps TDD only the first two values
-- ue-TransmittedPower and ultra-Carrier-RSSI are used.
-- For 1.28 Mcps TDD ue-RX-TX-TimeDifference corresponds to T-ADV in the tabular
UE-MeasurementQuantity ::= ENUMERATED {
    ue-TransmittedPower,
    ultra-Carrier-RSSI,
    ue-RX-TX-TimeDifference }

UE-RX-TX-ReportEntry ::= SEQUENCE {
    primaryCPICH-Info          PrimaryCPICH-Info,
    ue-RX-TX-TimeDifferenceType1 UE-RX-TX-TimeDifferenceType1
}

UE-RX-TX-ReportEntryList ::= SEQUENCE (SIZE (1..maxRL)) OF
    UE-RX-TX-ReportEntry

-- SPARE: UE-RX-TX-TimeDifferenceType1, Max = 1280
-- Values above Max are spare
UE-RX-TX-TimeDifferenceType1 ::= INTEGER (768..1791)

-- Actual value UE-RX-TX-TimeDifferenceType2 = IE value * 0.0625 + 768
UE-RX-TX-TimeDifferenceType2 ::= INTEGER (0..8191)

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```

UE-RX-TX-TimeDifferenceType2Info ::= SEQUENCE {
    ue-RX-TX-TimeDifferenceType2
    neighbourQuality
}

-- In 1.28 Mcps TDD, actual value for
-- T-ADV Threshold = (UE-RX-TX-TimeDifferenceThreshold - 768) * 0.125
UE-RX-TX-TimeDifferenceThreshold ::= INTEGER (768..1280)

UE-TransmittedPower ::= INTEGER (0..104)

UE-TransmittedPowerTDD-List ::= SEQUENCE (SIZE (1..maxTS)) OF
    UE-TransmittedPower

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

UE-Positioning-Accuracy ::= BIT STRING (SIZE (7))

UE-Positioning-CipherParameters ::= SEQUENCE {
    cipheringKeyFlag BIT STRING (SIZE (1)),
    cipheringSerialNumber INTEGER (0..65535)
}

UE-Positioning-Error ::= SEQUENCE {
    errorReason UE-Positioning-ErrorCause,
    ue-positioning-GPS-additionalAssistanceDataRequest UE-Positioning-GPS-
AdditionalAssistanceDataRequest OPTIONAL
}

UE-Positioning-ErrorCause ::= ENUMERATED {
    notEnoughOTDOA-Cells,
    notEnoughGPS-Satellites,
    assistanceDataMissing,
    methodNotSupported,
    undefinedError,
    requestDeniedByUser,
    notProcessedAndTimeout ,
    referenceCellNotServingCell }

UE-Positioning-EventParam ::= SEQUENCE {
    reportingAmount ReportingAmount,
    reportFirstFix BOOLEAN,
    measurementInterval UE-Positioning-MeasurementInterval,
    eventSpecificInfo UE-Positioning-EventSpecificInfo
}

UE-Positioning-EventParamList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    UE-Positioning-EventParam

UE-Positioning-EventSpecificInfo ::= CHOICE {
    e7a ThresholdPositionChange,
    e7b ThresholdSFN-SFN-Change,
    e7c ThresholdSFN-GPS-TOW
}

UE-Positioning-GPS-AcquisitionAssistance ::= SEQUENCE {
    gps-ReferenceTime INTEGER (0..604799999),
    utran-GPSReferenceTime UTRAN-GPSReferenceTime OPTIONAL,
    satelliteInformationList AcquisitionSatInfoList
}

UE-Positioning-GPS-AdditionalAssistanceDataRequest ::= SEQUENCE {
    almanacRequest BOOLEAN,
    utcModelRequest BOOLEAN,
    ionosphericModelRequest BOOLEAN,
    navigationModelRequest BOOLEAN,
    dgpsCorrectionsRequest BOOLEAN,
    referenceLocationRequest BOOLEAN,
    referenceTimeRequest BOOLEAN,
    aquisitionAssistanceRequest BOOLEAN,
    realTimeIntegrityRequest BOOLEAN,
    navModelAddDataRequest UE-Positioning-GPS-NavModelAddDataReq OPTIONAL
}

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```

}

UE-Positioning-GPS-Almanac ::=          SEQUENCE {
    wn-a                                BIT STRING (SIZE (8)),
    almanacSatInfoList                 AlmanacSatInfoList,
    sv-GlobalHealth                    BIT STRING (SIZE (364))          OPTIONAL
}

UE-Positioning-GPS-AssistanceData ::=  SEQUENCE {
    ue-positioning-GPS-ReferenceTime   UE-Positioning-GPS-ReferenceTime
    OPTIONAL,
    ue-positioning-GPS-ReferenceLocation ReferenceLocation          OPTIONAL,
    ue-positioning-GPS-DGPS-Corrections UE-Positioning-GPS-DGPS-Corrections
    OPTIONAL,
    ue-positioning-GPS-NavigationModel  UE-Positioning-GPS-NavigationModel
    OPTIONAL,
    ue-positioning-GPS-IonosphericModel UE-Positioning-GPS-IonosphericModel
    OPTIONAL,
    ue-positioning-GPS-UTC-Model        UE-Positioning-GPS-UTC-Model
    OPTIONAL,
    ue-positioning-GPS-Almanac          UE-Positioning-GPS-Almanac
    OPTIONAL,
    ue-positioning-GPS-AcquisitionAssistance UE-Positioning-GPS-AcquisitionAssistance
    OPTIONAL,
    ue-positioning-GPS-Real-timeIntegrity  BadSatList                OPTIONAL,
    ue-positioning-GPS-referenceCellInfo   UE-Positioning-GPS-ReferenceCellInfo
    OPTIONAL
}

UE-Positioning-GPS-DGPS-Corrections ::= SEQUENCE {
    gps-TOW                             INTEGER (0..604799),
    statusHealth                         DiffCorrectionStatus,
    dgps-CorrectionSatInfoList          DGPS-CorrectionSatInfoList
}

UE-Positioning-GPS-IonosphericModel ::= SEQUENCE {
    alfa0                                BIT STRING (SIZE (8)),
    alfa1                                BIT STRING (SIZE (8)),
    alfa2                                BIT STRING (SIZE (8)),
    alfa3                                BIT STRING (SIZE (8)),
    beta0                                 BIT STRING (SIZE (8)),
    beta1                                 BIT STRING (SIZE (8)),
    beta2                                 BIT STRING (SIZE (8)),
    beta3                                 BIT STRING (SIZE (8))
}

UE-Positioning-GPS-MeasurementResults ::= SEQUENCE {
    referenceTime                        CHOICE {
        utran-GPSReferenceTimeResult    UTRAN-GPSReferenceTimeResult,
        gps-ReferenceTimeOnly           INTEGER (0..604799999)
    },
    gps-MeasurementParamList            GPS-MeasurementParamList
}

UE-Positioning-GPS-NavigationModel ::= SEQUENCE {
    navigationModelSatInfoList          NavigationModelSatInfoList
}

UE-Positioning-GPS-NavModelAddDataReq ::= SEQUENCE {
    gps-Week                             INTEGER (0..1023),
    -- SPARE: gps-Toe, Max = 167
    -- Values above Max are spare
    gps-Toe                              INTEGER (0..255),
    -- SPARE: tToeLimit, Max = 10
    -- Values above Max are spare
    tToeLimit                            INTEGER (0..15),
    satDataList                          SatDataList
}

UE-Positioning-GPS-ReferenceCellInfo ::= SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                               SEQUENCE {
            referenceIdentity             PrimaryCPICH-Info
        },
        tdd                               SEQUENCE {
            referenceIdentity             CellParametersID
        }
    }
}

```

```

}

UE-Positioning-GPS-ReferenceTime ::= SEQUENCE {
    gps-Week INTEGER (0..1023),
    gps-tow-lmsec GPS-TOW-lmsec, utran-GPSReferenceTime UTRAN-
GPSReferenceTime OPTIONAL,
    sfm-tow-Uncertainty SFN-TOW-Uncertainty OPTIONAL,
    utran-GPS-DriftRate UTRAN-GPS-DriftRate OPTIONAL,
    gps-TOW-AssistList GPS-TOW-AssistList OPTIONAL
}

UE-Positioning-GPS-UTC-Model ::= SEQUENCE {
    a1 BIT STRING (SIZE (24)),
    a0 BIT STRING (SIZE (32)),
    t-ot BIT STRING (SIZE (8)),
    wn-t BIT STRING (SIZE (8)),
    delta-t-LS BIT STRING (SIZE (8)),
    wn-lsf BIT STRING (SIZE (8)),
    dn BIT STRING (SIZE (8)),
    delta-t-LSF BIT STRING (SIZE (8))
}

UE-Positioning-IPDL-Parameters ::= SEQUENCE {
    ip-Spacing IP-Spacing,
    ip-Length IP-Length,
    ip-Offset INTEGER (0..9),
    seed INTEGER (0..63),
    burstModeParameters BurstModeParameters OPTIONAL
}

UE-Positioning-IPDL-Parameters-r4 ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            ip-Spacing IP-Spacing,
            ip-Length IP-Length,
            ip-Offset INTEGER (0..9),
            seed INTEGER (0..63)
        },
        tdd SEQUENCE {
            ip-Spacing-TDD IP-Spacing-TDD,
            ip-slot INTEGER (0..14),
            ip-Start INTEGER (0..4095),
            ip-PCCPCG IP-PCCPCG-r4 OPTIONAL
        }
    },
    burstModeParameters BurstModeParameters OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDD-r4-ext ::= SEQUENCE {
    ip-Spacing IP-Spacing-TDD,
    ip-slot INTEGER (0..14),
    ip-Start INTEGER (0..4095),
    ip-PCCPCG IP-PCCPCG-r4 OPTIONAL,
    burstModeParameters BurstModeParameters
}

UE-Positioning-MeasuredResults ::= SEQUENCE {
    ue-positioning-OTDOA-Measurement UE-Positioning-OTDOA-Measurement
OPTIONAL,
    ue-positioning-PositionEstimateInfo UE-Positioning-PositionEstimateInfo
OPTIONAL,
    ue-positioning-GPS-Measurement UE-Positioning-GPS-MeasurementResults
OPTIONAL,
    ue-positioning-Error UE-Positioning-Error
OPTIONAL
}

UE-Positioning-MeasuredResults-v390ext ::= SEQUENCE {
    ue-Positioning-OTDOA-Measurement-v390ext UE-Positioning-OTDOA-Measurement-v390ext
}

UE-Positioning-Measurement ::= SEQUENCE {
    ue-positioning-ReportingQuantity UE-Positioning-ReportingQuantity,
    reportCriteria UE-Positioning-ReportCriteria,
    ue-positioning-OTDOA-AssistanceData UE-Positioning-OTDOA-AssistanceData
OPTIONAL,
    ue-positioning-GPS-AssistanceData UE-Positioning-GPS-AssistanceData
OPTIONAL
}

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}

UE-Positioning-Measurement-v390ext ::= SEQUENCE {
    ue-positioning-ReportingQuantity-v390ext    UE-Positioning-ReportingQuantity-v390ext
    OPTIONAL,
    measurementValidity                         MeasurementValidity                       OPTIONAL,
    ue-positioning-OTDOA-AssistanceData-UEB    UE-Positioning-OTDOA-AssistanceData-UEB
    OPTIONAL
}

UE-Positioning-Measurement-r4 ::= SEQUENCE {
    ue-positioning-ReportingQuantity            UE-Positioning-ReportingQuantity-r4,
    measurementValidity                         MeasurementValidity
    OPTIONAL,
    reportCriteria                             UE-Positioning-ReportCriteria,
    ue-positioning-OTDOA-AssistanceData        UE-Positioning-OTDOA-AssistanceData-r4
    OPTIONAL,
    ue-positioning-GPS-AssistanceData          UE-Positioning-GPS-AssistanceData
    OPTIONAL
}

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

UE-Positioning-MeasurementInterval ::= ENUMERATED {
    e5, e15, e60, e300,
    e900, e1800, e3600, e7200 }

UE-Positioning-MethodType ::= ENUMERATED {
    ue-Assisted,
    ue-Based,
    ue-BasedPreferred,
    ue-AssistedPreferred }

UE-Positioning-OTDOA-AssistanceData ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo    UE-Positioning-OTDOA-ReferenceCellInfo
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList    UE-Positioning-OTDOA-NeighbourCellList
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4 ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo    UE-Positioning-OTDOA-ReferenceCellInfo-r4
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList    UE-Positioning-OTDOA-NeighbourCellList-r4
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4ext ::= SEQUENCE {
    -- In case of TDD these IPDL parameters shall be used for the reference cell instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-ReferenceCellInfo
    ue-Positioning-IPDL-Parameters-TDD-r4-ext    UE-Positioning-IPDL-Parameters-TDD-r4-ext
    OPTIONAL,
    -- These IPDL parameters shall be used for the neighbour cells in case of TDD instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-NeighbourCellInfoList. The cells shall be
    -- listed in the same order as in IE UE-Positioning-OTDOA-NeighbourCellInfoList
    ue-Positioning-IPDL-Parameters-TDDList-r4-ext    UE-Positioning-IPDL-Parameters-TDDList-r4-ext
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-UEB ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo-UEB    UE-Positioning-OTDOA-ReferenceCellInfo-UEB
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList-UEB    UE-Positioning-OTDOA-NeighbourCellList-
UEB
    OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDDList-r4-ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    UE-Positioning-IPDL-Parameters-TDD-r4-ext

UE-Positioning-OTDOA-Measurement ::= SEQUENCE {
    sfn    INTEGER (0..4095),
    modeSpecificInfo    CHOICE {
        fdd    SEQUENCE {

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        referenceCellIdentity      PrimaryCPICH-Info,
        ue-RX-TX-TimeDifferenceType2Info UE-RX-TX-TimeDifferenceType2Info
    },
    tdd                            SEQUENCE {
        referenceCellIdentity      CellParametersID
    }
},
neighbourList                     NeighbourList                     OPTIONAL
}

UE-Positioning-OTDOA-Measurement-v390ext ::= SEQUENCE {
    neighbourList-v390ext          NeighbourList-v390ext
}

UE-Positioning-OTDOA-NeighbourCellInfo ::= SEQUENCE {
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            primaryCPICH-Info      PrimaryCPICH-Info
        },
        tdd                        SEQUENCE {
            cellAndChannelIdentity CellAndChannelIdentity
        }
    },
    frequencyInfo                 FrequencyInfo                     OPTIONAL,
    ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters
    OPTIONAL,
    sfn-SFN-RelTimeDifference      SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift                 SFN-SFN-Drift                     OPTIONAL,
    searchWindowSize              OTDOA-SearchWindowSize,
    positioningMode                CHOICE {
        ueBased                    SEQUENCE {},
        ueAssisted                 SEQUENCE {}
    }
}

UE-Positioning-OTDOA-NeighbourCellInfo-r4 ::= SEQUENCE {
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            primaryCPICH-Info      PrimaryCPICH-Info
        },
        tdd                        SEQUENCE {
            cellAndChannelIdentity CellAndChannelIdentity
        }
    },
    frequencyInfo                 FrequencyInfo                     OPTIONAL,
    ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters-r4 OPTIONAL,
    sfn-SFN-RelTimeDifference      SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift                 SFN-SFN-Drift                     OPTIONAL,
    searchWindowSize              OTDOA-SearchWindowSize,
    positioningMode                CHOICE {
        ueBased                    SEQUENCE {
            relativeNorth          INTEGER (-20000..20000)           OPTIONAL,
            relativeEast           INTEGER (-20000..20000)           OPTIONAL,
            relativeAltitude       INTEGER (-4000..4000)             OPTIONAL,
            fineSFN-SFN            FineSFN-SFN                     OPTIONAL,
            -- actual value roundTripTime = (IE value * 0.0625) + 876
            roundTripTime          INTEGER (0.. 32766)              OPTIONAL
        },
        ueAssisted                 SEQUENCE {}
    }
}

UE-Positioning-OTDOA-NeighbourCellInfo-UEB ::= SEQUENCE {
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            primaryCPICH-Info      PrimaryCPICH-Info
        },
        tdd                        SEQUENCE {
            cellAndChannelIdentity CellAndChannelIdentity
        }
    },
    frequencyInfo                 FrequencyInfo                     OPTIONAL,
    ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters           OPTIONAL,
    sfn-SFN-RelTimeDifference      SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift                 SFN-SFN-Drift                     OPTIONAL,
    searchWindowSize              OTDOA-SearchWindowSize,
    relativeNorth                 INTEGER (-20000..20000)           OPTIONAL,
    relativeEast                   INTEGER (-20000..20000)           OPTIONAL,

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relativeAltitude          INTEGER (-4000..4000)          OPTIONAL,
fineSFN-SFN               FINESFN-SFN,
-- actual value roundTripTime = (IE value * 0.0625) + 876
roundTripTime             INTEGER (0..32766)          OPTIONAL
}

UE-Positioning-OTDOA-NeighbourCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                           UE-Positioning-OTDOA-NeighbourCellInfo

UE-Positioning-OTDOA-NeighbourCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                               UE-Positioning-OTDOA-NeighbourCellInfo-r4

UE-Positioning-OTDOA-NeighbourCellList-UEB ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                UE-Positioning-OTDOA-NeighbourCellInfo-UEB

UE-Positioning-OTDOA-Quality ::= SEQUENCE {
  stdResolution            BIT STRING (SIZE (2)),
  numberOfOTDOA-Measurements BIT STRING (SIZE (3)),
  stdOfOTDOA-Measurements BIT STRING (SIZE (5))
}

UE-Positioning-OTDOA-ReferenceCellInfo ::= SEQUENCE {
  sfn                     INTEGER (0..4095)
  OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd                   SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info
    },
    tdd                   SEQUENCE {
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo           FrequencyInfo          OPTIONAL,
  positioningMode CHOICE {
    ueBased               SEQUENCE {},
    ueAssisted            SEQUENCE {}
  },
  ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-r4 ::= SEQUENCE {
  sfn                     INTEGER (0..4095)
  OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd                   SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info
    },
    tdd                   SEQUENCE {
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo           FrequencyInfo          OPTIONAL,
  positioningMode CHOICE {
    ueBased               SEQUENCE {
      cellPosition       ReferenceCellPosition OPTIONAL,
      -- actual value roundTripTime = (IE value * 0.0625) + 876
      roundTripTime     INTEGER (0..32766)      OPTIONAL
    },
    ueAssisted            SEQUENCE {}
  },
  ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters-r4 OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-UEB ::= SEQUENCE {
  sfn                     INTEGER (0..4095)          OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd                   SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info
    },
    tdd                   SEQUENCE {
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo           FrequencyInfo          OPTIONAL,
  cellPosition            ReferenceCellPosition OPTIONAL,
  -- actual value roundTripTime = (IE value * 0.0625) + 876
  roundTripTime           INTEGER (0..32766)      OPTIONAL,
  ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters OPTIONAL
}

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}

UE-Positioning-PositionEstimateInfo ::=          SEQUENCE {
  referenceTime          CHOICE {
    utran-GPSReferenceTimeResult      UTRAN-GPSReferenceTimeResult,
    gps-ReferenceTimeOnly             INTEGER (0..604799999),
    cell-Timing                     SEQUENCE {
      sfn                             INTEGER (0..4095),
      modeSpecificInfo               CHOICE {
        fdd                           SEQUENCE {
          primaryCPICH-Info           PrimaryCPICH-Info
        },
        tdd                           SEQUENCE {
          cellAndChannelIdentity      CellAndChannelIdentity
        }
      }
    }
  },
  positionEstimate      PositionEstimate
}

UE-Positioning-ReportingCriteria ::=             CHOICE {
  ue-positioning-ReportingCriteria             UE-Positioning-EventParamList,
  periodicalReportingCriteria                 PeriodicalReportingCriteria,
  noReporting                                 NULL
}

UE-Positioning-ReportingQuantity ::=            SEQUENCE {
  methodType                                UE-Positioning-MethodType,
  positioningMethod                         PositioningMethod,
  -- dummy1 is not used in this version of specification and it should
  -- be ignored.
  dummy1                                    UE-Positioning-ResponseTime,
  accuracy                                  UE-Positioning-Accuracy          OPTIONAL,
  gps-TimingOfCellWanted                    BOOLEAN,
  -- dummy2 is not used in this version of specification and it should
  -- be ignored.
  dummy2                                    BOOLEAN,
  additionalAssistanceDataReq                BOOLEAN,
  environmentCharacterisation                 EnvironmentCharacterisation      OPTIONAL
}

UE-Positioning-ReportingQuantity-v390ext ::=   SEQUENCE {
  vertical-Accuracy                          UE-Positioning-Accuracy
}

UE-Positioning-ReportingQuantity-r4 ::=        SEQUENCE {
  methodType                                UE-Positioning-MethodType,
  positioningMethod                         PositioningMethod,
  horizontalAccuracy                         UE-Positioning-Accuracy          OPTIONAL,
  verticalAccuracy                           UE-Positioning-Accuracy          OPTIONAL,
  gps-TimingOfCellWanted                    BOOLEAN,
  additionalAssistanceDataReq                BOOLEAN,
  environmentCharacterisation                 EnvironmentCharacterisation      OPTIONAL
}

UE-Positioning-ResponseTime ::=               ENUMERATED {
  s1, s2, s4, s8, s16,
  s32, s64, s128 }

-- SPARE: UTRA-CarrierRSSI, Max = 76
-- Values above Max are spare
UTRA-CarrierRSSI ::=                          INTEGER (0..127)

UTRAN-GPS-DriftRate ::=                       ENUMERATED {
  utran-GPSDrift0, utran-GPSDrift1, utran-GPSDrift2,
  utran-GPSDrift5, utran-GPSDrift10, utran-GPSDrift15,
  utran-GPSDrift25, utran-GPSDrift50, utran-GPSDrift-1,
  utran-GPSDrift-2, utran-GPSDrift-5, utran-GPSDrift-10,
  utran-GPSDrift-15, utran-GPSDrift-25, utran-GPSDrift-50}

UTRAN-GPSReferenceTime ::=                    SEQUENCE {
  -- For utran-GPSTimingOfCell values above 2322431999999 are not
  -- used in this version of the specification
  utran-GPSTimingOfCell                     SEQUENCE {
    ms-part                                  INTEGER (0..1023),
    ls-part                                  INTEGER (0..4294967295)
  },
}

```

```

modeSpecificInfo CHOICE {
  fdd SEQUENCE {
    referenceIdentity PrimaryCPICH-Info
  },
  tdd SEQUENCE {
    referenceIdentity CellParametersID
  }
} OPTIONAL,
sfn INTEGER (0..4095)
}

UTRAN-GPSReferenceTimeResult ::= SEQUENCE {
  -- For ue-GPSTimingOfCell values above 37158911999999 are not
  -- used in this version of the specification
  ue-GPSTimingOfCell SEQUENCE {
    ms-part INTEGER (0.. 16383),
    ls-part INTEGER (0..4294967295)
  },
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      referenceIdentity PrimaryCPICH-Info
    },
    tdd SEQUENCE {
      referenceIdentity CellParametersID
    }
  },
  sfn INTEGER (0..4095)
}

VarianceOfRLC-BufferPayload ::= ENUMERATED {
  plv0, plv4, plv8, plv16, plv32, plv64,
  plv128, plv256, plv512, plv1024,
  plv2k, plv4k, plv8k, plv16k, spare2, spare1 }

-- Actual value W = IE value * 0.1
W ::= INTEGER (0..20)

-- *****
--
-- OTHER INFORMATION ELEMENTS (10.3.8)
--
-- *****

BCC ::= INTEGER (0..7)

BCCH-ModificationInfo ::= SEQUENCE {
  mib-ValueTag MIB-ValueTag,
  bcch-ModificationTime BCCH-ModificationTime OPTIONAL
}

-- Actual value BCCH-ModificationTime = IE value * 8
BCCH-ModificationTime ::= INTEGER (0..511)

BSIC ::= SEQUENCE {
  ncc NCC,
  bcc BCC
}

CBS-DRX-Level1Information ::= SEQUENCE {
  ctch-AllocationPeriod INTEGER (1..256),
  cbs-FrameOffset INTEGER (0..255)
}

CDMA2000-Message ::= SEQUENCE {
  msg-Type BIT STRING (SIZE (8)),
  payload BIT STRING (SIZE (1..512))
}

CDMA2000-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
  CDMA2000-Message

CDMA2000-UMTS-Frequency-List ::= SEQUENCE (SIZE (1..maxNumCDMA2000Freqs)) OF
  FrequencyInfoCDMA2000

CellValueTag ::= INTEGER (1..4)

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

```

```

FDD-UMTS-Frequency-List ::= SEQUENCE (SIZE (1..maxNumFDDFreqs)) OF
    FrequencyInfoFDD

FrequencyInfoCDMA2000 ::= SEQUENCE {
    band-Class          BIT STRING (SIZE (5)),
    cdma-Freq           BIT STRING (SIZE(11))
}

GSM-BA-Range ::= SEQUENCE {
    gsmLowRangeUARFCN   UARFCN,
    gsmUpRangeUARFCN   UARFCN
}

GSM-BA-Range-List ::= SEQUENCE (SIZE (1..maxNumGSMFreqRanges)) OF
    GSM-BA-Range

GSM-Classmark2 ::= OCTET STRING (SIZE (5))

GSM-Classmark3 ::= OCTET STRING (SIZE (1..32))

GSM-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
    BIT STRING (SIZE (1..512))

GsmSecurityCapability ::= BIT STRING {
    a5-7(0),
    a5-6(1),
    a5-5(2),
    a5-4(3),
    a5-3(4),
    a5-2(5),
    a5-1(6)
} (SIZE (7))

IdentificationOfReceivedMessage ::= SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    receivedMessageType       ReceivedMessageType
}

InterRAT-ChangeFailureCause ::= CHOICE {
    configurationUnacceptable    NULL,
    physicalChannelFailure      NULL,
    protocolError                ProtocolErrorInformation,
    unspecified                  NULL,
    spare4                       NULL,
    spare3                       NULL,
    spare2                       NULL,
    spare1                       NULL
}

InterRAT-UE-RadioAccessCapability ::= CHOICE {
    gsm                           SEQUENCE {
        gsm-Classmark2          GSM-Classmark2,
        gsm-Classmark3          GSM-Classmark3
    },
    cdma2000                       SEQUENCE {
        cdma2000-MessageList    CDMA2000-MessageList
    }
}

InterRAT-UE-RadioAccessCapabilityList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
    InterRAT-UE-RadioAccessCapability

InterRAT-UE-SecurityCapability ::= CHOICE {
    gsm                           SEQUENCE {
        gsmSecurityCapability    GsmSecurityCapability
    }
}

InterRAT-UE-SecurityCapList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
    InterRAT-UE-SecurityCapability

InterRAT-HO-FailureCause ::= CHOICE {
    configurationUnacceptable    NULL,
    physicalChannelFailure      NULL,
    protocolError                ProtocolErrorInformation,
    interRAT-ProtocolError      NULL,
    unspecified                  NULL,
}

```

```

    spare11          NULL,
    spare10          NULL,
    spare9           NULL,
    spare8           NULL,
    spare7           NULL,
    spare6           NULL,
    spare5           NULL,
    spare4           NULL,
    spare3           NULL,
    spare2           NULL,
    spare1           NULL
}

MasterInformationBlock ::=          SEQUENCE {
    mib-ValueTag          MIB-ValueTag,
    -- TABULAR: The PLMN identity and ANSI-41 core network information
    -- are included in PLMN-Type.
    plmn-Type            PLMN-Type,
    sibSb-ReferenceList  SIBSb-ReferenceList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions SEQUENCE {}                                OPTIONAL
}

MIB-ValueTag ::=          INTEGER (1..8)

NCC ::=                  INTEGER (0..7)

PLMN-ValueTag ::=       INTEGER (1..256)

PredefinedConfigIdentityAndValueTag ::= SEQUENCE {
    predefinedConfigIdentity      PredefinedConfigIdentity,
    predefinedConfigValueTag      PredefinedConfigValueTag
}

ProtocolErrorInformation ::= SEQUENCE {
    diagnosticsType              CHOICE {
        type1                    SEQUENCE {
            protocolErrorCause    ProtocolErrorCause
        },
        spare                     NULL
    }
}

ReceivedMessageType ::= ENUMERATED {
    activeSetUpdate,
    cellChangeOrderFromUTRAN,
    cellUpdateConfirm,
    counterCheck,
    downlinkDirectTransfer,
    interRATHandoverCommand,
    measurementControl,
    pagingType2,
    physicalChannelReconfiguration,
    physicalSharedChannelAllocation,
    radioBearerReconfiguration,
    radioBearerRelease,
    radioBearerSetup,
    rrcConnectionRelease,
    rrcConnectionReject,
    rrcConnectionSetup,
    securityModeCommand,
    signallingConnectionRelease,
    transportChannelReconfiguration,
    transportFormatCombinationControl,
    ueCapabilityEnquiry,
    ueCapabilityInformationConfirm,
    uplinkPhysicalChannelControl,
    uraUpdateConfirm,
    utranMobilityInformation,
    assistanceDataDelivery,
    spare5, spare4, spare3, spare2,
    spare1
}

Rplmn-Information ::= SEQUENCE {
    gsm-BA-Range-List          GSM-BA-Range-List    OPTIONAL,

```

```

OPTIONAL,
OPTIONAL,
List OPTIONAL
}

Rplmn-Information-r4 ::= SEQUENCE {
    gsm-BA-Range-List GSM-BA-Range-List OPTIONAL,
    fdd-UMTS-Frequency-List FDD-UMTS-Frequency-List OPTIONAL,
    tdd384-UMTS-Frequency-List TDD-UMTS-Frequency-List OPTIONAL,
    tdd128-UMTS-Frequency-List TDD-UMTS-Frequency-List OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-
}

SchedulingInformation ::= SEQUENCE {
    scheduling SEQUENCE {
        segCount SegCount DEFAULT 1,
        sib-Pos CHOICE {
            -- The element name indicates the repetition period and the value
            -- (multiplied by two) indicates the position of the first segment.
            rep4 INTEGER (0..1),
            rep8 INTEGER (0..3),
            rep16 INTEGER (0..7),
            rep32 INTEGER (0..15),
            rep64 INTEGER (0..31),
            rep128 INTEGER (0..63),
            rep256 INTEGER (0..127),
            rep512 INTEGER (0..255),
            rep1024 INTEGER (0..511),
            rep2048 INTEGER (0..1023),
            rep4096 INTEGER (0..2047)
        },
        sib-PosOffsetInfo SibOFF-List OPTIONAL
    }
}

SchedulingInformationSIB ::= SEQUENCE {
    sib-Type SIB-TypeAndTag,
    scheduling SchedulingInformation
}

SchedulingInformationSIBSb ::= SEQUENCE {
    sibSb-Type SIBSb-TypeAndTag,
    scheduling SchedulingInformation
}

SegCount ::= INTEGER (1..16)

SegmentIndex ::= INTEGER (1..15)

-- Actual value SFN-Prime = 2 * IE value
SFN-Prime ::= INTEGER (0..2047)

SIB-Data-fixed ::= BIT STRING (SIZE (222))

SIB-Data-variable ::= BIT STRING (SIZE (1..214))

SIBOccurIdentity ::= INTEGER (0..15)

SIBOccurrenceIdentityAndValueTag ::= SEQUENCE {
    sibOccurIdentity SIBOccurIdentity,
    sibOccurValueTag SIBOccurValueTag
}

SIBOccurValueTag ::= INTEGER (0..15)

SIB-ReferenceList ::= SEQUENCE (SIZE (1..maxSIB)) OF
    SchedulingInformationSIB

SIBSb-ReferenceList ::= SEQUENCE (SIZE (1..maxSIB)) OF
    SchedulingInformationSIBSb

SIB-ReferenceListFACH ::= SEQUENCE (SIZE (1..maxSIB-FACH)) OF
    SchedulingInformationSIB

```

SIB-Type ::=

```

ENUMERATED {
    masterInformationBlock,
    systemInformationBlockType1,
    systemInformationBlockType2,
    systemInformationBlockType3,
    systemInformationBlockType4,
    systemInformationBlockType5,
    systemInformationBlockType6,
    systemInformationBlockType7,
    systemInformationBlockType8,
    systemInformationBlockType9,
    systemInformationBlockType10,
    systemInformationBlockType11,
    systemInformationBlockType12,
    systemInformationBlockType13,
    systemInformationBlockType13-1,
    systemInformationBlockType13-2,
    systemInformationBlockType13-3,
    systemInformationBlockType13-4,
    systemInformationBlockType14,
    systemInformationBlockType15,
    systemInformationBlockType15-1,
    systemInformationBlockType15-2,
    systemInformationBlockType15-3,
    systemInformationBlockType16,
    systemInformationBlockType17,
    systemInformationBlockType15-4,
    systemInformationBlockType18,
    schedulingBlock1,
    schedulingBlock2,
    systemInformationBlockType15-5,
    spare1, spare2 }

```

SIB-TypeAndTag ::=

```

    sysInfoType1
    sysInfoType2
    sysInfoType3
    sysInfoType4
    sysInfoType5
    sysInfoType6
    sysInfoType7
    sysInfoType8
    sysInfoType9
    sysInfoType10
    sysInfoType11
    sysInfoType12
    sysInfoType13
    sysInfoType13-1
    sysInfoType13-2
    sysInfoType13-3
    sysInfoType13-4
    sysInfoType14
    sysInfoType15
    sysInfoType16
    sysInfoType17
    sysInfoType15-1
    sysInfoType15-2
    sysInfoType15-3
    sysInfoType15-4
    sysInfoType18
    sysInfoType15-5
    spare5
    spare4
    spare3
    spare2
    spare1
}

```

```

CHOICE {
    PLMN-ValueTag,
    CellValueTag,
    CellValueTag,
    CellValueTag,
    CellValueTag,
    CellValueTag,
    NULL,
    CellValueTag,
    NULL,
    NULL,
    CellValueTag,
    CellValueTag,
    CellValueTag,
    CellValueTag,
    CellValueTag,
    CellValueTag,
    CellValueTag,
    NULL,
    CellValueTag,
    PredefinedConfigIdentityAndValueTag,
    NULL,
    CellValueTag,
    SIBOccurrenceIdentityAndValueTag,
    SIBOccurrenceIdentityAndValueTag,
    CellValueTag,
    CellValueTag,
    CellValueTag,
    NULL,
    NULL,
    NULL,
    NULL,
    NULL
}

```

SIBSb-TypeAndTag ::=

```

    sysInfoType1
    sysInfoType2
    sysInfoType3
    sysInfoType4
    sysInfoType5
    sysInfoType6
    sysInfoType7
    sysInfoType8
}

```

```

CHOICE {
    PLMN-ValueTag,
    CellValueTag,
    CellValueTag,
    CellValueTag,
    CellValueTag,
    CellValueTag,
    NULL,
    CellValueTag,
}

```



```

sysInfoType9          NULL,
sysInfoType10         NULL,
sysInfoType11         CellValueTag,
sysInfoType12         CellValueTag,
sysInfoType13         CellValueTag,
sysInfoType13-1       CellValueTag,
sysInfoType13-2       CellValueTag,
sysInfoType13-3       CellValueTag,
sysInfoType13-4       CellValueTag,
sysInfoType14         NULL,
sysInfoType15         CellValueTag,
sysInfoType16         PredefinedConfigIdentityAndValueTag,
sysInfoType17         NULL,
sysInfoTypeSB1        CellValueTag,
sysInfoTypeSB2        CellValueTag,
sysInfoType15-1       CellValueTag,
sysInfoType15-2       SIBOccurrenceIdentityAndValueTag,
sysInfoType15-3       SIBOccurrenceIdentityAndValueTag,
sysInfoType15-4       CellValueTag,
sysInfoType18         CellValueTag,
sysInfoType15-5       CellValueTag,
spare2                NULL,
spare1                NULL
}

SibOFF ::=
    ENUMERATED {
        so2, so4, so6, so8, so10,
        so12, so14, so16, so18,
        so20, so22, so24, so26,
        so28, so30, so32 }

SibOFF-List ::=
    SEQUENCE (SIZE (1..15)) OF
        SibOFF

SysInfoType1 ::=
    SEQUENCE {
        -- Core network IEs
        cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP,
        cn-DomainSysInfoList            CN-DomainSysInfoList,
        -- User equipment IEs
        ue-ConnTimersAndConstants        UE-ConnTimersAndConstants        OPTIONAL,
        ue-IdleTimersAndConstants        UE-IdleTimersAndConstants        OPTIONAL,
        -- Extension mechanism for non- release99 information
        v3a0NonCriticalExtensions        SEQUENCE {
            sysInfoType1-v3a0ext        SysInfoType1-v3a0ext-IEs,
            nonCriticalExtensions        SEQUENCE {} OPTIONAL
        }
    }

SysInfoType1-v3a0ext-IEs ::= SEQUENCE {
    ue-ConnTimersAndConstants-v3a0ext    UE-ConnTimersAndConstants-v3a0ext,
    ue-IdleTimersAndConstants-v3a0ext    UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType2 ::=
    SEQUENCE {
        -- UTRAN mobility IEs
        ura-IdentityList                URA-IdentityList,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}
    }

SysInfoType3 ::=
    SEQUENCE {
        sib4indicator                    BOOLEAN,
        -- UTRAN mobility IEs
        cellIdentity                     CellIdentity,
        cellSelectReselectInfo            CellSelectReselectInfoSIB-3-4,
        cellAccessRestriction            CellAccessRestriction,
        -- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions        SEQUENCE {
            sysInfoType3-v4xyext        SysInfoType3-v4xyext-IEs,
            nonCriticalExtensions        SEQUENCE {}
        }
    }

SysInfoType3-v4xyext-IEs ::= SEQUENCE {
    mapping-LCR                          Mapping-LCR-r4
}

SysInfoType4 ::=
    SEQUENCE {

```

```

-- UTRAN mobility IEs
  cellIdentity          CellIdentity,
  cellSelectReselectInfo CellSelectReselectInfoSIB-3-4,
  cellAccessRestriction CellAccessRestriction,
-- Extension mechanism for non- release99 information
  v4xyNonCriticalExtensions SEQUENCE {
    sysInfoType4-v4xyext SysInfoType4-v4xyext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
}

SysInfoType4-v4xyext-IEs ::= SEQUENCE {
  mapping-LCR Mapping-LCR-r4 OPTIONAL
}

SysInfoType5 ::= SEQUENCE {
  sib6indicator BOOLEAN,
-- Physical channel IEs
  pich-PowerOffset PICH-PowerOffset,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      aich-PowerOffset AICH-PowerOffset
    },
    tdd SEQUENCE {
-- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
-- and the info included in the tdd128SpecificInfo instead.
      pusch-SysInfoList-SFN PUSCH-SysInfoList-SFN OPTIONAL,
      pdsch-SysInfoList-SFN PDSCH-SysInfoList-SFN OPTIONAL,
      openLoopPowerControl-TDD OpenLoopPowerControl-TDD
    }
  },
  primaryCCPCH-Info PrimaryCCPCH-Info OPTIONAL,
  prach-SystemInformationList PRACH-SystemInformationList,
  sCCPCH-SystemInformationList SCCPCH-SystemInformationList,
-- cbs-DRX-Level1Information is conditional on any of the CTCH indicator IEs in
-- sCCPCH-SystemInformationList
  cbs-DRX-Level1Information CBS-DRX-Level1Information OPTIONAL,
-- Extension mechanism for non- release99 information
  v4xyNonCriticalExtensions SEQUENCE {
    sysInfoType5-v4xyext SysInfoType5-v4xyext-IEs,
-- Extension mechanism for non- rel-4 information
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  }
}

SysInfoType5-v4xyext-IEs ::= SEQUENCE {
  pNBSCH-Allocation-r4 PNBSCH-Allocation-r4 OPTIONAL,
-- In case of TDD, the following IE is included instead of the
-- IE up-IPDL-Parameter in up-OTDOA-AssistanceData.
  openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4 OPTIONAL,
-- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
-- PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
-- IE rach-TransportFormatSet shall be absent and the corresponding IE in the following
-- PRACH-SystemInformationList-LCR-r4 shall be used
  prach-SystemInformationList-LCR-r4 PRACH-SystemInformationList-LCR-r4 OPTIONAL,
  tdd128SpecificInfo SEQUENCE {
    pusch-SysInfoList-SFN PUSCH-SysInfoList-SFN-LCR-r4 OPTIONAL,
    pdsch-SysInfoList-SFN PDSCH-SysInfoList-SFN-LCR-r4 OPTIONAL,
    pCCPCH-LCR-Extensions PrimaryCCPCH-Info-LCR-r4-ext OPTIONAL,
    sCCPCH-LCR-ExtensionsList SCCPCH-SystemInformationList-LCR-r4-ext
  } OPTIONAL
}

SysInfoType6 ::= SEQUENCE {
-- Physical channel IEs
  pich-PowerOffset PICH-PowerOffset,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      aich-PowerOffset AICH-PowerOffset,
      -- dummy is not used in this version of specification, it should
      -- not be sent and if received it should be ignored.
      dummy CSICH-PowerOffset OPTIONAL
    },
    tdd SEQUENCE {
-- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList-SFN,
-- pdsch-SysInfoList-SFN and openLoopPowerControl-TDD should be absent
-- and the info included in the tdd128SpecificInfo instead.
      pusch-SysInfoList-SFN PUSCH-SysInfoList-SFN OPTIONAL,

```

```

        pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN          OPTIONAL,
        openLoopPowerControl-TDD       OpenLoopPowerControl-TDD
    },
    },
    primaryCCPCH-Info                  PrimaryCCPCH-Info                  OPTIONAL,
    prach-SystemInformationList        PRACH-SystemInformationList        OPTIONAL,
    sCCPCH-SystemInformationList       SCCPCH-SystemInformationList       OPTIONAL,
    cbs-DRX-Level1Information          CBS-DRX-Level1Information         OPTIONAL,
    -- Conditional on any of the CTCH indicator IEs in
    -- sCCPCH-SystemInformationList
    -- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions          SEQUENCE {
        sysInfoType6-v4xyext          SysInfoType6-v4xyext-IEs,
    -- Extension mechanism for non- rel-4 information
        nonCriticalExtensions          SEQUENCE {}
    }
}

SysInfoType6-v4xyext-IEs ::= SEQUENCE {
    -- openLoopPowerControl-IPDL-TDD is present only if IPDLs are applied for TDD
    openLoopPowerControl-IPDL-TDD     OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL,
    -- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included
    -- in PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
    -- IE rach-TransportFormatSet shall be absent and the corresponding IEs in the following
    -- PRACH-SystemInformationList-LCR-r4 shall be used
    prach-SystemInformationList-LCR-r4 PRACH-SystemInformationList-LCR-r4  OPTIONAL,
    tddl28SpecificInfo                SEQUENCE {
        pusch-SysInfoList-SFN         PUSCH-SysInfoList-SFN-LCR-r4     OPTIONAL,
        pdsch-SysInfoList-SFN         PDSCH-SysInfoList-SFN-LCR-r4     OPTIONAL,
        pCCPCH-LCR-Extensions         PrimaryCCPCH-Info-LCR-r4-ext     OPTIONAL,
        sCCPCH-LCR-ExtensionsList     SCCPCH-SystemInformationList-LCR-r4-ext OPTIONAL
    }
}

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

SysInfoType8 ::= SEQUENCE {
    -- User equipment IEs
    cpch-Parameters                   CPCH-Parameters,
    -- Physical channel IEs
    cpch-SetInfoList                  CPCH-SetInfoList,
    csich-PowerOffset                 CSICH-PowerOffset,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}
}

SysInfoType9 ::= SEQUENCE {
    -- Physical channel IEs
    cpch-PersistenceLevelsList        CPCH-PersistenceLevelsList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}
}

SysInfoType10 ::= SEQUENCE {
    -- User equipment IEs
    drac-SysInfoList                  DRAC-SysInfoList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}
}

SysInfoType11 ::= SEQUENCE {
    sib12indicator                     BOOLEAN,
    -- Measurement IEs
    fach-MeasurementOccasionInfo      FACH-MeasurementOccasionInfo     OPTIONAL,
    measurementControlSysInfo         MeasurementControlSysInfo,
}

```

```

-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions SEQUENCE {
  sysInfoType11-v4xyext SysInfoType11-v4xyext-IEs,
  nonCriticalExtensions SEQUENCE {} OPTIONAL
}
}

SysInfoType11-v4xyext-IEs ::= SEQUENCE {
  fach-MeasurementOccasionInfo-LCR-Ext FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
  measurementControlSysInfo-LCR MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType12 ::= SEQUENCE {
  -- Measurement IEs
  fach-MeasurementOccasionInfo FACH-MeasurementOccasionInfo OPTIONAL,
  measurementControlSysInfo MeasurementControlSysInfo,
  -- Extension mechanism for non- release99 information
  v4xyNonCriticalExtensions SEQUENCE {
    sysInfoType12-v4xyext SysInfoType12-v4xyext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  }
}

SysInfoType12-v4xyext-IEs ::= SEQUENCE {
  fach-MeasurementOccasionInfo-LCR-Ext FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
  measurementControlSysInfo-LCR MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType13 ::= SEQUENCE {
  -- Core network IEs
  cn-DomainSysInfoList CN-DomainSysInfoList,
  -- User equipment IEs
  ue-IdleTimersAndConstants UE-IdleTimersAndConstants OPTIONAL,
  capabilityUpdateRequirement CapabilityUpdateRequirement OPTIONAL,
  -- Extension mechanism for non- release99 information
  v3a0NonCriticalExtensions SEQUENCE {
    sysInfoType13-v3a0ext SysInfoType13-v3a0ext-IEs,
    v4xyNonCriticalExtensions SEQUENCE {
      sysInfoType13-v4xyext SysInfoType13-v4xyext-IEs,
      -- Extension mechanism for non- release99 information
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  }
}

SysInfoType13-v3a0ext-IEs ::= SEQUENCE {
  ue-IdleTimersAndConstants-v3a0ext UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType13-v4xyext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4Ext CapabilityUpdateRequirement-r4-ext OPTIONAL
}

SysInfoType13-1 ::= SEQUENCE {
  -- ANSI-41 IEs
  ansi-41-RAND-Information ANSI-41-RAND-Information,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions SEQUENCE {} OPTIONAL
}

SysInfoType13-2 ::= SEQUENCE {
  -- ANSI-41 IEs
  ansi-41-UserZoneID-Information ANSI-41-UserZoneID-Information,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions SEQUENCE {} OPTIONAL
}

SysInfoType13-3 ::= SEQUENCE {
  -- ANSI-41 IEs
  ansi-41-PrivateNeighbourListInfo ANSI-41-PrivateNeighbourListInfo,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions SEQUENCE {} OPTIONAL
}

SysInfoType13-4 ::= SEQUENCE {
  -- ANSI-41 IEs
  ansi-41-GlobalServiceRedirectInfo ANSI-41-GlobalServiceRedirectInfo,

```

```

-- Extension mechanism for non- release99 information
nonCriticalExtensions          SEQUENCE {}          OPTIONAL
}

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

SysInfoType15 ::=
-- Measurement IEs

ue-positioning-GPS-CipherParameters  UE-Positioning-CipherParameters  OPTIONAL,
ue-positioning-GPS-ReferenceLocation  ReferenceLocation,
ue-positioning-GPS-ReferenceTime      UE-Positioning-GPS-ReferenceTime,

ue-positioning-GPS-Real-timeIntegrity  BadSatList          OPTIONAL,
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions          SEQUENCE {}
  sysInfoType15-v4xyext            SysInfoType15-v4xyext-IEs,
-- Extension mechanism for non- release4 information
nonCriticalExtensions              SEQUENCE {}          OPTIONAL
}
}

SysInfoType15-v4xyext-IEs ::= SEQUENCE {
up-IPDL-Parameters-TDD            UE-Positioning-IPDL-Parameters-TDD-r4-ext  OPTIONAL
}

SysInfoType15-1 ::=
-- DGPS corrections
ue-positioning-GPS-DGPS-Corrections  UE-Positioning-GPS-DGPS-Corrections,

-- Extension mechanism for non- release99 information
nonCriticalExtensions              SEQUENCE {}          OPTIONAL
}

SysInfoType15-2 ::=
-- Ephemeris and clock corrections
transmissionTOW                   INTEGER (0..604799),
satID                              SatID,
ephemerisParameter                 EphemerisParameter,

-- Extension mechanism for non- release99 information
nonCriticalExtensions              SEQUENCE {}          OPTIONAL
}

SysInfoType15-3 ::=
-- Almanac and other data
transmissionTOW                   INTEGER (0.. 604799),
ue-positioning-GPS-Almanac         UE-Positioning-GPS-Almanac
OPTIONAL,
ue-positioning-GPS-IonosphericModel  UE-Positioning-GPS-IonosphericModel
OPTIONAL,
ue-positioning-GPS-UTC-Model        UE-Positioning-GPS-UTC-Model
OPTIONAL,
satMask                            BIT STRING (SIZE (1..32))  OPTIONAL,
lsbTOW                              BIT STRING (SIZE (8))    OPTIONAL,
-- Extension mechanism for non- release99 information
nonCriticalExtensions              SEQUENCE {}          OPTIONAL
}

SysInfoType15-4 ::=
-- Measurement IEs
ue-positioning-OTDOA-CipherParameters  UE-Positioning-CipherParameters  OPTIONAL,
ue-positioning-OTDOA-AssistanceData    UE-Positioning-OTDOA-AssistanceData,
v3a0NonCriticalExtensions              SEQUENCE {}
  sysInfoType15-4-v3a0ext              SysInfoType15-4-v3a0ext,
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions              SEQUENCE {}
  sysInfoType15-4-v4xyext              SysInfoType15-4-v4xyext,
nonCriticalExtensions                  SEQUENCE {}          OPTIONAL
}
}
}

```

```

SysInfoType15-4-v3a0ext ::= SEQUENCE {
    sfn-Offset-Validity          SFN-Offset-Validity          OPTIONAL
}

SysInfoType15-4-v4xyext ::= SEQUENCE {
    ue-Positioning-OTDOA-AssistanceData-r4ext  UE-Positioning-OTDOA-AssistanceData-r4ext  OPTIONAL
}

SysInfoType15-5 ::=
    SEQUENCE {
        -- Measurement IEs
        ue-positioning-OTDOA-AssistanceData-UEB  UE-Positioning-OTDOA-AssistanceData-UEB,
        v3a0NonCriticalExtensions                SEQUENCE {
            sysInfoType15-5-v3a0ext              SysInfoType15-5-v3a0ext,
            -- Extension mechanism for non- release99 information
            nonCriticalExtensions                SEQUENCE {}          OPTIONAL
        }          OPTIONAL
    }

SysInfoType15-5-v3a0ext ::= SEQUENCE {
    sfn-Offset-Validity          SFN-Offset-Validity          OPTIONAL
}

SysInfoType16 ::=
    SEQUENCE {
        -- Radio bearer IEs
        preDefinedRadioConfiguration  PreDefRadioConfiguration,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }

SysInfoType17 ::=
    SEQUENCE {
        -- Physical channel IEs
        -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList and
        -- pdsch-SysInfoList should be absent and the info included in the
        -- tddl28SpecificInfo instead.
        pusch-SysInfoList              PUSCH-SysInfoList          OPTIONAL,
        pdsch-SysInfoList              PDSCH-SysInfoList          OPTIONAL,
        -- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions      SEQUENCE {
            sysInfoType17-v4xyext      SysInfoType17-v4xyext-IEs,
            nonCriticalExtensions      SEQUENCE {}          OPTIONAL
        }          OPTIONAL
    }

SysInfoType17-v4xyext-IEs ::= SEQUENCE {
    tddl28SpecificInfo                SEQUENCE {
        pusch-SysInfoList              PUSCH-SysInfoList-LCR-r4          OPTIONAL,
        pdsch-SysInfoList              PDSCH-SysInfoList-LCR-r4          OPTIONAL,
        }          OPTIONAL
}

SysInfoType18 ::=
    SEQUENCE {
        idleModePLMNIdentities         PLMNIdentitiesOfNeighbourCells  OPTIONAL,
        connectedModePLMNIdentities    PLMNIdentitiesOfNeighbourCells  OPTIONAL,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }

SysInfoTypeSB1 ::=
    SEQUENCE {
        -- Other IEs
        sib-ReferenceList              SIB-ReferenceList,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }

SysInfoTypeSB2 ::=
    SEQUENCE {
        -- Other IEs
        sib-ReferenceList              SIB-ReferenceList,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }

TDD-UMTS-Frequency-List ::=
    SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF
    FrequencyInfoTDD

-- *****
--
-- ANSI-41 INFORMATION ELEMENTS (10.3.9)

```

```
--
-- *****

ANSI-41-GlobalServiceRedirectInfo ::= ANSI-41-NAS-Parameter
ANSI-41-PrivateNeighbourListInfo ::= ANSI-41-NAS-Parameter
ANSI-41-RAND-Information ::= ANSI-41-NAS-Parameter
ANSI-41-UserZoneID-Information ::= ANSI-41-NAS-Parameter
ANSI-41-NAS-Parameter ::= BIT STRING (SIZE (1..2048))

Min-P-REV ::= BIT STRING (SIZE (8))

NAS-SystemInformationANSI-41 ::= ANSI-41-NAS-Parameter
NID ::= BIT STRING (SIZE (16))

P-REV ::= BIT STRING (SIZE (8))

SID ::= BIT STRING (SIZE (15))

END
```

11.4 Constant definitions

```
Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

```
hipDSCHidentities INTEGER ::= 64
hipUSCHidentities INTEGER ::= 64
hIRM INTEGER ::= 256
maxAC INTEGER ::= 16
maxAdditionalMeas INTEGER ::= 4
maxASC INTEGER ::= 8
maxASCmap INTEGER ::= 7
maxASCpersist INTEGER ::= 6
maxCCTrCH INTEGER ::= 8
maxCellMeas INTEGER ::= 32
maxCellMeas-1 INTEGER ::= 31
maxCNDomains INTEGER ::= 4
maxCPCHsets INTEGER ::= 16
maxDPCH-DLchan INTEGER ::= 8
maxDPDCH-UL INTEGER ::= 6
maxDRACclasses INTEGER ::= 8
maxFACHPCH INTEGER ::= 8
maxFreq INTEGER ::= 8
maxFreqBandsFDD INTEGER ::= 8
maxFreqBandsTDD INTEGER ::= 4
maxFreqBandsGSM INTEGER ::= 16
maxHProcesses INTEGER ::= 68
maxHSDSCHTBIndex INTEGER ::= 64
maxHSDSCHTBIndex-tdd384 INTEGER ::= 512
maxHSSCCHs INTEGER ::= 4
maxInterSysMessages INTEGER ::= 4
maxLoCHperRLC INTEGER ::= 2
maxMAC-d-PDUsizes INTEGER ::= 16
maxMeasEvent INTEGER ::= 8
maxMeasIntervals INTEGER ::= 3
maxMeasParEvent INTEGER ::= 2
maxNumCDMA2000Freqs INTEGER ::= 8
maxNumGSMFreqRanges INTEGER ::= 32
maxNumFDDFreqs INTEGER ::= 8
maxNumTDDFreqs INTEGER ::= 8
maxNoOfMeas INTEGER ::= 16
maxOtherRAT INTEGER ::= 15
maxOtherRAT-16 INTEGER ::= 16
maxPage1 INTEGER ::= 8
maxPCPCH-APsig INTEGER ::= 16
maxPCPCH-APsubCh INTEGER ::= 12
maxPCPCH-CDsig INTEGER ::= 16
maxPCPCH-CDsubCh INTEGER ::= 12
maxPCPCH-SF INTEGER ::= 7
maxPCPCHs INTEGER ::= 64
maxPDCPAlgoType INTEGER ::= 8
maxPDSCH INTEGER ::= 8
maxPDSCH-TFCIgroups INTEGER ::= 256
maxPRACH INTEGER ::= 16
maxPRACH-FPACH INTEGER ::= 8
maxPredefConfig INTEGER ::= 16
```

```

maxPUSCH                INTEGER ::= 8
maxQueueIDs             INTEGER ::= 8
maxRABsetup             INTEGER ::= 16
maxRAT                  INTEGER ::= 16
maxRB                   INTEGER ::= 32
maxRBallRABs           INTEGER ::= 27
maxRBMuxOptions         INTEGER ::= 8
maxRBperRAB            INTEGER ::= 8
maxReportedGSMCells    INTEGER ::= 6
maxRL                   INTEGER ::= 8
maxRL-1                 INTEGER ::= 7
maxROHC-PacketSizes-r4 INTEGER ::= 16
maxROHC-Profile-r4     INTEGER ::= 8
maxSat                  INTEGER ::= 16
maxSCCPCH               INTEGER ::= 16
maxSIB                  INTEGER ::= 32
maxSIB-FACH             INTEGER ::= 8
maxSIBperMsg           INTEGER ::= 16
maxSRBsetup            INTEGER ::= 8
maxSystemCapability    INTEGER ::= 16
maxTF                   INTEGER ::= 32
maxTF-CPCH             INTEGER ::= 16
maxTFC                  INTEGER ::= 1024
maxTFCsub              INTEGER ::= 1024
maxTFCI-2-Combs        INTEGER ::= 512
maxTGPS                 INTEGER ::= 6
maxTrCH                 INTEGER ::= 32
-- maxTrCHpreconf should be 16 but has been set to 32 for compatibility
maxTrCHpreconf         INTEGER ::= 32
maxTS                   INTEGER ::= 14
maxTS-1                 INTEGER ::= 13
maxTS-LCR               INTEGER ::= 6
maxTS-LCR-1            INTEGER ::= 5
maxURA                  INTEGER ::= 8

```

END

11.5 RRC information between network nodes

Internode-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

```

    HandoverToUTRANCommand,
    MeasurementReport,
    PhysicalChannelReconfiguration,
    RadioBearerReconfiguration,
    RadioBearerRelease,
    RadioBearerSetup,
    RRC-FailureInfo-r3-IEs,
    TransportChannelReconfiguration
FROM PDU-definitions

```

```

-- Core Network IEs :
    CN-DomainIdentity,
    CN-DomainInformationList,
    CN-DRX-CycleLengthCoefficient,
    NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
    CellIdentity,
    URA-Identity,
-- User Equipment IEs :
    C-RNTI,
    DL-PhysChCapabilityFDD-v380ext,
    FailureCauseWithProtErr,
    RRC-MessageSequenceNumber,
    STARTList,
    START-Value,
    U-RNTI,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
    UE-RadioAccessCapability-v3a0ext,
    UE-RadioAccessCapability-v4xyext,
-- Radio Bearer IEs :

```



```

    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    RAB-Identity,
    SRB-InformationSetupList,
-- Transport Channel IEs :
    CPCH-SetID,
    DL-CommonTransChInfo,
    DL-AddReconfTransChInfoList,
    DRAC-StaticInformationList,
    UL-CommonTransChInfo,
    UL-AddReconfTransChInfoList,
-- Measurement IEs :
    MeasurementIdentity,
    MeasurementReportingMode,
    MeasurementType,
    MeasurementType-r4,
    AdditionalMeasurementID-List,
    PositionEstimate,
    UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
InterRAT-UE-RadioAccessCapabilityList
FROM InformationElements

    maxCNdomains,
    maxNoOfMeas,

    maxRB,
    maxSRBsetup
FROM Constant-definitions
;

-- Part 1: Class definitions similar to what has been defined in 11.1 for RRC messages
-- Information that is transferred in the same direction and across the same path is grouped
-- *****
--
-- RRC information, to target RNC
--
-- *****
-- RRC Information to target RNC sent either from source RNC or from another RAT

ToTargetRNC-Container ::= CHOICE {
    interRATHandoverInfo          InterRATHandoverInfoWithInterRATCapabilities-r3,
    srncRelocation                SRNC-RelocationInfo-r3,
    extension                      NULL
}

-- *****
--
-- RRC information, target RNC to source RNC
--
-- *****

Target-RNC-ToSourceRNC-Container ::= CHOICE {
    radioBearerSetup              RadioBearerSetup,
    radioBearerReconfiguration    RadioBearerReconfiguration,
    radioBearerRelease            RadioBearerRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    rrc-FailureInfo              RRC-FailureInfo-r3-IEs,
    extension                      NULL
}

-- Part 2: Container definitions, similar to the PDU definitions in 11.2 for RRC messages
-- In alphabetical order

-- *****
--
-- Handover to UTRAN information
--
-- *****

InterRATHandoverInfoWithInterRATCapabilities-r3 ::= CHOICE {
    r3                            SEQUENCE {
        -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also

```

```

-- includes non critical extensions
interRATHandoverInfo-r3          InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
v390NonCriticalExtensions        SEQUENCE {
    interRATHandoverInfoWithInterRATCapabilities-v390ext
InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
-- Reserved for future non critical extension
    nonCriticalExtensions        SEQUENCE {} OPTIONAL
}
},
criticalExtensions              SEQUENCE {}
}

InterRATHandoverInfoWithInterRATCapabilities-r3-IEs ::= SEQUENCE {
-- The order of the IEs may not reflect the tabular format
-- but has been chosen to simplify the handling of the information in the BSC
-- Other IEs
ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
-- interRATHandoverInfo, Octet string is used to obtain 8 bit length field prior to
-- actual information. This makes it possible for BSS to transparently handle information
-- received via GSM air interface even when it includes non critical extensions.
-- The octet string shall include the InterRATHandoverInfo information
-- The BSS can re-use the 04.18 length field received from the MS
interRATHandoverInfo           OCTET STRING (SIZE (0..255))
}

InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs ::= SEQUENCE {
-- User equipment IEs
    failureCauseWithProtErr      FailureCauseWithProtErr              OPTIONAL
}

-- *****
--
-- SRNC Relocation information
--
-- *****

SRNC-RelocationInfo-r3 ::= CHOICE {
    r3                            SEQUENCE {
        sRNC-RelocationInfo-r3    SRNC-RelocationInfo-r3-IEs,
        v380NonCriticalExtensions SEQUENCE {
            sRNC-RelocationInfo-v380ext SRNC-RelocationInfo-v380ext-IEs,
            -- Reserved for future non critical extension
            v390NonCriticalExtensions SEQUENCE {
                sRNC-RelocationInfo-v390ext SRNC-RelocationInfo-v390ext-IEs,
                v3a0NonCriticalExtensions SEQUENCE {
                    sRNC-RelocationInfo-v3a0ext SRNC-RelocationInfo-v3a0ext-IEs,
                    v4xyNonCriticalExtensions SEQUENCE {
                        sRNC-RelocationInfo-v4xyext SRNC-RelocationInfo-v4xyext-IEs,
                        -- Reserved for future non critical extension
                        nonCriticalExtensions SEQUENCE {} OPTIONAL
                    }
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    } OPTIONAL
},
criticalExtensions              SEQUENCE {}
}

SRNC-RelocationInfo-r3-IEs ::= SEQUENCE {
-- Non-RRC IEs
    stateOfRRC                    StateOfRRC,
    stateOfRRC-Procedure           StateOfRRC-Procedure,
-- Ciphering related information IEs
-- If the extension v380 is included use the extension for the ciphering status per CN domain
    cipheringStatus                CipheringStatus,
    calculationTimeForCiphering    CalculationTimeForCiphering    OPTIONAL,
    cipheringInfoPerRB-List        CipheringInfoPerRB-List        OPTIONAL,
    count-C-List                   COUNT-C-List                OPTIONAL,
    integrityProtectionStatus       IntegrityProtectionStatus,
    srb-SpecificIntegrityProtInfo   SRB-SpecificIntegrityProtInfoList,
    implementationSpecificParams    ImplementationSpecificParams    OPTIONAL,
-- User equipment IEs
    u-RNTI                         U-RNTI,
    c-RNTI                         C-RNTI                        OPTIONAL,
    ue-RadioAccessCapability        UE-RadioAccessCapability,
    ue-Positioning-LastKnownPos     UE-Positioning-LastKnownPos    OPTIONAL,
-- Other IEs
    ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,

```

```

-- UTRAN mobility IEs
  ura-Identity          URA-Identity          OPTIONAL,
-- Core network IEs
  cn-CommonGSM-MAP-NAS-SysInfo  NAS-SystemInformationGSM-MAP,
  cn-DomainInformationList      CN-DomainInformationList      OPTIONAL,
-- Measurement IEs
  ongoingMeasRepList          OngoingMeasRepList          OPTIONAL,
-- Radio bearer IEs
  predefinedConfigStatusList    PredefinedConfigStatusList,
  srb-InformationList          SRB-InformationSetupList,
  rab-InformationList          RAB-InformationSetupList          OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo        UL-CommonTransChInfo        OPTIONAL,
  ul-TransChInfoList          UL-AddReconfTransChInfoList    OPTIONAL,
  modeSpecificInfo            CHOICE {
    fdd                        SEQUENCE {
      cpch-SetID              CPCH-SetID              OPTIONAL,
      transChDRAC-Info        DRAC-StaticInformationList  OPTIONAL
    },
    tdd                        NULL
  },
  dl-CommonTransChInfo        DL-CommonTransChInfo        OPTIONAL,
  dl-TransChInfoList          DL-AddReconfTransChInfoList    OPTIONAL,
-- Measurement report
  measurementReport            MeasurementReport            OPTIONAL,
  nonCriticalExtensions        SEQUENCE {
    -- In case of TDD only up-Ipdl-Parameters-TDD is present, otherwise
    -- this IE is absent
    up-Ipdl-Parameters-TDD      UE-Positioning-IPDL-Parameters-TDD-r4-ext  OPTIONAL,
    -- Extension mechanism for non-release4 information
    nonCriticalExtensions        SEQUENCE {}
  }
}

SRNC-RelocationInfo-v380ext-IEs ::= SEQUENCE {
  -- Ciphering related information IEs
  cn-DomainIdentity            CN-DomainIdentity,
  cipheringStatusList          CipheringStatusList
}

SRNC-RelocationInfo-v390ext-IEs ::= SEQUENCE {
  cn-DomainInformationList-v390ext  CN-DomainInformationList-v390ext  OPTIONAL,
  ue-RadioAccessCapability-v370ext  UE-RadioAccessCapability-v370ext  OPTIONAL,
  ue-RadioAccessCapability-v380ext  UE-RadioAccessCapability-v380ext  OPTIONAL,
  dl-PhysChCapabilityFDD-v380ext     DL-PhysChCapabilityFDD-v380ext,
  failureCauseWithProtErr          FailureCauseWithProtErr           OPTIONAL
}

SRNC-RelocationInfo-v3a0ext-IEs ::= SEQUENCE {
  startValueForCIphering-v3a0ext    START-Value,
  cipheringInfoForSRB1-v3a0ext       CipheringInfoForSRB1-v3a0ext,
  ue-RadioAccessCapability-v3a0ext    UE-RadioAccessCapability-v3a0ext  OPTIONAL
}

SRNC-RelocationInfo-v4xyext-IEs ::= SEQUENCE {
  ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}

CipheringInfoForSRB1-v3a0ext ::= SEQUENCE {
  dl-UM-SN                          BIT STRING (SIZE (7))
}

CipheringStatusList ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
  CipheringStatusCNdomain

CipheringStatusCNdomain ::= SEQUENCE {
  cn-DomainIdentity                CN-DomainIdentity,
  cipheringStatus                  CipheringStatus
}

SRNC-RelocationInfo-r4 ::= SEQUENCE {
  -- Non-RRC IEs
  stateOfRRC                      StateOfRRC,
  stateOfRRC-Procedure              StateOfRRC-Procedure,
  cipheringStatus                  CipheringStatus,
  calculationTimeForCiphering       CalculationTimeForCiphering        OPTIONAL,
  cipheringInfoPerRB-List           CipheringInfoPerRB-List           OPTIONAL,
  integrityProtectionStatus         IntegrityProtectionStatus,

```

```

    srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList,
    implementationSpecificParams ImplementationSpecificParams OPTIONAL,
-- User equipment IEs
    u-RNTI U-RNTI,
    c-RNTI C-RNTI OPTIONAL,
    ue-RadioAccessCapability UE-RadioAccessCapability,
    ue-Positioning-LastKnownPos UE-Positioning-LastKnownPos OPTIONAL,
-- Other IEs
    ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity URA-Identity OPTIONAL,
-- Core network IEs
    cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP,
    cn-DomainInformationList CN-DomainInformationList OPTIONAL,
-- Measurement IEs
    ongoingMeasRepList OngoingMeasRepList-r4 OPTIONAL,
-- Radio bearer IEs
    predefinedConfigStatusList PredefinedConfigStatusList,
    srb-InformationList SRB-InformationSetupList,
    rab-InformationList RAB-InformationSetupList OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
    ul-TransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            cpch-SetID CPCH-SetID OPTIONAL,
            transChDRAC-Info DRAC-StaticInformationList OPTIONAL
        },
        tdd NULL
    },
    dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
    dl-TransChInfoList DL-AddReconfTransChInfoList OPTIONAL,
-- Measurement report
    measurementReport MeasurementReport OPTIONAL,
    nonCriticalExtensions SEQUENCE {
        -- In case of TDD only up-IPDL-Parameters-TDD is present, otherwise
        -- this IE is absent
        up-IPDL-Parameters-TDD UE-Positioning-IPDL-Parameters-TDD-r4-ext OPTIONAL,
        -- Extension mechanism for non-release4 information
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
}

-- IE definitions

CalculationTimeForCiphering ::= SEQUENCE {
    cell-Id CellIdentity,
    sfn INTEGER (0..4095)
}

CipheringInfoPerRB ::= SEQUENCE {
    dl-HFN BIT STRING (SIZE (20..25)),
    ul-HFN BIT STRING (SIZE (20..25))
}

-- TABULAR: CipheringInfoPerRB-List, multiplicity value numberOfRadioBearers
-- has been replaced with maxRB.
CipheringInfoPerRB-List ::= SEQUENCE (SIZE (1..maxRB)) OF
    CipheringInfoPerRB

CipheringStatus ::= ENUMERATED {
    started, notStarted }

CN-DomainInformation-v390ext ::= SEQUENCE {
    cn-DRX-CycleLengthCoeff CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList-v390ext ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainInformation-v390ext

COUNT-C-List ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    COUNT-CSingle

COUNT-CSingle ::= SEQUENCE {
    cn-DomainIdentity CN-DomainIdentity,
    count-C BIT STRING (SIZE (32))
}

```

```

ImplementationSpecificParams ::=      BIT STRING (SIZE (1..512))

IntegrityProtectionStatus ::=        ENUMERATED {
                                        started, notStarted }

MeasurementCommandWithType ::=       CHOICE {
    setup                               MeasurementType,
    modify                               NULL,
    release                              NULL
}

MeasurementCommandWithType-r4 ::=     CHOICE {
    setup                               MeasurementType-r4,
    modify                               NULL,
    release                              NULL
}

OngoingMeasRep ::=                   SEQUENCE {
    measurementIdentity                 MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType
    measurementCommandWithType         MeasurementCommandWithType,
    measurementReportingMode           MeasurementReportingMode           OPTIONAL,
    additionalMeasurementID-List       AdditionalMeasurementID-List       OPTIONAL
}

OngoingMeasRep-r4 ::=                SEQUENCE {
    measurementIdentity                 MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType-r4.
    measurementCommandWithType-r4     MeasurementCommandWithType-r4,
    measurementReportingMode           MeasurementReportingMode           OPTIONAL,
    additionalMeasurementID-List       AdditionalMeasurementID-List       OPTIONAL
}

OngoingMeasRepList ::=                SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                        OngoingMeasRep

OngoingMeasRepList-r4 ::=             SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                        OngoingMeasRep-r4

SRB-SpecificIntegrityProtInfo ::=     SEQUENCE {
    ul-RRC-HFN                          BIT STRING (SIZE (28)),
    dl-RRC-HFN                          BIT STRING (SIZE (28)),
    ul-RRC-SequenceNumber               RRC-MessageSequenceNumber,
    dl-RRC-SequenceNumber               RRC-MessageSequenceNumber
}

SRB-SpecificIntegrityProtInfoList ::= SEQUENCE (SIZE (4..maxSRBsetup)) OF
                                        SRB-SpecificIntegrityProtInfo

StateOfRRC ::=                        ENUMERATED {
                                        cell-DCH, cell-FACH,
                                        cell-PCH, ura-PCH }

StateOfRRC-Procedure ::=              ENUMERATED {
                                        awaitNoRRC-Message,
                                        awaitRRC-ConnectionRe-establishmentComplete,
                                        awaitRB-SetupComplete,
                                        awaitRB-ReconfigurationComplete,
                                        awaitTransportCH-ReconfigurationComplete,
                                        awaitPhysicalCH-ReconfigurationComplete,
                                        awaitActiveSetUpdateComplete,
                                        awaitHandoverComplete,
                                        sendCellUpdateConfirm,
                                        sendUraUpdateConfirm,
                                        sendRrcConnectionReestablishment,
                                        otherStates
}

UE-Positioning-LastKnownPos ::=       SEQUENCE {
    sfn                                  INTEGER (0..4095),
    cell-id                              CellIdentity,
    positionEstimate                    PositionEstimate
}

END

```

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CHANGE REQUEST

25.331 CR 1684 # rev - # Current version: 5.1.0

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

Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	# Mandatory Support of dedicated pilots for channel estimation		
Source:	# TSG-RAN WG2		
Work item code:	# TEI5	Date:	# 25/07/2002
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	# The correction is fulfilling the decision agreed in 12th TSG-RAN meeting.
Summary of change:	# A new physical channel capability parameter "Support of dedicated pilots for channel estimation" has been added, this CR mandates this feature in Release 5. # Isolated impact analysis: # The corrected functionality is channel estimation with dedicated pilots. This correction mandates support in Release 5 UEs. Has isolated impact towards functions not affected by the change.
Consequences if not approved:	# Not fulfilling the decision already made in TSG-RAN. While, full support for corrected functionality may be missing.

Clauses affected:	# 10.3.3.25										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;">X</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">X</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	# 25.306 v5.1.0
	Y	N									
	X										
	X										
	X										
		Test specifications									
		O&M Specifications									
Other comments:	#										

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of the Corrected Section>

10.3.3.25 Physical channel capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description	Version
Downlink physical channel capability information elements					
FDD downlink physical channel capability	CH- fdd_req_su p				
>Max no DPCH/PDSCH codes	MP		Integer (1..8)	Maximum number of DPCH/PDSCH codes to be simultaneously received	
>Max no physical channel bits received	MP		Integer (600, 1200, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 48000, 57600, 67200, 76800)	Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)	
>Support for SF 512	MP		Boolean	TRUE means supported	
>Support of PDSCH	MP		Boolean	TRUE means supported	
>CHOICE <i>Support of HS-PDSCH</i>	MP				REL-5
>>Supported					REL-5
>>>HS-DSCH capability class	MP		Integer (0..63)		REL-5
>>Unsupported				(no data)	REL-5
>Simultaneous reception of SCCPCH and DPCH	MP		Boolean	TRUE means supported	
>Simultaneous reception of SCCPCH, DPCH and PDSCH	CV- if_sim_rec _pdsch _sup		Boolean	TRUE means supported	
>Max no of S-CCPCH RL	CV- if_sim_rec		Integer(1)	Maximum number of simultaneous S-CCPCH radio links	
>Support of dedicated pilots for channel estimation	MD		Enumerated (true)	Presence of this element means supported and absence not supported. This IE shall be set to true in this version of the protocol. <i>If the UE notifies support of this functionality, it should comply with the corresponding performance requirements.</i>	

Information Element/Group name	Need	Multi	Type and Reference	Semantics description	Version
				Note 1.	
3.84 Mcps TDD downlink physical channel capability	CH-3.84_Mcps_tdd_req_s_up				Name changed in REL-4
>Maximum number of timeslots per frame	MP		Integer (1..14)		
>Maximum number of physical channels per frame	MP		Integer (1..224)		
>Minimum SF	MP		Integer (1, 16)		
>Support of PDSCH	MP		Boolean	TRUE means supported	
>CHOICE Support of HS-PDSCH	MP				REL-5
>>Supported					REL-5
>>>HS-DSCH capability class	MP		Integer (0..63)		REL-5
>>Unsupported				(no data)	REL-5
>Maximum number of physical channels per timeslot	MP		Integer (1..16)		
1.28 Mcps TDD downlink physical channel capability	CH-1.28_Mcps_tdd_req_s_up				REL-4
>Maximum number of timeslots per subframe	MP		Integer (1..6)		REL-4
>Maximum number of physical channels per subframe	MP		Integer (1..96)		REL-4
>Minimum SF	MP		Integer (1, 16)		REL-4
>Support of PDSCH	MP		Boolean	TRUE means supported	REL-4
>CHOICE Support of HS-PDSCH	MP				REL-5
>>Supported					REL-5
>>>HS-DSCH capability class	MP		Integer (0..63)		REL-5
>>Unsupported				(no data)	REL-5
>Maximum number of physical channels per timeslot	MP		Integer (1..16)		REL-4
>Support of 8PSK	MP		Boolean	TRUE means supported	REL-4
Uplink physical channel capability information elements					
FDD uplink physical channel capability	CH-fdd_req_s_up				
>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	
3.84 Mcps TDD uplink physical channel capability	CH-3.84_Mcps_tdd_req_s_up				Name changed in REL-4

Information Element/Group name	Need	Multi	Type and Reference	Semantics description	Version
>Maximum Number of timeslots per frame	MP		Integer (1..14)		
>Maximum number of physical channels per timeslot	MP		Integer (1, 2)		
>Minimum SF	MP		Integer (1, 2, 4, 8, 16)		
>Support of PUSCH	MP		Boolean	TRUE means supported	
1.28 Mcps TDD uplink physical channel capability	CH- <i>1.28_Mcps_tdd_req_sup</i>				REL-4
>Maximum Number of timeslots per subframe	MP		Integer (1..6)		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
<i>if_sim_rec_pdsch_sup</i>	The IE is mandatory present if the IE "Simultaneous reception of SCCPCH and DPCH" = True and IE Support of PDSCH = True. Otherwise this field is not needed in the message.
<i>if_sim_rec</i>	The IE is mandatory present if the IE "capability Simultaneous reception of SCCPCH and DPCH" = True. Otherwise this field is not needed in the message.
<i>3.84_Mcps_tdd_req_sup</i>	The IE is mandatory present if the IE "TDD RF capability" is present with the IE "Chip rate capability" set to "3.84 Mcps" and a 3.84 Mcps TDD capability update has been requested in a previous message. Otherwise this field is not needed in the message.
<i>1.28_Mcps_tdd_req_sup</i>	The IE is mandatory present if the IE "TDD RF capability" is present with the IE "Chip rate capability" set to "1.28 Mcps" and a 1.28 Mcps TDD capability update has been requested in a previous message. Otherwise this field is not needed in the message.
<i>fdd_req_sup</i>	The IE is mandatory present if the 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.

NOTE1: These performance requirements are defined in Release 5

<End of the Corrected Section>

