

TSG-RAN Meeting #15
Jeju-do, Korea, 5 - 8 March 2002

RP-020082

Title: Agreed CRs (Rel-4) to TS 25.331

Source: TSG-RAN WG2

Agenda item: 7.2.4

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio	Workite
R2-020530	agreed	25.331	1122	2	Rel-4	Correction to include Cell ID for Cell_DCH state	F	4.3.0	4.4.0	TEI4
R2-020531	agreed	25.331	1187	2	Rel-4	Correction of Transparent mode signalling for UL rate control	F	4.3.0	4.4.0	TEI4
R2-020532	agreed	25.331	1188	2	Rel-4	Introduction of default radio configurations for UMTS_AMR2 with four speech modes	C	4.3.0	4.4.0	TEI4
R2-020589	agreed	25.331	1223	1	Rel-4	Acquisition of PLMN identity of neighbour cells via SIB 18	C	4.3.0	4.4.0	TEI4
R2-020277	agreed	25.331	1254		Rel-4	Various ASN.1 Corrections	F	4.3.0	4.4.0	TEI4
R2-020310	agreed	25.331	1290		Rel-4	Handover from UTRAN failure	F	4.3.0	4.4.0	TEI4
R2-020364	agreed	25.331	1335		Rel-4	Corrections to indicate that SIB 14 is not used by 1.28 TDD	F	4.3.0	4.4.0	LCRTD D-L23
R2-020444	agreed	25.331	1356		Rel-4	Clarification on ICS version within UE radio access capabilities	F	4.3.0	4.4.0	TEI4

CHANGE REQUEST

⌘ **25.331 CR 1122** ⌘ rev **r2** ⌘ Current version: **4.3.0** ⌘

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 to include Cell ID for Cell_DCH state		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI4	Date:	⌘ 10 February 2002
Category:	⌘ F	Release:	⌘ REL-4
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ Correction to allow the provision of Cell ID when UE's are in CELL_DCH state.
Summary of change:	⌘ Correction to provide choice of providing the cell ID information to UE in CELL_DCH state, in order to ease system engineering.
Consequences if not approved:	⌘ Omission of an important function valuable for network management. Isolated impact This function will impact a number of Rel-4 procedures through the inclusion of one additional IE. Hence procedure that are impacted are: Active Set Update procedure Handover to UTRAN procedure Cell Update procedure Physical Channel Reconfiguration procedure Radio Bearer Configuration procedure Radio Bearer Setup procedure Radio Bearer Setup procedure RRRC Connection Setup procedure Transport Channel Reconfiguration procedure

Clauses affected:	⌘ 8.2.2.3, 8.3.1.6, 8.3.4.3, 8.3.6.3, 10.3.6.27, 10.3.6.28, 10.3.6.68, 11	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘

Other comments: ☹

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ☹ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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

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

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

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

If the UE receives:

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

it shall:

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

it may:

- 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:

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

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

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

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

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

- remove any C-RNTI from MAC;
- clear the variable C_RNTI.

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

- if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration.

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

- if the IE "Frequency info" is included in the received reconfiguration message:
 - select a suitable UTRA cell according to [4] on that frequency.
- if the IE "Frequency info" is not included in the received reconfiguration message:
 - select a suitable UTRA cell according to [4].
- if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - when the cell update procedure completed successfully:
 - if the UE is in CELL_PCH or URA_PCH state:
 - initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - proceed as below.
- start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;
- select PRACH according to subclause 8.5.17;
- select Secondary CCPCH according to subclause 8.5.19;
- use the transport format set given in system information;
- if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - ignore that IE and stop using DRX.
- if the contents of the variable C_RNTI is empty:
 - perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - when the cell update procedure completed successfully:
 - if the UE is in CELL_PCH or URA_PCH state:
 - initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - proceed as below.

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

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

- select a suitable UTRA cell according to [4] on that frequency;
- if the 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):
 - initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - when the cell update procedure completed successfully:
 - proceed as below.

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

- if the received reconfiguration message included the IE "Downlink counter synchronisation info":
 - re-establish RB2;
 - set the new uplink and downlink HFN of RB2 to $\text{MAX}(\text{uplink HFN of RB2} \mid \text{downlink HFN of RB2}) + 1$;
 - increment by one the downlink and uplink HFN values for RB2;
 - calculate the START value according to subclause 8.5.9;
 - include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
 - if the variable START_VALUE_TO_TRANSMIT is set:
 - include and set the IE "START" to the value of that variable.
 - if the variable START_VALUE_TO_TRANSMIT is not set and the IE "New U-RNTI" is included:
 - calculate the START value according to subclause 8.5.9;
 - include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- if the received reconfiguration message contained the IE "Ciphering mode info":
 - include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- if the received reconfiguration message contained the IE "Integrity protection mode info" with the IE "Integrity protection mode command" set to "Modify":
 - include and set the IE "Uplink integrity protection activation info" to the value of the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.
- if the received reconfiguration message did not contain the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info":
 - if prior to this procedure there exist no transparent mode RLC radio bearers:
 - if, at the conclusion of this procedure, the UE will be in CELL_DCH state; and
 - if, at the conclusion of this procedure, at least one transparent mode RLC radio bearer exists:
 - include the IE "COUNT-C activation time" and specify a CFN value for this IE.
 - if prior to this procedure there exists at least one transparent mode RLC radio bearer:
 - if, at the conclusion of this procedure, no transparent mode RLC radio bearers exist:

- include the IE "COUNT-C activation time" and specify a CFN value for this IE.
- set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- clear that entry;
- if the variable PDCP_SN_INFO is not empty:
 - include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_INFO.
- in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):
 - set the IE "Uplink Timing Advance" according to subclause 8.6.6.26.
- if the IE "Integrity protection mode info" was present in the received reconfiguration message:
 - start applying the new integrity protection configuration in the uplink for 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:

- if the IE "Frequency info" is included in the received reconfiguration message:
 - select a suitable UTRA cell according to [4] on that frequency.
- if the IE "Frequency info" is not included in the received reconfiguration message:
 - select a suitable UTRA cell according to [4].
- prohibit periodical status transmission in RLC;
- remove any C-RNTI from MAC;
- clear the variable C_RNTI;
- start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;
- select Secondary CCPCH according to subclause 8.5.19;
- if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:
 - set the variable INVALID_CONFIGURATION to TRUE.
- 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):
 - initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - when the cell update procedure completed successfully:
 - the procedure ends.
- if the UE enters 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:

- initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
- when the cell update procedure is successfully completed:
 - the procedure ends.
- if the UE enters URA_PCH state, and after cell selection the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 is fulfilled:
 - initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";
 - when the URA update procedure is successfully completed:
 - the procedure ends.

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8.3.1.6 Reception of the CELL UPDATE CONFIRM/URA UPDATE CONFIRM message by the UE

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- ~~if the message is received on DCCH:~~

the UE may:

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

the UE shall:

- stop timer T302;
- in case of a cell update procedure and the CELL UPDATE CONFIRM message:
 - includes "RB information elements"; and/or
 - includes "Transport channel information elements"; and/or
 - includes "Physical channel information elements"; and
 - if the variable ORDERED_RECONFIGURATION is set to FALSE:
- set the variable ORDERED_RECONFIGURATION to TRUE;
- act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:
 - if the IE "Frequency info" is included in the message:
 - if the IE "RRC State Indicator" is set to the value "CELL_FACH" or "CELL_PCH" or URA_PCH":
 - select a suitable UTRA cell according to [4] on that frequency;
 - act as specified in subclause 8.3.1.12.
 - if the IE "RRC State Indicator" is set to the value "CELL_DCH":
 - act on the IE "Frequency info" as specified in subclause 8.6.6.1.
 - use the transport channel(s) applicable for the physical channel types that is used; and

- if the IE "TFS" is neither included nor previously stored in the UE for that transport channel(s):
 - use the TFS given in system information.
- if none of the TFS stored is compatible with the physical channel:
 - delete the stored TFS;
 - use the TFS given in system information.
- perform the physical layer synchronisation procedure as specified in [29];
- if the CELL UPDATE CONFIRM message includes the IE "RLC re-establish indicator (RB2, RB3 and RB4)":
 - re-establish the RLC entities for signalling radio bearer RB2, signalling radio bearer RB3 and signalling radio bearer RB4 (if established);
 - if the value of the IE "Status" in the variable CIPHERING_STATUS of the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN is set to "Started":
 - set the HFN values for AM RLC entities with RB identity 2, RB identity 3 and RB identity 4 (if established) equal to the START value included in the latest transmitted CELL UPDATE message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN;
 - if the CELL UPDATE CONFIRM message includes the IE "RLC re-establish indicator (RB5 and upwards)":
 - for radio bearers with RB identity 5 and upwards:
 - re-establish the AM RLC entities;
 - if the value of the IE "Status" in the variable CIPHERING_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS is set to "Started":
 - set the HFN values for AM RLC entities equal to the START value included in this CELL UPDATE message for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS;
- enter a state according to subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.

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

- not prohibit periodical status transmission in RLC;
- for each CN domain for which a transparent mode radio bearer exists and for which the IE "Status" in the variable CIPHERING_STATUS is set to "Started" for that CN domain:
 - choose an activation time for the ciphering on transparent mode radio bearers and include it in the response message in the IE "COUNT-C activation time";
 - set the 20 MSB of the MAC-d HFN with the corresponding START value in the most recently sent IE "START list";
 - set the remaining LSB of the MAC-d HFN to zero;
 - apply ciphering on the transparent mode radio bearers;
 - start incrementing the COUNT-C value from the CFN that has been included in the IE "COUNT-C activation time".

If the UE after state transition remains in CELL_FACH state, it shall

- start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

- select PRACH according to subclause 8.5.17;
- select Secondary CCPCH according to subclause 8.5.19;
- not prohibit periodical status transmission in RLC;
- if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - ignore that IE and stop using DRX.

If the UE after state transition enters URA_PCH or CELL_PCH state, it shall:

- prohibit periodical status transmission in RLC;
- clear the variable C_RNTI;
- stop using that C_RNTI just cleared from the variable C_RNTI in MAC;
- start the timer T305 using its initial value if timer T305 is not running and periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";
- select Secondary CCPCH according to subclause 8.5.19;
- if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging Occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2 in CELL_PCH state.
- if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:
 - set the variable INVALID_CONFIGURATION to TRUE.

If the UE after the state transition remains in CELL_FACH state; and

- the contents of the variable C_RNTI are empty:

it shall check the value of V302; and:

- if V302 is equal to or smaller than N302:
 - if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
 - the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or
 - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:
 - abort the ongoing integrity and/or ciphering reconfiguration;
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
 - if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.
 - in case of a URA update procedure:
 - stop the URA update procedure; and
 - continue with a cell update procedure.

- set the contents of the CELL UPDATE message according to subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "cell reselection";
- submit the CELL UPDATE message for transmission on the uplink CCCH;
- increment counter V302;
- restart timer T302 when the MAC layer indicates success or failure to transmit the message.
- if V302 is greater than N302:
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
 - in case of a cell update procedure:
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
 - in case of a URA update procedure:
 - clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
 - release all its radio resources;
 - indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
 - clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
 - clear the variable ESTABLISHED_RABS;
 - enter idle mode;
 - other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
 - and the procedure ends.

If the UE after the state transition remains in CELL_FACH state; and

- a C-RNTI is stored in the variable C_RNTI;

or

- the UE after the state transition moves to another state than the CELL_FACH state:

the UE shall:

- if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - include and set the IE "Radio bearer uplink ciphering activation time info" in any response message transmitted below to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Integrity protection mode info" with the IE "Integrity protection mode command" set to "Modify":
 - include the IE "Uplink integrity protection activation info" in any response message transmitted below; and
 - set this IE to the value of the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.
- in case of a cell update procedure:

- set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- clear that entry.
- in case of a URA update procedure:
 - set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - clear that entry;
- if the variable PDCP_SN_INFO is non-empty:
 - include the IE "RB with PDCP information list" in any response message transmitted below and set it to the value of the variable PDCP_SN_INFO.
- if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message included the IE "Downlink counter synchronisation info":
 - calculate the START value according to subclause 8.5.9;
 - include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in any response message transmitted below.
- transmit a response message as specified in subclause 8.3.1.7;
- if the IE "Integrity protection mode info" was present in the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
 - start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.
 - set "Uplink RRC Message sequence number" for signalling radio bearer RB0 in the variable INTEGRITY_PROTECTION_INFO to a value such that next RRC message to be sent on uplink RB0 will use the new integrity protection configuration;
- if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - set the variable ORDERED_RECONFIGURATION to FALSE.
- clear the variable PDCP_SN_INFO;
- if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.
- in case of a cell update procedure:
 - clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.

- in case of a URA update procedure:
 - clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
 - set the variable CELL_UPDATE_STARTED to FALSE.

The procedure ends.

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8.3.4 Active set update

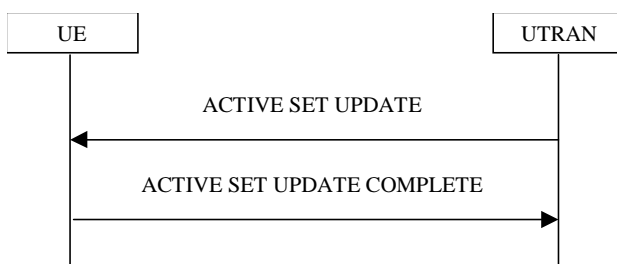


Figure 8.3.4-1: Active Set Update procedure, successful case

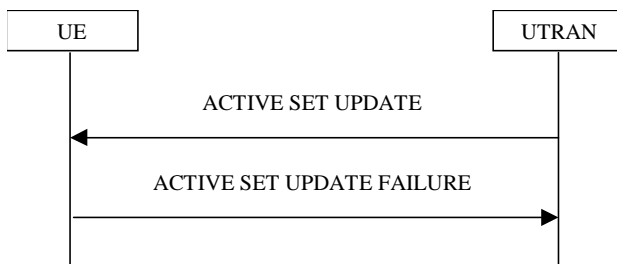


Figure 8.3.4-2: Active Set Update procedure, failure case

8.3.4.1 General

The purpose of the active set update procedure is to update the active set of the connection between the UE and UTRAN. This procedure shall be used in CELL_DCH state. The UE should keep on using the old RLs while configuring the new RLs. Also the UE should keep the transmitter turned on during the procedure. This procedure is only used in FDD mode.

8.3.4.2 Initiation

The procedure is initiated when UTRAN orders a UE in CELL_DCH state, to make the following modifications of the active set of the connection:

- a) Radio link addition;
- b) Radio link removal;
- c) Combined radio link addition and removal.

In case a) and c), UTRAN should:

- prepare new additional radio link(s) in the UTRAN prior to the command to the UE.

In all cases, UTRAN should:

- send an ACTIVE SET UPDATE message on downlink DCCH using AM or UM RLC.

UTRAN should include the following information:

- IE "Radio Link Addition Information": Downlink DPCH information and other optional parameters relevant for the radio links to be added along with the IE "Primary CPICH info" used for the reference ID to indicate which radio link to add. This IE is needed in cases a) and c) listed above;
- IE "Radio Link Removal Information": IE "Primary CPICH info" used for the reference ID to indicate which radio link to remove. This IE is needed in cases b) and c) listed above.

8.3.4.3 Reception of an ACTIVE SET UPDATE message by the UE

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

The UE may:

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

The UE shall:

- first add the RLS indicated in the IE "Radio Link Addition Information";
- remove the RLS indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;
- perform the physical layer synchronisation procedure as specified in [29];
- if the ACTIVE SET UPDATE message contained the IE "Ciphering mode info":
 - include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- if the ACTIVE SET UPDATE message contained the IE "Integrity protection mode info" with the IE "Integrity protection mode command" set to "Modify":
 - include and set the IE "Uplink integrity protection activation info" to the value of the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.
- if the variable PDCP_SN_INFO is non-empty:
 - include the IE "RB with PDCP information list" in the ACTIVE SET UPDATE COMPLETE message; and
 - set it to the value of the variable PDCP_SN_INFO.
- if the IE "TFCI combining indicator" associated with a radio link to be added is set to TRUE:
 - if a DSCH transport channel is assigned and there is a 'hard' split in the TFCI field:
 - configure Layer 1 to soft-combine TFCI (field 2) of this new link with those links already in the TFCI (field 2) combining set.
- if the received ACTIVE SET UPDATE message included the IE "Downlink counter synchronisation info":
 - calculate the START value according to subclause 8.5.9;
 - include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the ACTIVE SET UPDATE COMPLETE message.
- set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

- clear that entry;
- transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the Physical Layer synchronization;
- if the IE "Integrity protection mode info" was present in the ACTIVE SET UPDATE message:
 - start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted ACTIVE SET UPDATE COMPLETE message.
- if the variable PDCP_SN_INFO is empty:
 - if the ACTIVE SET UPDATE message contained the IE "Ciphering mode info":
 - when RLC has confirmed the successful transmission of the ACTIVE SET UPDATE COMPLETE message:
 - perform the actions below.
 - if the ACTIVE SET UPDATE message did not contain the IE "Ciphering mode info":
 - when RLC has been requested to transmit the ACTIVE SET UPDATE COMPLETE message:
 - perform the actions below.
- if the variable PDCP_SN_INFO is non-empty:
 - when RLC has confirmed the successful transmission of the ACTIVE SET UPDATE COMPLETE message:
 - for each radio bearer in the variable PDCP_SN_INFO:
 - if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":
 - configure the RLC entity for that radio bearer to "continue".
 - clear the variable PDCP_SN_INFO.
 - if the ACTIVE SET UPDATE message contained the IE "Ciphering mode info":
 - resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;
 - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
 - if the ACTIVE SET UPDATE message contained the IE "Integrity protection mode info":
 - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and
 - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.
- the procedure ends on the UE side.

>>>>-----<<<<

8.3.6.3 Reception of HANDOVER TO UTRAN COMMAND message by the UE

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

The UE shall act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following.

The UE may:

- [maintain a list of the set of cells to which the UE has Radio Links if the IE cell ID is present.](#)

The UE shall:

- store a U-RNTI value (32 bits), which is derived by the IEs "SRNC identity" (12 bits) and "S-RNTI 2" (10 bits) included in IE "U-RNTI-short". In order to produce a full size U-RNTI value, a full size "S-RNTI" (20 bits) shall be derived by padding the IE "S-RNTI 2" with 10 zero bits in the most significant positions; and
- initialise the variable ESTABLISHED_SIGNALLING_CONNECTIONS with the signalling connections that remains after the handover according to the specifications of the source RAT;
- initialise the variable UE_CAPABILITIES_TRANSFERRED with the UE capabilities that have been transferred to the network up to the point prior to the handover, if any;
- initialise the variable TIMERS_AND_CONSTANTS to the default values and start to use those timer and constants values;
- if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":
 - initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity";
 - initiate the physical channels in accordance with the predefined parameters identified by the IE "Predefined radio configuration identity" and the received physical channel information elements;
 - store information about the established radio access bearers and radio bearers according to the IE "Predefined configuration identity"; and
 - set the IE "RAB Info Post" in the variable ESTABLISHED_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED_RABS to "useT314".
- if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":
 - initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity";
 - initiate the physical channels in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" and the received physical channel information elements;

NOTE IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used

- set the IE "RAB Info Post" in the variable ESTABLISHED_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED_RABS to "useT314".
- if IE "Specification mode" is set to "Preconfiguration":
 - use the following values for parameters that are neither signalled within the HANDOVER TO UTRAN COMMAND message nor included within pre-defined or default configuration:
 - 0 dB for the power offset $P_{\text{Pilot-DPCH}}$ bearer in FDD;
 - calculate the Default DPCH Offset Value using the following formula:
 - in FDD:

$$\text{Default DPCH Offset Value} = (\text{SRNTI 2 mod } 600) * 512$$
 - in TDD:

$$\text{Default DPCH Offset Value} = (\text{SRNTI 2 mod } 7)$$
 - handle the above Default DPCH Offset Value as if an IE with that value was included in the message, as specified in subclause 8.6.6.21.

- if IE "Specification mode" is set to "Complete specification":
 - initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.
- perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;
- if ciphering has been activated and ongoing in the radio access technology from which inter- RAT handover is performed:
 - for the CN domain as in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup":
 - set the HFN component of the COUNT-C variable for all UL and DL radio bearers and all UL and DL signalling radio bearers that use RLC-AM and RLC-UM to the START value as stored in the USIM for that CN domain; and
 - set the remaining LSBs of the HFN component of COUNT-C to zero;
 - set the HFN component of the COUNT-C variable for all UL and DL radio bearers and all UL and DL signalling radio bearers that use the transparent mode of RLC to zero, while not incrementing the value of the HFN component of the COUNT-C variable at each CFN cycle; and
 - set the CFN component of the COUNT-C variable to the value of the CFN as calculated in subclause 8.5.15;
 - set the IE "Status" in the variable CIPHERING_STATUS to "Started";
 - apply the same ciphering status (ciphered/unciphered) as prior to inter-RAT handover;
 - if the change of algorithm is requested by means of the IE "Ciphering algorithm":
 - apply this algorithm and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.

If the UE succeeds in establishing the connection to UTRAN, it shall:

- if the IE "Status" in the variable CIPHERING_STATUS of a CN domain is set to "Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
 - include the IE "COUNT-C activation time" in the response message and specify a CFN value other than the default, "Now" for this IE;
 - at the CFN value as indicated in the response message in the IE "COUNT-C activation time":
 - set the HFN component of the COUNT-C variable to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
 - set the remaining LSBs of the HFN component of COUNT-C to zero;
 - increment the HFN component of the COUNT-C variable by one;
 - set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
 - step the COUNT-C variable, as normal, at each CFN value. The HFN component is no longer fixed in value but incremented at each CFN cycle.
- transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH, using the new ciphering configuration, only if ciphering has been started;
- when the HANDOVER TO UTRAN COMPLETE message has been submitted to lower layers for transmission:
 - initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4.
- and the procedure ends.

>>>>-----<<<<

10.3.6.27 Downlink information for each radio link

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Choice mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>> Cell ID	OP		Cell ID 10.3.2.2	
>>PDSCH with SHO DCH Info	OP		PDSCH with SHO DCH Info 10.3.6.47	
>>PDSCH code mapping	OP		PDSCH code mapping 10.3.6.43	
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57	
Downlink DPCH info for each RL	OP		Downlink DPCH info for each RL 10.3.6.21	
SCCPCH Information for FACH	OP		SCCPCH Information for FACH 10.3.6.70	

10.3.6.28 Downlink information for each radio link Post

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Choice mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>> Cell ID	OP		Cell ID 10.3.2.2	
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info post 10.3.6.58	
Downlink DPCH info for each RL	MP		Downlink DPCH info for each RL Post 10.3.6.22	

10.3.6.68 Radio link addition information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
Cell ID	OP		Cell ID 10.3.2.2	
Downlink DPCH info for each RL	MP		Downlink DPCH info for each RL 10.3.6.21	
TFCI combining indicator	MP		TFCI combining indicator 10.3.6.81	
SCCPCH Information for FACH	OP		SCCPCH Information for FACH 10.3.6.70	Note 1

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

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

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

11.0 General

Some messages and/or IEs may include one or more IEs with name "dummy" that are included only in the ASN.1. The UE should avoid sending information elements that are named "dummy" to UTRAN. Likewise, UTRAN should avoid sending IEs with name "dummy" to the UE. If the UE anyhow receives an information element named "dummy", it shall ignore the IE and process the rest of the message as if the IE was not included.

NOTE: An IE with name "dummy" concerns an information element that was (erroneously) included in a previous version of the specification and has been removed by replacing it with a dummy with same type.

If the abstract syntax of an IE is defined using the ASN.1 type "BIT STRING", and this IE corresponds to a functional IE definition in tabular format, in which the significance of bits is semantically defined, the following general rule shall be applied:

The bits in the ASN.1 bit string shall represent the semantics of the functional IE definition in decreasing order of bit significance;

- with the first (or leftmost) bit in the bit string representing the most significant bit; and
- with the last (or rightmost) bit in the bit string representing the least significant bit.

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,
extension                 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,
    extension                    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,
    extension                 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,
    extension            NULL
}

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

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

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

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

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

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

```

```

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

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

END

```

11.2 PDU definitions

```

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

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS

-- 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,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    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-v370ext,
UE-RadioAccessCapability-v380ext,
DL-PhysChCapabilityFDD-v380ext,
UE-ConnTimersAndConstants,
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-InformationReconfigList,
RB-InformationReconfigList-r4,
RB-InformationReleaseList,
RB-WithPDCP-InfoList, SRB-InformationSetupList,
SRB-InformationSetupList2,
UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
CPCH-SetID,
DL-AddReconfTransChInfo2List,
DL-AddReconfTransChInfoList,
DL-CommonTransChInfo,
DL-CommonTransChInfo-r4,
DL-DeletedTransChInfoList,
DRAC-StaticInformationList,
TFC-Subset,
TFCS-Identity,
UL-AddReconfTransChInfoList,
UL-CommonTransChInfo,
UL-DeletedTransChInfoList,
-- Physical Channel IEs :
Alpha,
CCTrCH-PowerControlInfo,
CCTrCH-PowerControlInfo-r4,
ConstantValue,
CPCH-SetInfo,
DL-CommonInformation,
DL-CommonInformation-r4,
DL-CommonInformationPost,
DL-InformationPerRL,
DL-InformationPerRL-List,
DL-InformationPerRL-List-r4,
DL-InformationPerRL-ListPostFDD,
DL-InformationPerRL-PostTDD,
DL-InformationPerRL-PostTDD-LCR-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-ChannelRequirementWithCPCH-SetID,
UL-ChannelRequirementWithCPCH-SetID-r4,
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,
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
    nonCriticalExtensions
    activeSetUpdate-r4-ext
    nonCriticalExtensions
  } OPTIONAL
  SEQUENCE {
    ActiveSetUpdate-r3-IEs,
    SEQUENCE {
      ActiveSetUpdate-r4-ext-IEs,
      SEQUENCE {} OPTIONAL
    }
  }
},

```

```

later-than-r3
  rrc-TransactionIdentifier  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-r4-ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- The following IE extends SSdT-Information. FDD only.
  ssdt-UL                    SSdT-UL-r4                    OPTIONAL,
  cell-id                    CellIdentity                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,
    nonCriticalExtensions     SEQUENCE {
      assistanceDataDelivery-r3-r4-ext
    }
  }
}

```

```

        nonCriticalExtensions      AssistanceDataDelivery-r3-r4-ext-IEs,
    } OPTIONAL                      SEQUENCE {}                          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-r3-r4-ext-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,
    -- not used in this release of the specification
    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 protocol
    dummy                          SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    -- not used in this release of the specification
    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,
  failureCause          FailureCauseWithProtErrTrId    OPTIONAL,
  -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
  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,
    nonCriticalExtensions SEQUENCE {
      cellUpdateConfirm-r3-r4-ext CellUpdateConfirm-r3-r4-ext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions CHOICE {
      r4 SEQUENCE {
        cellUpdateConfirm-r4 CellUpdateConfirm-r4-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      },
      criticalExtensions SEQUENCE {}
    }
  }
}

CellUpdateConfirm-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
  cipheringModeInfo CipheringModeInfo OPTIONAL,
  activationTime ActivationTime OPTIONAL,
  new-U-RNTI U-RNTI OPTIONAL,
  new-C-RNTI C-RNTI OPTIONAL,
  rrc-StateIndicator RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  rlc-Re-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-r3-r4-ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- The following IE extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL                       SSdT-UL-r4                   OPTIONAL,
cell-id                         CellIdentity                   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,
    rrc-StateIndicator            RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    rlc-ResetIndicatorC-Plane      BOOLEAN,
    rlc-ResetIndicatorU-Plane     BOOLEAN,
-- CN information elements
    cn-InformationInfo            CN-InformationInfo           OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                  URA-Identity                 OPTIONAL,
-- Radio bearer IEs
    rb-InformationReleaseList     RB-InformationReleaseList     OPTIONAL,
    rb-InformationReconfigList    RB-InformationReconfigList-r4 OPTIONAL,
    rb-InformationAffectedList    RB-InformationAffectedList    OPTIONAL,
    rb-WithPDCP-InfoList         RB-WithPDCP-InfoList         OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo          UL-CommonTransChInfo          OPTIONAL,
    ul-deletedTransChInfoList     UL-DeletedTransChInfoList     OPTIONAL,
    ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList   OPTIONAL,
    modeSpecificTransChInfo        CHOICE {
        fdd                        SEQUENCE {
            cpch-SetID             CPCH-SetID                   OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList   OPTIONAL
        },
        tdd                        NULL
    },
    dl-CommonTransChInfo          DL-CommonTransChInfo-r4      OPTIONAL,
    dl-DeletedTransChInfoList     DL-DeletedTransChInfoList     OPTIONAL,
    dl-AddReconfTransChInfoList   DL-AddReconfTransChInfoList   OPTIONAL,
-- Physical channel IEs
    frequencyInfo                 FrequencyInfo                 OPTIONAL,
    maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power         OPTIONAL,
    ul-ChannelRequirement         UL-ChannelRequirement-r4     OPTIONAL,
    modeSpecificPhysChInfo        CHOICE {
        fdd                        SEQUENCE {
            dl-PDSCH-Information   DL-PDSCH-Information         OPTIONAL
        },
        tdd                        NULL
    },
    dl-CommonInformation          DL-CommonInformation-r4      OPTIONAL,
    dl-InformationPerRL-List      DL-InformationPerRL-List-r4   OPTIONAL
}

-- *****

```

```

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

CellUpdateConfirm-CCCH ::= CHOICE {
  r3
    -- 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,
    nonCriticalExtensions SEQUENCE {
      cellUpdateConfirm-r3-r4-ext CellUpdateConfirm-r3-r4-ext-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      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
    SEQUENCE {
      downlinkDirectTransfer-r3 DownlinkDirectTransfer-r3-IEs,

```

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        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    later-than-r3                      SEQUENCE {
        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,
        nonCriticalExtensions          SEQUENCE {
            handoverToUTRANCommand-r3-r4-ext
            HandoverToUTRANCommand-r3-r4-ext-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                              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
                }
            }
        }
    }
}

```



```

        primaryCCPCH-TX-Power          PrimaryCCPCH-TX-Power
    },
    tdd128
    ul-DPCH-Info
    dl-InformationPerRL
    frequencyInfo
    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: the IE below 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,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions            SEQUENCE {}                    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 {

```

```

    single-GSM-Message          SEQUENCE {},
    -- In this case, what follows the basic production is a variable length bit string
    -- with no length field, containing the GSM message including GSM padding up to end
    -- of container, to be analysed according to GSM specifications
    gsm-MessageList            SEQUENCE {
        gsm-Messages            GSM-MessageList
    }
}

HandoverFromUTRANCommand-CDMA2000 ::= CHOICE {
    r3                          SEQUENCE {
        handoverFromUTRANCommand-CDMA2000-r3
        nonCriticalExtensions    HandoverFromUTRANCommand-CDMA2000-r3-IEs,
                                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,
    -- 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))
        -- octet aligned string containing IE UE-RadioAccessCapabilityInfo
    },
    -- Non critical extensions
    v390NonCriticalExtensions     CHOICE {
        absent                    NULL,
        present                   SEQUENCE {
            interRATHandoverInfo-v390ext InterRATHandoverInfo-v390ext-IEs,
            -- Reserved for future non critical extension
            nonCriticalExtensions        SEQUENCE {} OPTIONAL
        }
    }
}

```

```

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

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

MeasurementControl ::= CHOICE {
  r3                               SEQUENCE {
    measurementControl-r3          MeasurementControl-r3-IEs,
    v390nonCriticalExtensions      SEQUENCE {
      measurementControl-v390ext    MeasurementControl-v390ext,
      nonCriticalExtensions         SEQUENCE {
        measurementControl-r3-r4-ext MeasurementControl-r3-r4-ext-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,
  measurementCommand              MeasurementCommand,
  -- TABULAR: The measurement type is included in MeasurementCommand.
  measurementReportingMode        MeasurementReportingMode    OPTIONAL,
  additionalMeasurementList       AdditionalMeasurementID-List  OPTIONAL,
  -- Physical channel IEs
  dpch-CompressedModeStatusInfo   DPCH-CompressedModeStatusInfo  OPTIONAL
}

MeasurementControl-r3-r4-ext-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-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier        RRC-TransactionIdentifier,
  -- Measurement IEs
  measurementIdentity             MeasurementIdentity,
  measurementCommand              MeasurementCommand-r4,
  -- TABULAR: The measurement type is included in MeasurementCommand.
  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,
-- Extension mechanism for non- release99 information
    v390nonCriticalExtensions SEQUENCE {
        measurementReport-v390ext MeasurementReport-v390ext,
        nonCriticalExtensions    SEQUENCE {
            measurementReport-r3-r4-ext MeasurementReport-r3-r4-ext-IEs,
            nonCriticalExtensions    SEQUENCE {}      OPTIONAL
        }
    }
}

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

MeasurementReport-r3-r4-ext-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
    nonCriticalExtensions      PhysicalChannelReconfiguration-r3-IEs,
        SEQUENCE {
    physicalChannelReconfiguration-r3-r4-ext  PhysicalChannelReconfiguration-r3-r4-ext-
IEs,
        nonCriticalExtensions      SEQUENCE {} OPTIONAL
    }
    OPTIONAL
},
later-than-r3      SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions      CHOICE {
    r4      SEQUENCE {
        physicalChannelReconfiguration-r4
        PhysicalChannelReconfiguration-r4-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,
    ul-ChannelRequirement            UL-ChannelRequirementWithCPCH-SetID  OPTIONAL,
-- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
-- between UL DPCH info, CPCH SET info and CPCH set ID.
    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-r3-r4-ext-IEs ::= SEQUENCE {
-- Physical channel IES
-- The following IE extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL      SSdT-UL-r4      OPTIONAL,
cell-id      CellIdentity      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,
    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,
    ul-ChannelRequirement         UL-ChannelRequirementWithCPCH-SetID-r4 OPTIONAL,
-- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r4 contains the choice
-- between UL DPCH info, CPCH SET info and CPCH set ID.
    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
}

-- *****
--
-- 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       PhysicalSharedChannelAllocation-r3-IEs,
        SEQUENCE {}                OPTIONAL
    },
    later-than-r3                  SEQUENCE {
        c-RNTI                     C-RNTI                       OPTIONAL,
        rrc-TransactionIdentifier   RRC-TransactionIdentifier,
        criticalExtensions           CHOICE {
            r4                       SEQUENCE {
                physicalSharedChannelAllocation-r4
                nonCriticalExtensions PhysicalSharedChannelAllocation-r4-IEs,
                SEQUENCE {}         OPTIONAL
            },
            criticalExtensions       SEQUENCE {}
        }
    }
}

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {

```

```

-- TABULAR: Integrity protection shall not be performed on this message.
-- User equipment IES
  c-RNTI                C-RNTI                OPTIONAL,
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
-- Physical channel IES
  ul-TimingAdvance      UL-TimingAdvanceControl      OPTIONAL,
  pusch-CapacityAllocationInfo PUSCH-CapacityAllocationInfo OPTIONAL,
  pdsch-CapacityAllocationInfo PDSCH-CapacityAllocationInfo OPTIONAL,
  confirmRequest        ENUMERATED {
                        confirmPDSCH, confirmPUSCH } OPTIONAL,
-- TABULAR: If the above value is not present, the default value "No Confirm"
-- shall be used as specified in 10.2.25.
  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,
  confirmRequest        ENUMERATED {
                        confirmPDSCH, confirmPUSCH } OPTIONAL,
-- TABULAR: If the above value is not present, the default value "No Confirm"
-- shall be used as specified in 10.2.25.
  iscpTimeslotList       TimeslotList-r4              OPTIONAL,
  requestPCCPCHRSCP      BOOLEAN
}

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

PUSCHCapacityRequest ::= SEQUENCE {
-- User equipment IES
  c-RNTI                C-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,
    nonCriticalExtensions          SEQUENCE {
      radioBearerReconfiguration-r3-r4-ext
      RadioBearerReconfiguration-r3-r4-ext-IEs,
    } OPTIONAL
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions        CHOICE {
      r4          SEQUENCE {
        radioBearerReconfiguration-r4 RadioBearerReconfiguration-r4-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
      },
      criticalExtensions SEQUENCE {}
    }
  }
}

```



```

}

RadioBearerReconfiguration-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo              OPTIONAL,
  activationTime                  ActivationTime                  OPTIONAL,
  new-U-RNTI                      U-RNTI                      OPTIONAL,
  new-C-RNTI                      C-RNTI                      OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- Core network IEs
  cn-InformationInfo              CN-InformationInfo              OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                    URA-Identity                    OPTIONAL,
  -- Radio bearer IEs
  rab-InformationReconfigList     RAB-InformationReconfigList     OPTIONAL,
  rb-InformationReconfigList       RB-InformationReconfigList,
  -- NOTE: IE rb-InformationReconfigList should be optional in later versions of this message
  rb-InformationAffectedList       RB-InformationAffectedList       OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo            UL-CommonTransChInfo            OPTIONAL,
  ul-deletedTransChInfoList        UL-DeletedTransChInfoList        OPTIONAL,
  ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList      OPTIONAL,
  modeSpecificTransChInfo          CHOICE {
    fdd                            SEQUENCE {
      cpch-SetID                    CPCH-SetID                    OPTIONAL,
      addReconfTransChDRAC-Info      DRAC-StaticInformationList    OPTIONAL
    },
    tdd                            NULL
  } 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
  -- NOTE: IE dl-InformationPerRL-List should be optional in later versions of this message
}

RadioBearerReconfiguration-r3-r4-ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- The following IE extends SSdT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL                          SSdT-UL-r4                      OPTIONAL,
  cell-id                          CellIdentity                      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,
  rrc-StateIndicator                RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff        UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- Core network IEs
  cn-InformationInfo                CN-InformationInfo                OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                      URA-Identity                      OPTIONAL,
  -- Radio bearer IEs
  rab-InformationReconfigList       RAB-InformationReconfigList       OPTIONAL,
  rb-InformationReconfigList         RB-InformationReconfigList-r4     OPTIONAL,
  rb-InformationAffectedList         RB-InformationAffectedList        OPTIONAL,

```

```

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

-- *****
--
-- 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,
    nonCriticalExtensions        SEQUENCE {
      radioBearerRelease-r3-r4-ext  RadioBearerRelease-r3-r4-ext-IEs,
      nonCriticalExtensions        SEQUENCE {} OPTIONAL
    }
  } OPTIONAL
},

```

```

later-than-r3          SEQUENCE {
  rrc-TransactionIdentifier  RRC-TransactionIdentifier,
  criticalExtensions         CHOICE {
    r4                       SEQUENCE {
      radioBearerRelease-r4  RadioBearerRelease-r4-IEs,
      nonCriticalExtensions  SEQUENCE {} OPTIONAL
    },
    criticalExtensions       SEQUENCE {}
  }
}
}

RadioBearerRelease-r3-IEs ::= SEQUENCE {
-- User equipment IEs
  rrc-TransactionIdentifier  RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo         CipheringModeInfo              OPTIONAL,
  activationTime            ActivationTime                  OPTIONAL,
  new-U-RNTI                U-RNTI                        OPTIONAL,
  new-C-RNTI                C-RNTI                        OPTIONAL,
  rrc-StateIndicator        RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
  cn-InformationInfo        CN-InformationInfo              OPTIONAL,
  signallingConnectionRelIndication CN-DomainIdentity      OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity              URA-Identity                    OPTIONAL,
-- Radio bearer IEs
  rab-InformationReconfigList RAB-InformationReconfigList  OPTIONAL,
  rb-InformationReleaseList  RB-InformationReleaseList,
  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-r3-r4-ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- The following IE extends SSDT-Information, which is included in
-- DL-CommonInformation. FDD only.
  ssdt-UL                   SSDT-UL-r4                      OPTIONAL
  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,
  rrc-StateIndicator        RRC-StateIndicator,

```

```

    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
  cn-InformationInfo                CN-InformationInfo                OPTIONAL,
  signallingConnectionRelIndication CN-DomainIdentity                OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                      URA-Identity                      OPTIONAL,
-- Radio bearer IEs
  rab-InformationReconfigList       RAB-InformationReconfigList       OPTIONAL,
  rb-InformationReleaseList         RB-InformationReleaseList         OPTIONAL,
  rb-InformationAffectedList        RB-InformationAffectedList        OPTIONAL,
  rb-WithPDCP-InfoList             RB-WithPDCP-InfoList             OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo             UL-CommonTransChInfo             OPTIONAL,
  ul-deletedTransChInfoList        UL-DeletedTransChInfoList        OPTIONAL,
  ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList      OPTIONAL,
  modeSpecificTransChInfo          CHOICE {
    fdd                               SEQUENCE {
      cpch-SetID                     CPCH-SetID                       OPTIONAL,
      addReconfTransChDRAC-Info      DRAC-StaticInformationList       OPTIONAL
    },
    tdd                               NULL
  }
  dl-CommonTransChInfo             DL-CommonTransChInfo-r4          OPTIONAL,
  dl-DeletedTransChInfoList        DL-DeletedTransChInfoList        OPTIONAL,
  dl-AddReconfTransChInfoList      DL-AddReconfTransChInfo2List     OPTIONAL,
-- Physical channel IEs
  frequencyInfo                    FrequencyInfo                     OPTIONAL,
  maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power            OPTIONAL,
  ul-ChannelRequirement            UL-ChannelRequirement-r4         OPTIONAL,
  modeSpecificPhysChInfo           CHOICE {
    fdd                               SEQUENCE {
      dl-PDSCH-Information           DL-PDSCH-Information             OPTIONAL
    },
    tdd                               NULL
  },
  dl-CommonInformation             DL-CommonInformation-r4          OPTIONAL,
  dl-InformationPerRL-List         DL-InformationPerRL-List-r4      OPTIONAL
}

-- *****
--
-- 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,
    nonCriticalExtensions          SEQUENCE {
      radioBearerSetup-r3-r4-ext  RadioBearerSetup-r3-r4-ext-IEs,
      nonCriticalExtensions       SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  later-than-r3                   SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions             CHOICE {
      r4                           SEQUENCE {
        radioBearerSetup-r4       RadioBearerSetup-r4-IEs,
        nonCriticalExtensions     SEQUENCE {} OPTIONAL
      },
      criticalExtensions          SEQUENCE {}
    }
  }
}

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

RadioBearerSetup-r3-r4-ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- The following IE extends SSDT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL                        SSDT-UL-r4                            OPTIONAL,
  cell-id                   CellIdentity                       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,
  rrc-StateIndicator                 RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff         UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                       URA-Identity                       OPTIONAL,
  -- Core network IEs
  cn-InformationInfo                 CN-InformationInfo                 OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList           SRB-InformationSetupList           OPTIONAL,
  rab-InformationSetupList           RAB-InformationSetupList-r4        OPTIONAL,
  rb-InformationAffectedList         RB-InformationAffectedList         OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo               UL-CommonTransChInfo               OPTIONAL,
  ul-deletedTransChInfoList          UL-DeletedTransChInfoList          OPTIONAL,
  ul-AddReconfTransChInfoList        UL-AddReconfTransChInfoList        OPTIONAL,
  modeSpecificTransChInfo            CHOICE {
    fdd                               SEQUENCE {
      cpch-SetID                     CPCH-SetID                         OPTIONAL,
      addReconfTransChDRAC-Info       DRAC-StaticInformationList         OPTIONAL,
    },
    tdd                               NULL
  }
  dl-CommonTransChInfo               DL-CommonTransChInfo-r4            OPTIONAL,
  dl-DeletedTransChInfoList           DL-DeletedTransChInfoList          OPTIONAL,
  dl-AddReconfTransChInfoList         DL-AddReconfTransChInfoList        OPTIONAL,
  -- Physical channel IEs
  frequencyInfo                       FrequencyInfo                       OPTIONAL,
  maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power              OPTIONAL,
  ul-ChannelRequirement               UL-ChannelRequirement-r4           OPTIONAL,
  modeSpecificPhysChInfo              CHOICE {
    fdd                               SEQUENCE {
      dl-PDSCH-Information            DL-PDSCH-Information               OPTIONAL,
    },
    tdd                               NULL
  },
  dl-CommonInformation                DL-CommonInformation-r4            OPTIONAL,
  dl-InformationPerRL-List            DL-InformationPerRL-List-r4        OPTIONAL,
}

-- *****
--
-- 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                      N-308                OPTIONAL,
-- The IE above is conditional on the UE state.
    releaseCause               ReleaseCause,
    rplmn-information           Rplmn-Information    OPTIONAL
}

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

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

```

```

--
-- *****
RRCCConnectionRelease-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 {}
    }
  }
}

RRCCConnectionRelease-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
}

RRCCConnectionRelease-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
--
-- *****

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

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

RRCCConnectionRequest ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  initialUE-Identity              InitialUE-Identity,
  establishmentCause              EstablishmentCause,
  protocolErrorIndicator          ProtocolErrorIndicator,
  -- The IE above is MD, but for compactness reasons no default value
  -- has been assigned to it.
  -- Measurement IEs
  measuredResultsOnRACH           MeasuredResultsOnRACH           OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

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

RRCCConnectionSetup ::= CHOICE {
  r3                               SEQUENCE {
    rrcConnectionSetup-r3         RRCConnectionSetup-r3-IEs,
    nonCriticalExtensions          SEQUENCE {
      rrcConnectionSetup-r3-r4-ext RRCConnectionSetup-r3-r4-ext-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,
  capabilityUpdateRequirement  CapabilityUpdateRequirement  OPTIONAL,
-- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
-- be used.
-- Radio bearer IEs
  srb-InformationSetupList     SRB-InformationSetupList2,
-- Transport channel IEs
  ul-CommonTransChInfo        UL-CommonTransChInfo          OPTIONAL,
  ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList,
-- NOTE: IE ul-AddReconfTransChInfoList should be optional in later versions of this message
  dl-CommonTransChInfo        DL-CommonTransChInfo          OPTIONAL,
  dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList,
-- NOTE: IE dl-AddReconfTransChInfoList should be optional in later versions of this message
-- Physical channel IEs
  frequencyInfo                FrequencyInfo              OPTIONAL,
  maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power          OPTIONAL,
  ul-ChannelRequirement         UL-ChannelRequirement          OPTIONAL,
  dl-CommonInformation          DL-CommonInformation          OPTIONAL,
  dl-InformationPerRL-List      DL-InformationPerRL-List          OPTIONAL
}

RRCConnectionSetup-r3-r4-ext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4-ext  CapabilityUpdateRequirement-r4-ext  OPTIONAL,
-- Physical channel IEs
-- The following IE extends SSDT-Information, which is included in
-- DL-CommonInformation. FDD only.
  ssdt-UL                       SSDT-UL-r4              OPTIONAL
  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,
  capabilityUpdateRequirement     CapabilityUpdateRequirement-r4  OPTIONAL,
-- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
-- be used.
-- Radio bearer IEs
  srb-InformationSetupList        SRB-InformationSetupList2,
-- Transport channel IEs
  ul-CommonTransChInfo           UL-CommonTransChInfo          OPTIONAL,
  ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList    OPTIONAL,
  dl-CommonTransChInfo           DL-CommonTransChInfo-r4        OPTIONAL,
  dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList    OPTIONAL,
-- Physical channel IEs
  frequencyInfo                   FrequencyInfo              OPTIONAL,
  maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power          OPTIONAL,

```

```

    ul-ChannelRequirement          UL-ChannelRequirement-r4          OPTIONAL,
    dl-CommonInformation           DL-CommonInformation-r4         OPTIONAL,
    dl-InformationPerRL-List       DL-InformationPerRL-List-r4  OPTIONAL
}
-- *****
--
-- 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
            v4NonCriticalExtensions          SEQUENCE {
                rrcConnectionSetupComplete-r3-r4-ext
                RRCConnectionSetupComplete-r3-r4-ext-IEs,
                nonCriticalExtensions-r4    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-r3-r4-ext-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
    protocolErrorInformation          ProtocolErrorMoreInformation,

```

```

-- TABULAR: Identification of received message is nested in
-- 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
        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
    }
}

-- *****
--
-- 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
}

-- *****
--
-- 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,
        sib-Data-fixed           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
    }

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,
    sib-Data-fixed            BIT STRING (SIZE (226))
    -- In case the SIB data is less than 226 bits, padding shall be used
    -- The same padding bits shall be used as defined in clause 12.1
}

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
        nonCriticalExtensions  SEQUENCE {
            transportChannelReconfiguration-r3-r4-ext
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3             SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions        CHOICE {
            r4                    SEQUENCE {
                transportChannelReconfiguration-r4
                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-r3-r4-ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- The following IE extends SSDT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL                    SSDT-UL-r4                    OPTIONAL,
  cell-id                    CellIdentity                    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,
  rrc-StateIndicator           RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff   UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
  cn-InformationInfo          CN-InformationInfo              OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                 URA-Identity                    OPTIONAL,
-- Radio bearer IEs
  rb-WithPDCP-InfoList        RB-WithPDCP-InfoList            OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo        UL-CommonTransChInfo            OPTIONAL,
  ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList    OPTIONAL,
  modeSpecificTransChInfo     CHOICE {
    fdd                      SEQUENCE {
      cpch-SetID             CPCH-SetID                    OPTIONAL,
      addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
    },
    tdd                      NULL
  }
  dl-CommonTransChInfo-r4      DL-CommonTransChInfo-r4          OPTIONAL,
  dl-AddReconfTransChInfoList-r4  DL-AddReconfTransChInfoList-r4  OPTIONAL,
-- Physical channel IEs
  frequencyInfo-r4            FrequencyInfo-r4                  OPTIONAL,
  maxAllowedUL-TX-Power-r4     MaxAllowedUL-TX-Power-r4        OPTIONAL,
  ul-ChannelRequirement-r4     UL-ChannelRequirement-r4        OPTIONAL,
  modeSpecificPhysChInfo-r4    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
}

-- *****
--
-- 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
--
-- *****

TransportFormatCombinationControl ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message when transmitting this
    message
    -- on the transparent mode signalling DCCH.
    rrc-TransactionIdentifier        RRC-TransactionIdentifier          OPTIONAL,
    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH
    modeSpecificInfo                 CHOICE {
        fdd                           NULL,
        tdd                           SEQUENCE {
            tfcs-ID                    TFCS-Identity          OPTIONAL
        }
    },
    dpch-TFCS-InUplink                TFC-Subset,
    activationTimeForTFCSsubset        ActivationTime                    OPTIONAL,
    tfc-ControlDuration                TFC-ControlDuration              OPTIONAL,
    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH and is optional otherwise
    -- 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,
            nonCriticalExtensions        SEQUENCE {
                ueCapabilityEnquiry-r3-r4-ext  UECapabilityEnquiry-r3-r4-ext-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-r3-r4-ext-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,
            -- Reserved for future non critical extension
            v4NonCriticalExtensions        SEQUENCE {
                ueCapabilityInformation-r3-r4-ext
                UECapabilityInformation-r3-r4-ext,
                nonCriticalExtensions-r4    SEQUENCE {}          OPTIONAL
            }
        }
    }
}
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-r3-r4-ext ::= SEQUENCE {
-- User equipment IEs
    ue-RadioAccessCapability-r4-ext      UE-RadioAccessCapability-r4-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,
      nonCriticalExtensions           SEQUENCE {
        -- In case of TDD, the following IE is included instead of the IE
        -- up-IPDL-Parameters in up-OTDOA-AssistanceData
        openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL,
        -- Extension mechanism for non- release4 information
        noncriticalExtensions         SEQUENCE {}          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                ConstantValue                    OPTIONAL,
}

```

```

    pusch-ConstantValue          ConstantValue          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        ConstantValue          OPTIONAL,
      pusch-ConstantValue        ConstantValue          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                            SEQUENCE {
    uraUpdateConfirm-CCCH-r3    URAUpdateConfirm-CCCH-r3-IEs,

```

```

        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    },
    later-than-r3                      SEQUENCE {
        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                                  SEQUENCE {
        utranMobilityInformation-r3     UTRANMobilityInformation-r3-IEs,
        nonCriticalExtensions            SEQUENCE {}          OPTIONAL
    },
    later-than-r3                      SEQUENCE {
        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
}

-- *****
--
-- 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,
    maxInterSysMessages,
    maxLoCHperRLC,
    maxMeasEvent,
    maxMeasIntervals,
    maxMeasParEvent,
    maxNumCDMA2000Freqs,
    maxNumFDDFreqs,
    maxNumGSMFreqRanges,
    maxNumTDDFreqs,
    maxOtherRAT,
    maxPage1,
    maxPCPCH-APsig,
    maxPCPCH-APsubCh,
    maxPCPCH-CDsig,
    maxPCPCH-CDsubCh,
    maxPCPCH-SF,
    maxPCPCHs,
    maxPDCPAlgoType,
    maxPDSCH,
    maxPDSCH-TFCIgroups,
    maxPRACH,
    maxPRACH-FPACH,
    maxPredefConfig,
    maxPUSCH,
    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,
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
    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 ::=                             SEQUENCE {
    cn-DomainIdentity
    cn-Type
        gsm-MAP
        ansi-41
    },
    cn-DRX-CycleLengthCoeff
    NAS-SystemInformationGSM-MAP
    NAS-SystemInformationANSI-41
    CN-DRX-CycleLengthCoefficient
}

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

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

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

Digit ::=                                       INTEGER (0..9)

Gsm-map-IDNNS ::=                               SEQUENCE {
    routingbasis
        localPTMSI
        routingparameter
    },
    tMSIofsamePLMN
        routingparameter
    },
    tMSIofdifferentPLMN
        routingparameter
    CHOICE {
        SEQUENCE {
            RoutingParameter
        },
        SEQUENCE {
            RoutingParameter
        },
        SEQUENCE {
            RoutingParameter
        }
    }
}

```

```

    },
    IMSIresponsetopaging
        routingparameter
    },
    IMSIUEinitiatedEvent
        routingparameter
    },
    IMEI
        routingparameter
    },
    spare1
        routingparameter
    },
    spare2
        routingparameter
    }
},
enteredparameter
}

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
        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
        mnc
        MCC,
        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
    }
}

RAB-Identity ::=                CHOICE {
    gsm-MAP-RAB-Identity        BIT STRING (SIZE (8)),
    ansi-4l-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 {
            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
        q-QualMin
        q-RxlevMin
    },
    tdd
        s-Intrasearch
        s-Intersearch
        s-SearchHCS
        rat-List
        q-RxlevMin
    }
},
q-Hyst-l-S
t-Reselection-S
hcs-ServingCellInformation
maxAllowedUL-TX-Power
}

MapParameter ::=
    INTEGER (0..99)

Mapping ::=
    SEQUENCE {
        rat
        mappingFunctionParameterList
    }

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

MappingFunctionParameter ::=
    SEQUENCE {
        functionType
        mapParameter1
        mapParameter2
        upperLimit
        -- The parameter is conditional on the number of repetition
    }

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

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

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

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

RAT-FDD-Info ::=
    SEQUENCE {
        rat-Identifier
        s-SearchRAT
        s-HCS-RAT
        s-Limit-SearchRAT
    }

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

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

RAT-TDD-Info ::=
    SEQUENCE {
        rat-Identifier
        s-SearchRAT
        s-HCS-RAT
        s-Limit-SearchRAT
    }

```

```

}

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

ReservedIndicator ::= ENUMERATED {
                    reserved,
                    notReserved }

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

-- Actual value = (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)

-- 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)
--
-- *****

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

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,
-- The following 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
                                stopCiphering
                                CipheringAlgorithm,
                                NULL
                                }

CipheringModeInfo ::=         SEQUENCE {
                                cipheringModeCommand      CipheringModeCommand,
                                -- TABULAR: The ciphering algorithm is included in
                                -- the 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
                                }

CompressedModeMeasCapability ::= SEQUENCE {
                                fdd-Measurements          BOOLEAN,
                                -- TABULAR: The IEs below 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 indicates need for compressed mode for 3.84Mcps TDD measurements
                                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,
    powerControlAlgorithm         PowerControlAlgorithm,
    -- TABULAR: TPC step size nested inside 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        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-InTFCS        MaxNumberOfTFC-InTFCS-DL,
    maxNumberOfTF                MaxNumberOfTF
}

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

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

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,
        spare1 }

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

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

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

-- If ICS-Version-r4 is included, the following IE shall be ignored.
ICS-Version ::=                       ENUMERATED {
    r99 }

ICS-Version-r4 ::=                   ENUMERATED {
    rel-4 }

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

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

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

MaxNumberOfTFC-InTFCS-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: This IE 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-313 ::=                            ENUMERATED {
                                        s1, s2, s4, s10, s20,
                                        s50, s100, s200 }

N-315 ::=                            ENUMERATED {
                                        s1, s50, s100, s200, s400,
                                        s600, s800, s1000 }

```

```

N-AccessFails ::= INTEGER (1..64)
N-AP-RetransMax ::= INTEGER (1..64)
NetworkAssistedGPS-Supported ::= ENUMERATED {
    networkBased,
    ue-Based,
    bothNetworkAndUE-Based,
    noNetworkAssistedGPS }
NF-BO-AllBusy ::= INTEGER (0..31)
NF-BO-NoAICH ::= INTEGER (0..31)
NF-BO-Mismatch ::= INTEGER (0..127)
NS-BO-Busy ::= INTEGER (0..63)
NS-IP ::= INTEGER (0..28)
P-TMSI-and-RAI-GSM-MAP ::= SEQUENCE {
    p-TMSI
    rai
}
PagingCause ::= ENUMERATED {
    terminatingConversationalCall,
    terminatingStreamingCall,
    terminatingInteractiveCall,
    terminatingBackgroundCall,
    terminatingHighPrioritySignalling,
    terminatingLowPrioritySignalling,
    terminatingCauseUnknown
}
PagingRecord ::= CHOICE {
    cn-Identity
        pagingCause
        cn-DomainIdentity
        cn-pagedUE-Identity
    },
    utran-Identity
        u-RNTI
        cn-OriginatedPage-connectedMode-UE
            pagingCause
            cn-DomainIdentity
            pagingRecordTypeID
} OPTIONAL
PagingRecordList ::= SEQUENCE (SIZE (1..maxPage1)) OF
    PagingRecord
PDCP-Capability ::= SEQUENCE {
    losslessSRNS-RelocationSupport
        supportForRfc2507
            notSupported
            supported
        BOOLEAN,
        CHOICE {
            NULL,
            MaxHcContextSpace
        }
}
PDCP-Capability-r4-ext ::= SEQUENCE {
    supportForRfc3095
        notSupported
        supported
        CHOICE {
            NULL,
            SEQUENCE {
                maxROHC-ContextSessions
                reverseCompressionDepth
                MaxROHC-ContextSessions-r4
                INTEGER (0..65535)
            }
        }
}
PhysicalChannelCapability ::= SEQUENCE {
    fddPhysChCapability
        downlinkPhysChCapability
        uplinkPhysChCapability
        SEQUENCE {
            DL-PhysChCapabilityFDD,
            UL-PhysChCapabilityFDD
        }
} OPTIONAL,
-- The following describes the 3.84Mcps TDD physical channel capability

```



```

    tddPhysChCapability
      downlinkPhysChCapability
      uplinkPhysChCapability
    }
  }

-- The following 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
}

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,
  spare1, spare2 }

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

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

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

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

RadioFrequencyBandGSM ::= ENUMERATED {
  gsm450,
  gsm480,
  gsm850,
  gsm900P,
  gsm900E,
  gsm1800,
  gsm1900,
  spare1, spare2, spare3, spare4, spare5,

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```

        spare6, spare7, spare8, spare9}

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 }

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),
        uea1(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),
    uia1(14),
    spare0(15)
} (SIZE (16))
}

SimultaneousSCCPCH-DPCH-Reception ::= CHOICE {
    notSupported          NULL,
    supported             SEQUENCE {
        maxNoSCCPCH-RL    MaxNoSCCPCH-RL,
        simultaneousSCCPCH-DPCH-DPDCH-Reception
            BOOLEAN
        -- The IE above is applicable only if IE Support of PDSCH = TRUE
    }
}

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 }

T-302 ::=                ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,
    ms1800, ms2000, ms3000, ms4000,
    ms6000, ms8000 }

```

```

T-304 ::=
    ENUMERATED {
        ms100, ms200, ms400,
        ms1000, ms2000, spare1, spare2, spare3 }

T-305 ::=
    ENUMERATED {
        noUpdate, m5, m10, m30,
        m60, m120, m360, m720 }

T-307 ::=
    ENUMERATED {
        s5, s10, s15, s20,
        s30, s40, s50 }

T-308 ::=
    ENUMERATED {
        ms40, ms80, ms160, ms320 }

T-309 ::=
    INTEGER (1..8)

T-310 ::=
    ENUMERATED {
        ms40, ms80, ms120, ms160,
        ms200, ms240, ms280, ms320 }

T-311 ::=
    ENUMERATED {
        ms250, ms500, ms750, ms1000,
        ms1250, ms1500, ms1750, ms2000 }

T-312 ::=
    INTEGER (0..15)
-- The value 0 for T-312 is not used in this version of the specification

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 }

T-317 ::=
    ENUMERATED {
        s0, s10, s30, s60, s180,
        s600, s1200, s1800 }

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

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

TMSI-DS-41 ::=
    OCTET STRING (SIZE (2..12))

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

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

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

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

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

```

```

U-RNTI ::=
    srnc-Identity
    s-RNTI
}

U-RNTI-Short ::=
    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 release of the protocol
    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                                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                                N-315                                DEFAULT s1,
    t-316                                T-316                                DEFAULT s30,
    t-317                                T-317                                DEFAULT s180
}

UE-IdleTimersAndConstants ::=          SEQUENCE {
    t-300                                T-300,
    n-300                                N-300,
    t-312                                T-312,
    n-312                                N-312
}

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

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

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

UE-RadioAccessCapability ::=          SEQUENCE {
    ics-Version                          ICS-Version,
    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           UE-PositioningCapabilityExt
}

```

```

}

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

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,
    ics-Version-r4 ICS-Version-r4,
    rf-Capability RF-Capability-r4-ext,
    physicalChannelCapability-LCR PhysicalChannelCapability-LCR-r4,
    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,
    turboDecodingSupport TurboSupport,
    maxSimultaneousTransChs MaxSimultaneousTransChsUL,
    modeSpecificInfo CHOICE {
        fdd NULL,
        tdd SEQUENCE {
            maxSimultaneousCCTrCH-Count MaxSimultaneousCCTrCH-Count
        }
    },
    maxTransmittedBlocks MaxTransportBlocksUL,
    maxNumberOfTFC-InTFCS MaxNumberOfTFC-InTFCS-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
        }

AlgorithmSpecificInfo-r4 ::=
        CHOICE {
            rfc2507-Info
            rfc3095-Info
        }

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

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

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

DefaultConfigIdentity ::=
        INTEGER (0..9)

DefaultConfigMode ::=
        ENUMERATED {
            fdd,
            tdd }

DL-AM-RLC-Mode ::=
        SEQUENCE {
            inSequenceDelivery
            receivingWindowSize
            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
            logicalChannelIdentity
            LogicalChannelIdentity OPTIONAL
        }

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

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

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

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

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

```

```

    dch-and-dsch                TransportChannelIdentityDCHandDSCH
}

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

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

```



```

PDCP-InfoReconfig ::= SEQUENCE {
  pdcp-Info          PDCP-Info,
  -- dummy is not used in this version of the protocol
  dummy             INTEGER (0..65535)
}

PDCP-InfoReconfig-r4 ::= SEQUENCE {
  pdcp-Info          PDCP-Info-r4,
  pdcp-SN-Info       PDCP-SN-Info
}

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 ::= 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-r4 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-InformationAffectedList ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-InformationAffected

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

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

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

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)                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,
    expectReordering    ExpectReordering
    -- TABULAR: The IE above has only two possible values, so using Optional or Default
    -- would be wasteful
}

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

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

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

RLC-SizeInfo ::=
  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 ::=
  rb-Identity                  RB-Identity          OPTIONAL,
  -- The default value for the IE above is the smallest value not used yet.
  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 {

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```

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 BOOLEAN, -- NOTE: This parameter shall be set to TRUE in
this release
    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 {
        part1 INTEGER (0..15),
        part2 INTEGER (1..7) OPTIONAL
        -- Actual size = (part1 * 8) + 128 + part2
    },
    sizeType3 SEQUENCE {
        part1 INTEGER (0..47),
        part2 INTEGER (1..15) OPTIONAL
        -- Actual size = (part1 * 16) + 256 + part2
    },
    sizeType4 SEQUENCE {
        part1 INTEGER (0..62),
        part2 INTEGER (1..63) OPTIONAL
        -- Actual size = (part1 * 64) + 1024 + part2
    }
}
-- Actual value = IE value * 0.1
BLER-QualityValue ::= INTEGER (-63..0)

ChannelCodingType ::= CHOICE {
    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 this sequence is 16
DL-AddReconfTransChInfo2List ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation2

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

-- 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,
    tm-SignallingInfo          TM-SignallingInfo            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          CHOICE {
        fdd                    SEQUENCE {
            dl-Parameters      CHOICE {
                dl-DCH-TFCS    TFCS,
                sameAsUL       NULL
            }
        },
        tdd                    SEQUENCE {
            individualDL-CCTrCH-InfoList IndividualDL-CCTrCH-InfoList OPTIONAL
        }
    }
}

-- NOTE: CHOICE modeSpecificInfo should be optional. A new version of this IE
-- should be defined to be used in later versions of messages using this IE

DL-CommonTransChInfo-r4 ::= SEQUENCE {
    sccpch-TFCS                TFCS                OPTIONAL,
    modeSpecificInfo          CHOICE {
        fdd                    SEQUENCE {
            dl-Parameters      CHOICE {

```



```

        dl-DCH-TFCS          SEQUENCE {
            tfcs              TFCS          OPTIONAL
        },
        sameAsUL            NULL          OPTIONAL
    }
},
tdd                       SEQUENCE {
    individualDL-CCTrCH-InfoList IndividualDL-CCTrCH-InfoList OPTIONAL
}
}
}

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

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

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

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
}

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
    }

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 {
    sizeType1          INTEGER (0..31),
    -- Actual size = (8 * sizeType1) + 16
    sizeType2          SEQUENCE {
        part1          INTEGER (0..23),
        part2          INTEGER (1..3)                OPTIONAL
    },
    -- Actual size = (32 * part1) + 272 + (part2 * 8)
    sizeType3          SEQUENCE {
        part1          INTEGER (0..61),
        part2          INTEGER (1..7)                OPTIONAL
    },
    -- Actual size = (64 * part1) + 1040 + (part2 * 8)
}

OctetModeRLC-SizeInfoType2 ::= CHOICE {
    sizeType1          INTEGER (0..31),
    -- Actual size = (sizeType1 * 8) + 48
    sizeType2          INTEGER (0..63),
    -- Actual size = (sizeType2 * 16) + 312
    sizeType3          INTEGER (0..56),
    -- Actual size = (sizeType3 * 64) + 1384
}

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 }

TFC-Subset ::=                         CHOICE {
  minimumAllowedTFC-Number            TFC-Value,
  allowedTFC-List                     AllowedTFC-List,
  non-allowedTFC-List                 Non-allowedTFC-List,
  restrictedTrChInfoList               RestrictedTrChInfoList,
  fullTFCS                             NULL
}

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                    TFCI-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                              TFCI-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
        powerOffsetInformation
    },
    ctfc4Bit
    ctfc4
    powerOffsetInformation
},
    ctfc6Bit
    ctfc6
    powerOffsetInformation
},
    ctfc8Bit
    ctfc8
    powerOffsetInformation
},
    ctfc12Bit
    ctfc12
    powerOffsetInformation
},
    ctfc16Bit
    ctfc16
    powerOffsetInformation
},
    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
    --TrCH-Type is always DCH
    ul-controlledTrChList
}

TransmissionTimeInterval ::=
    ENUMERATED {
        tti10, tti20, tti40, tti80 }

TransmissionTimeValidity ::=
    INTEGER (1..256)

TransportChannelIdentity ::=
    INTEGER (1..32)

TransportChannelIdentityDCHandDSCH ::= SEQUENCE {
    dch-transport-ch-id
    dsch-transport-ch-id
}

TransportFormatSet ::=
    dedicatedTransChTFS
    commonTransChTFS
}

TransportFormatSet-LCR ::=
    dedicatedTransChTFS
    commonTransChTFS-LCR
}

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

UL-AddReconfTransChInformation ::= SEQUENCE {
    ul-TransportChannelType
    UL-TrCH-Type,

```

```

    transportChannelIdentity      TransportChannelIdentity,
    transportFormatSet           TransportFormatSet
}

UL-CommonTransChInfo ::=          SEQUENCE {
-- TABULAR: this tfc-subset IE is applicable to FDD only, TDD specifies tfc-subset in individual
-- CTrCH 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
        }
    }
}

-- 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,
-- in size2, subch0 means bitstring '01' in the tabular, subch1 means bitstring '10'.
        size2                     SEQUENCE {
            subchannels            ENUMERATED { subch0, subch1 } OPTIONAL
        },
        size4                     SEQUENCE {
            subchannels            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,
        -- in size2, subch0 means bitstring '01' in the tabular, subch1 means bitstring '10'.
        size2 SEQUENCE {
            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 = 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: This 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: This 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: This 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 }

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: The IE below 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: The IE below 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)

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,
  channelAssignmentActive      ChannelAssignmentActive,
-- TABULAR: VCAM info has been nested inside ChannelAssignmentActive,
-- which in turn is mandatory since it's only a binary choice.
  cpch-StatusIndicationMode    CPCH-StatusIndicationMode,
  pcpch-ChannelInfoList        PCPCH-ChannelInfoList
}

CPCH-SetInfoList ::=                 SEQUENCE (SIZE (1..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 = IE value * 512
DefaultDPCH-OffsetValueFDD ::=       INTEGER (0..599)

DefaultDPCH-OffsetValueTDD ::=       INTEGER (0..7)

DeltaPp-m ::=                         INTEGER (-10..10)

-- Actual value = 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           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 ::=
    cfncHandling
        maintain
        initialise
        cfntargetsfncframeoffset
    },
modeSpecificInfo
    fdd
        dl-DPCH-PowerControlInfo
        powerOffsetPilot-pdpdch
        dl-rate-matching-restriction
        spreadingFactorAndPilot
        -- TABULAR: The number of pilot bits is nested inside the spreading factor.
        positionFixedOrFlexible
        tfci-Existence
    },
    tdd
        dl-DPCH-PowerControlInfo
    }
}

DL-DPCH-InfoCommonPost ::=
    dl-DPCH-PowerControlInfo
}

DL-DPCH-InfoCommonPredef ::=
    modeSpecificInfo
        fdd
            spreadingFactorAndPilot
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            positionFixedOrFlexible
            tfci-Existence
        },
        tdd
            commonTimeslotInfo
    }
}

DL-DPCH-InfoPerRL ::=
    fdd
        pCPICH-UsageForChannelEst
        dpch-FrameOffset
        secondaryCPICH-Info
        dl-ChannelisationCodeList
        tpc-CombinationIndex
        ssdt-CellIdentity
        closedLoopTimingAdjMode
    },
    tdd
        DL-CCTrChList
}

DL-DPCH-InfoPerRL-r4 ::=
    fdd
        pCPICH-UsageForChannelEst
        dpch-FrameOffset
        secondaryCPICH-Info
        dl-ChannelisationCodeList
        tpc-CombinationIndex
        ssdt-CellIdentity
        closedLoopTimingAdjMode
    },
    tdd
        DL-CCTrChList-r4
}

DL-DPCH-InfoPerRL-PostFDD ::=
    pCPICH-UsageForChannelEst
    dl-ChannelisationCode
    tpc-CombinationIndex
}

DL-DPCH-InfoPerRL-PostTDD ::=
    dl-DPCH-TimeslotsCodes
}

```

```

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-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,
cell-id                             CellIdentity              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,
    secondaryCCPCH-Info                 SecondaryCCPCH-Info-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-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 {
            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
        timeslotList
    }
}

DPC-Mode ::=
    ENUMERATED {
        singleTPC,
        tpcTripletInSoft }

-- The actual value of DPCCH power offset is the value of this IE * 2.
DPCCH-PowerOffset ::=
    INTEGER (-82..-3)

-- The actual value of DPCCH power offset is the value of this (2 + IE * 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
}

-- TABULAR: Actual value = 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)

-- TABULAR : value [Duration = infinite] is the value by default,
-- and is encoded by absence of the full sequence. If the sequence is present,
-- thefield is absent, the default is respectivelyinfinite. Presence of the
-- field absent should not be used, but shall be understood as if the
-- sequence was absent.

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

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
}

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 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 }

NidentityAbort ::= INTEGER (1..128)

MaxAllowedUL-TX-Power ::= INTEGER (-50..33)

MaxAvailablePCPCH-Number ::= INTEGER (1..64)

MaxPowerIncrease-r4 ::= INTEGER (0..3)

MaxTFCI-Field2Value ::= INTEGER (1..1023)

MidambleConfigurationBurstTypeLand3 ::= ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstType2 ::= ENUMERATED {ms3, ms6}

MidambleShiftAndBurstType ::= SEQUENCE {
    burstType              CHOICE {
        type1              SEQUENCE {
            midambleConfigurationBurstTypeLand3 MidambleConfigurationBurstTypeLand3,
            midambleAllocationMode              CHOICE {
                defaultMidamble              NULL,
                commonMidamble                NULL,

```

```

        ueSpecificMidamble
        midambleShift
    }
},
type2
    midambleConfigurationBurstType2
    midambleAllocationMode
    defaultMidamble
    commonMidamble
    ueSpecificMidamble
    midambleShift
}
},
type3
    midambleConfigurationBurstTypeLand3
    midambleAllocationMode
    defaultMidamble
    ueSpecificMidamble
    midambleShift
}
}
}

MidambleShiftAndBurstType-LCR-r4 ::= SEQUENCE {
    midambleAllocationMode
    defaultMidamble
    commonMidamble
    ueSpecificMidamble
    midambleShift
}
    midambleConfiguration
    INTEGER (1..8) -- Actual value = IE value * 2
}

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
    -- The following IEs shall be ignored in 1.28Mcps TDD mode.
    alpha
    prach-ConstantValue
    dpch-ConstantValue
    pusch-ConstantValue
}
    PrimaryCCPCH-TX-Power,
    Alpha
    ConstantValue,
    ConstantValue,
    ConstantValue
    OPTIONAL,
    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        PDSCH-PowerControlInfo    OPTIONAL,
    -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
    -- selected the IE is OPTIONAL otherwise it should not be sent
    pdsch-AllocationPeriodInfo    AllocationPeriodInfo,
    tfcs-ID                       TFCS-IdentityPlain        DEFAULT 1,
    configuration                  CHOICE {
        old-Configuration          SEQUENCE {
            pdsch-Identity        PDSCH-Identity
        },
        new-Configuration          SEQUENCE {
            pdsch-Info            PDSCH-Info,
            pdsch-Identity        PDSCH-Identity    OPTIONAL
        }
    }
}

PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
    pdsch-PowerControlInfo        PDSCH-PowerControlInfo    OPTIONAL,
    -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
    -- selected the IE is OPTIONAL otherwise it should not be sent
    pdsch-AllocationPeriodInfo    AllocationPeriodInfo,
    tfcs-ID                       TFCS-IdentityPlain        DEFAULT 1,
    configuration                  CHOICE {
        old-Configuration          SEQUENCE {
            pdsch-Identity        PDSCH-Identity
        },
        new-Configuration          SEQUENCE {
            pdsch-Info            PDSCH-Info-r4,
            pdsch-Identity        PDSCH-Identity    OPTIONAL
        }
    }
}

PDSCH-CodeInfo ::=               SEQUENCE {
    spreadingFactor                SF-PDSCH,
    codeNumber                     CodeNumberDSCH,
    multiCodeInfo                  MultiCodeInfo
}

PDSCH-CodeInfoList ::=           SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
    PDSCH-CodeInfo

PDSCH-CodeMap ::=                SEQUENCE {
    spreadingFactor                SF-PDSCH,
    multiCodeInfo                  MultiCodeInfo,
    codeNumberStart                CodeNumberDSCH,
    codeNumberStop                 CodeNumberDSCH
}

PDSCH-CodeMapList ::=            SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
    PDSCH-CodeMap

```

```

PDSCH-CodeMapping ::=
  dl-ScramblingCode
  signallingMethod
  codeRange
  tfci-Range
  explicit-config
  replace
}
SEQUENCE {
  SecondaryScramblingCode OPTIONAL,
  CHOICE {
    CodeRange,
    DSCH-MappingList,
    PDSCH-CodeInfoList,
    ReplacedPDSCH-CodeInfoList
  }
}

PDSCH-Identity ::=
INTEGER (1..hiPDSCHidentities)

PDSCH-Info ::=
  tfcs-ID
  commonTimeslotInfo
  pdsch-TimeslotsCodes
}
SEQUENCE {
  TFCS-IdentityPlain DEFAULT 1,
  CommonTimeslotInfo OPTIONAL,
  DownlinkTimeslotsCodes OPTIONAL
}

PDSCH-Info-r4 ::=
  tfcs-ID
  commonTimeslotInfo
  tddOption
  tdd384
  pdsch-TimeslotsCodes
  },
  tdd128
  pdsch-TimeslotsCodes
}
SEQUENCE {
  TFCS-IdentityPlain DEFAULT 1,
  CommonTimeslotInfo OPTIONAL,
  CHOICE {
    SEQUENCE {
      DownlinkTimeslotsCodes OPTIONAL
    },
    SEQUENCE {
      DownlinkTimeslotsCodes-LCR-r4 OPTIONAL
    }
  }
}

PDSCH-Info-LCR-r4 ::=
  tfcs-ID
  commonTimeslotInfo
  pdsch-TimeslotsCodes
}
SEQUENCE {
  TFCS-IdentityPlain DEFAULT 1,
  CommonTimeslotInfo OPTIONAL,
  DownlinkTimeslotsCodes-LCR-r4 OPTIONAL
}

PDSCH-PowerControlInfo ::=
  tpc-StepSizeTDD
  ul-CCTrChTPCList
}
SEQUENCE {
  TPC-StepSizeTDD OPTIONAL,
  UL-CCTrChTPCList OPTIONAL
}

PDSCH-SHO-DCH-Info ::=
  dsch-RadioLinkIdentifier
  rl-IdentifierList
}
SEQUENCE {
  DSCH-RadioLinkIdentifier,
  RL-IdentifierList OPTIONAL
}

PDSCH-SysInfo ::=
  pdsch-Identity
  pdsch-Info
  dsch-TFS
  dsch-TFCS
}
SEQUENCE {
  PDSCH-Identity,
  PDSCH-Info,
  TransportFormatSet OPTIONAL,
  TFCS OPTIONAL
}

PDSCH-SysInfo-LCR-r4 ::=
  pdsch-Identity
  pdsch-Info
  dsch-TFS
  dsch-TFCS
}
SEQUENCE {
  PDSCH-Identity,
  PDSCH-Info-LCR-r4,
  TransportFormatSet OPTIONAL,
  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 ::=
  pdsch-SysInfo
  sfm-TimeInfo
}
SEQUENCE (SIZE (1..maxPDSCH)) OF
  SEQUENCE {
    PDSCH-SysInfo,
    SFN-TimeInfo OPTIONAL
  }

PDSCH-SysInfoList-SFN-LCR-r4 ::=
  pdsch-SysInfo
}
SEQUENCE (SIZE (1..maxPDSCH)) OF
  SEQUENCE {
    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 }

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 ::=
    fdd
    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
}

PRACH-SystemInformation-LCR-r4 ::=
    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 ::=
    ul-DPCH-InfoPredef
    dl-CommonInformationPredef
}

```

```

PrimaryCCPCH-Info ::=
    CHOICE {
        fdd
            tx-DiversityIndicator
            BOOLEAN
        },
        tdd
            -- syncCase should be absent for 1.28Mcps TDD mode
            syncCase
                CHOICE {
                    syncCase1
                        SEQUENCE {
                            timeslot
                                TimeslotNumber
                        },
                    syncCase2
                        SEQUENCE {
                            timeslotSync2
                                TimeslotSync2
                        }
                }
            cellParametersID
                CellParametersID
            sctd-Indicator
                BOOLEAN
    }
    OPTIONAL,
    OPTIONAL,
}

PrimaryCCPCH-Info-r4 ::=
    CHOICE {
        fdd
            tx-DiversityIndicator
            BOOLEAN
        },
        tdd
            tddOption
                CHOICE {
                    tdd384
                        syncCase
                            CHOICE {
                                syncCase1
                                    SEQUENCE {
                                        timeslot
                                            TimeslotNumber
                                    },
                                syncCase2
                                    SEQUENCE {
                                        timeslotSync2
                                            TimeslotSync2
                                    }
                            }
                    },
                    tdd128
                        SEQUENCE {
                            tstd-Indicator
                                BOOLEAN
                        }
                }
            cellParametersID
                CellParametersID
            blockSTTD-Indicator
                BOOLEAN
    }
    OPTIONAL,
    OPTIONAL,
}

PrimaryCCPCH-Info-LCR-r4 ::=
    SEQUENCE {
        tstd-Indicator
            BOOLEAN,
        cellParametersID
            CellParametersID
        blockSTTD-Indicator
            BOOLEAN
    }
    OPTIONAL,

-- 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,
            tfcs-ID TFCS-IdentityPlain DEFAULT 1,
            configuration CHOICE {
                old-Configuration SEQUENCE {
                    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,
            tfcs-Identity TFCS-IdentityPlain OPTIONAL,
            configuration CHOICE {
                old-Configuration SEQUENCE {
                    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                              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,
    sfn-TimeInfo                       SFN-TimeInfo                    OPTIONAL
}

PUSCH-SysInfoList-SFN-LCR-r4 ::=       SEQUENCE (SIZE (1..maxPUSCH)) OF
                                        SEQUENCE {
    pusch-SysInfo                      PUSCH-SysInfo-LCR-r4,
    sfn-TimeInfo                       SFN-TimeInfo                    OPTIONAL
}

RACH-TransmissionParameters ::=        SEQUENCE {
    mmax                                INTEGER (1..32),
    nb01Min                             NB01,
    nb01Max                             NB01
}

ReducedScramblingCodeNumber ::=        INTEGER (0..8191)

RepetitionPeriodAndLength ::=          CHOICE {
    repetitionPeriod1                   NULL,
    repetitionPeriod2                   INTEGER (1..1),
    -- repetitionPeriod2 could just as well be NULL also.
    repetitionPeriod4                   INTEGER (1..3),
    repetitionPeriod8                   INTEGER (1..7),
    repetitionPeriod16                  INTEGER (1..15),
    repetitionPeriod32                  INTEGER (1..31),
    repetitionPeriod64                  INTEGER (1..63)
}

RepetitionPeriodLengthAndOffset ::=    CHOICE {
    repetitionPeriod1                   NULL,
    repetitionPeriod2                   SEQUENCE {
        length                          NULL,
        offset                          INTEGER (0..1)
    },
    repetitionPeriod4                   SEQUENCE {
        length                          INTEGER (1..3),
        offset                          INTEGER (0..3)
    },
    repetitionPeriod8                   SEQUENCE {

```

```

length                INTEGER (1..7),
offset                INTEGER (0..7)
},
repetitionPeriod16   SEQUENCE {
length                INTEGER (1..15),
offset                INTEGER (0..15)
},
repetitionPeriod32   SEQUENCE {
length                INTEGER (1..31),
offset                INTEGER (0..31)
},
repetitionPeriod64   SEQUENCE {
length                INTEGER (1..63),
offset                INTEGER (0..63)
}
}

ReplacedPDSCH-CodeInfo ::= SEQUENCE {
    tfci-Field2          MaxTFCI-Field2Value,
    spreadingFactor      SF-PDSCH,
    codeNumber           CodeNumberDSCH,
    multiCodeInfo       MultiCodeInfo
}

ReplacedPDSCH-CodeInfoList ::= SEQUENCE (SIZE (1..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 {
    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 ::=
    secondaryCCPCH-Info
    tfcs
    modeSpecificInfo
        fdd
            fach-PCH-InformationList
            sib-ReferenceListFACH
        },
        tdd
            fach-PCH-InformationList
    }
}

SCCPCH-SystemInformation ::=
    secondaryCCPCH-Info
    tfcs
    fach-PCH-InformationList
    pich-Info
}

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

-- The following list 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 ::=
    modeSpecificInfo
        fdd
            -- This IE is not used in this version of the specification and should be ignored.
            dummy1 PCPICH-UsageForChannelEst,
            -- This IE 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
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
            commonTimeslotInfo CommonTimeslotInfoSCCPCH,
            individualTimeslotInfo IndividualTimeslotInfo,
            channelisationCode SCCPCH-ChannelisationCodeList
    }
}

SecondaryCCPCH-Info-r4 ::=
    modeSpecificInfo
        fdd
            pCPICH-UsageForChannelEst PCPICH-UsageForChannelEst,
            secondaryCPICH-Info 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,
        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
}

-- The following information element 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)),
    prxUpPCHdes                    INTEGER (0..62),
    -- Actual value = (IE value * 0.5) - 11
    powerRampStep                  INTEGER (0..3),
    max-SYNC-UL-Transmissions      ENUMERATED { tr1, tr2, tr4, tr8 } ,
    mmax                            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-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 ::=
    sf8
    sf16
    CHOICE {
        SEQUENCE (SIZE (1..8)) OF
            TDD-PRACH-CCode8,
        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)

-- The 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
            tgcfn
        },
    deactivate
    },
    tgps-ConfigurationParams
    TGPS-ConfigurationParams
    OPTIONAL
}

TGPS-Reconfiguration-CFN ::=
    INTEGER (0..255)

TGP-SequenceList ::=
    SEQUENCE (SIZE (1..maxTGPS)) OF
        TGP-Sequence

TGP-SequenceShort ::=
    tgpsi
    tgps-Status
        activate
            tgcfn
        },
    deactivate
    }
}

```

```

TGPL ::=                                INTEGER (1..144)

-- TABULAR: The 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,
    ul-DL-Mode                           UL-DL-Mode,
    -- TABULAR: Compressed mode method is nested inside 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 = IE value * 256
TimingOffset ::=                          INTEGER (0..149)

TPC-CombinationIndex ::=                  INTEGER (0..5)

TPC-StepSizeFDD ::=                       INTEGER (0..1)

-- Actual value = IE value + 1
TPC-StepSizeTDD ::=                       INTEGER (1..3)

-- Actual value = IE value * 0.5 seconds
TreconfirmAbort ::=                       INTEGER (1..20)

TX-DiversityMode ::=                      ENUMERATED {
    noDiversity,
    sttd,
    closedLoopMode1,
    closedLoopMode2 }

UARFCN ::=                                INTEGER (0..16383)

```

```

UCSM-Info ::=
  minimumSpreadingFactor
  nF-Max
  channelReqParamsForUCSM
}

SEQUENCE {
  MinimumSpreadingFactor,
  NF-Max,
  ChannelReqParamsForUCSM
}

UL-CCTrCH ::=
  tfcs-ID
  ul-TargetSIR
  timeInfo
  commonTimeslotInfo
  ul-CCTrCH-TimeslotsCodes
}

SEQUENCE {
  TFCS-IdentityPlain
  UL-TargetSIR,
  TimeInfo,
  CommonTimeslotInfo
  UplinkTimeslotsCodes
  DEFAULT 1,
  OPTIONAL,
  OPTIONAL
}

UL-CCTrCH-r4 ::=
  tfcs-ID
  ul-TargetSIR
  timeInfo
  commonTimeslotInfo
  tddOption
  tdd384
  ul-CCTrCH-TimeslotsCodes
  },
  tdd128
  ul-CCTrCH-TimeslotsCodes
}

SEQUENCE {
  TFCS-IdentityPlain
  UL-TargetSIR,
  TimeInfo,
  CommonTimeslotInfo
  CHOICE {
    SEQUENCE {
      UplinkTimeslotsCodes
    }
    SEQUENCE {
      UplinkTimeslotsCodes-LCR-r4
    }
  }
  DEFAULT 1,
  OPTIONAL,
  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
    cpch-SetInfo
  }

UL-ChannelRequirement-r4 ::=
  CHOICE {
    ul-DPCH-Info-r4,
    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-DPCH-Info-r4,
  CPCH-SetInfo,
  CPCH-SetID
}

UL-CompressedModeMethod ::=
  ENUMERATED {
    sf-2,
    higherLayerScheduling }

UL-DL-Mode ::=
  CHOICE {
    ul
    dl
    ul-and-dl
    ul
    dl
  }
  UL-CompressedModeMethod,
  DL-CompressedModeMethod,
  SEQUENCE {
    UL-CompressedModeMethod,
    DL-CompressedModeMethod
  }
  }}}

UL-DPCCH-SlotFormat ::=
  ENUMERATED {
    slf0, slf1, slf2 }

UL-DPCH-Info ::=
  ul-DPCH-PowerControlInfo
  modeSpecificInfo
}

SEQUENCE {
  UL-DPCH-PowerControlInfo
  CHOICE {

```

```

    fdd
        scramblingCodeType
        scramblingCode
        numberOfDPDCH
        spreadingFactor
        tfci-Existence
        numberOfFBI-Bits
        -- The IE above is conditional based on history
        puncturingLimit
    },
    tdd
        ul-TimingAdvance
        ul-CCTrCHList
    }
}

UL-DPCH-Info-r4 ::=
    ul-DPCH-PowerControlInfo
    modeSpecificInfo
    fdd
        scramblingCodeType
        scramblingCode
        numberOfDPDCH
        spreadingFactor
        tfci-Existence
        numberOfFBI-Bits
        -- The IE above is conditional based on history
        puncturingLimit
    },
    tdd
        ul-TimingAdvance
        ul-CCTrCHList
    }
}

UL-DPCH-InfoPostFDD ::=
    ul-DPCH-PowerControlInfo
    scramblingCodeType
    reducedScramblingCodeNumber
    spreadingFactor
}

UL-DPCH-InfoPostTDD ::=
    ul-DPCH-PowerControlInfo
    ul-TimingAdvance
    ul-CCTrCH-TimeslotsCodes
}

UL-DPCH-InfoPostTDD-LCR-r4 ::=
    ul-DPCH-PowerControlInfo
    ul-TimingAdvance
    ul-CCTrCH-TimeslotsCodes
}

UL-DPCH-InfoPredef ::=
    ul-DPCH-PowerControlInfo
    modeSpecificInfo
    fdd
        tfci-Existence
        puncturingLimit
    },
    tdd
        commonTimeslotInfo
    }
}

UL-DPCH-PowerControlInfo ::=
    fdd
        dpccch-PowerOffset
        pc-Preamble
        sRB-delay
        powerControlAlgorithm
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    },

```

```

tdd
    ul-TargetSIR
    ul-OL-PC-Signalling
        broadcast-UL-OL-PC-info
        handoverGroup
            individualTS-InterferenceList
            dpch-ConstantValue
            primaryCCPCH-TX-Power
    }
}
}

UL-DPCH-PowerControlInfo-r4 ::= CHOICE {
    fdd
        dpcch-PowerOffset
        pc-Preamble
        powerControlAlgorithm
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    },
    tdd
        -- 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-OL-PC-Signalling
            broadcast-UL-OL-PC-info
            handoverGroup
                tddOption
                    tdd384
                        individualTS-InterferenceList
                        dpch-ConstantValue
                    },
                    tdd128
                        tpc-StepSize
                }
            },
            primaryCCPCH-TX-Power
        }
    }
}

UL-DPCH-PowerControlInfoPostFDD ::= SEQUENCE {
    dpcch-PowerOffset
    pc-Preamble
    SRB-delay
}

UL-DPCH-PowerControlInfoPostTDD ::= SEQUENCE {
    ul-TargetSIR
    ul-TimeslotInterference
}

UL-DPCH-PowerControlInfoPostTDD-LCR-r4 ::= SEQUENCE {
    ul-TargetSIR
}

UL-DPCH-PowerControlInfoPredef ::= CHOICE {
    fdd
        powerControlAlgorithm
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    },
    tdd
        -- The following IE shall be ignored if in 1.28Mcps TDD mode.
        dpch-ConstantValue
    }
}

UL-Interference ::= INTEGER (-110..-70)

UL-ScramblingCode ::= INTEGER (0..16777215)

UL-SynchronisationParameters-r4 ::= SEQUENCE {
    stepSize
    frequency
}

```



```

-- Actual value = (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
  additionalTimeslots  CHOICE {
    consecutive        SEQUENCE {
                        numAdditionalTimeslots
                        INTEGER (1..maxTS-1)
    },
    timeslotList       SEQUENCE (SIZE (1..maxTS-1)) OF
                        UplinkAdditionalTimeslots
  }
}
}

UplinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {
  dynamicSFusage        BOOLEAN,
  firstIndividualTimeslotInfo-
  LCR-r4                IndividualTimeslotInfo-LCR-r4,
  ul-TS-ChannelisationCodeList-
  LCR-r4                UL-TS-ChannelisationCodeList,
  moreTimeslots        CHOICE {
    noMore
    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 = IE value * 2.5
  doppler0thOrder     INTEGER (-2048..2047),
  extraDopplerInfo    ExtraDopplerInfo OPTIONAL,
  codePhase            INTEGER (0..1022),
  integerCodePhase    INTEGER (0..19),
  gps-BitNumber        INTEGER (0..3),
  codePhaseSearchWindow-
  CodePhaseSearchWindow,
  azimuthAndElevation AzimuthAndElevation OPTIONAL
}

AcquisitionSatInfoList ::= SEQUENCE (SIZE (1..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-0a                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 }

AzimuthAndElevation ::=          SEQUENCE {
    -- Actual value = IE value * 11.25
    azimuth                    INTEGER (0..31),
    -- Actual value = 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-LCR-r4,
    PeriodicalReportingCriteria
}

-- Actual value = 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,	
primaryCCPCH-TX-Power	PrimaryCCPCH-TX-Power	OPTIONAL,
timeslotInfoList	TimeslotInfoList-r4	OPTIONAL,
readSFN-Indicator	BOOLEAN	
}		
}		
}		
CellInfoSI-RSCP ::=	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-RSCP	OPTIONAL
}		
CellInfoSI-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-RSCP	OPTIONAL
}		
CellInfoSI-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-ECN0	OPTIONAL
}		
CellInfoSI-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-ECN0	OPTIONAL
}		

```

CellInfoSI-HCS-RSCP ::=
  cellIndividualOffset
  referenceTimeDifferenceToCell
  modeSpecificInfo
    fdd
      primaryCPICH-Info
      primaryCPICH-TX-Power
      readSFN-Indicator
      tx-DiversityIndicator
    },
    tdd
      primaryCCPCH-Info
      primaryCCPCH-TX-Power
      timeslotInfoList
      readSFN-Indicator
    }
  },
  cellSelectionReselectionInfo
}

SEQUENCE {
  CellIndividualOffset           DEFAULT 0,
  ReferenceTimeDifferenceToCell  OPTIONAL,
  CHOICE {
    SEQUENCE {
      PrimaryCPICH-Info          OPTIONAL,
      PrimaryCPICH-TX-Power      OPTIONAL,
      BOOLEAN,
      BOOLEAN
    }
    SEQUENCE {
      PrimaryCCPCH-Info,
      PrimaryCCPCH-TX-Power      OPTIONAL,
      TimeslotInfoList          OPTIONAL,
      BOOLEAN
    }
  }
  CellSelectReselectInfoSIB-11-12-HCS-RSCP  OPTIONAL
}

CellInfoSI-HCS-RSCP-LCR-r4 ::=
  cellIndividualOffset
  referenceTimeDifferenceToCell
  primaryCCPCH-Info
  primaryCCPCH-TX-Power
  timeslotInfoList
  readSFN-Indicator
  cellSelectionReselectionInfo
}

SEQUENCE {
  CellIndividualOffset           DEFAULT 0,
  ReferenceTimeDifferenceToCell  OPTIONAL,
  PrimaryCCPCH-Info-LCR-r4,
  PrimaryCCPCH-TX-Power          OPTIONAL,
  TimeslotInfoList-LCR-r4       OPTIONAL,
  BOOLEAN,
  CellSelectReselectInfoSIB-11-12-HCS-RSCP  OPTIONAL
}

CellInfoSI-HCS-ECN0 ::=
  cellIndividualOffset
  referenceTimeDifferenceToCell
  modeSpecificInfo
    fdd
      primaryCPICH-Info
      primaryCPICH-TX-Power
      readSFN-Indicator
      tx-DiversityIndicator
    },
    tdd
      primaryCCPCH-Info
      primaryCCPCH-TX-Power
      timeslotInfoList
      readSFN-Indicator
    }
  },
  cellSelectionReselectionInfo
}

SEQUENCE {
  CellIndividualOffset           DEFAULT 0,
  ReferenceTimeDifferenceToCell  OPTIONAL,
  CHOICE {
    SEQUENCE {
      PrimaryCPICH-Info          OPTIONAL,
      PrimaryCPICH-TX-Power      OPTIONAL,
      BOOLEAN,
      BOOLEAN
    }
    SEQUENCE {
      PrimaryCCPCH-Info,
      PrimaryCCPCH-TX-Power      OPTIONAL,
      TimeslotInfoList          OPTIONAL,
      BOOLEAN
    }
  }
  CellSelectReselectInfoSIB-11-12-HCS-ECN0  OPTIONAL
}

CellInfoSI-HCS-ECN0-LCR-r4 ::=
  cellIndividualOffset
  referenceTimeDifferenceToCell
  primaryCCPCH-Info
  primaryCCPCH-TX-Power
  timeslotInfoList
  readSFN-Indicator
  cellSelectionReselectionInfo
}

SEQUENCE {
  CellIndividualOffset           DEFAULT 0,
  ReferenceTimeDifferenceToCell  OPTIONAL,
  PrimaryCCPCH-Info-LCR-r4,
  PrimaryCCPCH-TX-Power          OPTIONAL,
  TimeslotInfoList-LCR-r4       OPTIONAL,
  BOOLEAN,
  CellSelectReselectInfoSIB-11-12-HCS-ECN0  OPTIONAL
}

CellMeasuredResults ::=
  cellIdentity
  sfn-SFN-ObsTimeDifference
  cellSynchronisationInfo
  modeSpecificInfo
    fdd
      primaryCPICH-Info
      cpich-Ec-N0
      cpich-RSCP
      pathloss
    },
    tdd
      cellParametersID
      proposedTGSN
      primaryCCPCH-RSCP
      pathloss
      timeslotISCP-List
}

SEQUENCE {
  CellIdentity                   OPTIONAL,
  SFN-SFN-ObsTimeDifference      OPTIONAL,
  CellSynchronisationInfo        OPTIONAL,
  CHOICE {
    SEQUENCE {
      PrimaryCPICH-Info,
      CPICH-Ec-N0           OPTIONAL,
      CPICH-RSCP            OPTIONAL,
      Pathloss              OPTIONAL
    }
    SEQUENCE {
      CellParametersID,
      TGSN                  OPTIONAL,
      PrimaryCCPCH-RSCP     OPTIONAL,
      Pathloss              OPTIONAL,
      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 SFM-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
    }
  }
}

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    },
    tdd
        q-RxlevMin
    },
    gsm
        q-RxlevMin
    }
}

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,
}

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w96, w128, w192 }

CountC-SFN-Frame-difference ::= SEQUENCE {
    countC-SFN-High    INTEGER(0..15),      -- Actual value = IE value * 256
    off                INTEGER(0..255)
}

-- It is not allowed to send value 50 in this version of the specification
CPICH-Ec-NO ::= INTEGER (0..50)

CPICH-RSCP ::= INTEGER (0..91)

DeltaPRC ::= INTEGER (-127..127)

-- Actual value = 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 }

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)
}

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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 }

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
}

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}

Event1f ::=
    triggeringCondition      SEQUENCE {
        thresholdUsedFrequency      TriggeringCondition1,
    }                          ThresholdUsedFrequency
}

Event2a ::=
    dummy                    SEQUENCE {
        -- IE "dummy" shall not be sent and shall be ignored if received.
        -- IE "dummy" should be removed in later versions of the message including this IE
        usedFreqW            W,
        hysteresis           HysteresisInterFreq,
        timeToTrigger        TimeToTrigger,
        reportingCellStatus  ReportingCellStatus      OPTIONAL,
        nonUsedFreqParameterList NonUsedFreqParameterList  OPTIONAL
    }

Event2b ::=
    usedFreqThreshold        SEQUENCE {
        usedFreqW            W,
        hysteresis           HysteresisInterFreq,
        timeToTrigger        TimeToTrigger,
        reportingCellStatus  ReportingCellStatus      OPTIONAL,
        nonUsedFreqParameterList NonUsedFreqParameterList  OPTIONAL
    }

Event2c ::=
    hysteresis               SEQUENCE {
        timeToTrigger        TimeToTrigger,
        reportingCellStatus  ReportingCellStatus      OPTIONAL,
        nonUsedFreqParameterList NonUsedFreqParameterList  OPTIONAL
    }

Event2d ::=
    usedFreqThreshold        SEQUENCE {
        usedFreqW            W,
        hysteresis           HysteresisInterFreq,
        timeToTrigger        TimeToTrigger,
        reportingCellStatus  ReportingCellStatus      OPTIONAL
    }

Event2e ::=
    hysteresis               SEQUENCE {
        timeToTrigger        TimeToTrigger,
        reportingCellStatus  ReportingCellStatus      OPTIONAL,
        nonUsedFreqParameterList NonUsedFreqParameterList  OPTIONAL
    }

Event2f ::=
    usedFreqThreshold        SEQUENCE {
        usedFreqW            W,
        hysteresis           HysteresisInterFreq,
        timeToTrigger        TimeToTrigger,
        reportingCellStatus  ReportingCellStatus      OPTIONAL
    }

Event3a ::=
    thresholdOwnSystem       SEQUENCE {
        w                    W,
        thresholdOtherSystem Threshold,
        hysteresis           Hysteresis,
        timeToTrigger        TimeToTrigger,
        reportingCellStatus  ReportingCellStatus      OPTIONAL
    }

Event3b ::=
    thresholdOtherSystem     SEQUENCE {
        hysteresis           Hysteresis,
        timeToTrigger        TimeToTrigger,
        reportingCellStatus  ReportingCellStatus      OPTIONAL
    }

Event3c ::=
    thresholdOtherSystem     SEQUENCE {
        hysteresis           Hysteresis,
        timeToTrigger        TimeToTrigger,

```

```

    reportingCellStatus          ReportingCellStatus          OPTIONAL
}

Event3d ::=
    hysteresis                   Hysteresis,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus          OPTIONAL
}

EventIDInterFreq ::=
    ENUMERATED {
        e2a, e2b, e2c, e2d, e2e, e2f }

EventIDInterRAT ::=
    ENUMERATED {
        e3a, e3b, e3c, e3d }

EventIDIntraFreq ::=
    ENUMERATED {
        e1a, e1b, e1c, e1d, e1e,
        e1f, e1g, e1h, e1i }

EventResults ::=
    CHOICE {
        intraFreqEventResults    IntraFreqEventResults,
        interFreqEventResults    InterFreqEventResults,
        interRATEventResults     InterRATEventResults,
        trafficVolumeEventResults TrafficVolumeEventResults,
        qualityEventResults       QualityEventResults,
        ue-InternalEventResults   UE-InternalEventResults,
        ue-positioning-MeasurementEventResults UE-Positioning-MeasurementEventResults
    }

ExtraDopplerInfo ::=
    SEQUENCE {
        -- Actual value = 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,
    -- The following IE 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 = 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 {
    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                INTEGER (46..158)        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 {
    penaltyTime          PenaltyTime-RSCP
    -- TABULAR: The default value is "notUsed", temporary offset is nested inside PenaltyTime
}

HCS-CellReselectInformation-ECN0 ::= SEQUENCE {
    penaltyTime          PenaltyTime-ECN0
    -- TABULAR: The default value is "notUsed", temporary offset is nested inside PenaltyTime
}

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-CRMax                 OPTIONAL
}

```

```

-- Actual value = IE value * 0.5
Hysteresis ::= INTEGER (0..15)

-- Actual value = IE value * 0.5
HysteresisInterFreq ::= INTEGER (0..29)

InterFreqCell ::= SEQUENCE {
    frequencyInfo          FrequencyInfo,
    nonFreqRelatedEventResults CellMeasurementEventResults
}

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 {
    event2a          Event2a,

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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
}

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```

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      InterFreqReportingCriteria,
    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,
        spare                           NULL
    }
}

InterRATCellID ::= INTEGER (0..maxCellMeas-1)

InterRATCellInfoList ::= SEQUENCE {
    removedInterRATCellList         RemovedInterRATCellList,
    newInterRATCellList             NewInterRATCellList,
    -- NOTE: Future revisions of dedicated message(s) including IE newInterRATCellList
    -- should use a corrected version of this IE
    cellsForInterRATMeasList        CellsForInterRATMeasList     OPTIONAL
}

InterRATCellInfoList-B ::= SEQUENCE {
    removedInterRATCellList         RemovedInterRATCellList,
    newInterRATCellList-B          NewInterRATCellList-B
    -- NOTE: IE newInterRATCellList should be optional.
    -- However, system information does not support message versions
    -- Hence, this can not be corrected
}

InterRATCellInfoList-r4 ::= SEQUENCE {

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    removedInterRATCellList      RemovedInterRATCellList,
    newInterRATCellList          NewInterRATCellList
    cellsForInterRATMeasList     CellsForInterRATMeasList
}
                                OPTIONAL,
                                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)) 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           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
}

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 {
    ela Event1a-r4,
    elb Event1b-r4,
    elc Event1c,
    eld NULL,
    ele Event1e,
    elf Event1f,
    elg NULL,
    elh ThresholdUsedFrequency,
    eli ThresholdUsedFrequency
}

IntraFreqEvent-LCR-r4 ::= CHOICE {
    ela Event1a-LCR-r4,
    elb Event1b-LCR-r4,
    elc Event1c,
    eld NULL,
    ele Event1e,
    elf Event1f,
    elg NULL,
    elh ThresholdUsedFrequency,
    eli 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
        }
    }
}

IntraFreqMeasQuantity-FDD ::= ENUMERATED {
    cpich-Ec-N0,
    cpich-RSCP,
    pathloss,
    ultra-CarrierRSSI }

```

```

-- If used in InterRATMeasQuantity only cpich-Ec-N0 and cpich-RSCP is
-- allowed.
-- If used in InterFreqMeasQuantity ultra-CarrierRSSI is not allowed.
IntraFreqMeasQuantity-TDD ::=      ENUMERATED {
    primaryCCPCH-RSCP,
    pathloss,
    timeslotISCP,
    ultra-CarrierRSSI }

-- If used in InterFreqMeasQuantity ultra-CarrierRSSI is not allowed.
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        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            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
}

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-LCR-r4  UE-InternalMeasuredResults-LCR-r4,
    ue-positioning-MeasuredResults     UE-Positioning-MeasuredResults
}

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 {

```



```

        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 {
-- The following CHOICE 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 IntraFrequencyMeasurement-r4,
    interFrequencyMeasurement InterFrequencyMeasurement-r4,
    interRATMeasurement InterRATMeasurement-r4,
    up-Measurement UE-Positioning-Measurement-r4,
    trafficVolumeMeasurement TrafficVolumeMeasurement,
    qualityMeasurement QualityMeasurement,
    ue-InternalMeasurement UE-InternalMeasurement-r4
}

MeasurementValidity ::= SEQUENCE {
    ue-State ENUMERATED {
        cell-DCH, all-But-Cell-DCH, all-States }
}

MonitoredCellRACH-List ::= SEQUENCE (SIZE (1..7)) OF
    MonitoredCellRACH-Result

MonitoredCellRACH-Result ::= SEQUENCE {
    sfn-SFN-ObsTimeDifference SFN-SFN-ObsTimeDifference OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            primaryCPICH-Info PrimaryCPICH-Info,
            measurementQuantity CHOICE {
                cpich-Ec-N0 CPICH-Ec-N0,
                cpich-RSCP CPICH-RSCP,
                pathloss Pathloss
            }
        },
        tdd SEQUENCE {

```

```

        cellParametersID
        primaryCCPCH-RSCP
    }
}

MultipathIndicator ::=
    ENUMERATED {
        nm,
        low,
        medium,
        high }

N-CR-T-CRMaxHyst ::=
    n-CR
    t-CRMaxHyst
}

NavigationModelSatInfo ::=
    satID
    satelliteStatus
    ephemerisParameter
}

NavigationModelSatInfoList ::=
    SEQUENCE (SIZE (1..maxSat)) OF
        NavigationModelSatInfo

EphemerisParameter ::=
    codeOnL2
    uraIndex
    satHealth
    iodc
    l2Pflag
    sf1Revd
    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 ::=
    modeSpecificInfo
    fdd
        neighbourIdentity
        uE-RX-TX-TimeDifferenceType2Info
    },
    tdd
        neighbourAndChannelIdentity
    },
    neighbourQuality
    sfN-SFN-ObsTimeDifference2
}

Neighbour-v390ext ::=
    modeSpecificInfo
    fdd
        frequencyInfo
    },
    tdd
        NULL
}

```



```

    }
}

NeighbourList ::=                               SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                Neighbour

NeighbourList-v390ext ::=                       SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                Neighbour-v390ext
-- The order of the cells in IE NeighbourList-v390ext shall be the
-- same as the order in IE NeighbourList

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                                    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 ::=                SEQUENCE {
    interFreqCellID                            InterFreqCellID                OPTIONAL,
    frequencyInfo                              FrequencyInfo                  OPTIONAL,
    cellInfo                                    CellInfoSI-HCS-RSCP
}

NewInterFreqCellSI-HCS-ECN0 ::=                SEQUENCE {
    interFreqCellID                            InterFreqCellID                OPTIONAL,
    frequencyInfo                              FrequencyInfo                  OPTIONAL,
    cellInfo                                    CellInfoSI-HCS-ECN0
}

NewInterFreqCellSI-RSCP-LCR-r4 ::=            SEQUENCE {
    interFreqCellID                            InterFreqCellID                OPTIONAL,
    frequencyInfo                              FrequencyInfo                  OPTIONAL,
    cellInfo                                    CellInfoSI-RSCP-LCR-r4
}

NewInterFreqCellSI-ECN0-LCR-r4 ::=            SEQUENCE {
    interFreqCellID                            InterFreqCellID                OPTIONAL,
    frequencyInfo                              FrequencyInfo                  OPTIONAL,
    cellInfo                                    CellInfoSI-ECN0-LCR-r4
}

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,

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    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                           NULL                        OPTIONAL
        },
        is-2000                            SEQUENCE {
            is-2000SpecificMeasInfo        IS-2000SpecificMeasInfo
        },
        none                                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
        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                           NULL                        OPTIONAL
        },
        is-2000                            SEQUENCE {
            is-2000SpecificMeasInfo        IS-2000SpecificMeasInfo
        },
        none                                NULL,
        -- 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
        spare1                             NULL
    }
}

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

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

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NewIntraFreqCell ::=
  IntraFreqCellID
  CellInfo
}
SEQUENCE {
  IntraFreqCellID
  CellInfo
} OPTIONAL,

NewIntraFreqCell-r4 ::=
  IntraFreqCellID
  CellInfo-r4
}
SEQUENCE {
  IntraFreqCellID
  CellInfo-r4
} OPTIONAL,

NewIntraFreqCellList ::=
SEQUENCE (SIZE (1..maxCellMeas)) OF
  NewIntraFreqCell

NewIntraFreqCellList-r4 ::=
SEQUENCE (SIZE (1..maxCellMeas)) OF
  NewIntraFreqCell-r4

NewIntraFreqCellSI-RSCP ::=
  IntraFreqCellID
  CellInfoSI-RSCP
}
SEQUENCE {
  IntraFreqCellID
  CellInfoSI-RSCP
} OPTIONAL,

NewIntraFreqCellSI-ECN0 ::=
  IntraFreqCellID
  CellInfoSI-ECN0
}
SEQUENCE {
  IntraFreqCellID
  CellInfoSI-ECN0
} OPTIONAL,

NewIntraFreqCellSI-HCS-RSCP ::=
  IntraFreqCellID
  CellInfoSI-HCS-RSCP
}
SEQUENCE {
  IntraFreqCellID
  CellInfoSI-HCS-RSCP
} OPTIONAL,

NewIntraFreqCellSI-HCS-ECN0 ::=
  IntraFreqCellID
  CellInfoSI-HCS-ECN0
}
SEQUENCE {
  IntraFreqCellID
  CellInfoSI-HCS-ECN0
} OPTIONAL,

NewIntraFreqCellSI-RSCP-LCR-r4 ::=
  IntraFreqCellID
  CellInfoSI-RSCP-LCR-r4
}
SEQUENCE {
  IntraFreqCellID
  CellInfoSI-RSCP-LCR-r4
} OPTIONAL,

NewIntraFreqCellSI-ECN0-LCR-r4 ::=
  IntraFreqCellID
  CellInfoSI-ECN0-LCR-r4
}
SEQUENCE {
  IntraFreqCellID
  CellInfoSI-ECN0-LCR-r4
} OPTIONAL,

NewIntraFreqCellSI-HCS-RSCP-LCR-r4 ::=
  IntraFreqCellID
  CellInfoSI-HCS-RSCP-LCR-r4
}
SEQUENCE {
  IntraFreqCellID
  CellInfoSI-HCS-RSCP-LCR-r4
} OPTIONAL,

NewIntraFreqCellSI-HCS-ECN0-LCR-r4 ::=
  IntraFreqCellID
  CellInfoSI-HCS-ECN0-LCR-r4
}
SEQUENCE {
  IntraFreqCellID
  CellInfoSI-HCS-ECN0-LCR-r4
} OPTIONAL,

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

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NonUsedFreqParameter ::=          SEQUENCE {
    nonUsedFreqThreshold          Threshold,
    -- IE "nonUsedFreqThreshold" is not needed in case of event 2a
    -- In case of event 2a UTRAN should include value 0 within IE "nonUsedFreqThreshold"
    -- In case of event 2a, the UE shall be ignore IE "nonUsedFreqThreshold"
    -- In later versions of the message including this IE, a special version of
    -- IE "NonUsedFreqParameterList" may be defined for event 2a, namely a
    -- version not including IE "nonUsedFreqThreshold"
    nonUsedFreqW                  W
}

NonUsedFreqParameterList ::=      SEQUENCE (SIZE (1..maxFreq)) OF
    NonUsedFreqParameter

ObservedTimeDifferenceToGSM ::=    INTEGER (0..4095)

OTDOA-SearchWindowSize ::=        ENUMERATED {
    c20, c40, c80, c160, c320,
    c640, c1280, moreThan1280 }

Pathloss ::=                      INTEGER (46..158)

PenaltyTime-RSCP ::=              CHOICE {
    notUsed                        NULL,
    pt10                           TemporaryOffset1,
    pt20                           TemporaryOffset1,
    pt30                           TemporaryOffset1,
    pt40                           TemporaryOffset1,
    pt50                           TemporaryOffset1,
    pt60                           TemporaryOffset1
}

PenaltyTime-ECNO ::=              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
}

PLMNIdentitiesOfNeighbourCells ::= 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

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    plmn-Identity                SEQUENCE {
    }                               PLMN-Identity                OPTIONAL

PositionEstimate ::=
    ellipsoidPoint                CHOICE {
    ellipsoidPointUncertCircle    EllipsoidPoint,
    ellipsoidPointUncertEllipse  EllipsoidPointUncertCircle,
    ellipsoidPointAltitude       EllipsoidPointUncertEllipse,
    ellipsoidPointAltitudeEllipso EllipsoidPointAltitude,
    ellipsoidPointAltitudeEllipso EllipsoidPointAltitudeEllipsoide
    }

PositioningMethod ::=
    ENUMERATED {
    otdoa,
    gps,
    otdoaOrGPS, cellID }

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

PrimaryCCPCH-RSCP ::=
    INTEGER (0..91)

Q-HCS ::=
    INTEGER (0..99)

Q-OffsetS-N ::=
    INTEGER (-50..50)

Q-QualMin ::=
    INTEGER (-24..0)

-- Actual value = (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 {

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                                gsm, is2000 }

ReferenceCellPosition ::=          CHOICE {
    ellipsoidPoint                EllipsoidPoint,
    ellipsoidPointWithAltitude    EllipsoidPointAltitude
}

-- As defined in 23.032
ReferenceLocation ::=              SEQUENCE {
    ellipsoidPointAltitudeEllipsoide    EllipsoidPointAltitudeEllipsoide
}

ReferenceSFN ::=                  INTEGER (0..4095)

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

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
}

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ReportingCellStatusOpt ::=          SEQUENCE {
    reportingCellStatus              OPTIONAL
}

ReportingInfoForCellDCH ::=         SEQUENCE {
    intraFreqReportingQuantity,
    measurementReportingMode,
    reportCriteria
}

ReportingInfoForCellDCH-LCR-r4 ::= SEQUENCE {
    intraFreqReportingQuantity,
    measurementReportingMode,
    reportCriteria
}

ReportingInterval ::=              ENUMERATED {
    noPeriodicalreporting, ri0-25,
    ri0-5, ri1, ri2, ri4, ri8, ri16 }

ReportingIntervalLong ::=          ENUMERATED {
    ril0, ril0-25, ril0-5, ril1,
    ril2, ril3, ril4, ril6, ril8,
    ril12, ril16, ril20, ril24,
    ril28, ril32, ril64 }

-- Actual value = IE value * 0.5
ReportingRange ::=                 INTEGER (0..29)

RL-AdditionInfoList ::=           SEQUENCE (SIZE (1..maxRL)) OF
    PrimaryCPICH-Info

RL-InformationLists ::=           SEQUENCE {
    rl-AdditionInfoList              OPTIONAL,
    rl-RemovalInformationList        OPTIONAL
}

RLC-BuffersPayload ::=           ENUMERATED {
    p10, p14, p18, p116, p132, p164, p1128,
    p1256, p1512, p11024, p12k, p14k,
    p18k, p116k, p132k, p164k, p1128k,
    p1256k, p1512k, p11024k }

-- Actual value = 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-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 {

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    type1
    type2
}
SFN-SFN-ObsTimeDifference1 ::= INTEGER (0..9830399)
SFN-SFN-ObsTimeDifference2 ::= INTEGER (0..40961)
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,
    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
-- 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 = IE value * 20.
TimeInterval ::=        INTEGER (1..13)

TimeslotInfo ::=        SEQUENCE {
    timeslotNumber      TimeslotNumber,
    burstType           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
}

TimeslotISCP ::=        INTEGER (0..91)

-- The following 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            TimeslotNumber,
    timeslotISCP        TimeslotISCP
}

TimeToTrigger ::=       ENUMERATED {
    ttt0, ttt10, ttt20, ttt40, ttt60,
    ttt80, ttt100, ttt120, ttt160,
    ttt200, ttt240, ttt320, ttt640,
    ttt1280, ttt2560, ttt5000 }

TrafficVolumeEventParam ::= SEQUENCE {
    eventID             TrafficVolumeEventType,
    reportingThreshold  TrafficVolumeThreshold,
    timeToTrigger        TimeToTrigger
    pendingTimeAfterTrigger OPTIONAL,
    tx-InterruptionAfterTrigger OPTIONAL,
}

```

```

TrafficVolumeEventResults ::= SEQUENCE {
    ul-transportChannelCausingEvent    UL-TrCH-Identity,
    trafficVolumeEventIdentity         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                             TrafficVolumeReportingCriteria OPTIONAL,
    -- Above IE is not used in this version of protocol
    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 {
    transChCriteriaList               TransChCriteriaList           OPTIONAL
    --NOTE: IE "transChCriteriaList" should be mandatory in later versions of this message
}

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,
}

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th512k, th768k }

TransChCriteria ::=
  ul-transportChannelID          SEQUENCE {
  eventSpecificParameters        UL-TrCH-Identity          OPTIONAL,
                                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
}

```

```

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,
    periodicalReportingCriteria,
    noReporting
}

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
                }
            }
        }
    }
}

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```

    }
  }
}

-- TABULAR: For 3.84 Mcps TDD only the first two values are used.
-- for 1.28 Mcps TDD ue-RX-TX-TimeDifference corresponds to TADV 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

UE-RX-TX-TimeDifferenceType1 ::=
    INTEGER (768..1280)

-- Actual value = 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 TADV 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

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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-NavigationModel ::= SEQUENCE {

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    navigationModelSatInfoList      NavigationModelSatInfoList
}

UE-Positioning-GPS-NavModelAddDataReq ::= SEQUENCE {
    gps-Week      INTEGER (0..1023),
    gps-Toe       INTEGER (0..167),
    tToeLimit     INTEGER (0..10),
    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
}

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 ::= SEQUENCE {
    ue-positioning-OTDOA-Measurement      UE-Positioning-OTDOA-Measurement
OPTIONAL,

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ue-positioning-PositionEstimateInfo
  OPTIONAL,
ue-positioning-GPS-Measurement
  OPTIONAL,
ue-positioning-Error
  OPTIONAL
}

UE-Positioning-MeasuredResults-v390ext ::= SEQUENCE {
  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
}

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,
  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
}

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
}

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}

UE-Positioning-OTDOA-AssistanceData-UEB ::= SEQUENCE {
    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 {
                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
        INTEGER (0..30),
    searchWindowSize
        OTDOA-SearchWindowSize,
    positioningMode
        CHOICE {
        ueBased
            SEQUENCE {
                relativeNorth
                    INTEGER (-20000..20000)
                    OPTIONAL,
                relativeEast
                    INTEGER (-20000..20000)
                    OPTIONAL,
                relativeAltitude
                    INTEGER (-4000..4000)
                    OPTIONAL,
                fineSFN-SFN
                    FineSFN-SFN
                    OPTIONAL,
                -- actual value = (IE value * 0.0625) + 876
                roundTripTime
                    INTEGER (0.. 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 = (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 = (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 = (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 UE-Positioning-ResponseTime,
    -- This IE is not used in this version of the specification and should be ignored.
    -- IE "dummy1" should be removed in later versions of the message including this IE
    accuracy UE-Positioning-Accuracy OPTIONAL,
    gps-TimingOfCellWanted BOOLEAN,
    dummy2 BOOLEAN,
    -- This IE is not used in this version of the specification and should be ignored.
    -- IE "dummy2" should be removed in later versions of the message including this IE
    additionalAssistanceDataReq BOOLEAN,
    environmentCharacterisation EnvironmentCharacterisation OPTIONAL
}

UE-Positioning-ReportingQuantity-v390ext ::= SEQUENCE {
    vertical-Accuracy UE-Positioning-Accuracy
}

UE-Positioning-ResponseTime ::= ENUMERATED {
    s1, s2, s4, s8, s16,
    s32, s64, s128
}

UTRA-CarrierRSSI ::= INTEGER (0..76)

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 {
    utran-GPSTimingOfCell INTEGER(0..2322431999999),

```

```

modeSpecificInfo          CHOICE {
  fdd                     SEQUENCE {
    referenceIdentity     PrimaryCPICH-Info
  },
  tdd                     SEQUENCE {
    referenceIdentity     CellParametersID
  }
}
sfm                       OPTIONAL,
INTEGER (0..4095)
}

UTRAN-GPSReferenceTimeResult ::= SEQUENCE {
  ue-GPSTimingOfCell     INTEGER(0..37158911999999),
  modeSpecificInfo       CHOICE {
    fdd                   SEQUENCE {
      referenceIdentity   PrimaryCPICH-Info
    },
    tdd                   SEQUENCE {
      referenceIdentity   CellParametersID
    }
  },
  sfm                     INTEGER (0..4095)
}

VarianceOfRLC-BufferPayload ::= ENUMERATED {
  plv0, plv4, plv8, plv16, plv32, plv64,
  plv128, plv256, plv512, plv1024,
  plv2k, plv4k, plv8k, plv16k }

-- Actual value = IE value * 0.1
W ::= INTEGER (0..20)

-- *****
--
-- OTHER INFORMATION ELEMENTS (10.3.8)
--
-- *****

BCC ::= INTEGER (0..7)

BCCH-ModificationInfo ::= SEQUENCE {
  mib-ValueTag           MIB-ValueTag,
  bcch-ModificationTime  BCCH-ModificationTime OPTIONAL
}

-- Actual value = 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,
    spare1                       NULL,
    spare2                       NULL,
    spare3                       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,
    spare1                       NULL,
    spare2                       NULL,
    spare3                       NULL,
    spare4                       NULL
}

```

```

MasterInformationBlock ::=          SEQUENCE {
    mib-ValueTag                    MIB-ValueTag,
    plmn-Type                        PLMN-Type,
    -- TABULAR: The PLMN identity and ANSI-41 core network information
    -- are included in PLMN-Type.
    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,
    spare1, spare2, spare3, spare4,
    spare5
}

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 = 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,

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```

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

}

SIBSb-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
  sysInfoTypeSB1
  sysInfoTypeSB2
  sysInfoType15-1
  sysInfoType15-2
  sysInfoType15-3

CHOICE {
  PLMN-ValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  NULL,
  CellValueTag,
  NULL,
  NULL,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  NULL,
  CellValueTag,
  SIBOccurrenceIdentityAndValueTag,
  SIBOccurrenceIdentityAndValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag

CHOICE {
  PLMN-ValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  NULL,
  CellValueTag,
  NULL,
  NULL,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  NULL,
  CellValueTag,
  PredefinedConfigIdentityAndValueTag,
  NULL,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  CellValueTag,
  SIBOccurrenceIdentityAndValueTag,
  SIBOccurrenceIdentityAndValueTag,

```



```

sysInfoType15-4      CellValueTag,
sysInfoType18       CellValueTag,
sysInfoType15-5     CellValueTag
}

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
        nonCriticalExtensions          SEQUENCE {}                OPTIONAL
    }

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
        nonCriticalExtensions          SEQUENCE {
            sysInfoType3-r3-r4-ext    SysInfoType3-r3-r4-ext-IEs,
            nonCriticalExtensions      SEQUENCE {}                OPTIONAL
        }
    }

SysInfoType3-r3-r4-ext-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
        nonCriticalExtensions          SEQUENCE {
            sysInfoType4-r3-r4-ext    SysInfoType4-r3-r4-ext-IEs,
            nonCriticalExtensions      SEQUENCE {}                OPTIONAL
        }
    }

SysInfoType4-r3-r4-ext-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,
            }
        }
    }

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        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
    nonCriticalExtensions              SEQUENCE {
        sysInfoType5-r3-r4-ext        SysInfoType5-r3-r4-ext-IEs,
    -- Extension mechanism for non- rel-4 information
        nonCriticalExtensions         SEQUENCE {}
    }
}

SysInfoType5-r3-r4-ext-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
    }
}

SysInfoType6 ::= SEQUENCE {
    -- Physical channel IEs
    pich-PowerOffset                  PICH-PowerOffset,
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            aich-PowerOffset           AICH-PowerOffset,
            dummy                       CSICH-PowerOffset              OPTIONAL
        },
        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        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
    nonCriticalExtensions              SEQUENCE {
        sysInfoType6-r3-r4-ext        SysInfoType6-r3-r4-ext-IEs,
    -- Extension mechanism for non- rel-4 information
        nonCriticalExtensions         SEQUENCE {}
    }
}

SysInfoType6-r3-r4-ext-IEs ::= SEQUENCE {
    -- This IE 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
  }
}

SysInfoType7 ::=
  -- 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 ::=
  -- 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 ::=
  -- Physical channel IEs
  cpch-PersistenceLevelsList     CPCH-PersistenceLevelsList,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType10 ::=
  -- User equipment IEs
  drac-SysInfoList               DRAC-SysInfoList,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType11 ::=
  sib12indicator                 BOOLEAN,
  -- Measurement IEs
  fach-MeasurementOccasionInfo   FACH-MeasurementOccasionInfo  OPTIONAL,
  measurementControlSysInfo      MeasurementControlSysInfo,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {
    sysInfoType11-r3-r4-ext      SysInfoType11-r3-r4-ext-IEs,
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
  }
}

SysInfoType11-r3-r4-ext-IEs ::= SEQUENCE {
  fach-MeasurementOccasionInfo-LCR-Ext  FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
  measurementControlSysInfo-LCR        MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType12 ::=
  -- Measurement IEs
  fach-MeasurementOccasionInfo   FACH-MeasurementOccasionInfo  OPTIONAL,
  measurementControlSysInfo      MeasurementControlSysInfo,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {
    sysInfoType12-r3-r4-ext      SysInfoType12-r3-r4-ext-IEs,
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
  }
}

SysInfoType12-r3-r4-ext-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
  nonCriticalExtensions         SEQUENCE {
    sysInfoType13-r3-r4-ext     SysInfoType13-r3-r4-ext-IEs,
  -- Extension mechanism for non- release99 information
    nonCriticalExtensions       SEQUENCE {}                      OPTIONAL
  }
}

SysInfoType13-r3-r4-ext-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
  nonCriticalExtensions                 SEQUENCE {
    sysInfoType15-r3-r4-ext             SysInfoType15-r3-r4-ext-IEs,
  -- Extension mechanism for non- release4 information
    nonCriticalExtensions                 SEQUENCE {}                      OPTIONAL
  }
  }
}

SysInfoType15-r3-r4-ext-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 ::=
-- 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,
-- Extension mechanism for non- release99 information
nonCriticalExtensions                SEQUENCE {
  sysInfoType15-4-r4ext               SysInfoType15-4-r4ext          OPTIONAL,
  nonCriticalExtensions                SEQUENCE {}
}
OPTIONAL

SysInfoType15-4-r4ext ::= SEQUENCE {
  ue-Positioning-OTDOA-AssistanceData-r4ext UE-Positioning-OTDOA-AssistanceData-r4ext  OPTIONAL
}

SysInfoType15-5 ::=
-- Measurement IEs
ue-positioning-OTDOA-AssistanceData-UEB UE-Positioning-OTDOA-AssistanceData-UEB,
-- Extension mechanism for non- release99 information
nonCriticalExtensions                    SEQUENCE {}          OPTIONAL
}

SysInfoType16 ::=
-- Radio bearer IEs
preDefinedRadioConfiguration           PreDefRadioConfiguration,
-- Extension mechanism for non- release99 information
nonCriticalExtensions                    SEQUENCE {}          OPTIONAL
}

SysInfoType17 ::=
-- Physical channel IEs
-- 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                       PUSCH-SysInfoList          OPTIONAL,
pdsch-SysInfoList                       PDSCH-SysInfoList        OPTIONAL,
-- Extension mechanism for non- release99 information
nonCriticalExtensions                    SEQUENCE {
  sysInfoType17-r3-r4-ext               SysInfoType17-r3-r4-ext-IEs,
  nonCriticalExtensions                    SEQUENCE {}          OPTIONAL
}
OPTIONAL

SysInfoType17-r3-r4-ext-IEs ::= SEQUENCE {
  tdd128SpecificInfo                    SEQUENCE {
    pusch-SysInfoList                   PUSCH-SysInfoList-LCR-r4    OPTIONAL,
    pdsch-SysInfoList                   PDSCH-SysInfoList-LCR-r4    OPTIONAL
  }
  }
OPTIONAL
}

```

```

SysInfoType18 ::=
    idleModePLMNIdentities          SEQUENCE {
    connectedModePLMNIdentities PLMNIdentitiesOfNeighbourCells OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {} OPTIONAL
}

SysInfoTypeSB1 ::=
    -- Other IEs
    sib-ReferenceList              SIB-ReferenceList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {} OPTIONAL
}

SysInfoTypeSB2 ::=
    -- 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
maxInterSysMessages        INTEGER ::= 4
maxLoCHperRLC               INTEGER ::= 2
maxMeasEvent                INTEGER ::= 8
maxMeasIntervals           INTEGER ::= 3

```

```

maxMeasParEvent          INTEGER ::= 2
maxNumCDMA2000Freqs     INTEGER ::= 8
maxNumGSMFreqRanges     INTEGER ::= 32
maxNumFDDFreqs          INTEGER ::= 8
maxNumTDDFreqs          INTEGER ::= 8
maxNoOfMeas              INTEGER ::= 16
maxOtherRAT              INTEGER ::= 15
maxPage1                 INTEGER ::= 8
maxPCPCH-APsig           INTEGER ::= 16
maxPCPCH-APsubCh         INTEGER ::= 12
maxPCPCH-CDsig           INTEGER ::= 16
maxPCPCH-CDsubCh         INTEGER ::= 12
maxPCPCH-SF              INTEGER ::= 7
maxPCPCHs                INTEGER ::= 64
maxPDCPAlgoType          INTEGER ::= 8
maxPDSCH                 INTEGER ::= 8
maxPDSCH-TFCIgroups     INTEGER ::= 256
maxPRACH                 INTEGER ::= 16
maxPRACH-FPACH           INTEGER ::= 8
maxPredefConfig          INTEGER ::= 16
maxPUSCH                 INTEGER ::= 8
maxRABsetup              INTEGER ::= 16
maxRAT                   INTEGER ::= 16
maxRB                    INTEGER ::= 32
maxRBallRABs             INTEGER ::= 27
maxRBMuxOptions          INTEGER ::= 8
maxRBperRAB              INTEGER ::= 8
maxReportedGSMCells     INTEGER ::= 6
maxRL                     INTEGER ::= 8
maxRL-1                  INTEGER ::= 7
maxROHC-PacketSizes-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
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,
    U-RNTI,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    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,
    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 {
    interRATHandoverInfo-r3 InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
    -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
    -- includes non critical extensions
    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 (SIZE (0..255))
  -- 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
}
```

```
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,
      -- 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 this IE 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
  }
}

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
}

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 this IE 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: 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,
    measurementCommandWithType    MeasurementCommandWithType,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in the IE above.
    measurementReportingMode    MeasurementReportingMode    OPTIONAL,
    additionalMeasurementID-List    AdditionalMeasurementID-List    OPTIONAL
}

OngoingMeasRep-r4 ::= SEQUENCE {
    measurementIdentity    MeasurementIdentity,
    measurementCommandWithType    MeasurementCommandWithType-r4,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in the IE above.
    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

```

CR-Form-v5

CHANGE REQUEST

⌘ **25.331 CR 1356** ⌘ rev **-** ⌘ Current version: **4.3.0** ⌘

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

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

Title:	⌘ Clarification on ICS version within UE radio access capabilities		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI4	Date:	⌘ 20-02-2002
Category:	⌘ F	Release:	⌘ REL-4
	<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 ICS version is defined ambiguously
Summary of change:	⌘ The original revision of this CR introduces the following changes <ul style="list-style-type: none"> • The ICS version is renamed to Access stratum release indicator and it is clarified to be the version of the core specification that is applicable for the UE e.g. R99, REL-4. The original IE only included 1 value, resulting in no bits transferred on Uu. It has been removed and a new IE with r99 and 15 spares has been introduced as an extension • The IE is now included in the RRC connection request so UTRAN can use the information when selecting the version of the RRC connection setup message to send to the UE
Consequences if not approved:	⌘ The definition of ICS version remains ambiguous and does not reflect what is actually being signalled

Clauses affected:	⌘ 10.2.39, 10.3.3.42, 11.2, 11.3, 11.5		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

10.2.39 RRC CONNECTION REQUEST

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

RLC-SAP: TM

Logical channel: CCCH

Direction: UE → UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE information elements					
Initial UE identity	MP		Initial UE identity 10.3.3.15		
Establishment cause	MP		Establishment cause 10.3.3.11		
Protocol error indicator	MD		Protocol error indicator 10.3.3.27	Default value is FALSE	
Measurement information elements					
Measured results on RACH	OP		Measured results on RACH 10.3.7.45		
<u>Access stratum release indicator</u>	<u>MP</u>		<u>Enumerated(REL-4)</u>	<u>Absence of the IE implies R99. The IE also indicates the release of the RRC transfer syntax supported by the UE</u> <u>15 spare values are needed</u>	<u>REL-4</u>

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

10.3.3.42 UE radio access capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
ICS version Access stratum <u>release indicator</u>	MP		Enumerated(R99)	Indicates the release version of [42]-2 (Implementation Conformance Statement (ICS) proforma specification) that is applicable for the UE.	
	<u>CV-</u> <u>not rrc co</u> <u>nnectionSe</u> <u>tupComple</u> <u>te</u>		Enumerated(REL-4)	Absence of the IE implies R99. The IE also indicates the release of the RRC transfer syntax supported by the UE 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		
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-		Measuremen		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
	<i>fdd_req_sup</i>		t 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.
<u><i>not_rrc_connectionSetupComplete</i></u>	The IE is not needed in the RRC CONNECTION SETUP COMPLETE message. Otherwise the IE is <u>mandatory present</u> .

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 :
  URA-Identity,
-- User Equipment IEs :
  ActivationTime,
  C-RNTI,
  CapabilityUpdateRequirement,
  CapabilityUpdateRequirement-r4,
  CapabilityUpdateRequirement-r4-ext,
  CellUpdateCause,
  CipheringAlgorithm,
  CipheringModeInfo,
  EstablishmentCause,
  FailureCauseWithProtErr,
  FailureCauseWithProtErrTrId,
  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-v370ext,
  UE-RadioAccessCapability-v380ext,
  UE-RadioAccessCapability-v4xyext,
  DL-PhysChCapabilityFDD-v380ext,
  UE-ConnTimersAndConstants,
```

```

    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-InformationReconfigList,
    RB-InformationReconfigList-r4,
    RB-InformationReleaseList,
    RB-WithPDCP-InfoList,    SRB-InformationSetupList,
    SRB-InformationSetupList2,
    UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
    CPCH-SetID,
    DL-AddReconfTransChInfo2List,
    DL-AddReconfTransChInfoList,
    DL-CommonTransChInfo,
    DL-CommonTransChInfo-r4,
    DL-DeletedTransChInfoList,
    DRAC-StaticInformationList,
    TFC-Subset,
    TFCS-Identity,
    UL-AddReconfTransChInfoList,
    UL-CommonTransChInfo,
    UL-DeletedTransChInfoList,
-- Physical Channel IEs :
    Alpha,
    CCTrCH-PowerControlInfo,
    CCTrCH-PowerControlInfo-r4,
    ConstantValue,
    CPCH-SetInfo,
    DL-CommonInformation,
    DL-CommonInformation-r4,
    DL-CommonInformationPost,
    DL-InformationPerRL,
    DL-InformationPerRL-List,
    DL-InformationPerRL-List-r4,
    DL-InformationPerRL-ListPostFDD,
    DL-InformationPerRL-PostTDD,
    DL-InformationPerRL-PostTDD-LCR-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-ChannelRequirementWithCPCH-SetID,
UL-ChannelRequirementWithCPCH-SetID-r4,
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,
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;

<Cut until the next modified section>

-- *****
--
-- 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))
    -- octet aligned string containing IE UE-RadioAccessCapabilityInfo
  },
  -- Non critical extensions
  v390NonCriticalExtensions CHOICE {
    absent NULL,
    present SEQUENCE {
      interRATHandoverInfo-v390ext InterRATHandoverInfo-v390ext-IEs,
      Reserved for future non critical extension
      v4xyNonCriticalExtensions SEQUENCE {} OPTIONAL
      InterRATHandoverInfo-v4xyext InterRATHandoverInfo-v4xyext-IEs,
      -- Reserved for future non critical extension
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  }
}

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

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

<Cut until the next modified section>

-- *****
--
-- 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 ProtocolErrorIndicator,
  -- The IE above is MD, but for compactness reasons no default value
  -- has been assigned to it.
  -- Measurement IEs
  measuredResultsOnRACH MeasuredResultsOnRACH OPTIONAL,
  v4xyNonCriticalExtensions SEQUENCE {
    rrcConnectionRequest-v4xyext RRCConnectionRequest-v4xyext-IEs,
    -- Reserved for future non critical extension
    Extension mechanism for non-release99 information
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
}

```

```

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

<Cut until the next modified section>

-- *****
--
-- 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,
-- Reserved for future non critical extension
v4NonCriticalExtensions             SEQUENCE {
ueCapabilityInformation-r3-r4-ext
V4xyNonCriticalExtensions           SEQUENCE {
ueCapabilityInformation-v4xyext    UECapabilityInformation-
v4xyext-IEs,
-- Reserved for future non critical extension
nonCriticalExtensions-r4           SEQUENCE {}    OPTIONAL
}    OPTIONAL
}    OPTIONAL
}    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-r3-r4-ext ::= SEQUENCE {
-- User equipment IES
ue-RadioAccessCapability-r4-ext     UE-RadioAccessCapability-r4-ext    OPTIONAL
}

UECapabilityInformation-v4xyext ::= SEQUENCE {
-- User equipment IES
ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}

```

11.3 Information element definitions

InformationElements DEFINITIONS AUTOMATIC TAGS ::=

<Cut until the next modified section>

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

<Cut until the next modified section>

~~— If ICS Version r4 is included, the following IE shall be ignored.~~

```
ICS-Version ::= ENUMERATED {
    r99 }

ICS-Version r4 ::= ENUMERATED {
    rel-4 }

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

<Cut until the next modified section>

```
UE-RadioAccessCapability ::= SEQUENCE {
    ics-Version ICS-Version,
    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 UE-PositioningCapabilityExt
}

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

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 {  
  pdcap-Capability-r4-ext          PDCP-Capability-r4-ext,  
  ics-Version-r4                  ICS-Version-r4,  
  rf-Capability                    RF-Capability-r4-ext,  
  physicalChannelCapability-LCR     PhysicalChannelCapability-LCR-r4,  
  measurementCapability-r4-ext     MeasurementCapability-r4-ext OPTIONAL  
}
```

<Cut until the next modified section>

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


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,  
    U-RNTI,  
    UE-RadioAccessCapability,  
    UE-RadioAccessCapability-v370ext,  
    UE-RadioAccessCapability-v380ext,  
    UE-RadioAccessCapability-v4xyext,  
-- Radio Bearer IEs :  
    PredefinedConfigStatusList,  
    PredefinedConfigValueTag,  
    RAB-InformationSetupList,  
    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  
;
```

```

<Cut until the next modified section>

-- *****
--
-- Handover to UTRAN information
--
-- *****

InterRATHandoverInfoWithInterRATCapabilities-r3 ::= CHOICE {
  r3
    interRATHandoverInfo-r3          InterRATHandoverInfoWithInterRATCapabilities-r3-
IEs,
  -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
  -- includes non critical extensions
  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 (SIZE (0..255))
  -- 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
}

InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  failureCauseWithProtErr           FailureCauseWithProtErr
  OPTIONAL
}

-- *****
--
-- SRNC Relocation information
--
-- *****

SRNC-RelocationInfo-r3 ::= CHOICE {
  r3
    sRNC-RelocationInfo-r3          SEQUENCE {
      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,
          v4xyNonCriticalExtensions  SEQUENCE {
            sRNC-RelocationInfo-v4xyext sRNC-RelocationInfo-v4xyext-IEs,
            -- Reserved for future non critical extension
            nonCriticalExtensions     SEQUENCE {} 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-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-SysInfoList         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 this IE 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
}
}
}

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-v4xyext-IEs ::= SEQUENCE {  
    ue-RadioAccessCapability-v4xyext UE-RadioAccessCapability-v4xyext  
}
```

Orlando, USA, 18-22 February 2002

CR-Form-v3

CHANGE REQUEST

⌘ **25.331 CR 1335** ⌘ rev **-** ⌘ Current version: **4.3.0** ⌘

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

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

Title: ⌘ Corrections to indicate that SIB 14 is not used by 1.28 TDD

Source: ⌘ TSG-RAN WG2

Work item code: ⌘ LCRTDD-L23

Date: ⌘ 8. 02. 2002

Category: ⌘ **F**

Release: ⌘ REL-4

Use one 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 one of the following releases:

2 (GSM Phase 2)

R96 (Release 1996)

R97 (Release 1997)

R98 (Release 1998)

R99 (Release 1999)

REL-4 (Release 4)

REL-5 (Release 5)

Reason for change: ⌘ Currently SIB 14 is marked as being used by TDD whereas it is only used by 3.84 Mcps TDD.

Summary of change: ⌘ In Table 8.1.1, for the SIB 14 entry, TDD is changed to 3.84 Mcps TDD.

In section 8.1.1.6.14, TDD is changed to 3.84 Mcps TDD.

In section 10.2.48.8.17 TDD is changed to 3.84 Mcps TDD.

Consequences if not approved: ⌘ TS25.331 will not show clearly the usage of SIB 14

Clauses affected: ⌘ 8.1.1.1.2, 8.1.1.6.14, 10.2.48.8.17

Other specs affected: ⌘ Other core specifications ⌘

Test specifications

O&M Specifications

Other comments: ⌘

8.1.1.1.2 System information blocks

Table 8.1.1 specifies all system information blocks and their characteristics.

The *area scope column* in table 8.1.1 specifies the area where a system information block's value tag is valid. If the area scope is *cell*, the UE shall consider the system information block to be valid only in the cell in which it was read. If system information blocks have been previously stored for this cell, the UE shall check whether the value tag for the system information block in the entered cell is different compared to the stored value tag. If the area scope is *PLMN* or *Equivalent PLMN*, the UE shall check the value tag for the system information block when a new cell is selected. If the value tag for the system information block in the new cell is different compared to the value tag for the system information block stored in the UE, the UE shall re-read the system information block. If the area scope is *PLMN*, the UE shall consider the system information block to be valid only within the PLMN in which it was read. If the area scope is *Equivalent PLMN*, the UE shall consider the system information block to be valid within the PLMN in which it was received and all PLMNs which are indicated by higher layers to be equivalent.

For System information block types 15.2, 15.3 and 16, which may have multiple occurrences, each occurrence has its own independent value tag. The UE shall re-read a particular occurrence if the value tag of this occurrence has changed compared to that stored in the UE.

The *UE mode/state column when block is valid* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block shall be regarded as valid by the UE. In other words, the indicated system information block becomes invalid upon change to a mode/state that is not included in this column. System Information Block Type 16 remains also valid upon transition to or from GSM/GPRS. In some cases, the states are inserted in brackets to indicate that the validity is dependent on the broadcast of the associated System Information Blocks by the network as explained in the relevant procedure subclause.

The *UE mode/state column when block is read* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block may be read by the UE. The UE shall have the necessary information prior to execution of any procedure requiring information to be obtained from the appropriate system information block. The requirements on the UE in terms of when to read the system information may therefore be derived from the procedure specifications that specify which IEs are required in the different UE modes/states in conjunction with the different performance requirements that are specified. System Information Block type 10 shall only be read by the UE while in CELL_DCH.

NOTE 1: There are a number of system information blocks that include the same IEs while the UE mode/state in which the information is valid differs. This approach is intended to allow the use of different IE values in different UE mode/states.

NOTE 2: System Information Block Type 16 is also obtained by a UE while in GSM/GPRS. The details of this are not within the scope of this specification.

The *Scheduling information* column in table 8.1.1 specifies the position and repetition period for the SIB.

The *modification of system information* column in table 8.1.1 specifies the update mechanisms applicable for a certain system information block. For system information blocks with a value tag, the UE shall update the information according to subclause 8.1.1.7.1 or 8.1.1.7.2. For system information blocks with an expiration timer, the UE shall, when the timer expires, perform an update of the information according to subclause 8.1.1.7.4.

Table 8.1.1: Specification of system information block characteristics

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
Master information block	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	SIB_POS = 0 SIB_REP = 8 (FDD) SIB_REP = 8, 16, 32 (TDD) SIB_OFF=2	Value tag	

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
Scheduling block 1	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information" in MIB	Value tag	
Scheduling block 2	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information" in MIB	Value tag	
System information block type 1	PLMN	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 2	Cell	URA_PCH	URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 3	Cell	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH)	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH)	Specified by the IE "Scheduling information"	Value tag	
System information block type 4	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	If System information block type 4 is not broadcast in a cell, the connected mode UE shall apply information in System information block type 3 in connected mode.
System information block type 5	Cell	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only))	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only))	Specified by the IE "Scheduling information"	Value tag	

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 6	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Specified by the IE "Scheduling information"	Value tag	<p>If system information block type 6 is not broadcast in a cell, the connected mode UE shall read System information block type 5.</p> <p>If some of the optional IEs are not included in System information block type 6, the UE shall read the corresponding IEs in System information block type 5</p> <p>In TDD mode system information block 6 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7 and/or if shared transport channels are assigned to the UE. If in these cases system information block type 6 is not broadcast the UE shall read system information block type 5.</p>
System information block type 7	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Specified by the IE "Scheduling information"	Expiration timer = MAX(320 ms, SIB_REP * ExpirationTimeFactor)	In TDD mode system information block type 7 shall only be read in CELL_DCH if shared transport channels are assigned to the UE.
System information block type 8	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 9	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	
System information block type 10	Cell	CELL_DCH	CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	
System information block type 11	Cell	Idle mode (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH)	Idle mode (CELL_FACH, CELL_PCH, URA_PCH)	Specified by the IE "Scheduling information"	Value tag	

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 12	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	If system information block type 12 is not broadcast in a cell, the connected mode UE shall read System information block type 11. If some of the optional IEs are not included in System information block type 12, the UE shall read the corresponding IEs in System information block type 11.
System information block type 13	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.1	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.2	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.3	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.4	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 14	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = MAX([320 ms], SIB_REP * ExpirationTimeFactor)	This system information block is used in 3.84 Mcps TDD mode only . System information block type 14 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7.
System information block type 15	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.1	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.2	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 15.3	PLMN	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences
System information block type 15.4	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.5	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 16	Equivalent PLMN	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences. This system information block is also valid while in GSM/GPRS.
System information block type 17	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	This system information block is used in TDD mode only. System information block type 17 shall only be read if shared transport channels are assigned to the UE.
System Information Block type 18	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	

The UE shall acquire all system information blocks except system information block type 10 on BCH. System Information Block type 10 shall be acquired on the FACH and only by UEs with support for simultaneous reception of one SCCPCH and one DPCH. If System Information Block type 10 is not broadcast in a cell, the DRAC procedures do not apply in this cell. System Information Block type 10 is used in FDD mode only.

8.1.1.6.14 System Information Block type 14

This system information block type is used only in [3.84 Mcps](#) TDD.

The UE should store all relevant IEs included in this system information block. The UE shall:

- use the IE "UL Timeslot Interference" to calculate PRACH, DPCH and PUSCH transmit power for TDD uplink open loop power control as defined in subclause 8.5.7.

10.2.48.8.17 System Information Block type 14

NOTE: Only for [3.84 Mcps](#) TDD.

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PhyCH information elements				

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

CHANGE REQUEST

⌘ **25.331 CR 1290** ⌘ rev **-** ⌘ Current version: **4.3.0** ⌘

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:	⌘ Handover from UTRAN failure		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI4	Date:	⌘ 2002-02-12
Category:	⌘ F	Release:	⌘ REL-4
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change: ⌘ In the HandoverFromUTRANFailure message the in 25.331 ver 3.9.0, the interRATMessage in the ASN.1 definition is included and inline with tabular.

This is though missing in the 25.331, 4.1.0 version.

The HandoverFromUTRANFailure message does not include interRATMessage in the ASN.1 definition, but is included in the tabular format.

Summary of change: ⌘ The IE "interRATMessage" is included in the "HandoverFromUTRANFailure" message in ASN.1.

The first part below is from 25.331 ver 3.9.0

```

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

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

```

```

}
The second part is from 25.331 ver 4.3.0
-- *****
--
-- HANDOVER FROM UTRAN FAILURE
--
-- *****

HandoverFromUTRANFailure ::= SEQUENCE {
-- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
-- Other IEs
  interRAT-HO-FailureCause      InterRAT-HO-FailureCause
-- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {} OPTIONAL
}

```

Consequences if not approved: ⌘ Handover from UTRAN failure message will not include the IE "Inter RAT message."

Clauses affected: ⌘ 11.3

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

Other comments: ⌘

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://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.

11.3 Information element definitions

BREAK.....

```
-- *****
--
-- 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
}
```

BREAK.....

CHANGE REQUEST

⌘ **25.331 CR 1254** ⌘ rev **-** ⌘ Current version: **4.3.0** ⌘

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:	⌘ Various ASN.1 corrections		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI4	Date:	⌘ 07.02.2002
Category:	⌘ F Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Release:	⌘ REL-4 Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change: ⌘ There are a number of different types of error in the Rel-4 ASN.1 definitions which should be corrected:

Type1: Comment text and placing inconsistent

Type2: Names of non-critical extensions do not use the format specified in TR25.921.

Type3: New Rel4 versions of IEs created to allow corrections to be made vs the R99 version where the message they are included in has been critically extended.

Type4: Messages have been critically extended for Rel4, but the information included in R99 non-critical extensions has not been included.

Type5: Tabular upadted to show that the Need of IE has been corrected in ASN.1 for Rel-4.

Summary of change: ⌘ **Type1 Corrections**

All Sections

Comments modified to use correct format and placing

Type2 Corrections

11.2 (Messages) and 11.3 (System Information)

Names of all non-critical extensions checked and corrected as appropriate. Rel4 non-critical extensions modified to include the marker "v4xy", which should be replaced with the specification version number when backwards compatibility of Rel4 is started.

Type3 Corrections

HANDOVER TO UTRAN COMMAND

ActivationTime shown as dummy in R99 and should be removed from Rel4

PDCP-InfoReconfig-r4

pdcp-SN-Info is dummy in R99 and should be deleted from Rel4 version

10.3.5.6 DL Transport channel information common for all transport channels

DL-CommonTransChInfo-r4

Need of CHOICE modeSpecificInfo corrected to OP (OPTIONAL) in both tabular and ASN.1

PDSCH-CapacityAllocationInfo-r4

pdsch-PowerControllInfo moved to new-Configuration branch.

New SCCPCH-InfoForFACH-r4

Created to include SecondaryCCPCH-Info-r4, also includes correction of fach-PCH-Information which has been moved from both mode specific branches of the CHOICE to the comment part of the type at the top.

SecondaryCCPCH-Info-r4

secondaryCPICH-Info and pCPICH-UsageForChannelEst which are marked as dummy in R99 removed from Rel4.

DL-InformationPerRL-r4

Corrected to use SCCPCH-InfoForFACH-r4.

NewInterRATCell-r4 (New)

10.3.7.23 Inter-RAT cell info list

dummy from R99 version removed, also "none" value of technologySpecficInfo CHOICE removed as IE is now OPTIONAL in InterRATCellInfoList-r4, tabular updated to reflect this.

NewInterRATCellList-r4 (New)

Created to make Rel4 version of the list including NewInterRATCell-r4

InterRATCellInfoList-r4

Corrected to use NewInterRATCellList-r4

UE-Positioning-ReportingQuantity-r4 (New)

Created and dummy1 and dummy2 from R99 removed in Rel4 version.

UE-Positioning-Measurement-r4

Corrected to use new Rel4 version of UE-Positioning-ReportingQuantity-r4

Type4 Corrections

MEASUREMENT CONTROL

Some of the IEs included in MeasurementControl-v390ext have not been included in the new Rel4 critical extension:

- verticalAccuracy added in UE-Positioning-ReportingQuantity-r4
- measurementValidity added to UE-Positioning-Measurement-r4
- UE-Positioning-OTDOA-AssistanceData-UEB already nested (deeply) inside UE-Positioning-Measurement-r4

Type5 Corrections

10.2.27 RADIO BEARER RECONFIGURATION

10.3.5.6 DL Transport channel information common for all transport channels

10.3.7.23 Inter-RAT cell info list

Other Issues

MeasurementControl-r4-IEs

RRC-TransactionIdentifier has been removed as it is now contained at the top of the critical extension branch.

RadioBearerSetup-r4-IEs

In RADIO BEARER SETUP critical extension for Rel4, DL-CounterSynchronisationInfo is missing. RB-WithPDCP-InfoList is added to RadioBearerSetup-r4-IEs to correct this.

IntraFreqCellInfoList-r4

IE Cells for measurement (CellsForIntraFreqMeasList) should be OPTIONAL when the IE is not included on system information. It was absent so it has been added.

UE-Positioning-IPDL-Parameters-r4

IE should be OPTIONAL, this has been corrected.

UE-Positioning-OTDOA-NeighbourCellInfo-r4

SFN-SFN-Drift is not correctly defined, this has been corrected.

Consequences if not approved:	⌘	Errors in specification remain.
Clauses affected:	⌘	10.2.27, 10.2.40, 10.3.5.6, 10.3.7.23, 11.1, 11.2, 11.3, 11.4, 11.5
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘	

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

10.2.27 RADIO BEARER RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information elements				
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity check info	CH		Integrity check info 10.3.3.16	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
RRC State Indicator	MP		RRC State Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49	
CN information elements				
CN Information info	OP		CN Information info 10.3.1.3	
UTRAN mobility information elements				
URA identity	OP		URA identity 10.3.2.6	
RB information elements				
RAB information to reconfigure list	OP	1 to <maxRABse tup >		
>RAB information to reconfigure	MP		RAB information to reconfigure 10.3.4.11	
RB information to reconfigure list	MP	1to <maxRB>		Although this IE is not always required, need is MP to align

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				with ASN.1
	OP			REL-4
>RB information to reconfigure	MP		RB information to reconfigure 10.3.4.18	
RB information to be affected list	OP	1 to <maxRB>		
>RB information to be affected	MP		RB information to be affected 10.3.4.17	
TrCH Information Elements				
Uplink transport channels				
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Deleted TrCH information list	OP	1 to <maxTrCH >		
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5	
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >		
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
CHOICE <i>mode</i>	OP			
>FDD				
>>CPCH set ID	OP		CPCH set ID 10.3.5.3	
>>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH >		
>>>>DRAC static information	MP		DRAC static information 10.3.5.7	
>TDD				(no data)
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Deleted TrCH information list	OP	1 to <maxTrCH >		
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4	
Added or Reconfigured TrCH	OP	1 to		

Information Element/Group name	Need	Multi	Type and reference	Semantics description
information list		<maxTrCH >		
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
<i>CHOICE channel requirement</i>				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
<i>CHOICE mode</i>				
>FDD	MP			
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>TDD				(no data)
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	MP	1 to <maxRL>		Although this IE is not always required, need is MP to align with ASN.1
	OP			REL-4
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

10.2.40 RRC CONNECTION SETUP

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

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE Information Elements				
Initial UE identity	MP		Initial UE identity 10.3.3.15	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
New U-RNTI	MP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
RRC State Indicator	MP		RRC State Indicator 10.3.3.10	
UTRAN DRX cycle length coefficient	MP		UTRAN DRX cycle length coefficient 10.3.3.49	
Capability update requirement	MD		Capability update requirement 10.3.3.2	Default value is defined in subclause 10.3.3.2
RB Information Elements				
Signalling RB information to setup list	MP	3 to 4		
>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24	
TrCH Information Elements				
Uplink transport channels				
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24	
Added or Reconfigured TrCH information list	MP	1 to <maxTrCH >		Although this IE is not required when the IE "RRC state indicator" is set to "CELL_FACH", need is MP to align with ASN.1
	OP			REL-4
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
Downlink transport channels				
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6	
Added or Reconfigured TrCH information list	MP	1 to <maxTrCH >		Although this IE is not required when the IE "RRC state indicator" is set to "CELL_FACH", need is MP to

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				align with ASN.1
	OP			REL-4
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1	
PhyCH information elements				
Frequency info	MD		Frequency info 10.3.6.36	Default value is the existing value of frequency information
Uplink radio resources				
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power
<i>CHOICE channel requirement</i>	OP			
>Uplink DPCH info			Uplink DPCH info 10.3.6.88	
>CPCH SET Info			CPCH SET Info 10.3.6.13	
Downlink radio resources				
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24	
Downlink information per radio link list	OP	1 to <MaxRL>		Send downlink information for each radio link to be set-up
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	

10.3.5.6 DL Transport channel information common for all transport channels

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SCCPCH TFCS	OP		Transport Format Combination Set 10.3.5.20	This IE should not be included in this version of the protocol.
<i>CHOICE mode</i>	MP			Although this IE is not always required, need is MP to align with ASN.1
	OP			REL-4
>FDD				
>>CHOICE DL parameters	OP			
>>>Explicit				
>>>>DL DCH TFCS	MP		Transport Format Combination Set 10.3.5.20	Although this IE is not always required, need is MP to align with ASN.1
	OP			REL-4
>>>SameAsUL				(no data)
>TDD				

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>Individual DL CCTrCH information	OP	1 to <maxCCTrCH>		
>>>DL TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Identifies a special CCTrCH for shared or dedicated channels.
>>>CHOICE <i>DL parameters</i>	MP			
>>>>Independent				
>>>>>DL TFCS	MP		Transport format combination set 10.3.5.20	
>>>>>SameAsUL				
>>>>>>UL DCH TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Same TFCS applies as specified for the indicated UL DCH TFCS identity except for information applicable for UL only

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

10.3.7.23 Inter-RAT cell info list

Contains the information for the list of measurement objects for an inter-RAT measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE <i>Inter-RAT cell removal</i>	MP			
>Remove all inter-RAT cells				No data
>Remove some inter-RAT cells				
>>Removed inter-RAT cells	MP	1 to <maxCellMeas>		
>>>Inter-RAT cell id	MP		Integer(0 .. <maxCellMeas> - 1)	
>Remove no inter-RAT cells				
New inter-RAT cells	MP	1 to <maxCellMeas>		Although this IE is not always required, need is MP to align with ASN.1
	OP			REL-4
>Inter-RAT cell id	OP		Integer(0 .. <maxCellMeas> - 1)	
>CHOICE <i>Radio Access Technology</i>	MP			
>>GSM				
>>>Cell individual offset	MP		Integer (-50..50)	In dB Used to offset measured quantity value
>>>>Cell selection and re-selection info	OP		Cell selection and re-selection info for SIB11/12 10.3.2.4	see 8.6.7.3 If HCS is not used and all the parameters in cell selection and re-selection info are default values, this IE is absent.
>>>>>BSIC	MP		BSIC 10.3.8.2	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>Band indicator	MP		Enumerated (DCS 1800 band used, PCS 1900 band used)	Indicates how to interpret the BCCH ARFCN
>>>BCCH ARFCN	MP		Integer (0..1023)	[45]
>>IS-2000				
>>>System specific measurement info	MP		enumerated (frequency, timeslot, colour code, output power, PN offset)	For IS-2000, use fields from TIA/EIA/IS-2000.5, subclause 3. 7.3.3.2.27, <i>Candidate Frequency Neighbour List Message</i>
>>None			(no data)	This value has been introduced to handle the case when IE "New inter-RAT cells" is not required
Cell for measurement	OP	1 to <maxCellMeas>		
>Inter-RAT cell id	MP		Integer(0 .. <maxCellMeas>-1)	

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,
    extension                          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,
    extension                      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,
    extension                   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,
    extension                 NULL
}

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

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

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

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

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

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

--*****

```

```

--
-- BCCH messages sent on BCH
--
--*****
BCCH-BCH-Message ::= SEQUENCE {
    message          SystemInformation-BCH
}
END

```

11.2 PDU definitions

```

--*****
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*****
PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=
BEGIN
--*****
--
-- IE parameter types from other modules
--
--*****

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    CN-InformationInfoFull,
    NAS-Message,
    PagingRecordTypeID,
-- UTRAN Mobility IEs :
    URA-Identity,
-- User Equipment IEs :
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CapabilityUpdateRequirement-r4,
    CapabilityUpdateRequirement-r4-ext,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    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-v370ext,
    UE-RadioAccessCapability-v380ext,

```

```

DL-PhysChCapabilityFDD-v380ext,
UE-ConnTimersAndConstants,
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-InformationReconfigList,
RB-InformationReconfigList-r4,
RB-InformationReleaseList,
RB-WithPDCP-InfoList, SRB-InformationSetupList,
SRB-InformationSetupList2,
UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
CPCH-SetID,
DL-AddReconfTransChInfo2List,
DL-AddReconfTransChInfoList,
DL-CommonTransChInfo,
DL-CommonTransChInfo-r4,
DL-DeletedTransChInfoList,
DRAC-StaticInformationList,
TFC-Subset,
TFCS-Identity,
UL-AddReconfTransChInfoList,
UL-CommonTransChInfo,
UL-DeletedTransChInfoList,
-- Physical Channel IEs :
Alpha,
CCTrCH-PowerControlInfo,
CCTrCH-PowerControlInfo-r4,
ConstantValue,
CPCH-SetInfo,
DL-CommonInformation,
DL-CommonInformation-r4,
DL-CommonInformationPost,
DL-InformationPerRL,
DL-InformationPerRL-List,
DL-InformationPerRL-List-r4,
DL-InformationPerRL-ListPostFDD,
DL-InformationPerRL-PostTDD,
DL-InformationPerRL-PostTDD-LCR-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-ChannelRequirementWithCPCH-SetID,
UL-ChannelRequirementWithCPCH-SetID-r4,
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,
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                               SEQUENCE {
        activeSetUpdate-r3           ActiveSetUpdate-r3-IEs,
        v4xxnonCriticalExtensions    SEQUENCE {
            activeSetUpdate-r4v4xy-ext  ActiveSetUpdate-r4v4xy-ext-IEs,
            nonCriticalExtensions     SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3                    SEQUENCE {
        rrc-TransactionIdentifier     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-r4v4xy-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    ssdt-UL                      SSDT-UL-r4                      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,
        v4xynonCriticalExtensions SEQUENCE {
            assistanceDataDelivery-r3-r4- v4xyext
            AssistanceDataDelivery-r3-r4- v4xyext-IEs,
            nonCriticalExtensions   SEQUENCE {}
        } 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-r3-r4-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,
    -- not used in this release of the specification
    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 protocol
    dummy            SEQUENCE {
        rrc-TransactionIdentifier    RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    -- not used in this release of the specification
    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,
  failureCause          FailureCauseWithProtErrTrId    OPTIONAL,
  -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
  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,
    v4xynonCriticalExtensions    SEQUENCE {
      cellUpdateConfirm-r3-r4-v4xyext    CellUpdateConfirm-r3-r4-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
      },
      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-r3-r4-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                             SSDT-UL-r4                  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,
    rrc-StateIndicator                   RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff          UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    rlc-ResetIndicatorC-Plane            BOOLEAN,
    rlc-ResetIndicatorU-Plane            BOOLEAN,
    --- CN information elements
    cn-InformationInfo                   CN-InformationInfo            OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                         URA-Identity                   OPTIONAL,
    -- Radio bearer IEs
    rb-InformationReleaseList            RB-InformationReleaseList      OPTIONAL,
    rb-InformationReconfigList           RB-InformationReconfigList-r4  OPTIONAL,
    rb-InformationAffectedList           RB-InformationAffectedList     OPTIONAL,
    rb-WithPDCP-InfoList                 RB-WithPDCP-InfoList          OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo                 UL-CommonTransChInfo          OPTIONAL,
    ul-deletedTransChInfoList            UL-DeletedTransChInfoList     OPTIONAL,
    ul-AddReconfTransChInfoList          UL-AddReconfTransChInfoList   OPTIONAL,
    modeSpecificTransChInfo              CHOICE {
        fdd                              SEQUENCE {
            cpch-SetID                   CPCH-SetID                     OPTIONAL,
            addReconfTransChDRAC-Info     DRAC-StaticInformationList     OPTIONAL
        },
        tdd                              NULL
    },
    dl-CommonTransChInfo                 DL-CommonTransChInfo-r4       OPTIONAL,
    dl-DeletedTransChInfoList            DL-DeletedTransChInfoList     OPTIONAL,
    dl-AddReconfTransChInfoList          DL-AddReconfTransChInfoList   OPTIONAL,
    -- Physical channel IEs
    frequencyInfo                         FrequencyInfo                   OPTIONAL,
    maxAllowedUL-TX-Power                 MaxAllowedUL-TX-Power          OPTIONAL,
    ul-ChannelRequirement                 UL-ChannelRequirement-r4       OPTIONAL,
    modeSpecificPhysChInfo                CHOICE {
        fdd                              SEQUENCE {
            dl-PDSCH-Information        DL-PDSCH-Information        OPTIONAL
        },
        tdd                              NULL
    },
    dl-CommonInformation                 DL-CommonInformation-r4       OPTIONAL,
    dl-InformationPerRL-List              DL-InformationPerRL-List-r4   OPTIONAL
}

-- *****
--
-- 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-r3-r4-v4xyext CellUpdateConfirm-r3-r4-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                                SEQUENCE {
        downlinkDirectTransfer-r3        DownlinkDirectTransfer-r3-IEs,
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
    },
    later-than-r3                      SEQUENCE {
        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
}

-- *****
--
-- HANDBOVER TO UTRAN COMMAND
--
-- *****

HandoverToUTRANCommand ::= CHOICE {
  r3 SEQUENCE {
    handoverToUTRANCommand-r3 HandoverToUTRANCommand-r3-IEs,
    v4xynonCriticalExtensions SEQUENCE {
      handoverToUTRANCommand-r3-r4-v4xyext
      HandoverToUTRANCommand-r3-r4-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              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 {
      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              DL-InformationPerRL-PostTDD,
                frequencyInfo                    FrequencyInfoTDD,
                primaryCCPCH-TX-Power           PrimaryCCPCH-TX-Power
            }
        }
    },
    -- Physical channel IEs
    maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power
}

| HandoverToUTRANCommand-r3-r4-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                        SSdT-UL-r4                OPTIONAL
}

HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    new-U-RNTI                      U-RNTI-Short,
    activationTime              ActivationTime          OPTIONAL,
    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
}
-- *****
--
-- HANOVER TO UTRAN COMPLETE
--
-- *****

HandoverToUTRANComplete ::= SEQUENCE {
  --TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  -- TABULAR: the IE below 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,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}                     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 {
    single-GSM-Message           SEQUENCE {},
    -- In this case, what follows the basic production is a variable length bit string
    -- with no length field, containing the GSM message including GSM padding up to end
    -- of container, to be analysed according to GSM specifications
    gsm-MessageList              SEQUENCE {
      gsm-Messages                GSM-MessageList
    }
  }
}

HandoverFromUTRANCommand-CDMA2000 ::= CHOICE {
  r3                             SEQUENCE {

```

```

        handoverFromUTRANCommand-CDMA2000-r3
        nonCriticalExtensions          HandoverFromUTRANCommand-CDMA2000-r3-IEs,
        },                             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,
    -- 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))
        -- octet aligned string containing IE UE-RadioAccessCapabilityInfo
    },
    -- Non critical extensions
    v390NonCriticalExtensions          CHOICE {
        absent                          NULL,
        present                          SEQUENCE {
            interRATHandoverInfo-v390ext InterRATHandoverInfo-v390ext-IEs,
            -- Reserved for future non critical extension
            nonCriticalExtensions        SEQUENCE {} OPTIONAL
        }
    }
}

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

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

```



```

MeasurementControl ::= CHOICE {
  r3 SEQUENCE {
    measurementControl-r3 MeasurementControl-r3-IEs,
    v390nonCriticalExtensions SEQUENCE {
      measurementControl-v390ext MeasurementControl-v390ext,
      v4xynonCriticalExtensions SEQUENCE {
        measurementControl-r3-r4-v4xyext MeasurementControl-r3-r4-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,
  measurementCommand MeasurementCommand,
  -- TABULAR: The measurement type is included in MeasurementCommand.
  measurementReportingMode MeasurementReportingMode OPTIONAL,
  additionalMeasurementList AdditionalMeasurementID-List OPTIONAL,
  -- Physical channel IEs
  dpch-CompressedModeStatusInfo DPCH-CompressedModeStatusInfo OPTIONAL
}

MeasurementControl-r3-r4-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-r4-IEs ::= SEQUENCE {
  User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  -- Measurement IEs
  measurementIdentity MeasurementIdentity,
  -- TABULAR: The measurement type is included in MeasurementCommand.
  measurementCommand MeasurementCommand-r4,
  TABULAR: The measurement type is included in MeasurementCommand.
  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,
  -- Extension mechanism for non- release99 information
  v390nonCriticalExtensions SEQUENCE {
    measurementReport-v390ext      MeasurementReport-v390ext,
    v4xynonCriticalExtensions     SEQUENCE {
      measurementReport-r3-r4-v4xyext MeasurementReport-r3-r4-v4xyext-IEs,
      nonCriticalExtensions        SEQUENCE {}          OPTIONAL
    }
  }
}

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

MeasurementReport-r3-r4-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,
    v4xynonCriticalExtensions     SEQUENCE {
      physicalChannelReconfiguration-r3-r4-v4xyext PhysicalChannelReconfiguration-r3-r4-v4xyext-
      IEs,
      nonCriticalExtensions        SEQUENCE {}          OPTIONAL
    }
  },
  later-than-r3          SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions            CHOICE {

```

```

        r4
            physicalChannelReconfiguration-r4
                nonCriticalExtensions
                    PhysicalChannelReconfiguration-r4-IEs,
                    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,
    ul-ChannelRequirement          UL-ChannelRequirementWithCPCH-SetID OPTIONAL,
    -- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
    -- between UL DPCH info, CPCH SET info and CPCH set ID.
    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-r3-r4-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                        SSdT-UL-r4                        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,
    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,
    -- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r4 contains the choice
    -- between UL DPCH info, CPCH SET info and CPCH set ID.
    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
    }
-- *****
--
-- 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 {
        c-RNTI                          C-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
    c-RNTI                              C-RNTI                            OPTIONAL,
    rrc-TransactionIdentifier            RRC-TransactionIdentifier,
    -- Physical channel IEs
    ul-TimingAdvance                    UL-TimingAdvanceControl           OPTIONAL,
    pusch-CapacityAllocationInfo         PUSCH-CapacityAllocationInfo     OPTIONAL,
    pdsch-CapacityAllocationInfo         PDSCH-CapacityAllocationInfo     OPTIONAL,
    confirmRequest                       ENUMERATED {
        confirmPDSCH, confirmPUSCH } OPTIONAL,
    -- TABULAR: If the above value is not present, the default value "No Confirm"
    -- shall be used as specified in 10.2.25.
    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,
    -- TABULAR: If the above value is not present, the default value "No Confirm"
    -- shall be used as specified in 10.2.25.
    iscpTimeslotList            TimeslotList-r4                OPTIONAL,
    requestPCCPCHRSCP          BOOLEAN
}

```

```

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

```

```

PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
    c-RNTI                C-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,
        v4xynonCriticalExtensions SEQUENCE {
            radioBearerReconfiguration-r3-r4-v4xyext
                RadioBearerReconfiguration-r3-r4-v4xyext-IEs,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        }
    },
    later-than-r3 SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions CHOICE {
            r4 SEQUENCE {
                radioBearerReconfiguration-r4 RadioBearerReconfiguration-r4-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            },
            criticalExtensions SEQUENCE {}
        }
    }
}

```

```

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

```

```

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

```

```

| RadioBearerReconfiguration-r3-r4-v4xyext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- The following IE extends SSdT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL                          SSdT-UL-r4                       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,
  rrc-StateIndicator               RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff       UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
  cn-InformationInfo                CN-InformationInfo                OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                      URA-Identity                      OPTIONAL,
-- Radio bearer IEs
  rab-InformationReconfigList       RAB-InformationReconfigList       OPTIONAL,
  rb-InformationReconfigList       RB-InformationReconfigList-r4     OPTIONAL,
  rb-InformationAffectedList       RB-InformationAffectedList       OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo             UL-CommonTransChInfo             OPTIONAL,
  ul-deletedTransChInfoList        UL-DeletedTransChInfoList        OPTIONAL,
  ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList      OPTIONAL,
  modeSpecificTransChInfo          CHOICE {
    fdd                             SEQUENCE {
      cpch-SetID                   CPCH-SetID                       OPTIONAL,
      addReconfTransChDRAC-Info    DRAC-StaticInformationList      OPTIONAL
    },
    tdd                             NULL
  }
  dl-CommonTransChInfo             DL-CommonTransChInfo-r4          OPTIONAL,
  dl-DeletedTransChInfoList        DL-DeletedTransChInfoList        OPTIONAL,
  dl-AddReconfTransChInfoList      DL-AddReconfTransChInfo2List     OPTIONAL,
-- Physical channel IEs
}

```

```

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

```

```

-- *****
--
-- 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,
        v4xynonCriticalExtensions      SEQUENCE {
            radioBearerRelease-r3-r4-v4xyext  RadioBearerRelease-r3-r4-v4xyext-IEs,
            nonCriticalExtensions          SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3  SEQUENCE {
        rrc-TransactionIdentifier  RRC-TransactionIdentifier,
        criticalExtensions        CHOICE {
            r4          SEQUENCE {
                radioBearerRelease-r4          RadioBearerRelease-r4-IEs,
                nonCriticalExtensions          SEQUENCE {} OPTIONAL
            },
            criticalExtensions        SEQUENCE {}
        }
    }
}

```

```

RadioBearerRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,

```

```

    integrityProtectionModeInfo      IntegrityProtectionModeInfo      OPTIONAL,
    cipheringModeInfo                CipheringModeInfo                OPTIONAL,
    activationTime                    ActivationTime                    OPTIONAL,
    new-U-RNTI                       U-RNTI                          OPTIONAL,
    new-C-RNTI                       C-RNTI                          OPTIONAL,
    rrc-StateIndicator               RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff       UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
    cn-InformationInfo               CN-InformationInfo              OPTIONAL,
    signallingConnectionRelIndication CN-DomainIdentity              OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                     URA-Identity                    OPTIONAL,
-- Radio bearer IEs
    rab-InformationReconfigList      RAB-InformationReconfigList     OPTIONAL,
    rb-InformationReleaseList        RB-InformationReleaseList,
    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-r3-r4-v4ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- The following IE extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL                          SSdT-UL-r4                      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,
    rrc-StateIndicator               RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff       UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
    cn-InformationInfo               CN-InformationInfo              OPTIONAL,
    signallingConnectionRelIndication CN-DomainIdentity              OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                     URA-Identity                    OPTIONAL,
-- Radio bearer IEs
    rab-InformationReconfigList      RAB-InformationReconfigList     OPTIONAL,
    rb-InformationReleaseList        RB-InformationReleaseList,
    rb-InformationAffectedList       RB-InformationAffectedList      OPTIONAL,
    rb-WithPDCP-InfoList            RB-WithPDCP-InfoList            OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo            UL-CommonTransChInfo            OPTIONAL,
    ul-deletedTransChInfoList        UL-DeletedTransChInfoList       OPTIONAL,
    ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList     OPTIONAL,
    modeSpecificTransChInfo          CHOICE {
        fdd                          SEQUENCE {
            cpch-SetID                CPCH-SetID                      OPTIONAL,

```



```

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

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

RadioBearerReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier               RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo              IntegrityProtActivationInfo      OPTIONAL,
    -- TABULAR: UL-TimingAdvance is
    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,
        v4xynonCriticalExtensions           SEQUENCE {
            radioBearerSetup-r3-r4-v4xyext  RadioBearerSetup-r3-r4-v4xyext-IEs,
            nonCriticalExtensions             SEQUENCE {}                     OPTIONAL
        }
    },
    later-than-r3                             SEQUENCE {
        rrc-TransactionIdentifier           RRC-TransactionIdentifier,
        criticalExtensions                   CHOICE {
            r4                               SEQUENCE {
                radioBearerSetup-r4         RadioBearerSetup-r4-IEs,
                nonCriticalExtensions       SEQUENCE {}                     OPTIONAL
            }
        }
    }
}

```

```

        criticalExtensions          SEQUENCE {}
    }
}

RadioBearerSetup-r3-IEs ::= SEQUENCE {
-- User equipment IEs
  rrc-TransactionIdentifier        RRC-TransactionIdentifier,
  integrityProtectionModeInfo     IntegrityProtectionModeInfo     OPTIONAL,
  cipheringModeInfo               CipheringModeInfo                 OPTIONAL,
  activationTime                   ActivationTime                     OPTIONAL,
  new-U-RNTI                       U-RNTI                           OPTIONAL,
  new-C-RNTI                       C-RNTI                           OPTIONAL,
  rrc-StateIndicator               RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                      URA-Identity                       OPTIONAL,
-- Core network IEs
  cn-InformationInfo               CN-InformationInfo                 OPTIONAL,
-- Radio bearer IEs
  srb-InformationSetupList         SRB-InformationSetupList          OPTIONAL,
  rab-InformationSetupList         RAB-InformationSetupList          OPTIONAL,
  rb-InformationAffectedList       RB-InformationAffectedList         OPTIONAL,
  dl-CounterSynchronisationInfo    DL-CounterSynchronisationInfo     OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo            UL-CommonTransChInfo              OPTIONAL,
  ul-deletedTransChInfoList       UL-DeletedTransChInfoList         OPTIONAL,
  ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList       OPTIONAL,
  modeSpecificTransChInfo         CHOICE {
    fdd                             SEQUENCE {
      cpch-SetID                    CPCH-SetID                        OPTIONAL,
      addReconfTransChDRAC-Info     DRAC-StaticInformationList        OPTIONAL,
    },
    tdd                             NULL
  }
  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-r3-r4-v4xyext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- The following IE extends SSDT-Information, which is included in
-- DL-CommonInformation. FDD only.
  ssdt-UL                          SSDT-UL-r4                          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,
  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-r4     RAB-InformationSetupList-r4      OPTIONAL,
  rb-InformationAffectedList       RB-InformationAffectedList         OPTIONAL,
  rb-WithPDCP-InfoList            RB-WithPDCP-InfoList              OPTIONAL,
-- Transport channel IEs

```

```

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

```

```

-- *****
--
-- 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                            N-308                      OPTIONAL,
    -- The IE above is conditional on the UE state.
    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,
    The IE above is conditional on the UE state.
    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     ProtocolErrorIndicator,
  -- The IE above is MD, but for compactness reasons no default value
  -- has been assigned to it.
  -- Measurement IEs
  measuredResultsOnRACH      MeasuredResultsOnRACH           OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions      SEQUENCE {}                       OPTIONAL
}

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

RRCCONNECTIONSETUP ::= CHOICE {
  r3
    SEQUENCE {
      rrcConnectionSetup-r3  RRCCONNECTIONSETUP-r3-IEs,
      v4xynonCriticalExtensions
      rrcConnectionSetup-r3-r4-v4xyext RRCCONNECTIONSETUP-r3-r4-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,
        capabilityUpdateRequirement    CapabilityUpdateRequirement  OPTIONAL,
        -- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
        -- be used.
    -- Radio bearer IEs
        srb-InformationSetupList      SRB-InformationSetupList2,
    -- Transport channel IEs
        ul-CommonTransChInfo         UL-CommonTransChInfo        OPTIONAL,
        ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList,
    -- NOTE: IE ul-AddReconfTransChInfoList should be optional in later versions of this message
        dl-CommonTransChInfo         DL-CommonTransChInfo        OPTIONAL,
        dl-AddReconfTransChInfoList   DL-AddReconfTransChInfoList,
    -- NOTE: IE dl-AddReconfTransChInfoList should be optional in later versions of this message
    -- Physical channel IEs
        frequencyInfo                FrequencyInfo              OPTIONAL,
        maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power     OPTIONAL,
        ul-ChannelRequirement         UL-ChannelRequirement     OPTIONAL,
        dl-CommonInformation          DL-CommonInformation      OPTIONAL,
        dl-InformationPerRL-List      DL-InformationPerRL-List  OPTIONAL
    }

RRCConnectionSetup-r3-r4-v4xyext-IEs ::= SEQUENCE {
    capabilityUpdateRequirement-r4-ext  CapabilityUpdateRequirement-r4-ext  OPTIONAL,
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                            SSDT-UL-r4                      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 capabilityUpdateRequirement is not present, the default value
    -- defined in 10.3.3.2 shall be used.
    capabilityUpdateRequirement          CapabilityUpdateRequirement-r4  OPTIONAL,
    -- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
    -- be used.
    -- Radio bearer IEs
    srb-InformationSetupList            SRB-InformationSetupList2,
    -- Transport channel IEs
    ul-CommonTransChInfo               UL-CommonTransChInfo        OPTIONAL,
    ul-AddReconfTransChInfoList         UL-AddReconfTransChInfoList  OPTIONAL,
    dl-CommonTransChInfo               DL-CommonTransChInfo-r4     OPTIONAL,
    dl-AddReconfTransChInfoList         DL-AddReconfTransChInfoList  OPTIONAL,
    -- Physical channel IEs
    frequencyInfo                      FrequencyInfo                OPTIONAL,
    maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power       OPTIONAL,
    ul-ChannelRequirement               UL-ChannelRequirement-r4    OPTIONAL,
    dl-CommonInformation                DL-CommonInformation-r4     OPTIONAL,
    dl-InformationPerRL-List            DL-InformationPerRL-List-r4  OPTIONAL
}

-- *****
--
-- 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
  v4xyNonCriticalExtensions SEQUENCE {
    rrcConnectionSetupComplete-r3-r4-v4xyext
    RRCConnectionSetupComplete-r3-r4-v4xyext-IEs,
    nonCriticalExtensions-r4 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-r3-r4-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
  protocolErrorInformation ProtocolErrorMoreInformation,
  -- TABULAR: Identification of received message is nested in
  -- 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
  }
}

-- *****
--
-- 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
  }
}

```

```

-- *****
--
-- 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,
        sib-Data-fixed    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
    }

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,
        sib-Data-fixed    BIT STRING (SIZE (226))
        -- In case the SIB data is less than 226 bits, padding shall be used
        -- The same padding bits shall be used as defined in clause 12.1
    }

```

```

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,
    v4xynonCriticalExtensions SEQUENCE {
      transportChannelReconfiguration-r3-r4-v4xyext
      TransportChannelReconfiguration-r3-r4-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 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-r3-r4-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IES
    -- The following IE extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL          SSdT-UL-r4          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,
    rrc-StateIndicator           RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff   UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    -- Core network IES
    cn-InformationInfo           CN-InformationInfo           OPTIONAL,
    -- UTRAN mobility IES
    ura-Identity                 URA-Identity                 OPTIONAL,
    -- Radio bearer IES
    rb-WithPDCP-InfoList        RB-WithPDCP-InfoList        OPTIONAL,
    -- Transport channel IES
    ul-CommonTransChInfo        UL-CommonTransChInfo        OPTIONAL,
    ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList  OPTIONAL,
    modeSpecificTransChInfo      CHOICE {
        fdd                 SEQUENCE {
            cpch-SetID      CPCH-SetID          OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
        },
        tdd                 NULL
    }
    dl-CommonTransChInfo        DL-CommonTransChInfo-r4      OPTIONAL,
    dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList  OPTIONAL,
    -- Physical channel IES
    frequencyInfo              FrequencyInfo              OPTIONAL,
    maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power      OPTIONAL,
    ul-ChannelRequirement      UL-ChannelRequirement-r4    OPTIONAL,
    modeSpecificPhysChInfo      CHOICE {
        fdd                 SEQUENCE {
            dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL
        },
        tdd                 NULL
    },
    dl-CommonInformation        DL-CommonInformation-r4      OPTIONAL,
    dl-InformationPerRL-List    DL-InformationPerRL-List-r4  OPTIONAL
}

```

```

-- *****
--
-- 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
--
-- *****

TransportFormatCombinationControl ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message when transmitting this
message
    -- this message on the transparent mode signalling DCCH.
    rrc-TransactionIdentifier          RRC-TransactionIdentifier          OPTIONAL,
    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH
    modeSpecificInfo                  CHOICE {
        fdd                            NULL,
        tdd                            SEQUENCE {
            tfcs-ID                    TFCS-Identity          OPTIONAL
        }
    },
    dpch-TFCS-InUplink                TFC-Subset,
    activationTimeForTFCSsubset        ActivationTime                  OPTIONAL,
    -- tfc-ControlDuration is not included when transmitting the message
    -- on the transparent mode signalling DCCH and is optional otherwise
    tfc-ControlDuration                TFC-ControlDuration            OPTIONAL,
    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH and is optional otherwise
    -- 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,
        v4xnonCriticalExtensions
        ueCapabilityEnquiry-r3-r4-v4xyext
        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-r3-r4-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,
            -- Reserved for future non critical extension
            v4xyNonCriticalExtensions      SEQUENCE {
                ueCapabilityInformation-r3-r4-v4xyext
                UECapabilityInformation-r3-r4-v4xyext,
                nonCriticalExtensions-r4      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-r3-r4-v4xyext ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-r4-ext      UE-RadioAccessCapability-r4-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,
      -- In case of TDD, the following IE is included instead of the IE
      -- up-IPDL-Parameters in up-OTDOA-AssistanceData
      openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4 OPTIONAL,
      -- Extension mechanism for non- release4 information
      noncriticalExtensions          SEQUENCE {}                   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            ConstantValue                    OPTIONAL,
  pusch-ConstantValue            ConstantValue                    OPTIONAL
}

UplinkPhysicalChannelControl-v4xyext-IEs ::= SEQUENCE {
  -- In case of TDD, the following IE is included instead of the 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        ConstantValue                    OPTIONAL,
      pusch-ConstantValue        ConstantValue                    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                SEQUENCE {
        uraUpdateConfirm-CCCH-r3    URAUpdateConfirm-CCCH-r3-IEs,
        nonCriticalExtensions        SEQUENCE {}    OPTIONAL
    },
    later-than-r3     SEQUENCE {
        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                               SEQUENCE {
    utranMobilityInformation-r3    UTRANMobilityInformation-r3-IEs,
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
  },
  later-than-r3                   SEQUENCE {
    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
}

-- *****
--
-- 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,  
    maxInterSysMessages,  
    maxLoCHperRLC,  
    maxMeasEvent,  
    maxMeasIntervals,  
    maxMeasParEvent,  
    maxNumCDMA2000Freqs,  
    maxNumFDDFreqs,  
    maxNumGSMFreqRanges,  
    maxNumTDDFreqs,  
    maxOtherRAT,  
    maxPage1,  
    maxPCPCH-APsig,  
    maxPCPCH-APsubCh,  
    maxPCPCH-CDsig,  
    maxPCPCH-CDsubCh,  
    maxPCPCH-SF,  
    maxPCPCHs,  
    maxPDCPAlgoType,  
    maxPDSCH,  
    maxPDSCH-TFCIgroups,  
    maxPRACH,  
    maxPRACH-FPACH,  
    maxPredefConfig,  
    maxPUSCH,  
    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,  
    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
}

CN-DomainInformationFull ::=                     SEQUENCE {
    cn-DomainIdentity
    cn-DomainSpecificNAS-Info
    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 ::=                             SEQUENCE {
    cn-DomainIdentity
    cn-Type
        gsm-MAP
        ansi-41
    },
    cn-DRX-CycleLengthCoefficient
}

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

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

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

Digit ::=                                       INTEGER (0..9)

Gsm-map-IDNNS ::=                               SEQUENCE {
    routingbasis
        localPTMSI
            routingparameter
        },
    tMSIofsamePLMN
        routingparameter
    },
    tMSIofdifferentPLMN
        routingparameter
    },
    iMSIresponsetopaging
        routingparameter
    },
    iMSIUEinitiatedEvent
        routingparameter
    },
    iMEI
        routingparameter
    },
    spare1
        routingparameter
    },
    spare2
        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 ::=
    version                                       SEQUENCE {
        release99                                CHOICE {
            cn-Type                               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,
        min-P-REV,
        sid,
        nid
    },
    gsm-MAP-and-ANSI-41 SEQUENCE {
        plmn-Identity,
        p-REV,
        min-P-REV,
        sid,
        nid
    }
}

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

```

```

    ansi-4l-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))

CellSelectReselectInfoSIB-3-4 ::= SEQUENCE {
    mappingInfo                   MappingInfo           OPTIONAL,
    cellSelectQualityMeasure      CHOICE {
        cpich-Ec-N0                SEQUENCE {
            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                               OPTIONAL,
    upperLimit                               UpperLimit                               OPTIONAL
    -- The parameter is conditional on the number of repetition
}

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

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

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

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

-- Actual value = (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)

-- 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)
--
-- *****

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

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,
  -- The following 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 {
  cipheringModeCommand              CipheringModeCommand,
  -- TABULAR: The ciphering algorithm is included in
  -- the 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
}

CompressedModeMeasCapability ::= SEQUENCE {
    fdd-Measurements          BOOLEAN,
    -- TABULAR: The IEs below 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 indicates need for compressed mode for 3.84Mcps TDD measurements
    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,
    powerControlAlgorithm     PowerControlAlgorithm,
    -- TABULAR: TPC step size nested inside 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,
    maxPhysChPerFrame 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-InTFCS MaxNumberOfTFC-InTFCS-DL,
    maxNumberOfTF MaxNumberOfTF
}

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

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

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,
    spare1 }

FailureCauseWithProtErr ::= CHOICE {
    configurationUnsupported NULL,
    physicalChannelFailure NULL,
    incompatibleSimultaneousReconfiguration NULL,
    compressedModeRuntimeError TGPSI,
    protocolError ProtocolErrorInformation,
    cellUpdateOccurred NULL,
    invalidConfiguration NULL,
    configurationIncomplete NULL,
    unsupportedMeasurement NULL,
}

```

```

    spare1                NULL,
    spare2                NULL,
    spare3                NULL,
    spare4                NULL,
    spare5                NULL,
    spare6                NULL,
    spare7                NULL
}

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

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

| -- If ICS-Version-r4 is included, the following IE ICS-Version shall be ignored.
ICS-Version ::= ENUMERATED {
    r99 }

ICS-Version-r4 ::= ENUMERATED {
    rel-4 }

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

```

```

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

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

MaxNumberOfTFC-InTFCS-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: This IE 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-313 ::=                                ENUMERATED {
    s1, s2, s4, s10, s20,
    s50, s100, s200 }
N-315 ::=                                ENUMERATED {
    s1, s50, s100, s200, s400,
    s600, s800, s1000 }

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

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

NF-BO-AllBusy ::=                       INTEGER (0..31)
NF-BO-NoAICH ::=                       INTEGER (0..31)
NF-BO-Mismatch ::=                     INTEGER (0..127)

```

```

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

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

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

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

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
    }
    -- The following tddPhysChCapability describes the 3.84Mcps TDD physical channel capability
    tddPhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityTDD,
        uplinkPhysChCapability UL-PhysChCapabilityTDD
    }
    OPTIONAL
}

-- The following 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
}

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,
    spare1, spare2 }

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

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

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

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

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

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 }

RF-Capability ::=
    SEQUENCE {
        fddRF-Capability
            SEQUENCE {
                ue-PowerClass
                    UE-PowerClass,
                txRxFrequencySeparation
                    TxRxFrequencySeparation
            }
            OPTIONAL,
        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 ::=
    SEQUENCE {
        totalRLC-AM-BufferSize
            TotalRLC-AM-BufferSize,
        maximumRLC-WindowSize
            MaximumRLC-WindowSize,
        maximumAM-EntityNumber
            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 ::=
    SEQUENCE {
        cipheringAlgorithmCap
            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)),
        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
            BOOLEAN
        -- The IE above is applicable only if IE Support of PDSCH = TRUE
    }
}

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 }

T-302 ::= ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,
    ms1800, ms2000, ms3000, ms4000,
    ms6000, ms8000 }

T-304 ::= ENUMERATED {
    ms100, ms200, ms400,
    ms1000, ms2000, spare1, spare2, spare3 }

T-305 ::= ENUMERATED {
    noUpdate, m5, m10, m30,
    m60, m120, m360, m720 }

T-307 ::= ENUMERATED {
    s5, s10, s15, s20,
    s30, s40, s50 }

T-308 ::= ENUMERATED {
    ms40, ms80, ms160, ms320 }

```



```

T-309 ::= INTEGER (1..8)

T-310 ::= ENUMERATED {
    ms40, ms80, ms120, ms160,
    ms200, ms240, ms280, ms320 }

T-311 ::= ENUMERATED {
    ms250, ms500, ms750, ms1000,
    ms1250, ms1500, ms1750, ms2000 }

T-312 ::= INTEGER (0..15)
-- The value 0 for T-312 is not used in this version of the specification

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 }

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..12))

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

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

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

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

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

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 release of the protocol
    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          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          N-315          DEFAULT s1,
t-316          T-316          DEFAULT s30,
t-317          T-317          DEFAULT s180
}

UE-IdleTimersAndConstants ::= SEQUENCE {
  t-300          T-300,
  n-300          N-300,
  t-312          T-312,
  n-312          N-312
}

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

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

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

UE-RadioAccessCapability ::= SEQUENCE {
  ics-Version      ICS-Version,
  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 UE-PositioningCapabilityExt
}

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

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,
    ics-Version-r4                 ICS-Version-r4,
    rf-Capability                  RF-Capability-r4-ext,
    physicalChannelCapability-LCR   PhysicalChannelCapability-LCR-r4,
    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,
    turboDecodingSupport            TurboSupport,
    maxSimultaneousTransChs         MaxSimultaneousTransChsUL,
    modeSpecificInfo                CHOICE {
        fdd                          NULL,
        tdd                          SEQUENCE {
            maxSimultaneousCCTrCH-Count MaxSimultaneousCCTrCH-Count
        }
    },
    maxTransmittedBlocks            MaxTransportBlocksUL,
    maxNumberOfTFC-InTFCS           MaxNumberOfTFC-InTFCS-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
    rfc3095-Info
}

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

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

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

DefaultConfigIdentity ::= INTEGER (0..9)

DefaultConfigMode ::= ENUMERATED {
    fdd,
    tdd }

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

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

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

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

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

DL-RLC-StatusInfo ::= SEQUENCE {
    timerStatusProhibit
    timerEPC
    missingPDU-Indicator
    timerStatusPeriodic
}

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

DL-TransportChannelType ::= CHOICE {
    dch
    fach
    dsch
    dch-and-dsch
}

ExpectReordering ::= ENUMERATED {
    reorderingNotExpected,
    reorderingExpected }

ExplicitDiscard ::= SEQUENCE {
    timerMRW
    timerDiscard
    maxMRW
}

HeaderCompressionInfo ::= SEQUENCE {
    algorithmSpecificInfo
}

```

```

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

HeaderCompressionInfo-r4 ::= SEQUENCE {
    algorithmSpecificInfo
}

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

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

PDCP-InfoReconfig ::= SEQUENCE {
    pdcp-Info PDCP-Info,
    -- dummy is not used in this version of the protocol
    dummy INTEGER (0..65535)
}

PDCP-InfoReconfig-r4 ::= SEQUENCE {
    pdcp-Info PDCP-Info-r4,
    pdcp-SN-Info PDCP-SN-Info
}

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
    rb-InformationSetupList
}

RAB-InformationSetup-r4 ::= 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
}

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

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

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
}

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
}

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

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

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

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

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

```

```

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

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) 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,
    expectReordering ExpectReordering
    -- TABULAR: The IE above has only two possible values, so using Optional or Default
    -- would be wasteful
}

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 RLC-Info,
    same-as-RB RB-Identity
}

```



```

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 {
    rb-Identity RB-Identity OPTIONAL,
    -- The default value for the IE above is the smallest value not used yet.
    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
    timerBasedNoExplicit
    maxDAT-Retransmissions
    noDiscard
}

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
    transmissionWindowSize
    timerRST
    max-RST
    pollingInfo
}

UL-CounterSynchronisationInfo ::= SEQUENCE {
    RB-WithPDCP-InfoList OPTIONAL,
    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 BOOLEAN, -- NOTE: This parameter shall be set to TRUE in
this release
    ul-LogicalChannelMapping SEQUENCE (SIZE (maxLoChperRLC)) OF
UL-LogicalChannelMapping
}

UL-LogicalChannelMappings ::= CHOICE {
    oneLogicalChannel
    twoLogicalChannels
}

```

```

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

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

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

UL-TransportChannelType ::=
    dch
    rach
    cpch
    usch
}
CHOICE {
    TransportChannelIdentity,
    NULL,
    NULL,
    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 ::=
    sizeType1
    sizeType2
        part1
        part2
        -- Actual size = (part1 * 8) + 128 + part2
    },
    sizeType3
        part1
        part2
        -- Actual size = (part1 * 16) + 256 + part2
    },
    sizeType4
        part1
        part2
        -- Actual size = (part1 * 64) + 1024 + part2
    }
}
-- Actual value = IE value * 0.1
BLER-QualityValue ::=
    INTEGER (-63..0)

ChannelCodingType ::=
    noCoding
    convolutional
    turbo
}
CHOICE {
    NULL,
    CodingRate,
    NULL
}

CodingRate ::=
    ENUMERATED {
        half,
        third }

CommonDynamicTF-Info ::=
    rlc-Size
        fdd
            octetModeRLC-SizeInfoType2
        },
        tdd
            commonTDD-Choice
                bitModeRLC-SizeInfo
                octetModeRLC-SizeInfoType1
            }
    }
SEQUENCE {
    CHOICE {
        SEQUENCE {
            OctetModeRLC-SizeInfoType2
        }
        SEQUENCE {
            CHOICE {
                BitModeRLC-SizeInfo,
                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 this sequence is 16
DL-AddReconfTransChInfo2List ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation2

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

-- 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,
    tm-SignallingInfo TM-SignallingInfo 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 CHOICE {
        fdd SEQUENCE {
            dl-Parameters CHOICE {
                dl-DCH-TFCS TFCS,
                sameAsUL NULL
            } OPTIONAL,
            tdd SEQUENCE {
                individualDL-CCTrCH-InfoList IndividualDL-CCTrCH-InfoList OPTIONAL
            }
        }
    }
}

-- NOTE: CHOICE modeSpecificInfo should be optional. A new version of this IE
-- should be defined to be used in later versions of messages using this IE

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

```

```

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

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

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

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
}

IndividualDL-CCTrCH-Info ::= SEQUENCE {
    dl-TFCS-Identity
    tfcs-SignallingMode
    explicit-config
    sameAsUL
}

IndividualDL-CCTrCH-InfoList ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                IndividualDL-CCTrCH-Info

IndividualUL-CCTrCH-Info ::= SEQUENCE {
    ul-TFCS-Identity
    ul-TFCS
    tfc-Subset
}

IndividualUL-CCTrCH-InfoList ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                IndividualUL-CCTrCH-Info

LogicalChannelByRB ::= SEQUENCE {
    rb-Identity
    logChOfRb
}

LogicalChannelList ::= CHOICE {
    allSizes
    configured
    explicitList
}

NumberOfTbSizeAndTTIList ::= SEQUENCE (SIZE (1..maxTF)) OF SEQUENCE {
    numberOfTransportBlocks
    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 {
  sizeType1                       INTEGER (0..31),
  -- Actual size = (8 * sizeType1) + 16
  sizeType2                       SEQUENCE {
    part1                          INTEGER (0..23),
    part2                          INTEGER (1..3)                OPTIONAL
    -- Actual size = (32 * part1) + 272 + (part2 * 8)
  },
  sizeType3                       SEQUENCE {
    part1                          INTEGER (0..61),
    part2                          INTEGER (1..7)                OPTIONAL
    -- Actual size = (64 * part1) + 1040 + (part2 * 8)
  }
}

OctetModeRLC-SizeInfoType2 ::= CHOICE {
  sizeType1                       INTEGER (0..31),
  -- Actual size = (sizeType1 * 8) + 48
  sizeType2                       INTEGER (0..63),
  -- Actual size = (sizeType2 * 16) + 312
  sizeType3                       INTEGER (0..56)
  -- Actual size = (sizeType3 * 64) + 1384
}

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 ::=
    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 }

TFC-Subset ::=
    minimumAllowedTFC-Number              TFC-Value,
    allowedTFC-List                       AllowedTFC-List,
    non-allowedTFC-List                   Non-allowedTFC-List,
    restrictedTrChInfoList                RestrictedTrChInfoList,
    fullTFCS                              NULL
}

TFC-Value ::=
    INTEGER (0..1023)

TFCI-Field2-Information ::=
    tfci-Range                            TFCI-RangeList,
    explicit-config                        ExplicitTFCS-Configuration
}

TFCI-Range ::=
    maxTFCIField2Value                    INTEGER (1..1023),
    tfcs-InfoForDSCH                      TFCS-InfoForDSCH
}

TFCI-RangeList ::=
    SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
        TFCI-Range

TFCS ::=
    normalTFCI-Signalling                  ExplicitTFCS-Configuration,
    splitTFCI-Signalling                   SplitTFCI-Signalling
}

TFCS-Identity ::=
    tfcs-ID                                TFCI-IdentityPlain                    DEFAULT 1,
    sharedChannelIndicator                 BOOLEAN
}

TFCS-IdentityPlain ::=
    INTEGER (1..8)

TFCS-InfoForDSCH ::=
    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..1677215)
}

TFCS-ReconfAdd ::=
    ctfcSize                               SEQUENCE{
        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                     SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    ctfc24                       INTEGER(0..16777215),
    powerOffsetInformation        PowerOffsetInformation      OPTIONAL
  }
}

TFCS-Removal ::= SEQUENCE {
  tfci INTEGER (0..1023)
}

TFCS-RemovalList ::= SEQUENCE (SIZE (1..maxTFC)) OF
  TFCS-Removal

TimeDurationBeforeRetry ::= INTEGER (1..256)

TM-SignallingInfo ::= SEQUENCE {
  messType MessType,
  tm-SignallingMode CHOICE {
    mode1 NULL,
    mode2 SEQUENCE {
      --TrCH-Type is always DCH
      ul-controlledTrChList UL-ControlledTrChList
    }
  }
}

TransmissionTimeInterval ::= ENUMERATED {
  tti10, tti20, tti40, tti80 }

TransmissionTimeValidity ::= INTEGER (1..256)

TransportChannelIdentity ::= INTEGER (1..32)

TransportChannelIdentityDCHandDSCH ::= SEQUENCE {
  dch-transport-ch-id TransportChannelIdentity,
  dsch-transport-ch-id TransportChannelIdentity
}

TransportFormatSet ::= CHOICE {
  dedicatedTransChTFS DedicatedTransChTFS,
  commonTransChTFS CommonTransChTFS
}

TransportFormatSet-LCR ::= CHOICE {
  dedicatedTransChTFS DedicatedTransChTFS,
  commonTransChTFS-LCR CommonTransChTFS-LCR
}

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

UL-AddReconfTransChInformation ::= SEQUENCE {
  ul-TransportChannelType UL-TrCH-Type,
  transportChannelIdentity TransportChannelIdentity,
  transportFormatSet TransportFormatSet
}

UL-CommonTransChInfo ::= SEQUENCE {
  -- TABULAR: this tfc-subset IE is applicable to FDD only, TDD specifies tfc-subset in individual
  -- CTrCH Info.
  tfc-Subset TFC-Subset OPTIONAL,
  prach-TFCS TFCS OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      ul-TFCS TFCS
    },

```



```

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,
    in size2, subch0 means bitstring '01' in the tabular, subch1 means bitstring '10'.
    size2 SEQUENCE {
      -- subch0 means bitstring '01' in the tabular, subch1 means bitstring '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 = 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: This 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: This 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: This 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 }

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: The IE below 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: The IE below 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)

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,
    channelAssignmentActive       ChannelAssignmentActive,
    -- TABULAR: VCAM info has been nested inside ChannelAssignmentActive,
    -- which in turn is mandatory since it's only a binary choice.
    cpch-StatusIndicationMode    CPCH-StatusIndicationMode,
    pcpch-ChannelInfoList        PCPCH-ChannelInfoList
}

CPCH-SetInfoList ::=              SEQUENCE (SIZE (1..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 = IE value * 512
DefaultDPCH-OffsetValueFDD ::=    INTEGER (0..599)

DefaultDPCH-OffsetValueTDD ::=    INTEGER (0..7)

DeltaPp-m ::=                     INTEGER (-10..10)

-- Actual value = 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 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 {
            cfnTargetsfnframeoffset CfnTargetsfnframeoffset OPTIONAL
        }
    },
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            dl-DPCH-PowerControlInfo DL-DPCH-PowerControlInfo OPTIONAL,

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        powerOffsetPilot-pdpdch          PowerOffsetPilot-pdpdch,
        dl-rate-matching-restriction     Dl-rate-matching-restriction      OPTIONAL,
        spreadingFactorAndPilot          SF512-AndPilot,
        -- TABULAR: The number of pilot bits is nested inside the spreading factor.
        positionFixedOrFlexible          PositionFixedOrFlexible,
        tfci-Existence                   BOOLEAN
    },
    tdd                                   SEQUENCE {
        dl-DPCH-PowerControlInfo         DL-DPCH-PowerControlInfo          OPTIONAL
    }
}

DL-DPCH-InfoCommonPost ::=              SEQUENCE {
    dl-DPCH-PowerControlInfo             DL-DPCH-PowerControlInfo          OPTIONAL
}

DL-DPCH-InfoCommonPredef ::=            SEQUENCE {
    modeSpecificInfo                     CHOICE {
        fdd                               SEQUENCE {
            spreadingFactorAndPilot       SF512-AndPilot,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            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 ::=           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-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,
    secondaryCCPCH-Info SecondaryCCPCH-Info-r4 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-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
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo,
            dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            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 }

-- The actual value of DPCCH power offset is the value of this IE * 2.
DPCCH-PowerOffset ::= INTEGER (-82..-3)

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-- The actual value of DPCCH power offset is the value of this (2 + IE * 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
}

-- TABULAR: Actual value = 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)

-- TABULAR : value [Duration = infinite] is the value by default,
-- and is encoded by absence of the full sequence. If the sequence is present,
-- thefield is absent, the default is respectivelyinfinite. Presence of the
-- field absent should not be used, but shall be understood as if the
-- sequence was absent.

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

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
}

IndividualTimeslotInfo ::= SEQUENCE {

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    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 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)

MidambleConfigurationBurstTypeLand3 ::= ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstType2 ::= ENUMERATED {ms3, ms6}

MidambleShiftAndBurstType ::= SEQUENCE {
    burstType              CHOICE {
        type1              SEQUENCE {
            midambleConfigurationBurstTypeLand3 MidambleConfigurationBurstTypeLand3,
            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) Actual value = IE value * 2
}

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,
  -- The following Iesalpha, prach-ConstantValue, dpch-ConstantValue and pus
  -- shall be ignored in 1.28Mcps TDD mode.
  alpha Alpha OPTIONAL,
  prach-ConstantValue ConstantValue,
  dpch-ConstantValue ConstantValue,
  pusch-ConstantValue ConstantValue 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
    -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
    -- selected the IE is OPTIONAL otherwise it should not be sent
    pdsch-AllocationPeriodInfo
    tfcs-ID
    configuration
    old-Configuration
        pdsch-Identity
    },
    new-Configuration
        pdsch-Info
        pdsch-Identity
    }
    CHOICE {
        PDSCH-Identity
        PDSCH-Info,
        PDSCH-Identity
    }
    OPTIONAL
}

PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {

    pdsch-PowerControlInfo
    -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
    -- selected the IE is OPTIONAL otherwise it should not be sent
    pdsch-AllocationPeriodInfo
    tfcs-ID
    configuration
    old-Configuration
        pdsch-Identity
    },
    new-Configuration
        pdsch-Info
        pdsch-Identity
        pdsch-PowerControlInfo

    PDSCH-PowerControlInfo
    OPTIONAL,
    AllocationPeriodInfo,
    TFCS-IdentityPlain
    DEFAULT 1,
    CHOICE {
        PDSCH-Identity
        PDSCH-Info-r4,
        PDSCH-Identity
        PDSCH-PowerControlInfo
    }
    OPTIONAL,
    OPTIONAL
}

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
    }
    OPTIONAL,
}

```

```

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,    OPTIONAL
  rl-IdentifierList                              RL-IdentifierList
}

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          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-LCR-r4 MidambleShiftAndBurstType-LCR-r4,
    repetitionPeriodLengthOffset-LCR-r4 RepPerLengthOffset-PICH    OPTIONAL,
    pagingIndicatorLength-LCR-r4      PagingIndicatorLength    DEFAULT pi4,
    n-GAP-LCR-r4                      N-GAP                    DEFAULT f4,
    n-PCH-LCR-r4                      N-PCH                    DEFAULT 2
}

PICH-PowerOffset ::=          INTEGER (-10..5)

PilotBits128 ::=          ENUMERATED {
                                pb4, pb8 }

PilotBits256 ::=          ENUMERATED {
                                pb2, pb4, pb8 }

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-LCR-r4 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 absent/ignored for 1.28Mcps TDD mode
        syncCase        CHOICE {
            syncCase1    SEQUENCE {
                timeslot TimeslotNumber
            }
        }
    }
}

```

```

        },
        syncCase2
            timeslotSync2
        }
    }
    cellParametersID
    sctd-Indicator
}

PrimaryCCPCH-Info-r4 ::=
| fdd
    tx-DiversityIndicator
},
tdd
    tddOption
        tdd384
            syncCase
                syncCase1
                    timeslot
                },
                syncCase2
                    timeslotSync2
            }
        },
        tdd128
            tstd-Indicator
        }
    },
    cellParametersID
    blockSTTD-Indicator
}

PrimaryCCPCH-Info-LCR-r4 ::=
    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 ::=
    tstd-Indicator
}

PrimaryCCPCH-InfoPost ::=
    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 ::=
    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,
      tfcs-ID TFCS-IdentityPlain DEFAULT 1,
      configuration CHOICE {
        old-Configuration SEQUENCE {
          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,
      tfcs-Identity TFCS-IdentityPlain OPTIONAL,
      configuration CHOICE {
        old-Configuration SEQUENCE {
          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 SEQUENCE {

```

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        tpc-StepSize                TPC-StepSizeTDD                OPTIONAL,
        dl-CCTrChTPCLList          DL-CCTrChTPCLList                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,
        sfn-TimeInfo             SFN-TimeInfo                            OPTIONAL
    }

PUSCH-SysInfoList-SFN-LCR-r4 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF
    SEQUENCE {
        pusch-SysInfo            PUSCH-SysInfo-LCR-r4,
        sfn-TimeInfo             SFN-TimeInfo                            OPTIONAL
    }

RACH-TransmissionParameters ::= SEQUENCE {
    mmax                          INTEGER (1..32),
    nb01Min                       NB01,
    nb01Max                       NB01
}

ReducedScramblingCodeNumber ::= INTEGER (0..8191)

RepetitionPeriodAndLength ::=  CHOICE {
    repetitionPeriod1             NULL,
    repetitionPeriod2             INTEGER (1..1),
    -- repetitionPeriod2 could just as well be NULL also.
    repetitionPeriod4             INTEGER (1..3),
    repetitionPeriod8             INTEGER (1..7),
    repetitionPeriod16            INTEGER (1..15),
    repetitionPeriod32            INTEGER (1..31),
    repetitionPeriod64            INTEGER (1..63)
}

RepetitionPeriodLengthAndOffset ::= CHOICE {
    repetitionPeriod1             NULL,
    repetitionPeriod2             SEQUENCE {
        length                   NULL,
        offset                   INTEGER (0..1)
    },
    repetitionPeriod4             SEQUENCE {
        length                   INTEGER (1..3),
        offset                   INTEGER (0..3)
    },
    repetitionPeriod8             SEQUENCE {
        length                   INTEGER (1..7),
        offset                   INTEGER (0..7)
    },
    repetitionPeriod16            SEQUENCE {
        length                   INTEGER (1..15),
        offset                   INTEGER (0..15)
    },
    repetitionPeriod32            SEQUENCE {
        length                   INTEGER (1..31),
        offset                   INTEGER (0..31)
    }
}

```

```

    },
    repetitionPeriod64
    length
    offset
  }
}

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 {
    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,
        fach-PCH-InformationList      FACH-PCH-InformationList,
        pich-Info                    PICH-Info
    }
    OPTIONAL,
    OPTIONAL,
    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

-- The following list 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 {
                -- This Ie is not used in this version of the specification and should be ignored.
                dummy1                PCPICH-UsageForChannelEst,
                -- This Ie is not used in this version of the specification. It should not
                -- be sent and if received it should be ignored.
                dummy2                SecondaryCPICH-Info,
                secondaryScramblingCode SecondaryScramblingCode,
                sttd-Indicator          BOOLEAN,
                sf-AndCodeNumber        SF256-AndCodeNumber,
                pilotSymbolExistence    BOOLEAN,
                tfci-Existence          BOOLEAN,
                positionFixedOrFlexible PositionFixedOrFlexible,
                timingOffset            TimingOffset
            },
            tdd                      SEQUENCE {
                -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
                commonTimeslotInfo      CommonTimeslotInfoSCCPCH,
                individualTimeslotInfo   IndividualTimeslotInfo,
                channelisationCode      SCCPCH-ChannelisationCodeList
            }
        }
    }
    DEFAULT 0

SecondaryCCPCH-Info-r4 ::=
    SEQUENCE {
        modeSpecificInfo            CHOICE {
            fdd                      SEQUENCE {
                PCPICH-UsageForChannelEst PCPICH-UsageForChannelEst,

```

```

secondaryCPICH-Info 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,
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
}

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
}

SSDT-Information-r4 ::=
    s-Field
    codeWordSet
    ssdt-UL
}

-- The following information element 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
    fpach-Info
    sync-UL-Procedure
}

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 ::=
    max-SYNC-UL-Transmissions
    powerRampStep
}

max-SYNC-UL-Transmissions
    ENUMERATED { tr1, tr2, tr4, tr8 },
powerRampStep
    INTEGER (0..3)

SYNC-UL-Info-r4 ::=
    sync-UL-Codes-Bitmap
}

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),
    -- Actual value = (IE value * 0.5) - 11
    powerRampStep
    INTEGER (0..3),
    max-SYNC-UL-Transmissions
    ENUMERATED { tr1, tr2, tr4, tr8 } ,
    mmax
    INTEGER(1..32)
}

TDD-FPACH-CCode16-r4 ::=
    ENUMERATED {
        ccl6-1, ccl6-2, ccl6-3, ccl6-4,
        ccl6-5, ccl6-6, ccl6-7, ccl6-8,

```



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cc16-9, cc16-10, cc16-11, cc16-12,
cc16-13, cc16-14, cc16-15, cc16-16 }

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)

-- The 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 {

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        tgcfm                TGCFM
    },
    deactivate                NULL
}

TGPL ::=                     INTEGER (1..144)

-- TABULAR: The 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,
    ul-DL-Mode                UL-DL-Mode,
    -- TABULAR: Compressed mode method is nested inside 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 = IE value * 256
TimingOffset ::=            INTEGER (0..149)

TPC-CombinationIndex ::=    INTEGER (0..5)

TPC-StepSizeFDD ::=         INTEGER (0..1)

-- Actual value = IE value + 1
TPC-StepSizeTDD ::=         INTEGER (1..3)

-- Actual value = IE value * 0.5 seconds
TreconfirmAbort ::=         INTEGER (1..20)

TX-DiversityMode ::=        ENUMERATED {
    noDiversity,
    sttd,
    closedLoopModel,
}

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        closedLoopMode2 }

UARFCN ::=
    INTEGER (0..16383)

UCSM-Info ::=
    minimumSpreadingFactor
    nf-Max
    channelReqParamsForUCSM
    SEQUENCE {
        MinimumSpreadingFactor,
        NF-Max,
        ChannelReqParamsForUCSM
    }

UL-CCTrCH ::=
    tfcs-ID
    ul-TargetSIR
    timeInfo
    commonTimeslotInfo
    ul-CCTrCH-TimeslotsCodes
    SEQUENCE {
        TFCS-IdentityPlain
        UL-TargetSIR,
        TimeInfo,
        CommonTimeslotInfo
        UplinkTimeslotsCodes
        DEFAULT 1,
        OPTIONAL,
        OPTIONAL
    }

UL-CCTrCH-r4 ::=
    tfcs-ID
    ul-TargetSIR
    timeInfo
    commonTimeslotInfo
    tddOption
    tdd384
    ul-CCTrCH-TimeslotsCodes
    tdd128
    ul-CCTrCH-TimeslotsCodes
    SEQUENCE {
        TFCS-IdentityPlain
        UL-TargetSIR,
        TimeInfo,
        CommonTimeslotInfo
        CHOICE {
            SEQUENCE {
                UplinkTimeslotsCodes
                OPTIONAL
            },
            SEQUENCE {
                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-CCTrChTPCLList ::=
    SEQUENCE (SIZE (0..maxCCTrCH)) OF
        TFCS-Identity

UL-ChannelRequirement ::=
    ul-DPCH-Info
    cpch-SetInfo
    CHOICE {
        UL-DPCH-Info,
        CPCH-SetInfo
    }

UL-ChannelRequirement-r4 ::=
    ul-DPCH-Info
    cpch-SetInfo
    CHOICE {
        UL-DPCH-Info-r4,
        CPCH-SetInfo
    }

UL-ChannelRequirementWithCPCH-SetID ::=
    ul-DPCH-Info
    cpch-SetInfo
    cpch-SetID
    CHOICE {
        UL-DPCH-Info,
        CPCH-SetInfo,
        CPCH-SetID
    }

UL-ChannelRequirementWithCPCH-SetID-r4 ::=
    ul-DPCH-Info
    cpch-SetInfo
    cpch-SetID
    CHOICE {
        UL-DPCH-Info-r4,
        CPCH-SetInfo,
        CPCH-SetID
    }

UL-CompressedModeMethod ::=
    sf-2,
    higherLayerScheduling }
    ENUMERATED {

UL-DL-Mode ::=
    ul
    dl
    ul-and-dl
    ul
    dl
    CHOICE {
        UL-CompressedModeMethod,
        DL-CompressedModeMethod,
        SEQUENCE {
            UL-CompressedModeMethod,
            DL-CompressedModeMethod
        }
    }

UL-DPCCH-SlotFormat ::=
    slf0, slf1, slf2 }
    ENUMERATED {

```

```

UL-DPCH-Info ::=
  ul-DPCH-PowerControlInfo      SEQUENCE {
  modeSpecificInfo              UL-DPCH-PowerControlInfo      OPTIONAL,
    fdd                          CHOICE {
      scramblingCodeType        SEQUENCE {
        scramblingCodeType      ScramblingCodeType,
        scramblingCode          UL-ScramblingCode,
        numberOfDPDCH           NumberOfDPDCH           DEFAULT 1,
        spreadingFactor         SpreadingFactor,
        tfci-Existence          BOOLEAN,
        numberOfFBI-Bits        NumberOfFBI-Bits        OPTIONAL,
        -- The IE above is conditional based on history
        puncturingLimit        PuncturingLimit
      },
      tdd                        SEQUENCE {
        ul-TimingAdvance        UL-TimingAdvanceControl  OPTIONAL,
        ul-CCTrCHList          UL-CCTrCHList
      }
    }
  }

UL-DPCH-Info-r4 ::=
  ul-DPCH-PowerControlInfo      SEQUENCE {
  modeSpecificInfo              UL-DPCH-PowerControlInfo-r4    OPTIONAL,
    fdd                          SEQUENCE {
      scramblingCodeType        SEQUENCE {
        scramblingCodeType      ScramblingCodeType,
        scramblingCode          UL-ScramblingCode,
        numberOfDPDCH           NumberOfDPDCH           DEFAULT 1,
        spreadingFactor         SpreadingFactor,
        tfci-Existence          BOOLEAN,
        -- numberOfFBI-Bits is conditional based on history
        numberOfFBI-Bits        NumberOfFBI-Bits        OPTIONAL,
        -- The IE above is conditional based on history
        puncturingLimit        PuncturingLimit
      },
      tdd                        SEQUENCE {
        ul-TimingAdvance        UL-TimingAdvanceControl-r4  OPTIONAL,
        ul-CCTrCHList          UL-CCTrCHList-r4
      }
    }
  }

UL-DPCH-InfoPostFDD ::=
  ul-DPCH-PowerControlInfo      SEQUENCE {
    scramblingCodeType          UL-DPCH-PowerControlInfoPostFDD,
    reducedScramblingCodeNumber ReducedScramblingCodeNumber,
    spreadingFactor             SpreadingFactor
  }

UL-DPCH-InfoPostTDD ::=
  ul-DPCH-PowerControlInfo      SEQUENCE {
    ul-TimingAdvance            UL-DPCH-PowerControlInfoPostTDD,
    ul-CCTrCH-TimeslotsCodes   UplinkTimeslotsCodes      OPTIONAL,
  }

UL-DPCH-InfoPostTDD-LCR-r4 ::=
  ul-DPCH-PowerControlInfo      SEQUENCE {
    ul-TimingAdvance            UL-DPCH-PowerControlInfoPostTDD-LCR-r4,
    ul-CCTrCH-TimeslotsCodes   UplinkTimeslotsCodes-LCR-r4    OPTIONAL,
  }

UL-DPCH-InfoPredef ::=
  ul-DPCH-PowerControlInfo      SEQUENCE {
  modeSpecificInfo              UL-DPCH-PowerControlInfoPredef,
    fdd                          CHOICE {
      tfci-Existence           SEQUENCE {
        tfci-Existence         BOOLEAN,
        puncturingLimit        PuncturingLimit
      },
      tdd                        SEQUENCE {
        commonTimeslotInfo     CommonTimeslotInfo
      }
    }
  }

UL-DPCH-PowerControlInfo ::=
  fdd                            CHOICE {
    dpcch-PowerOffset          SEQUENCE {
      dpcch-PowerOffset       DPCCH-PowerOffset,

```

```

pc-Preamble                PC-Preamble,
srb-delay                  SRB-delay,
powerControlAlgorithm      PowerControlAlgorithm
-- TABULAR: TPC step size nested inside PowerControlAlgorithm
},
tdd                        SEQUENCE {
  ul-TargetSIR              UL-TargetSIR                OPTIONAL,
  ul-OL-PC-Signalling       CHOICE {
    broadcast-UL-OL-PC-info  NULL,
    handoverGroup           SEQUENCE {
      individualTS-InterferenceList  IndividualTS-InterferenceList,
      dpch-ConstantValue             ConstantValue,
      primaryCCPCH-TX-Power          PrimaryCCPCH-TX-Power
    }
  }
}
}
}

UL-DPCH-PowerControlInfo-r4 ::= CHOICE {
  fdd                        SEQUENCE {
    dpccch-PowerOffset       DPCCH-PowerOffset,
    pc-Preamble              PC-Preamble,
    -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    powerControlAlgorithm    PowerControlAlgorithm
    -- TABULAR: TPC step size nested inside 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-PowerControlInfoPostFDD ::= SEQUENCE {
  dpccch-PowerOffset       DPCCH-PowerOffset2, -- smaller range to save bits
  pc-Preamble              PC-Preamble,
  srb-delay                SRB-delay
}

UL-DPCH-PowerControlInfoPostTDD ::= SEQUENCE {
  ul-TargetSIR              UL-TargetSIR,
  ul-TimeslotInterference   UL-Interference
}

UL-DPCH-PowerControlInfoPostTDD-LCR-r4 ::= SEQUENCE {
  ul-TargetSIR              UL-TargetSIR
}

UL-DPCH-PowerControlInfoPredef ::= CHOICE {
  fdd                        SEQUENCE {
    powerControlAlgorithm    PowerControlAlgorithm
    -- TABULAR: TPC step size nested inside PowerControlAlgorithm
  },
  tdd                        SEQUENCE {
    -- The following IE dpch-ConstantValue shall be ignored if in 1.28Mcps TDD mode.
    dpch-ConstantValue       ConstantValue
  }
}

UL-Interference ::= INTEGER (-110..-70)
UL-ScramblingCode ::= INTEGER (0..16777215)

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```

UL-SynchronisationParameters-r4 ::= SEQUENCE {
    stepSize                INTEGER (1..8),
    frequency                INTEGER (1..8)
}

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

AcquisitionSatInfoList ::=         SEQUENCE (SIZE (1..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 }

AzimuthAndElevation ::=          SEQUENCE {
    -- Actual value = IE value * 11.25
    azimuth                        INTEGER (0..31),
    -- Actual value = 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 = 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             SEQUENCE {
referenceTimeDifferenceToCell    CellIndividualOffset          DEFAULT 0,
modeSpecificInfo                ReferenceTimeDifferenceToCell  OPTIONAL,
    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,
            primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power    OPTIONAL,
            timeslotInfoList     TimeslotInfoList-r4      OPTIONAL,
            readSFN-Indicator    BOOLEAN
        }
    }
}

CellInfoSI-RSCP ::=
cellIndividualOffset             SEQUENCE {
referenceTimeDifferenceToCell    CellIndividualOffset          DEFAULT 0,
modeSpecificInfo                ReferenceTimeDifferenceToCell  OPTIONAL,
    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             SEQUENCE {
referenceTimeDifferenceToCell    CellIndividualOffset          DEFAULT 0,
primaryCCPCH-Info               ReferenceTimeDifferenceToCell  OPTIONAL,
primaryCCPCH-TX-Power           PrimaryCCPCH-Info-LCR-r4,
timeslotInfoList                PrimaryCCPCH-TX-Power          OPTIONAL,
readSFN-Indicator               TimeslotInfoList-LCR-r4      OPTIONAL,
cellSelectionReselectionInfo    BOOLEAN,
                                CellSelectReselectInfoSIB-11-12-RSCP  OPTIONAL
}

CellInfoSI-ECN0 ::=
cellIndividualOffset             SEQUENCE {
referenceTimeDifferenceToCell    CellIndividualOffset          DEFAULT 0,
modeSpecificInfo                ReferenceTimeDifferenceToCell  OPTIONAL,
    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             SEQUENCE {
referenceTimeDifferenceToCell    CellIndividualOffset          DEFAULT 0,

```

```

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                   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-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                   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 ::=
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,
modeSpecificInfo         CHOICE {
    fdd                   SEQUENCE {
        primaryCPICH-Info PrimaryCPICH-Info,
        cpich-Ec-N0       CPICH-Ec-N0              OPTIONAL,
        cpich-RSCP        CPICH-RSCP                OPTIONAL,
        pathloss          Pathloss                    OPTIONAL
    },
}

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    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 {
    sfn-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,

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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-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,
  hcs-NeighbouringCellInformation-ECN0 HCS-NeighbouringCellInformation-ECN0
  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
}

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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 {
    countC-SFN-High INTEGER(0..15), -- Actual value = IE value * 256
    off INTEGER(0..255)
}

-- It is not allowed to send value 50 in this version of the specification
CPICH-Ec-N0 ::= INTEGER (0..50)

CPICH-RSCP ::= INTEGER (0..91)

DeltaPRC ::= INTEGER (-127..127)

-- Actual value = 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 }

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 }

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,
}

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    reportingInterval          ReportingInterval
}

Eventle ::=
    triggeringCondition          TriggeringCondition2,
    thresholdUsedFrequency      ThresholdUsedFrequency
}

Event1f ::=
    triggeringCondition          TriggeringCondition1,
    thresholdUsedFrequency      ThresholdUsedFrequency
}

Event2a ::=
    dummy                        Threshold,
    -- IE "dummy" shall not be sent and shall be ignored if received.
    -- IE "dummy" should be removed in later versions of the message including this IE
    usedFreqW                    W,
    hysteresis                   HysteresisInterFreq,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus          OPTIONAL,
    nonUsedFreqParameterList    NonUsedFreqParameterList    OPTIONAL
}

Event2b ::=
    usedFreqThreshold           Threshold,
    usedFreqW                   W,
    hysteresis                   HysteresisInterFreq,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus          OPTIONAL,
    nonUsedFreqParameterList    NonUsedFreqParameterList    OPTIONAL
}

Event2c ::=
    hysteresis                   HysteresisInterFreq,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus          OPTIONAL,
    nonUsedFreqParameterList    NonUsedFreqParameterList    OPTIONAL
}

Event2d ::=
    usedFreqThreshold           Threshold,
    usedFreqW                   W,
    hysteresis                   HysteresisInterFreq,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus          OPTIONAL
}

Event2e ::=
    hysteresis                   HysteresisInterFreq,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus          OPTIONAL,
    nonUsedFreqParameterList    NonUsedFreqParameterList    OPTIONAL
}

Event2f ::=
    usedFreqThreshold           Threshold,
    usedFreqW                   W,
    hysteresis                   HysteresisInterFreq,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus          OPTIONAL
}

Event3a ::=
    thresholdOwnSystem           Threshold,
    w                            W,
    thresholdOtherSystem         Threshold,
    hysteresis                   Hysteresis,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus          OPTIONAL
}

Event3b ::=
    thresholdOtherSystem         Threshold,
    hysteresis                   Hysteresis,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus          OPTIONAL
}

```

```

}

Event3c ::=
    thresholdOtherSystem
    hysteresis
    timeToTrigger
    reportingCellStatus
SEQUENCE {
    Threshold,
    Hysteresis,
    TimeToTrigger,
    ReportingCellStatus
OPTIONAL
}

Event3d ::=
    hysteresis
    timeToTrigger
    reportingCellStatus
SEQUENCE {
    Hysteresis,
    TimeToTrigger,
    ReportingCellStatus
OPTIONAL
}

EventIDInterFreq ::=
ENUMERATED {
    e2a, e2b, e2c, e2d, e2e, e2f
}

EventIDInterRAT ::=
ENUMERATED {
    e3a, e3b, e3c, e3d
}

EventIDIntraFreq ::=
ENUMERATED {
    e1a, e1b, e1c, e1d, e1e,
    e1f, e1g, e1h, e1i
}

EventResults ::=
    intraFreqEventResults
    interFreqEventResults
    interRATEventResults
    trafficVolumeEventResults
    qualityEventResults
    ue-InternalEventResults
    ue-positioning-MeasurementEventResults
CHOICE {
    IntraFreqEventResults,
    InterFreqEventResults,
    InterRATEventResults,
    TrafficVolumeEventResults,
    QualityEventResults,
    UE-InternalEventResults,
    UE-Positioning-MeasurementEventResults
}

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

FACH-MeasurementOccasionInfo ::=
    fACH-meas-occasion-coeff
    inter-freq-FDD-meas-ind
    -- The following IE 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
    inter-RAT-meas-ind
SEQUENCE {
    INTEGER (1..12)
    OPTIONAL,
    BOOLEAN,
    BOOLEAN,
    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 = IE value * 0.0625
FineSFN-SFN ::=
INTEGER (0..15)

ForbiddenAffectCell ::=
    fdd
    tdd
CHOICE {
    PrimaryCPICH-Info,
    PrimaryCCPCH-Info
}

ForbiddenAffectCell-r4 ::=
    fdd
    tdd
CHOICE {
    PrimaryCPICH-Info,
    PrimaryCCPCH-Info-r4
}

ForbiddenAffectCell-LCR-r4 ::=
    tdd
SEQUENCE {
    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 INTEGER (46..158) 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 {
    penaltyTime PenaltyTime-RSCP
    -- TABULAR: The default value is "notUsed", temporary offset is nested inside PenaltyTime
}
HCS-CellReselectInformation-ECNO ::= SEQUENCE {
    penaltyTime PenaltyTime-ECNO
    -- TABULAR: The default value is "notUsed", temporary offset is nested inside PenaltyTime
}
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-CRMax          OPTIONAL
}

-- Actual value = IE value * 0.5
Hysteresis ::= INTEGER (0..15)

-- Actual value = IE value * 0.5
HysteresisInterFreq ::= INTEGER (0..29)

InterFreqCell ::= SEQUENCE {
    frequencyInfo      FrequencyInfo,
    nonFreqRelatedEventResults CellMeasurementEventResults
}

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 {
    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        InterFreqReportingCriteria,
    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             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,
        spare                          NULL
    }
}

InterRATCellID ::= INTEGER (0..maxCellMeas-1)

InterRATCellInfoList ::= SEQUENCE {
    removedInterRATCellList           RemovedInterRATCellList,
    newInterRATCellList               NewInterRATCellList,
    -- NOTE: Future revisions of dedicated message(s) including IE newInterRATCellList
    -- should use a corrected version of this IE
    cellsForInterRATMeasList          CellsForInterRATMeasList          OPTIONAL
}

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

```

```

-- NOTE: IE newInterRATCellList should be optional.
-- However, system information does not support message versions
-- Hence, this can not be corrected
}

InterRATCellInfoList-r4 ::= SEQUENCE {
  removedInterRATCellList      RemovedInterRATCellList,
  newInterRATCellList          NewInterRATCellList-r4 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)) OF
  InterRATMeasuredResults

InterRATMeasurement ::= SEQUENCE {
  interRATCellInfoList      InterRATCellInfoList      OPTIONAL,
  interRATMeasQuantity      InterRATMeasQuantity      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-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,
}

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    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
        }
    }
}

```

```

}

IntraFreqMeasQuantity-FDD ::=      ENUMERATED {
    cpich-Ec-N0,
    cpich-RSCP,
    pathloss,
    ultra-CarrierRSSI }
-- If used in InterRATMeasQuantity only cpich-Ec-N0 and cpich-RSCP is
-- allowed.
-- If used in InterFreqMeasQuantity ultra-CarrierRSSI is not allowed.
IntraFreqMeasQuantity-TDD ::=      ENUMERATED {
    primaryCCPCH-RSCP,
    pathloss,
    timeslotISCP,
    ultra-CarrierRSSI }
-- If used in InterFreqMeasQuantity ultra-CarrierRSSI is not allowed.
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-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          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
}

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
}

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
                }
            },
            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 {
    use-of-HCS CHOICE use-of-HCS shall have the same value as the use-of-HCS
}

```

```

| _____ -- in MeasurementControlSysInfo
| use-of-HCS CHOICE {
|   hcs-not-used SEQUENCE {
|     _____ -- The following CHOICE cellSelectQualityMeasure shall have the same value as the
|     cellSelectQualityMeasure in
|     _____ -- 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 {
|     _____ -- The following CHOICE cellSelectQualityMeasure shall have the same value as the
|     cellSelectQualityMeasure in
|     _____ -- 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,
    qualityMeasurement QualityMeasurement,
    ue-InternalMeasurement-r4 UE-InternalMeasurement-r4
}

MeasurementValidity ::= SEQUENCE {
    ue-State ENUMERATED {
        cell-DCH, all-But-Cell-DCH, all-States }
}

MonitoredCellRACH-List ::= SEQUENCE (SIZE (1..7)) OF
    MonitoredCellRACH-Result

MonitoredCellRACH-Result ::= SEQUENCE {
    sfn-SFN-ObsTimeDifference SFN-SFN-ObsTimeDifference OPTIONAL,

```

```

modeSpecificInfo
  fdd
    primaryCPICH-Info
    measurementQuantity
      cpich-Ec-NO
      cpich-RSCP
      pathloss
    }
  },
  tdd
    cellParametersID
    primaryCCPCH-RSCP
  }
}

MultipathIndicator ::=
  ENUMERATED {
    nm,
    low,
    medium,
    high }

N-CR-T-CRMaxHyst ::=
  n-CR
  t-CRMaxHyst
}

NavigationModelSatInfo ::=
  satID
  satelliteStatus
  ephemerisParameter
}

NavigationModelSatInfoList ::=
  SEQUENCE (SIZE (1..maxSat)) OF
  NavigationModelSatInfo

EphemerisParameter ::=
  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 ::=
  modeSpecificInfo
  fdd
    neighbourIdentity
    ue-RX-TX-TimeDifferenceType2Info
  },
  tdd
    neighbourAndChannelIdentity
  }
  CHOICE {
    SEQUENCE {
      PrimaryCPICH-Info,
      CHOICE {
        CPICH-Ec-NO,
        CPICH-RSCP,
        Pathloss
      }
    }
    SEQUENCE {
      CellParametersID,
      PrimaryCCPCH-RSCP
    }
  }
  OPTIONAL

  ENUMERATED {
    nm,
    low,
    medium,
    high }

  SEQUENCE {
    INTEGER (1..16)
    T-CRMaxHyst
  }
  DEFAULT 8,

  SEQUENCE {
    SatID,
    SatelliteStatus,
    EphemerisParameter
  }
  OPTIONAL

  SEQUENCE (SIZE (1..maxSat)) OF
  NavigationModelSatInfo

  SEQUENCE {
    BIT STRING (SIZE (2)),
    BIT STRING (SIZE (4)),
    BIT STRING (SIZE (6)),
    BIT STRING (SIZE (10)),
    BIT STRING (SIZE (1)),
    SubFrame1Reserved,
    BIT STRING (SIZE (8)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (8)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (22)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (32)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (32)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (32)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (1)),
    BIT STRING (SIZE (5)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (32)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (32)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (32)),
    BIT STRING (SIZE (16)),
    BIT STRING (SIZE (24)),
    BIT STRING (SIZE (14))
  }

  BIT STRING (SIZE (3))

  SEQUENCE {
    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

NeighbourList-v390ext ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
        Neighbour-v390ext
-- The order of the cells in IE NeighbourList-v390ext shall be the
-- same as the order in IE NeighbourList

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             NULL                OPTIONAL
        },
        is-2000              SEQUENCE {
            is-2000SpecificMeasInfo IS-2000SpecificMeasInfo
        },
        none                 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
        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                 NULL          OPTIONAL
  },
  is-2000                SEQUENCE {
    is-2000SpecificMeasInfo      IS-2000SpecificMeasInfo
  },
  none                   NULL,
  -- 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
  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-ECNO-LCR-r4 ::= SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfoSI-HCS-ECNO-LCR-r4
}

NewIntraFreqCellSI-List-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-RSCP

NewIntraFreqCellSI-List-ECNO ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-ECNO

NewIntraFreqCellSI-List-HCS-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-RSCP

NewIntraFreqCellSI-List-HCS-ECNO ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-ECNO

NewIntraFreqCellSI-List-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-RSCP-LCR-r4

NewIntraFreqCellSI-List-ECNO-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-ECNO-LCR-r4

NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-RSCP-LCR-r4

NewIntraFreqCellSI-List-HCS-ECNO-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-ECNO-LCR-r4

NonUsedFreqParameter ::= SEQUENCE {
    nonUsedFreqThreshold      Threshold,
    -- IE "nonUsedFreqThreshold" is not needed in case of event 2a
    -- In case of event 2a UTRAN should include value 0 within IE "nonUsedFreqThreshold"
    -- In case of event 2a, the UE shall be ignore IE "nonUsedFreqThreshold"
    -- In later versions of the message including this IE, a special version of
    -- IE "NonUsedFreqParameterList" may be defined for event 2a, namely a
    -- version not including IE "nonUsedFreqThreshold"
    nonUsedFreqW              W
}

NonUsedFreqParameterList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    NonUsedFreqParameter

ObservedTimeDifferenceToGSM ::= INTEGER (0..4095)

OTDOA-SearchWindowSize ::= ENUMERATED {
    c20, c40, c80, c160, c320,
    c640, c1280, moreThan1280 }

Pathloss ::= INTEGER (46..158)

PenaltyTime-RSCP ::= CHOICE {
    notUsed          NULL,
    pt10             TemporaryOffset1,
    pt20             TemporaryOffset1,
    pt30             TemporaryOffset1,
    pt40             TemporaryOffset1,
    pt50             TemporaryOffset1,
    pt60             TemporaryOffset1
}

PenaltyTime-ECNO ::= 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
}

PLMNIdentitiesOfNeighbourCells ::= 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,
    ellipsoidPointAltitudeEllipse EllipsoidPointAltitudeEllipsoide
}

PositioningMethod ::= ENUMERATED {
    otdoa,
    gps,
    otdoaOrGPS, cellID }

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

PrimaryCCPCH-RSCP ::= INTEGER (0..91)

Q-HCS ::= INTEGER (0..99)

Q-OffsetS-N ::= INTEGER (-50..50)

Q-QualMin ::= INTEGER (-24..0)

-- Actual value = (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
}

-- As defined in 23.032
ReferenceLocation ::=             SEQUENCE {
    ellipsoidPointAltitudeEllipsoide EllipsoidPointAltitudeEllipsoide
}

ReferenceSFN ::=                 INTEGER (0..4095)

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

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 = 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 {
                                        p10, p14, p18, p116, p132, p164, p1128,
                                        p1256, p1512, p11024, p12k, p14k,
                                        p18k, p116k, p132k, p164k, p1128k,
                                        p1256k, p1512k, p11024k }

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

```

```

SatData ::=
    satID
    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-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 ::=
    type1
    type2
}

SFN-SFN-ObsTimeDifference1 ::=
    INTEGER (0..9830399)

SFN-SFN-ObsTimeDifference2 ::=
    INTEGER (0..40961)

SFN-SFN-OTD-Type ::=
    ENUMERATED {
        noReport,
        type1,
        type2 }

SFN-SFN-RelTimeDifference1 ::=
    sfn-Offset
    sfn-sfn-Reltimedifference
}

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
}

SIR-TFCS ::=
    TFCS-IdentityPlain

SIR-TFCS-List ::=
    SEQUENCE (SIZE (1..maxCCTrCH)) OF
        SIR-TFCS

SIR-TimeslotList ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        SIR

-- Reserved bits in subframe 1 of the GPS navigation message
SubFrameReserved ::=
    reserved1
    reserved2
    reserved3
    SEQUENCE {
        BIT STRING (SIZE (23)),
        BIT STRING (SIZE (24)),
        BIT STRING (SIZE (24)),

```

```

    reserved4                                BIT STRING (SIZE (16))
}

T-ADVinfo ::=
    t-ADV                                     SEQUENCE {
        sfn                                   INTEGER(0..2047),
                                             INTEGER(0..4095)
    }

T-CRMax ::=
    notUsed                                  CHOICE {
        t30                                   NULL,
        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 ::=
    temporaryOffset1                          SEQUENCE {
    temporaryOffset2                          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 = IE value * 20.
TimeInterval ::=
    INTEGER (1..13)

TimeslotInfo ::=
    timeslotNumber                            SEQUENCE {
    burstType                                  TimeslotNumber,
                                             BurstType
    }

TimeslotInfo-LCR-r4 ::=
    timeslotNumber                            SEQUENCE {
    TimeslotNumber-LCR-r4
    }

TimeslotInfoList ::=
    SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotInfo

TimeslotInfoList-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxTS-LCR)) OF
    TimeslotInfo-LCR-r4

TimeslotInfoList-r4 ::=
    tdd384                                     CHOICE {
    tdd128                                     SEQUENCE (SIZE (1..maxTS)) OF
                                             TimeslotInfo,
                                             SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                             TimeslotInfo-LCR-r4
    }

```

```

}

TimeslotISCP ::=                               INTEGER (0..91)

| The following list 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                                     TimeslotNumber,
  timeslotISCP                                 TimeslotISCP
}

TimeToTrigger ::=                             ENUMERATED {
  ttt0, ttt10, ttt20, ttt40, ttt60,
  ttt80, ttt100, ttt120, ttt160,
  ttt200, ttt240, tt320, ttt640,
  ttt1280, ttt2560, ttt5000 }

TrafficVolumeEventParam ::=                   SEQUENCE {
  eventID                                     TrafficVolumeEventType,
  reportingThreshold                          TrafficVolumeThreshold,
  timeToTrigger                               TimeToTrigger                               OPTIONAL,
  pendingTimeAfterTrigger                     PendingTimeAfterTrigger                     OPTIONAL,
  tx-InterruptionAfterTrigger                 TX-InterruptionAfterTrigger                 OPTIONAL
}

TrafficVolumeEventResults ::=                 SEQUENCE {
  ul-transportChannelCausingEvent             UL-TrCH-Identity,
  trafficVolumeEventIdentity                  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                                        TrafficVolumeReportingCriteria                  OPTIONAL,
  -- Above IE is not used in this version of protocol
  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 {
    transChCriteriaList                TransChCriteriaList                OPTIONAL
--NOTE: IE "transChCriteriaList" should be mandatory in later versions of this message
}

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
}

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: For 3.84 Mcps TDD only the first two values are used.
-- for 1.28 Mcps TDD ue-RX-TX-TimeDifference corresponds to TADV 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

UE-RX-TX-TimeDifferenceType1 ::= INTEGER (768..1280)

-- Actual value = 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 TADV 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 ::=
    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 ::=
    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,
        acquisitionAssistanceRequest  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-NavigationModel ::= SEQUENCE {
    navigationModelSatInfoList  NavigationModelSatInfoList
}

UE-Positioning-GPS-NavModelAddDataReq ::= SEQUENCE {
    gps-Week                INTEGER (0..1023),
    gps-Toe                  INTEGER (0..167),
    tToeLimit                INTEGER (0..10),
    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 ::= 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
}

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
}

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 {
            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 {

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    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        INTEGER (0..30) 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,
  relativeAltitude    INTEGER (-4000..4000)  OPTIONAL,
  fineSFN-SFN         FineSFN-SFN,
  -- actual value = (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
    },

```

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        tdd
            cellAndChannelIdentity
        }
    },
    frequencyInfo
    positioningMode CHOICE {
        ueBased
            ueAssisted
        },
    ue-positioning-IPDL-Parameters
}

UE-Positioning-OTDOA-ReferenceCellInfo-r4 ::= SEQUENCE {
    sfn
        OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd
            primaryCPICH-Info
        },
        tdd
            cellAndChannelIdentity
    },
    frequencyInfo
    positioningMode CHOICE {
        ueBased
            cellPosition
                -- actual value roundTripTime = (IE value * 0.0625) + 876
                roundTripTime
            },
        ueAssisted
    },
    ue-positioning-IPDL-Parameters
}

UE-Positioning-OTDOA-ReferenceCellInfo-UEB ::= SEQUENCE {
    sfn
        OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd
            primaryCPICH-Info
        },
        tdd
            cellAndChannelIdentity
    },
    frequencyInfo
    cellPosition
        -- actual value = (IE value * 0.0625) + 876
    roundTripTime
    ue-positioning-IPDL-Parameters
}

UE-Positioning-PositionEstimateInfo ::= SEQUENCE {
    referenceTime
        CHOICE {
            utran-GPSReferenceTimeResult
            gps-ReferenceTimeOnly
            cell-Timing
                sfn
                modeSpecificInfo
                    CHOICE {
                        fdd
                            primaryCPICH-Info
                        },
                    tdd
                        cellAndChannelIdentity
                }
        }
    },
    positionEstimate
}

UE-Positioning-ReportCriteria ::= CHOICE {
    ue-positioning-ReportingCriteria
    periodicalReportingCriteria
    noReporting
}

UE-Positioning-ReportingQuantity ::= SEQUENCE {

```



```

    methodType                UE-Positioning-MethodType,
    positioningMethod          PositioningMethod,
    dummy1                     UE-Positioning-ResponseTime,
-- This IE is not used in this version of the specification and should be ignored.
-- IE "dummy1" should be removed in later versions of the message including this IE
    accuracy                   UE-Positioning-Accuracy                OPTIONAL,
    gps-TimingOfCellWanted     BOOLEAN,
    dummy2                     BOOLEAN,
-- This IE is not used in this version of the specification and should be ignored.
-- IE "dummy2" should be removed in later versions of the message including this IE
    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
}

UTRA-CarrierRSSI ::= INTEGER (0..76)

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 {
    utran-GPSTimingOfCell     INTEGER(0..2322431999999),
    modeSpecificInfo          CHOICE {
        fdd                    SEQUENCE {
            referenceIdentity   PrimaryCPICH-Info
        },
        tdd                    SEQUENCE {
            referenceIdentity   CellParametersID
        }
    } OPTIONAL,
    sfn                       INTEGER (0..4095)
}

UTRAN-GPSReferenceTimeResult ::= SEQUENCE {
    ue-GPSTimingOfCell        INTEGER(0..37158911999999),
    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
}

-- Actual value = IE value * 0.1
W ::= INTEGER (0..20)

-- *****
--
-- OTHER INFORMATION ELEMENTS (10.3.8)

```

```

--
-- *****
BCC ::=
    INTEGER (0..7)

BCCH-ModificationInfo ::=
    SEQUENCE {
        mib-ValueTag
        bcch-ModificationTime
    }
    OPTIONAL

-- Actual value = IE value * 8
BCCH-ModificationTime ::=
    INTEGER (0..511)

BSIC ::=
    SEQUENCE {
        ncc
        bcc
    }

CBS-DRX-Level1Information ::=
    SEQUENCE {
        ctch-AllocationPeriod
        cbs-FrameOffset
    }

CDMA2000-Message ::=
    SEQUENCE {
        msg-Type
        payload
    }

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
        cdma-Freq
    }
    BIT STRING (SIZE (5)),
    BIT STRING (SIZE(11))

GSM-BA-Range ::=
    SEQUENCE {
        gsmLowRangeUARFCN
        gsmUpRangeUARFCN
    }
    UARFCN,
    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
        receivedMessageType
    }
    RRC-TransactionIdentifier,
    ReceivedMessageType

InterRAT-ChangeFailureCause ::=
    CHOICE {

```

```

configurationUnacceptable          NULL,
physicalChannelFailure             NULL,
protocolError                     ProtocolErrorInformation,
unspecified                       NULL,
spare1                            NULL,
spare2                            NULL,
spare3                            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,
  spare1                            NULL,
  spare2                            NULL,
  spare3                            NULL,
  spare4                            NULL
}

MasterInformationBlock ::= SEQUENCE {
  mib-ValueTag                      MIB-ValueTag,
  plmn-Type                          PLMN-Type,
  -- TABULAR: The PLMN identity and ANSI-41 core network information
  -- are included in PLMN-Type.
  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,
        spare1, spare2, spare3, spare4,
        spare5
    }
}

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 = 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
}

SIBSb-TypeAndTag ::=
  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,
  sysInfoTypeSB1      CellValueTag,
  sysInfoTypeSB2      CellValueTag,
  sysInfoType15-1     CellValueTag,
  sysInfoType15-2     SIBOccurrenceIdentityAndValueTag,
  sysInfoType15-3     SIBOccurrenceIdentityAndValueTag,
  sysInfoType15-4     CellValueTag,
  sysInfoType18       CellValueTag,
  sysInfoType15-5     CellValueTag
}

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
    nonCriticalExtensions          SEQUENCE {}                      OPTIONAL
  }

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
  v4xnonCriticalExtensions ---SEQUENCE {
    sysInfoType3-r3-r4-v4xyext SysInfoType3-r3-r4-v4xyext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  }
}

SysInfoType3-r3-r4-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
  v4xnonCriticalExtensions ---SEQUENCE {
    sysInfoType4-r3-r4-v4xyext SysInfoType4-r3-r4-v4xyext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  }
}

SysInfoType4-r3-r4-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 CBS-DRX-Level1Information OPTIONAL,
  -- Conditional on any of the CTCH indicator IEs in
  -- sCCPCH-SystemInformationList
-- Extension mechanism for non- release99 information
  v4xnonCriticalExtensions ---SEQUENCE {
    sysInfoType5-r3-r4-v4xyext SysInfoType5-r3-r4-v4xyext-IEs,
  -- Extension mechanism for non- rel-4 information
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  }
}

SysInfoType5-r3-r4-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-LCR-r4 PUSCH-SysInfoList-SFN-LCR-r4 OPTIONAL,
    pdsch-SysInfoList-SFN-LCR-r4 PDSCH-SysInfoList-SFN-LCR-r4 OPTIONAL,
    pCCPCH-LCR-Extensions PrimaryCCPCH-Info-LCR-r4-ext OPTIONAL,
    sCCPCH-LCR-ExtensionsList SCCPCH-SystemInformationList-LCR-r4-ext
  }
}

```

```

SysInfoType6 ::= SEQUENCE {
  -- Physical channel IEs
  pich-PowerOffset          PICH-PowerOffset,
  modeSpecificInfo          CHOICE {
    fdd                      SEQUENCE {
      aich-PowerOffset      AICH-PowerOffset,
      dummy                 CSICH-PowerOffset          OPTIONAL
    },
    tdd                      SEQUENCE {
      -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEpusch-
      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-r3-r4-v4xyext SysInfoType6-r3-r4-v4xyext-IEs,
    -- Extension mechanism for non- rel-4 information
    nonCriticalExtensions      SEQUENCE {}          OPTIONAL
  }
}

SysInfoType6-r3-r4-v4xyext-IEs ::= SEQUENCE {
  -- This IEOpenLoopPowerControl-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
  -- 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
  }
}

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 ::=
-- User equipment IEs
drac-SysInfoList              DRAC-SysInfoList,
-- Extension mechanism for non- release99 information
nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType11 ::=
sib12indicator                BOOLEAN,
-- Measurement IEs
fach-MeasurementOccasionInfo  FACH-MeasurementOccasionInfo          OPTIONAL,
measurementControlSysInfo     MeasurementControlSysInfo,
-- Extension mechanism for non- release99 information
v4xynonCriticalExtensions     SEQUENCE {
  sysInfoType11-r3-r4-v4xyext      SysInfoType11-r3-r4-v4xyext-IEs,
  nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}
}

SysInfoType11-r3-r4-v4xyext-IEs ::= SEQUENCE {
  fach-MeasurementOccasionInfo-LCR-Ext  FACH-MeasurementOccasionInfo-LCR-r4-ext  OPTIONAL,
  measurementControlSysInfo-LCR        MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType12 ::=
-- Measurement IEs
fach-MeasurementOccasionInfo  FACH-MeasurementOccasionInfo          OPTIONAL,
measurementControlSysInfo     MeasurementControlSysInfo,
-- Extension mechanism for non- release99 information
v4xynonCriticalExtensions     SEQUENCE {
  sysInfoType12-r3-r4-v4xyext      SysInfoType12-r3-r4-v4xyext-IEs,
  nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}
}

SysInfoType12-r3-r4-v4xyext-IEs ::= SEQUENCE {
  fach-MeasurementOccasionInfo-LCR-Ext  FACH-MeasurementOccasionInfo-LCR-r4-ext  OPTIONAL,
  measurementControlSysInfo-LCR        MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType13 ::=
-- Core network IEs
cn-DomainSysInfoList         CN-DomainSysInfoList,
-- User equipment IEs
ue-IdleTimersAndConstants    UE-IdleTimersAndConstants          OPTIONAL,
capabilityUpdateRequirement   CapabilityUpdateRequirement          OPTIONAL,
-- Extension mechanism for non- release99 information
v4xynonCriticalExtensions     SEQUENCE {
  sysInfoType13-r3-r4-v4xyext      SysInfoType13-r3-r4-v4xyext-IEs,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}
}

SysInfoType13-r3-r4-v4xyext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4Ext     CapabilityUpdateRequirement-r4-ext  OPTIONAL
}

SysInfoType13-1 ::=
-- ANSI-41 IEs
ansi-41-RAND-Information     ANSI-41-RAND-Information,
-- Extension mechanism for non- release99 information
nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType13-2 ::=
-- ANSI-41 IEs
ansi-41-UserZoneID-Information ANSI-41-UserZoneID-Information,
-- Extension mechanism for non- release99 information
nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType13-3 ::=
-- 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
        v4xnonCriticalExtensions             SEQUENCE {
                sysInfoType15-r3-r4-v4xyext  SysInfoType15-r3-r4-v4xyext-IEs,
-- Extension mechanism for non- release4 information
                nonCriticalExtensions          SEQUENCE {}          OPTIONAL
            }
        }
    }

SysInfoType15-r3-r4-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,

```

```

-- Extension mechanism for non- release99 information
v4xynonCriticalExtensions SEQUENCE {
  sysInfoType15-4-r4v4xyext SysInfoType15-4-r4v4xyext OPTIONAL,
  nonCriticalExtensions SEQUENCE {}
}
}

SysInfoType15-4-r4v4xyext ::= 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,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions SEQUENCE {} 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, the following IEspusch-SysInfoList and
  should be absent
  ----- -- 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-r3-r4-v4xyext SysInfoType17-r3-r4-v4xyext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  }
}

SysInfoType17-r3-r4-v4xyext-IEs ::= SEQUENCE {
  tddl28SpecificInfo 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
maxInterSysMessages        INTEGER ::= 4
maxLoCHperRLC              INTEGER ::= 2
maxMeasEvent               INTEGER ::= 8
maxMeasIntervals           INTEGER ::= 3
maxMeasParEvent            INTEGER ::= 2
maxNumCDMA2000Freqs        INTEGER ::= 8
maxNumGSMFreqRanges        INTEGER ::= 32
maxNumFDDFreqs             INTEGER ::= 8
maxNumTDDFreqs             INTEGER ::= 8
maxNoOfMeas                INTEGER ::= 16
maxOtherRAT                INTEGER ::= 15
maxPage1                   INTEGER ::= 8
maxPCPCH-APsig             INTEGER ::= 16
maxPCPCH-APsubCh           INTEGER ::= 12
maxPCPCH-CDsig             INTEGER ::= 16
maxPCPCH-CDsubCh           INTEGER ::= 12
maxPCPCH-SF                INTEGER ::= 7
maxPCPCHs                  INTEGER ::= 64
maxPDCPAlgoType            INTEGER ::= 8
maxPDSCH                   INTEGER ::= 8
maxPDSCH-TFCIgroups        INTEGER ::= 256
maxPRACH                   INTEGER ::= 16
maxPRACH-FPACH             INTEGER ::= 8
maxPredefConfig            INTEGER ::= 16
maxPUSCH                   INTEGER ::= 8
maxRABsetup                INTEGER ::= 16
maxRAT                     INTEGER ::= 16
maxRB                      INTEGER ::= 32
maxRBallRABs               INTEGER ::= 27
maxRBMuxOptions            INTEGER ::= 8
maxRBperRAB                INTEGER ::= 8
maxReportedGSMCells        INTEGER ::= 6
maxRL                       INTEGER ::= 8
maxRL-1                    INTEGER ::= 7
maxROHC-PacketSizes-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
maxTF-CI-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,
    U-RNTI,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    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 {
        interRATHandoverInfo-r3    InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
        -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
        -- includes non critical extensions
        v390NonCriticalExtensions  SEQUENCE {
            interRATHandoverInfoWithInterRATCapabilities-v390ext
            InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
            -- Reserved for future non critical extension
            nonCriticalExtensions   SEQUENCE {} OPTIONAL
        }
        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 (SIZE (0..255))
-- 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
}

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,
        -- Reserved for future non critical extension
        nonCriticalExtensions       SEQUENCE {} 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-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           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
}
}

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
}

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 this IE 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          OPTIONAL
        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: 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,
    measurementCommandWithType    MeasurementCommandWithType,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in the IE above.
    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    MeasurementCommandWithType-r4,
    TABULAR: The CHOICE Measurement in the tabular description is included
    in the IE above.
    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
```

CHANGE REQUEST

⌘ **25.331 CR 1223** ⌘ rev **r1** ⌘ Current version: **4.3.0** ⌘

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:	⌘ Acquisition of PLMN identity of neighbour cells via SIB 18		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI4	Date:	⌘ 22.02.2002
Category:	⌘ C	Release:	⌘ REL-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		REL-4 (Release 4)
			REL-5 (Release 5)

Reason for change:	⌘ The PLMN identities were included in SIB 18 as an association to the neighbour cell list in order to allow the UE to obtain knowledge about the PLMN the neighbour cell belongs to. If a UE acquires this information from the current serving cell it does not need to check the PLMN id during reselection on the target cell. So UEs using this information can prevent measurements on neighbour cells which belong to a PLMN that is not allowed for the UE. They can narrow the cell reselection list to cells which are allowed for the UE by using this information.
	When this feature was included to R'99 (R2-010670) it was requested to have it optional for the UE, because of the impact on UE implementations:
	R2-010458 Replaced CR 704 to 25.331 on Association of PLMN ID to neighbour cells (Nortel Networks)
	René Faurie (Nortel Networks) presented this CR.
	Discussion: This was a result of the Workshop on Idle Mode. It was argued that this was a relatively small change that would save terminal power in certain cases. <i>However, it was also argued that this change was not really needed for Release '99 to have a functioning system. In the end a compromise was reached to have a backward compatible way of handling the issue by having an extra SIB.</i>
	Decision: An update of the CR was needed. The update would be in R2-010576.
	Due to the fact that network sharing and usage of equivalent PLMNs become more and more an issue for network operators it is seen as appropriate to have support of acquisition of neighbour cells PLMN identity via SIB 18 as a mandatory UE requirement for Rel-4. A significant gain in cell reselection performance and also terminal power saving improvement is expected if a UE supports this feature.
Summary of change:	⌘ In chapter 8.1.1.6.18 the UE behaviour if SIB 18 is broadcast in a cell is changed. The "may" is changed to "shall" in order to specify the mandatory UE behaviour.
Consequences if not approved:	⌘ It is expected that the cell reselection performance is not as good as possible and terminal power consumption increased when a UE not supporting this feature is

used in a network which broadcast SIB 18 and uses forbidden PLMN lists intensively. This is expected especially in shared network scenarios.

Clauses affected:	⌘	8.1.1.6.18, 8.5.14a
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications
		<input type="checkbox"/> Test specifications
		<input type="checkbox"/> O&M Specifications
Other comments:	⌘	

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.1.1.6.18 System Information Block type 18

If the System Information Block type 18 is present, a UE **may-shall** obtain knowledge of the PLMN identity of the neighbour cells to be considered for cell reselection, and **may-shall** behave as specified in this subclause and in subclause 8.5.14a.

The UE should store all the relevant IEs included in this system information block.

A UE in idle mode shall act according to the following rules:

- any PLMN list of a given type (IEs "PLMNs of intra-frequency cells list", "PLMNs of inter-frequency cells list", "PLMNs of inter-RAT cell lists") included in the IE "Idle mode PLMN identities" is paired with the list of cells of the same type derived from System Information Block type 11;
- the PLMN identity located at a given rank in the PLMN list is that of the cell with the same ranking in the paired list of cells, the cells being considered in the increasing order of their associated identities ("Intra-frequency cell id", "Inter-frequency cell id", "Inter-RAT cell id");
- if the number of identities in a PLMN list exceeds the number of neighbour cells in the paired list (if any), the extra PLMN identities are considered as unnecessary and ignored;
- if the number of identities in a PLMN list (if any) is lower than the number of neighbour cells in the paired list, the missing PLMN identities are replaced by the last PLMN identity in the list if present, otherwise by the identity of the selected PLMN.

A UE in connected mode shall act in the same manner as a UE in idle mode with the following modifications:

- the PLMN lists to be considered are the ones included, when present, in the IE "Connected mode PLMN identities"; otherwise, the UE shall use, in place of any missing list, the corresponding one in the IE "Idle mode PLMN identities";
- the paired lists of cells are the ones derived from System Information Block type 11, and System Information Block type 12 if present.

8.5.14a Neighbour cells list narrowing for cell reselection

| A UE having performed the PLMN identification of the neighbour cells as specified in 8.1.1.6.18 ~~may~~shall narrow the cell list to be used for cell reselection ([4]) to those cells that do satisfy one of the following criteria:

- the PLMN identity of the neighbour cell is the identity of the selected PLMN;
- the PLMN identity of the neighbour cell is indicated by higher layers to be equivalent to the identity of the selected PLMN.

CHANGE REQUEST

⌘ **25.331 CR 1188** ⌘ rev **r2** ⌘ Current version: **4.3.0** ⌘

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:	⌘ Introduction of default radio configurations for UMTS_AMR2 with four speech modes		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI4		Date: ⌘ 18-02-2002
Category:	⌘ C		Release: ⌘ REL-4
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP <u>TR 21.900</u> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ During the RAN2 meeting #23 it was decided that the introduction of default radio configurations for UMTS_AMR2 with four speech modes should be done in REL4. See Tdoc R2-011896 for discussion paper. This revision includes the definition of the list of Transport Format Combination Subsets (new text is in "light blue"). The TF semi-static parameters of the DL TrCH used for AMR control are also defined (new text is in "yellow").
Summary of change:	⌘ The default configurations for AMR with four speech mode are introduced in section 13.7.
Consequences if not approved:	⌘ The UEs not implementing this CR will need to be reconfigured after Inter-RAT handover in order to support the AMR with 4 speech modes. This leads to unnecessary signalling after the inter-RAT handover.

Clauses affected:	⌘ 13.7
Other specs affected:	⌘ <input checked="" type="checkbox"/> Other core specifications ⌘ <input checked="" type="checkbox"/> Test specifications ⌘ <input type="checkbox"/> O&M Specifications ⌘
Other comments:	⌘

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- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

13.7 Parameter values for default radio configurations

The UE shall support the use of the default radio configurations that are specified in the following.

NOTE 1: These configurations are based on [41] and cover a number of RAB and signalling connection configurations.

In the table that is used to specify the parameter values for these default configurations, the following principles are used:

- Optional IEs that are not used are omitted;
- In case no parameter value is specified in a column, this means the value given the previous (left side) column applies.

NOTE 2: If needed, signalling radio bearer RB4 is established after the completion of handover.

NOTE 3: For each default configuration, the value of FDD, 3.84 Mcps TDD and 1.28 Mcps TDD parameters are specified. All parameters apply to FDD, 3.84 Mcps TDD and 1.28 Mcps TDD modes, unless explicitly stated otherwise. It should be noted that in this respect default configurations differ from pre-defined configurations, which only include parameter values for one mode.

NOTE 4: The transport format sizes, indicated in the following table, concern the RLC PDU size, since all configurations concern dedicated channels. The transport block sizes indicated in TS 34.108 are different since these include the size of the MAC header.

Configuration	3.4 kbps signalling	13.6 kbps signalling	7.95 kbps speech + 3.4 kbps signalling	12.2 kbps speech + 3.4 kbps signalling
Ref 34.108	2	3	6	4
Default configuration identity	0	1	2	3
RB INFORMATION				
rb-Identity	RB1: 1, RB2: 2, RB3: 3	RB1: 1, RB2: 2, RB3: 3	RB1: 1, RB2: 2, RB3: 3, RB5: 5, RB6: 6	RB1: 1, RB2: 2, RB3: 3, RB5: 5, RB6: 6, RB7: 7
rlc-InfoChoice	Rlc-info	Rlc-info	Rlc-info	Rlc-info
>ul-RLC-Mode	RB1: UM RB2- RB3: AM	RB1: UM RB2- RB3: AM	RB1: UM RB2- RB3: AM RB5- RB6: TM	RB1: UM RB2- RB3: AM RB5- RB7: TM
>>transmissionRLC-DiscardMode	RB1: N/A RB2- RB3: NoDiscard	RB1: N/A RB2- RB3: NoDiscard	RB1: N/A RB2- RB3: NoDiscard RB5- RB6: N/A	RB1: N/A RB2- RB3: NoDiscard RB5- RB7: N/A
>>>maxDat	RB1: N/A RB2- RB3: 15	RB1: N/A RB2- RB3: 15	RB1: N/A RB2- RB3: 15 RB5- RB6: N/A	RB1: N/A RB2- RB3: 15 RB5- RB7: N/A
>>transmissionWindowSize	RB1: N/A RB2- RB3: 128	RB1: N/A RB2- RB3: 128	RB1: N/A RB2- RB3: 128 RB5- RB6: N/A	RB1: N/A RB2- RB3: 128 RB5- RB7: N/A
>>timerRST	RB1: N/A RB2- RB3: 300	RB1: N/A RB2- RB3: 300	RB1: N/A RB2- RB3: 300 RB5- RB6: N/A	RB1: N/A RB2- RB3: 300 RB5- RB7: N/A
>>max-RST	RB1: N/A RB2- RB3: 1	RB1: N/A RB2- RB3: 1	RB1: N/A RB2- RB3: 1 RB5- RB6: N/A	RB1: N/A RB2- RB3: 1 RB5- RB7: N/A
>>pollingInfo	RB1: N/A RB2- RB3: as below	RB1: N/A RB2- RB3: as below	RB1: N/A RB2- RB3: as below RB5- RB6: N/A	RB1: N/A RB2- RB3: as below RB5- RB7: N/A
>>>lastTransmissionPDU-Poll	RB2- RB3: FALSE	RB2- RB3: FALSE	RB2- RB3: FALSE	RB2- RB3: FALSE
>>>lastRetransmissionPDU-Poll	RB2- RB3: FALSE	RB2- RB3: FALSE	RB2- RB3: FALSE	RB2- RB3: FALSE
>>>timerPollPeriodic	RB2- RB3: 100	RB2- RB3: 100	RB2- RB3: 100	RB2- RB3: 100
>>segmentationIndication	RB1- RB3: N/A	RB1- RB3: N/A	RB1- RB3: N/A RB5- RB6: FALSE	RB1- RB3: N/A RB5- RB7: FALSE
>dl-RLC-Mode	RB1: UM RB2- RB3: AM	RB1: UM RB2- RB3: AM	RB1: UM RB2- RB3: AM RB5- RB6: TM	RB1: UM RB2- RB3: AM RB5- RB7: TM
>>inSequenceDelivery	RB1: N/A RB2- RB3: TRUE	RB1: N/A RB2- RB3: TRUE	RB1: N/A RB2- RB3: TRUE RB5- RB6: N/A	RB1: N/A RB2- RB3: TRUE RB5- RB7: N/A
>>receivingWindowSize	RB1: N/A RB2- RB3: 128	RB1: N/A RB2- RB3: 128	RB1: N/A RB2- RB3: 128 RB5- RB6: N/A	RB1: N/A RB2- RB3: 128 RB5- RB7: N/A
>>dl-RLC-StatusInfo	RB1: N/A RB2- RB3: as below	RB1: N/A RB2- RB3: as below	RB1: N/A RB2- RB3: as below RB5- RB6: N/A	RB1: N/A RB2- RB3: as below RB5- RB7: N/A
>>>timerStatusProhibit	RB2- RB3: 100	RB2- RB3: 100	RB2- RB3: 100	RB2- RB3: 100
>>>missingPDU-Indicator	RB2- RB3: FALSE	RB2- RB3: FALSE	RB2- RB3: FALSE	RB2- RB3: FALSE
>>>timerStatusPeriodic	RB2- RB3: 100	RB2- RB3: 100	RB2- RB3: 100	RB2- RB3: 100
>>segmentationIndication	RB1- RB3: N/A	RB1- RB3: N/A	RB1- RB3: N/A RB5- RB6: FALSE	RB1- RB3: N/A RB5- RB7: FALSE
rb-MappingInfo				
>UL-LogicalChannelMappings	OneLogicalChannel	OneLogicalChannel	OneLogicalChannel	OneLogicalChannel
>>ul-TransportChannelType	Dch	Dch	Dch	Dch
>>>transportChannelIdentity	RB1- RB3: 1	RB1- RB3: 1	RB1- RB3: 3 RB5: 1, RB6: 2	RB1- RB3: 4 RB5: 1, RB6: 2, RB7: 3

>>logicalChannelIdentity	RB1: 1, RB2: 2, RB3: 3	RB1: 1, RB2: 2, RB3: 3	RB1: 1, RB2: 2, RB3: 3 RB5- RB6: N/A	RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A
>>rlc-SizeList	RB1- RB3: all	RB1- RB3: all	RB1- RB3: all RB5- RB6: N/A	RB1- RB3: all RB5- RB7: N/A
>>mac-LogicalChannelPriority	RB1: 1, RB2: 2, RB3: 3	RB1: 1, RB2: 2, RB3: 3	RB1: 1, RB2: 2, RB3: 3 RB5- RB6: 5	RB1: 1, RB2: 2, RB3: 3 RB5- RB7: 5
>DL-logicalChannelMappingList				
>>Mapping option 1	One mapping option	One mapping option	One mapping option	One mapping option
>>>dl-TransportChannelType	Dch	Dch	Dch	Dch
>>>>transportChannelIdentity	RB1- RB3: 1	RB1- RB3: 1	RB1- RB3: 3 RB5: 1, RB6: 2	RB1- RB3: 4 RB5: 1, RB6: 2, RB7: 3
>>>>logicalChannelIdentity	RB1: 1, RB2: 2, RB3: 3	RB1: 1, RB2: 2, RB3: 3	RB1: 1, RB2: 2, RB3: 3 RB5- RB6: N/A	RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A
TrCH INFORMATION PER TrCH				
UL-AddReconfTransChInfoList				
>Uplink transport channel type	dch	dch	dch	dch
>transportChannelIdentity	TrCH1: 1	TrCH1: 1	TrCH1: 1, TrCH2: 2, TrCH3: 3	TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4
>transportFormatSet	DedicatedTransChTFS	DedicatedTransChTFS	DedicatedTransChTFS	DedicatedTransChTFS
>>dynamicTF-information				
>>>>tf0/ tf0,1	TrCH1: (0x144, 1x144)	TrCH1: (0x144, 1x144)	TrCH1: (0x75) TrCH2: (0x 84 1x84) TrCH3: (0x144, 1x144)	TrCH1: (0x81) TrCH2: (0x 103, 1x103) TrCH3: (0x 60, 1x60) TrCH4: (0x144, 1x144)
>>>>>rlcSize	BitMode	BitMode	BitMode	BitMode
>>>>>>sizeType	TrCH1: type 2, part1= 2, part2= 0 (144)	TrCH1: type 2, part1= 2, part2= 0 (144)	TrCH1: type 1: 75 TrCH2: type 1: 84 TrCH3: 2: type 2, part1= 2, part2= 0 (144)	TrCH1: type 1: 81 TrCH2: type 1: 103 TrCH3: type 1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)
>>>>>>numberOfTbSizeList	TrCH1: Zero, one	TrCH1: Zero, one	TrCH1: Zero TrCH2-3: Zero, one	TrCH1: Zero TrCH2-4: Zero, one
>>>>>logicalChannelList	All	All	All	All
>>>>tf 1	N/A	N/A	TrCH1: (1x39) TrCH2- TrCH4: N/A	TrCH1: (1x39) TrCH2- TrCH4: N/A
>>>>>numberOfTransportBlocks			TrCH1: One	TrCH1: One
>>>>>rlc-Size			TrCH1: BitMode	TrCH1: BitMode
>>>>>>sizeType			TrCH1: 1: 39	TrCH1: 1: 39
>>>>>>numberOfTbSizeList			TrCH1: One	TrCH1: One
>>>>>>logicalChannelList			TrCH1: all	TrCH1: all
>>>>tf 2	N/A	N/A	TrCH1: (1x75) TrCH2- TrCH3: N/A	TrCH1: (1x81) TrCH2- TrCH4: N/A
>>>>>numberOfTransportBlocks			TrCH1: Zero	TrCH1: Zero
>>>>>rlc-Size			TrCH1: BitMode	TrCH1: BitMode
>>>>>>sizeType			TrCH1: type 1: 75	TrCH1: type 1: 81
>>>>>>numberOfTbSizeList			TrCH1: One	TrCH1: One
>>>>>>logicalChannelList			TrCH1: all	TrCH1: all
>>semistaticTF-Information				

>>>tti	TrCH1: 40	TrCH1: 10	TrCH1- TrCH2: 20 TrCH3: 40	TrCH1- TrCH3: 20 TrCH4: 40
>>>channelCodingType	Convolutional	Convolutional	Convolutional	Convolutional
>>>>codingRate	TrCH1: Third	TrCH1: Third	TrCH1- TrCH2: Third TrCH3: Third	TrCH1- TrCH2: Third TrCH3: Half TrCH4: Third
>>>>rateMatchingAttribute	TrCH1: 160	TrCH1: 160	TrCH1: 200 TrCH2: 190 TrCH3: 160	TrCH1: 200 TrCH2: 190 TrCH3: 235 TrCH4: 160
>>>>crc-Size	TrCH1: 16	TrCH1: 16	TrCH1: 12 TrCH2: 0 TrCH3: 16	TrCH1: 12 TrCH2- TrCH3: 0 TrCH4: 16
DL-AddReconfTransChInfoList				
>Downlink transport channel type	dch	dch	dch	dch
>dl-TransportChannelIdentity (should be as for UL)	TrCH1: 1	TrCH1: 1	TrCH1: 1, TrCH2: 2, TrCH3: 3	TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4
>tfs-SignallingMode	SameAsUL	SameAsUL	Independent <Only tf0 on TrCH1 is different and shown below>	Independent <Only tf0 on TrCH1 is different and shown below>
>>transportFormatSet			DedicatedTransChTFS	DedicatedTransChTFS
>>>>dynamicTF-information				
>>>>>tf0/ tf0,1			TrCH1: (1x0)	TrCH1: (1x0)
>>>>>rlcSize			BitMode	bitMode
>>>>>>sizeType			TrCH1: type 1: 0	TrCH1: type 1: 0
>>>>>>numberOfTbSizeList			TrCH1: One	TrCH1: One
>>>>>>logicalChannelList			All	All
>>ULTrCH-Id	TrCH1: 1	TrCH1: 1	TrCH1: 1, TrCH2: 2, TrCH3: 3	TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4
>dch-QualityTarget				
>>bler-QualityValue	TrCH1: 5×10^{-2}	TrCH1: 5×10^{-2}	TrCH1: 7×10^{-3} TrCH2- TrCH3: Absent	TrCH1: 7×10^{-3} TrCH2- TrCH4: Absent
TrCH INFORMATION, COMMON				
ul-CommonTransChInfo				
>tfc-ID (TDD only)	1	1	1	1
>sharedChannelIndicator (TDD only)	FALSE	FALSE	FALSE	FALSE
>tfc-Subset	Absent, not required	Absent, not required	Absent, not required	Absent, not required
>ul-TFCS	Normal TFCI signalling	Normal TFCI signalling	Normal TFCI signalling	Normal TFCI signalling
>>explicitTFCS-ConfigurationMode	Complete	Complete	Complete	Complete
>>>>ctfcSize	Ctfc2Bit	Ctfc2Bit	Ctfc4Bit	Ctfc6Bit
>>>>>TFCS representation	Addition	Addition	Addition	Addition
>>>>>>TFCS list				
>>>>>>>TFCS 1	(TF0)	(TF0)	(TF0, TF0, TF0)	(TF0, TF0, TF0, TF0)
>>>>>>>>ctfc	0	0	0	0
>>>>>>>>>gainFactorInformation	Computed	Computed	Computed	Computed
>>>>>>>>>>referenceTFCId	0	0	0	0
>>>>>>>>>>>TFCS 2	(TF1)	(TF1)	(TF1, TF0, TF0)	(TF1, TF0, TF0, TF0)
>>>>>>>>>>>ctfc	1	1	1	1
>>>>>>>>>>>>gainFactorInformation	Signalled	Signalled	Computed	Computed
>>>>>>>>>>>>>>βc (FDD only)	11	11	N/A	N/A

>>>>>>> β d	15	15	N/A	N/A
>>>>>>>referenceTFCId	N/A	N/A	0	0
>>>>>>>TFCS 3			(TF2, TF1, TF0)	(TF2, TF1, TF1, TF0)
>>>>>>>ctfc			5	11
>>>>>>>gainFactorInformation			Computed	Computed
>>>>>>>referenceTFCId			0	0
>>>>>>>TFCS 4			(TF0, TF0, TF1)	(TF0, TF0, TF0, TF1)
>>>>>>>ctfc			6	12
>>>>>>>gainFactorInformation			Computed	Computed
>>>>>>> β c (FDD only)			N/A	N/A
>>>>>>> β d			N/A	N/A
>>>>>>>referenceTFCId			0	0
>>>>>>>TFCS 5			(TF1, TF0, TF1)	(TF1, TF0, TF0, TF1)
>>>>>>>ctfc			7	13
>>>>>>>gainFactorInformation			Computed	Computed
>>>>>>>referenceTFCId			0	0
>>>>>>>TFCS 6			(TF2, TF1, TF1)	(TF2, TF1, TF1, TF1)
>>>>>>>ctfc			11	23
>>>>>>>gainFactorInformation			Signalled	Signalled
>>>>>>> β c (FDD only)			11	11
>>>>>>> β d			15	15
>>>>>>>referenceTFCId			0	0
>dl-CommonTransChInfo				
>tfcs-SignallingMode	Same as UL	Same as UL	Same as UL	Same as UL
PhyCH INFORMATION FDD				
UL-DPCH-InfoPredef				
>ul-DPCH-PowerControlInfo				
>>powerControlAlgorithm	Algorithm 1	Algorithm 1	Algorithm 1	Algorithm 1
>>>tpcStepSize	1	1	1	1
>tfci-Existence	TRUE	TRUE	TRUE	TRUE
>puncturingLimit	1	1	1	0.88
DL-CommonInformationPredef				
>dl-DPCH-InfoCommon				
>>spreadingFactor	256	128	128	128
>>pilotBits	4	4	4	4
>>positionFixed	N/A	N/A	Fixed	Fixed
PhyCH INFORMATION 3.84 Mcps TDD				
UL-DPCH-InfoPredef				
>ul-DPCH-PowerControlInfo				
>>dpch-ConstantValue	-20	-20	-20	-20
>commonTimeslotInfo				
>>secondInterleavingMode	frameRelated	frameRelated	frameRelated	frameRelated
>>>tfci-Coding	4	4	16	16
>>puncturingLimit	1	0.92	0.52	0.88
>>repetitionPeriodAndLength	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1
DL-CommonInformationPredef				
>dl-DPCH-InfoCommon				
>>commonTimeslotInfo				

>>>secondInterleavingMode	frameRelated	frameRelated	frameRelated	frameRelated
>>>tfci-Coding	4	4	16	16
>>>puncturingLimit	1	0.92	0.52	0.92
>>>repetitionPeriodAndLength	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1
PhyCH INFORMATION 1.28 Mcps TDD				
UL-DPCH-InfoPredef				
>commonTimeslotInfo				
>>secondInterleavingMode	frameRelated	frameRelated	frameRelated	frameRelated
>>tfci-Coding	4	4	16	16
>>puncturingLimit	1	0.64	0.80	0.60
>>repetitionPeriodAndLength	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1
DL- CommonInformationPredef				
>dl-DPCH-InfoCommon				
>>commonTimeslotInfo				
>>>secondInterleavingMode	frameRelated	frameRelated	frameRelated	frameRelated
>>>tfci-Coding	4	4	16	16
>>>puncturingLimit	1	0.64	0.80	0.60
>>>repetitionPeriodAndLength	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1

Configuration	10.2/6.7/5.9/4.75 kbps speech + 3.4 kbps signalling	7.4/6.7/5.9/4.75 kbps speech + 3.4 kbps signalling
Ref 34.108	N/A	N/A
Default configuration identity	8	9
RB INFORMATION		
rb-Identity	RB1: 1, RB2: 2, RB3: 3, RB5: 5, RB6: 6, RB7: 7	RB1: 1, RB2: 2, RB3: 3, RB5: 5, RB6: 6
rlc-InfoChoice	Rlc-info	Rlc-info
>ul-RLC-Mode	RB1: UM RB2- RB3: AM RB5-RB7: TM	RB1: UM RB2- RB3: AM RB5-RB6: TM
>>transmissionRLC-DiscardMode	RB1: N/A RB2- RB3: NoDiscard RB5- RB7: N/A	RB1: N/A RB2- RB3: NoDiscard RB5- RB6: N/A
>>>maxDat	RB1: N/A RB2- RB3: 15 RB5- RB7: N/A	RB1: N/A RB2- RB3: 15 RB5- RB6: N/A
>>transmissionWindowSize	RB1: N/A RB2- RB3: 128 RB5- RB7: N/A	RB1: N/A RB2- RB3: 128 RB5- RB6: N/A
>>timerRST	RB1: N/A RB2- RB3: 300 RB5- RB7: N/A	RB1: N/A RB2- RB3: 300 RB5- RB6: N/A
>>max-RST	RB1: N/A RB2- RB3: 1 RB5- RB7: N/A	RB1: N/A RB2- RB3: 1 RB5- RB6: N/A
>>pollingInfo	RB1: N/A RB2- RB3: as below RB5- RB7: N/A	RB1: N/A RB2- RB3: as below RB5- RB6: N/A
>>>lastTransmissionPDU-Poll	RB2- RB3: FALSE	RB2- RB3: FALSE
>>>lastRetransmissionPDU-Poll	RB2- RB3: FALSE	RB2- RB3: FALSE
>>>timerPollPeriodic	RB2- RB3: 100	RB2- RB3: 100
>>segmentationIndication	RB1- RB3: N/A RB5- RB7: FALSE	RB1- RB3: N/A RB5- RB6: FALSE
>dl-RLC-Mode	RB1: UM RB2- RB3: AM RB5- RB7: TM RB8: TM	RB1: UM RB2- RB3: AM RB5- RB6: TM RB7: TM
>>inSequenceDelivery	RB1: N/A RB2- RB3: TRUE RB5- RB8: N/A	RB1: N/A RB2- RB3: TRUE RB5- RB7: N/A
>>receivingWindowSize	RB1: N/A RB2- RB3: 128 RB5- RB8: N/A	RB1: N/A RB2- RB3: 128 RB5- RB7: N/A
>>dl-RLC-StatusInfo	RB1: N/A RB2- RB3: as below RB5- RB7: N/A	RB1: N/A RB2- RB3: as below RB5- RB6: N/A
>>>timerStatusProhibit	RB2- RB3: 100	RB2- RB3: 100
>>>missingPDU-Indicator	RB2- RB3: FALSE	RB2- RB3: FALSE
>>>timerStatusPeriodic	RB2- RB3: 100	RB2- RB3: 100
>>segmentationIndication	RB1- RB3: N/A RB5- RB7: FALSE	RB1- RB3: N/A RB5- RB6: FALSE
rb-MappingInfo		
>UL-LogicalChannelMappings	OneLogicalChannel	OneLogicalChannel
>>ul-TransportChannelType	Dch	Dch
>>>transportChannelIdentity	RB1- RB3: 4 RB5: 1, RB6: 2, RB7: 3,	RB1- RB3: 3 RB5: 1, RB6: 2

>>logicalChannelIdentity	RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A	RB1: 1, RB2: 2, RB3: 3 RB5- RB6: N/A
>>rlc-SizeList	RB1- RB3: configured RB5- RB7: N/A	RB1- RB3: configured RB5- RB6: N/A
>>mac-LogicalChannelPriority	RB1: 1, RB2: 2, RB3: 3 RB5- RB7: 5	RB1: 1, RB2: 2, RB3: 3 RB5- RB6: 5
>DL-logicalChannelMappingList		
>>Mapping option 1	One mapping option	One mapping option
>>>dl-TransportChannelType	Dch	Dch
>>>>transportChannelIdentity	RB1- RB3: 4 RB5: 1, RB6: 2, RB7: 3, RB8: 5	RB1- RB3: 3 RB5: 1, RB6: 2, RB7:4
>>>logicalChannelIdentity	RB1: 1, RB2: 2, RB3: 3 RB5- RB8: N/A	RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A
TrCH INFORMATION PER TrCH		
UL-AddReconfTransChInfoList		
>Uplink transport channel type	dch	dch
>transportChannelIdentity	TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4	TrCH1: 1, TrCH2: 2, TrCH3: 3
>transportFormatSet	DedicatedTransChTFS	DedicatedTransChTFS
>>dynamicTF-information		
>>>tf0/ tf0,1	TrCH1: (0x65) TrCH2: (0x 99) TrCH3: (0x 40, 1x40) TrCH4: (0x144, 1x144)	TrCH1: (0x61) TrCH2: (0x 87) TrCH3: (0x 144, 1x144)
>>>>rlcSize	BitMode	BitMode
>>>>>sizeType	TrCH1: type 1: 65 TrCH2: type 1: 99 TrCH3: type 1: 40 TrCH4: 2: type 2, part1= 2, part2= 0 (144)	TrCH1: type 1: 61 TrCH2: type 1: 87 TrCH3: 2: type 2, part1= 2, part2= 0 (144)
>>>>numberOfTbSizeList	TrCH1-2: Zero TrCH3-4: Zero, one	TrCH1-2: Zero TrCH3: Zero, one
>>>>logicalChannelList	All	All
>>>tf 1	TrCH1: (1x39) TrCH2: (1x 53) TrCH3- TrCH4: N/A	TrCH1: (1x39) TrCH2: (1x53) TrCH3: N/A
>>>>numberOfTransportBlocks	TrCH1: One TrCH2: One	TrCH1: One TrCH2: One
>>>>rlc-Size	TrCH1-2: BitMode	TrCH1-2: BitMode
>>>>>sizeType	TrCH1: 1: 39 TrCH2: 1: 53	TrCH1: 1: 39 TrCH1: 1: 53
>>>>numberOfTbSizeList	TrCH1-2: One	TrCH1-2: One
>>>>logicalChannelList	TrCH1: all	TrCH1: all
>>>tf 2	TrCH1: (1x42) TrCH2: (1x63) TrCH3- TrCH4: N/A	TrCH1: (1x42) TrCH2: (1x63) TrCH3: N/A
>>>>numberOfTransportBlocks	TrCH1: One TrCh2: One	TrCH1: One TrCh2: One
>>>>rlc-Size	TrCH1: BitMode	TrCH1: BitMode
>>>>>sizeType	TrCH1: type 1: 42 TrCH2: type 1: 63	TrCH1: type 1: 42 TrCH2: type 1: 63

>>>>numberOfTbSizeList	TrCH1: One TrCH2: One	TrCH1: One TrCH2: One
>>>>logicalChannelList	TrCH1: all TrCH2: all	TrCH1: all TrCH2: all
>>>tf 3	TrCH1: (1x55) TrCH2: (1x76 5) TrCH3- TrCH4: N/A	TrCH1: (1x55) TrCH2: (1x76) TrCH3: N/A
>>>>numberOfTransportBlocks	TrCH1: One TrCh2: One	TrCH1: One TrCh2: One
>>>>rlc-Size	TrCH1: BitMode	TrCH1: BitMode
>>>>>size Type	TrCH1: type 1: 55 TrCH2: type 1: 76 5	TrCH1: type 1: 55 TrCH2: type 1: 76
>>>>numberOfTbSizeList	TrCH1: One TrCH2: One	TrCH1: One TrCH2: One
>>>>logicalChannelList	TrCH1: all TrCH2: all	TrCH1: all TrCH2: all
>>>tf 4	TrCH1: (1x58) TrCH2: (1x99) TrCH3- TrCH4: N/A	TrCH1: (1x58) TrCH2: (1x87) TrCH3: N/A
>>>>numberOfTransportBlocks	TrCH1: One TrCh2: One	TrCH1: One TrCh2: One
>>>>rlc-Size	TrCH1: BitMode	TrCH1: BitMode
>>>>>size Type	TrCH1: type 1: 58 TrCH2: type 1: 99	TrCH1: type 1: 58 TrCH2: type 1: 87
>>>>numberOfTbSizeList	TrCH1: One TrCH2: One	TrCH1: One TrCH2: One
>>>>logicalChannelList	TrCH1: all TrCH2: all	TrCH1: all TrCH2: all
>>>tf 5	TrCH1: (1x65) TrCH2- TrCH4: N/A	TrCH1: (1x61) TrCH2- TrCH4: N/A
>>>>numberOfTransportBlocks	TrCH1: One	TrCH1: One
>>>>rlc-Size	TrCH1: BitMode	TrCH1: BitMode
>>>>>size Type	TrCH1: type 1: 42	TrCH1: type 1: 42
>>>>numberOfTbSizeList	TrCH1: One	TrCH1: One
>>>>logicalChannelList	TrCH1: all	TrCH1: all
>>semistaticTF-Information		
>>>tti	TrCH1- TrCH3: 20 TrCH4: 40	TrCH1- TrCH2: 20 TrCH3: 40
>>>channelCodingType	Convolutional	Convolutional
>>>>codingRate	TrCH1- TrCH2: Third TrCH3: Half TrCH4: Third	TrCH1- TrCH2: Third TrCH3: Third
>>>>rateMatchingAttribute	TrCH1: 200 TrCH2: 190 TrCH3: 235 TrCH4: 160	TrCH1: 200 TrCH2: 190 TrCH3: 160
>>>>crc-Size	TrCH1: 12 TrCH2- TrCH3: 0 TrCH4: 16	TrCH1: 12 TrCH2: 0 TrCH3: 16
DL-AddReconfTransChInfoList		
>Downlink transport channel type	dch	dch
>dl-TransportChannelIdentity		
>tfs-SignallingMode	Independent <Only tf0 on TrCH1 and tf0/1 on TrCH5 are different and shown below>	Independent <Only tf0 on TrCH1 and tf0/1 on TrCH4 are different and shown below>
>>transportFormatSet		
>>>dynamicTF-information		
>>>>tf0/ tf0,1	TrCH1: (1x0) TrCH5: (0x7, 1x7)	TrCH1: (1x0) TrCH4: (0x7, 1x7)

>>>>rlcSize	BitMode	bitMode
>>>>>sizeType	TrCH1: type 1: 0 TrCH5: type 1: 7	TrCH1: type 1: 0 TrCH4: type 1: 7
>>>>numberOfTbSizeList	TrCH1: One TrCH5: Zero, one	TrCH1: One TrCH4: Zero, one
>>>>logicalChannellist	All	All
>>>>semistaticTF-Information	same as UL except for TrCH5	same as DL except for TrCH4
>>>>tti	TrCH5: 20	TrCH4: 20
>>>>channelCodingType	Convolutional	Convolutional
>>>>>codingRate	TrCH5: Third	TrCH4: Third
>>>>rateMatchingAttribute	TrCH5: 200	TrCH4: 200
>>>>crc-Size	TrCH5: 12	TrCH4: 12
>>ULTrCH-Id	TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4,	TrCH1: 1, TrCH2: 2, TrCH3: 3
>dch-QualityTarget		
>>bler-QualityValue	TrCH1: 7×10^{-3} TrCH2- TrCH5: Absent	TrCH1: 7×10^{-3} TrCH2- TrCH4: Absent
TrCH INFORMATION, COMMON		
ul-CommonTransChInfo		
>tfc-ID (TDD only)	1	1
>sharedChannellIndicator (TDD only)	FALSE	FALSE
> tfc-Subset	Absent, not required	Absent, not required
>ul-TFCS	Normal TFCI signalling	Normal TFCI signalling
>>explicitTFCS-ConfigurationMode	Complete	Complete
>>>ctfcSize	Ctfc6Bit	Ctfc6Bit
>>>>TFCS representation	Addition	Addition
>>>>>TFC list		
>>>>>>TFC 1	(TF0, TF0, TF0, TF0)	(TF0, TF0, TF0)
>>>>>>>ctfc	0	0
>>>>>>>gainFactorInformation	Computed	Computed
>>>>>>>referenceTFCId	0	0
>>>>>>>TFC 2	(TF1, TF0, TF0, TF0)	(TF1, TF0, TF0)
>>>>>>>ctfc	1	1
>>>>>>>gainFactorInformation	Computed	Computed
>>>>>>>> β_c (FDD only)	N/A	N/A
>>>>>>>> β_d	N/A	N/A
>>>>>>>>referenceTFCId	0	0
>>>>>>>>TFC 3	(TF2, TF1, TF0, TF0)	(TF2, TF1, TF0)
>>>>>>>>ctfc	8	8
>>>>>>>>gainFactorInformation	Computed	Computed
>>>>>>>>referenceTFCId	0	0
>>>>>>>>TFC 4	(TF3, TF2, TF0, TF0)	(TF3, TF2, TF0)
>>>>>>>>ctfc	15	15
>>>>>>>>gainFactorInformation	Computed	Computed
>>>>>>>>> β_c (FDD only)		
>>>>>>>>> β_d		
>>>>>>>>>referenceTFCId	0	0
>>>>>>>>>TFC 5	(TF4, TF3, TF0, TF0)	(TF4, TF3, TF0)
>>>>>>>>>>ctfc	22	22

>>>>>>>gainFactorInformation	Computed	Computed
>>>>>>>referenceTFCId	0	0
>>>>>>>TFC 6	(TF5, TF4, TF1, TF0)	(TF5, TF4, TF0)
>>>>>>>ctfc	59	29
>>>>>>>gainFactorInformation	Computed	Computed
>>>>>>> β_c (FDD only)		
>>>>>>> β_d		
>>>>>>>referenceTFCId	0	0
>>>>>>>TFC 7	(TF0, TF0, TF0, TF1)	(TF0, TF0, TF1)
>>>>>>>ctfc	60	30
>>>>>>>gainFactorInformation	Computed	Computed
>>>>>>>referenceTFCId	0	0
>>>>>>>TFC 8	(TF1, TF0, TF0, TF1)	(TF1, TF0, TF1)
>>>>>>>ctfc	61	31
>>>>>>>gainFactorInformation	computed	computed
>>>>>>> β_c (FDD only)		
>>>>>>> β_d		
>>>>>>>referenceTFCId	0	0
>>>>>>>TFC 9	(TF2, TF1, TF0, TF1)	(TF2, TF1, TF1)
>>>>>>>ctfc	68	38
>>>>>>>gainFactorInformation	computed	computed
>>>>>>>referenceTFCId		
>>>>>>>TFC 10	(TF3, TF2, TF0, TF1)	(TF3, TF2, TF1)
>>>>>>>ctfc	75	45
>>>>>>>gainFactorInformation	computed	computed
>>>>>>> β_c (FDD only)		
>>>>>>> β_d		
>>>>>>>referenceTFCId	0	0
>>>>>>>TFC 11	(TF4, TF3, TF0, TF1)	(TF4, TF3, TF1)
>>>>>>>ctfc	82	52
>>>>>>>gainFactorInformation	computed	computed
>>>>>>>referenceTFCId		
>>>>>>>TFC 12	(TF5, TF4, TF1, TF1)	(TF5, TF4, TF1)
>>>>>>>ctfc	97	59
>>>>>>>gainFactorInformation	signalled	signalled
>>>>>>> β_c (FDD only)	11	11
>>>>>>> β_d	15	15
>>>>>>>referenceTFCId		
> TFC subset list		
>>TFC subset 1	(speech rate 10.2)	(speech rate 7.4)
>>> Allowed transport format combination list	(TFC1, TFC2, TFC7, TFC8, TFC6, TFC12)	(TFC1, TFC2, TFC7, TFC8, TFC6, TFC12)
>>TFC subset 2	(speech rate 6.7)	(speech rate 6.7)
>>> Allowed transport format combination list	(TFC1, TFC2, TFC7, TFC8, TFC5, TFC11)	(TFC1, TFC2, TFC7, TFC8, TFC5, TFC11)
>>TFC subset 3	(speech rate 5.9)	(speech rate 5.9)

>>> Allowed transport format combination list	(TFC1, TFC2, TFC7, TFC8, TFC4, TFC10)	(TFC1, TFC2, TFC7, TFC8, TFC4, TFC10)
>>TFC subset 4	(speech rate 4.75)	(speech rate 4.75)
>>> Allowed transport format combination list	(TFC1, TFC2, TFC7, TFC8, TFC3, TFC9)	(TFC1, TFC2, TFC7, TFC8, TFC3, TFC9)
dl-CommonTransChInfo		
>tfcS-SignallingMode	Independent	Independent
ul-CommonTransChInfo		
>tfcS-ID (TDD only)	1	1
>sharedChannelIndicator (TDD only)	FALSE	FALSE
> tfc-Subset	Absent, not required	Absent, not required
>dl-TFCS	Normal TFCI signalling	Normal TFCI signalling
>>explicitTFCS-ConfigurationMode	Complete	Complete
>>>ctfcSize	Ctfc6Bit	Ctfc6Bit
>>>>TFCS representation	Addition	Addition
>>>>>TFCS list		
>>>>>>TFC 1	(TF0, TF0, TF0, TF0, TF0)	(TF0, TF0, TF0, TF0)
>>>>>>>ctfc	0	0
>>>>>>>TFC 2	(TF1, TF0, TF0, TF0, TF0)	(TF1, TF0, TF0, TF0)
>>>>>>>ctfc	1	1
>>>>>>>TFC 3	(TF2, TF1, TF0, TF0, TF0)	(TF2, TF1, TF0, TF0)
>>>>>>>ctfc	8	8
>>>>>>>TFC 4	(TF3, TF2, TF0, TF0, TF0)	(TF3, TF2, TF0, TF0)
>>>>>>>ctfc	15	15
>>>>>>>TFC 5	(TF4, TF3, TF0, TF0, TF0)	(TF4, TF3, TF0, TF0)
>>>>>>>ctfc	22	22
>>>>>>>TFC 6	(TF5, TF4, TF1, TF0, TF0)	(TF5, TF4, TF0, TF0)
>>>>>>>ctfc	59	29
>>>>>>>TFC 7	(TF0, TF0, TF0, TF1, TF0)	(TF0, TF0, TF1, TF0)
>>>>>>>ctfc	60	30
>>>>>>>TFC 8	(TF1, TF0, TF0, TF1, TF0)	(TF1, TF0, TF1, TF0)
>>>>>>>ctfc	61	31
>>>>>>>TFC 9	(TF2, TF1, TF0, TF1, TF0)	(TF2, TF1, TF1, TF0)
>>>>>>>ctfc	68	37
>>>>>>>TFC 10	(TF3, TF2, TF0, TF1, TF0)	(TF3, TF2, TF1, TF0)
>>>>>>>ctfc	75	55
>>>>>>>TFC 11	(TF4, TF3, TF0, TF1, TF0)	(TF4, TF3, TF1, TF0)
>>>>>>>ctfc	82	52
>>>>>>>TFC 12	(TF5, TF4, TF1, TF1, TF0)	(TF5, TF4, TF1, TF0)
>>>>>>>ctfc	119	59
>>>>>>>TFC 13	(TF0, TF0, TF0, TF0, TF1)	(TF0, TF0, TF0, TF1)
>>>>>>>ctfc	120	60
>>>>>>>TFC 14	(TF1, TF0, TF0, TF0, TF1)	(TF1, TF0, TF0, TF1)
>>>>>>>ctfc	121	61
>>>>>>>TFC 15	(TF2, TF1, TF0, TF0, TF1)	(TF2, TF1, TF0, TF1)

>>>>>>ctfc	128	68
>>>>>>TFC 16	(TF3, TF2, TF0, TF0, TF1)	(TF3, TF2, TF0, TF1)
>>>>>>ctfc	135	75
>>>>>>TFC 17	(TF4, TF3, TF0, TF0, TF1)	(TF4, TF3, TF0, TF1)
>>>>>>ctfc	152	82
>>>>>>TFC 18	(TF5, TF4, TF1, TF0, TF1)	(TF5, TF4, TF0, TF1)
>>>>>>ctfc	189	89
>>>>>>TFC 19	(TF0, TF0, TF0, TF1, TF1)	(TF0, TF0, TF1, TF1)
>>>>>>ctfc	180	90
>>>>>>TFC 20	(TF1, TF0, TF0, TF1, TF1)	(TF1, TF0, TF1, TF1)
>>>>>>ctfc	181	91
>>>>>>TFC 21	(TF2, TF1, TF0, TF1, TF1)	(TF2, TF1, TF1, TF1)
>>>>>>ctfc	188	98
>>>>>>TFC 22	(TF3, TF2, TF0, TF1, TF1)	(TF3, TF2, TF1, TF1)
>>>>>>ctfc	195	105
>>>>>>TFC 23	(TF4, TF3, TF0, TF1, TF1)	(TF4, TF3, TF1, TF1)
>>>>>>ctfc	239	112
>>>>>>TFC 24	(TF5, TF4, TF1, TF1, TF1)	(TF5, TF4, TF1, TF1)
>>>>>>ctfc	218	119
PhyCH INFORMATION FDD		
UL-DPCH-InfoPredef		
>ul-DPCH- PowerControlInfo		
>>powerControlAlgorithm	Algorithm 1	Algorithm 1
>>>tpcStepSize	1	1
>tfc-Existence	TRUE	TRUE
>puncturingLimit	0.88	0.88
DL- CommonInformationPredef		
>dl-DPCH-InfoCommon		
>>spreadingFactor	128	128
>>pilotBits	4	4
>>positionFixed	Fixed	Fixed
PhyCH INFORMATION 3.84 Mcps TDD		
UL-DPCH-InfoPredef		
>ul-DPCH- PowerControlInfo		
>>dpch-ConstantValue	-20	-20
>commonTimeslotInfo		
>>secondInterleavingMode	frameRelated	frameRelated
>>tfc-Coding	16	16
>>puncturingLimit	0.60	0.60
>>repetitionPeriodAndLen gth	repetitionPeriod1	repetitionPeriod1
DL- CommonInformationPredef		
>dl-DPCH-InfoCommon		
>>commonTimeslotInfo		
>>>secondInterleavingMod e	frameRelated	frameRelated
>>>tfc-Coding	16	16
>>>puncturingLimit	0.60	0.60
>>>repetitionPeriodAndLe ngth	repetitionPeriod1	repetitionPeriod1

PhyCH INFORMATION		
1.28 Mcps TDD		
UL-DPCH-InfoPredef		
>commonTimeslotInfo		
>>secondInterleavingMode	<u>frame Related</u>	<u>frame Related</u>
>>tfci-Coding	<u>16</u>	<u>16</u>
>>puncturingLimit	<u>0.64</u>	<u>0.64</u>
>>repetitionPeriodAndLength	<u>repetitionPeriod1</u>	<u>repetitionPeriod1</u>
DL-CommonInformationPredef		
>dl-DPCH-InfoCommon		
>>commonTimeslotInfo		
>>>secondInterleavingMode	<u>frame Related</u>	<u>frame Related</u>
>>>tfci-Coding	<u>16</u>	<u>16</u>
>>>puncturingLimit	<u>0.64</u>	<u>0.64</u>
>>>repetitionPeriodAndLength	<u>repetitionPeriod1</u>	<u>repetitionPeriod1</u>

Configuration	28.8 kbps conv. CS- data + 3.4 kbps signalling	32 kbps conv. CS- data + 3.4 kbps signalling	64kbps conv. CS- data + 3.4 kbps signalling	14.4 kbps streaming CS- data + 3.4 kbps signalling
Ref 34.108	12	14	13	15
Default configuration identity	4	5	6	7
RB INFORMATION				
rb-Identity	RB1: 1, RB2: 2, RB3: 3, RB5: 5	RB1: 1, RB2: 2, RB3: 3, RB5: 5	RB1: 1, RB2: 2, RB3: 3, RB5: 5	RB1: 1, RB2: 2, RB3: 3, RB5: 5
rlc-InfoChoice	Rlc-info	Rlc-info	Rlc-info	Rlc-info
>ul-RLC-Mode	RB1: UM RB2- RB3: AM RB5: TM	RB1: UM RB2- RB3: AM RB5: TM	RB1: UM RB2- RB3: AM RB5: TM	RB1: UM RB2- RB3: AM RB5: TM
>>transmissionRLC-DiscardMode	RB1: N/A RB2- RB3: NoDiscard RB5: N/A	RB1: N/A RB2- RB3: NoDiscard RB5: N/A	RB1: N/A RB2- RB3: NoDiscard RB5: N/A	RB1: N/A RB2- RB3: NoDiscard RB5: N/A
>>>maxDat	RB1: N/A RB2- RB3: 15 RB5: N/A	RB1: N/A RB2- RB3: 15 RB5: N/A	RB1: N/A RB2- RB3: 15 RB5: N/A	RB1: N/A RB2- RB3: 15 RB5: N/A
>>transmissionWindowSize	RB1: N/A RB2- RB3: 128 RB5: N/A	RB1: N/A RB2- RB3: 128 RB5: N/A	RB1: N/A RB2- RB3: 128 RB5: N/A	RB1: N/A RB2- RB3: 128 RB5: N/A
>>timerRST	RB1: N/A RB2- RB3: 300 RB5: N/A	RB1: N/A RB2- RB3: 300 RB5: N/A	RB1: N/A RB2- RB3: 300 RB5: N/A	RB1: N/A RB2- RB3: 300 RB5: N/A
>>max-RST	RB1: N/A RB2- RB3: 1 RB5: N/A	RB1: N/A RB2- RB3: 1 RB5: N/A	RB1: N/A RB2- RB3: 1 RB5: N/A	RB1: N/A RB2- RB3: 1 RB5: N/A
>>pollingInfo	RB1: N/A RB2- RB3: as below RB5: N/A	RB1: N/A RB2- RB3: as below RB5: N/A	RB1: N/A RB2- RB3: as below RB5: N/A	RB1: N/A RB2- RB3: as below RB5: N/A
>>>lastTransmissionPDU-Poll	RB2- RB3: FALSE	RB2- RB3: FALSE	RB2- RB3: FALSE	RB2- RB3: FALSE
>>>lastRetransmissionPDU-Poll	RB2- RB3: FALSE	RB2- RB3: FALSE	RB2- RB3: FALSE	RB2- RB3: FALSE
>>>timerPollPeriodic	RB2- RB3: 100	RB2- RB3: 100	RB2- RB3: 100	RB2- RB3: 100
>>segmentationIndication	RB1- RB3: N/A RB5: FALSE	RB1- RB3: N/A RB5: FALSE	RB1- RB3: N/A RB5: FALSE	RB1- RB3: N/A RB5: FALSE
>dl-RLC-Mode	RB1: UM RB2- RB3: AM RB5: TM	RB1: UM RB2- RB3: AM RB5: TM	RB1: UM RB2- RB3: AM RB5: TM	RB1: UM RB2- RB3: AM RB5: TM
>>inSequenceDelivery	RB1: N/A RB2- RB3: TRUE RB5: N/A	RB1: N/A RB2- RB3: TRUE RB5: N/A	RB1: N/A RB2- RB3: TRUE RB5: N/A	RB1: N/A RB2- RB3: TRUE RB5: N/A
>>receivingWindowSize	RB1: N/A RB2- RB3: 128 RB5: N/A	RB1: N/A RB2- RB3: 128 RB5: N/A	RB1: N/A RB2- RB3: 128 RB5: N/A	RB1: N/A RB2- RB3: 128 RB5: N/A
>>dl-RLC-StatusInfo	RB1: N/A RB2- RB3: as below RB5: N/A	RB1: N/A RB2- RB3: as below RB5: N/A	RB1: N/A RB2- RB3: as below RB5: N/A	RB1: N/A RB2- RB3: as below RB5: N/A
>>>timerStatusProhibit	RB2- RB3: 100	RB2- RB3: 100	RB2- RB3: 100	RB2- RB3: 100
>>>missingPDU-Indicator	RB2- RB3: FALSE	RB2- RB3: FALSE	RB2- RB3: FALSE	RB2- RB3: FALSE
>>>timerStatusPeriodic	RB2- RB3: 100	RB2- RB3: 100	RB2- RB3: 100	RB2- RB3: 100
>>segmentationIndication	RB1- RB3: N/A RB5: FALSE	RB1- RB3: N/A RB5: FALSE	RB1- RB3: N/A RB5: FALSE	RB1- RB3: N/A RB5: FALSE
rb-MappingInfo				
>UL-LogicalChannelMappings	OneLogicalChannel	OneLogicalChannel	OneLogicalChannel	OneLogicalChannel
>>ul-TransportChannelType	Dch	Dch	Dch	Dch
>>>transportChannelIdentity	RB1- RB3: 2 RB5: 1	RB1- RB3: 2 RB5: 1	RB1- RB3: 2 RB5: 1	RB1- RB3: 2 RB5: 1
>>logicalChannelIdentity	RB1: 1, RB2: 2, RB3: 3 RB5: N/A	RB1: 1, RB2: 2, RB3: 3 RB5: N/A	RB1: 1, RB2: 2, RB3: 3 RB5: N/A	RB1: 1, RB2: 2, RB3: 3 RB5: N/A

>>rlc-SizeList	RB1- RB3: all RB5: N/A	RB1- RB3: all RB5: N/A	RB1- RB3: all RB5: N/A	RB1- RB3: all RB5: N/A
>>mac-LogicalChannelPriority	RB1: 1, RB2: 2, RB3: 3 RB5: 5	RB1: 1, RB2: 2, RB3: 3 RB5: 5	RB1: 1, RB2: 2, RB3: 3 RB5: 5	RB1: 1, RB2: 2, RB3: 3 RB5: 5
>DL-logicalChannelMappingList				
>>Mapping option 1	One mapping option	One mapping option	One mapping option	One mapping option
>>>dl-TransportChannelType	Dch	Dch	Dch	Dch
>>>>transportChannelIdentity	RB1- RB3: 2 RB5: 1	RB1- RB3: 2 RB5: 1	RB1- RB3: 2 RB5: 1	RB1- RB3: 2 RB5: 1
>>>>logicalChannelIdentity	RB1: 1, RB2: 2, RB3: 3 RB5: N/A	RB1: 1, RB2: 2, RB3: 3 RB5: N/A	RB1: 1, RB2: 2, RB3: 3 RB5: N/A	RB1: 1, RB2: 2, RB3: 3 RB5: N/A
TrCH INFORMATION PER TrCH				
UL-AddReconfTransChInfoList				
>Uplink transport channel type	dch	dch	dch	dch
>transportChannelIdentity	TrCH1: 1, TrCH2: 2	TrCH1: 1, TrCH2: 2	TrCH1: 1, TrCH2: 2	TrCH1: 1, TrCH2: 2
>transportFormatSet	DedicatedTransChTFS	DedicatedTransChTFS	DedicatedTransChTFS	DedicatedTransChTFS
>>dynamicTF-information				
>>>>tf0/ tf0,1	TrCH1: (0x576, 1x576, 2x576) TrCH2: (0x144, 1x144)	TrCH1: (0x640, 1x640) TrCH2: (0x144, 1x144)	TrCH1: (0x640, 2x640) TrCH2: (0x144, 1x144)	TrCH1: (0x576, 1x576) TrCH2: (0x144, 1x144)
>>>>>rlcSize	TrCH1: OctetMode TrCH2: BitMode	TrCH1: OctetMode TrCH2: BitMode	TrCH1: OctetMode TrCH2: BitMode	TrCH1: OctetMode TrCH2: BitMode
>>>>>>sizeType	TrCH1: type 2, part1= 11, part2= 2 (576) TrCH2: type 2, part1= 2, part2= 0 (144)	TrCH1: type 2, part1= 11, part2= 2 (640) TrCH2: type 2, part1= 2, part2= 0 (144)	TrCH1: type 2, part1= 11, part2= 2 (640) TrCH2: type 2, part1= 2, part2= 0 (144)	TrCH1: type 2, part1= 9, part2= 2 (576) TrCH2: type 2, part1= 2, part2= 0 (144)
>>>>>numberOfTbSizeList	TrCH1: Zero, 1, 2 (4) TrCH2: Zero, one	TrCH1: Zero, one TrCH2: Zero, one	TrCH1: Zero, 2 (4) TrCH2: Zero, one	TrCH1: Zero, one, TrCH2: Zero, one
>>>>>logicalChannelList	All	All	All	All
>>semiStaticTF-Information				
>>>>tti	TrCH1: 40 TrCH2: 40	TrCH1: 20 TrCH2: 40	TrCH1: 20 TrCH2: 40	TrCH1: 40 TrCH2: 40
>>>>channelCodingType	TrCH1: Turbo TrCH2: Convolutional	TrCH1: Turbo TrCH2: Convolutional	TrCH1: Turbo TrCH2: Convolutional	TrCH1: Turbo TrCH2: Convolutional
>>>>>codingRate	TrCH1: N/A TrCH2: Third	TrCH1: N/A TrCH2: Third	TrCH1: N/A TrCH2: Third	TrCH1: N/A TrCH2: Third
>>>>rateMatchingAttribute	TrCH1: 180 TrCH2: 160	TrCH1: 185 TrCH2: 160	TrCH1: 170 TrCH2: 160	TrCH1: 165 TrCH2: 160
>>>>>crc-Size	TrCH1: 16 TrCH2: 16	TrCH1: 16 TrCH2: 16	TrCH1: 16 TrCH2: 16	TrCH1: 16 TrCH2: 16
DL-AddReconfTransChInfoList				
>Downlink transport channel type	dch	dch	dch	dch
>dl-TransportChannelIdentity (should be as for UL)	TrCH1: 1, TrCH2: 2	TrCH1: 1, TrCH2: 2	TrCH1: 1, TrCH2: 2	TrCH1: 1, TrCH2: 2
>tfs-SignallingMode	SameAsUL	SameAsUL	SameAsUL	SameAsUL
>>transportFormatSet				

>>>dynamicTF-information				
>>>>tf0/ tf0,1				
>>>>rlcSize				
>>>>>sizeType				
>>>>numberOfTbSizeList				
>>>>logicalChannelList				
>>ULTrCH-Id	TrCH1: 1, TrCH2: 2	TrCH1: 1, TrCH2: 2	TrCH1: 1, TrCH2: 2	TrCH1: 1, TrCH2: 2
>dch-QualityTarget				
>>bler-QualityValue	TrCH1: 2×10^{-3} TrCH2: Absent	TrCH1: 2×10^{-3} TrCH2: Absent	TrCH1: 2×10^{-3} TrCH2: Absent	TrCH1: 1×10^{-2} TrCH2: Absent
TrCH INFORMATION, COMMON				
ul-CommonTransChInfo				
>tfcs-ID (TDD only)	1	1	1	1
>sharedChannelIndicator (TDD only)	FALSE	FALSE	FALSE	FALSE
>tfcs-Subset	Absent, not required	Absent, not required	Absent, not required	Absent, not required
>ul-TFCS	Normal TFCI signalling	Normal TFCI signalling	Normal TFCI signalling	Normal TFCI signalling
>>explicitTFCS-ConfigurationMode	Complete	Complete	Complete	Complete
>>>ctfcSize	Ctfc2Bit	Ctfc2Bit	Ctfc2Bit	Ctfc4Bit
>>>>TFCS representation	Addition	Addition	Addition	Addition
>>>>>TFCS list				
>>>>>>TFCS 1	(TF0, TF0)	(TF0, TF0)	(TF0, TF0)	(TF0, TF0)
>>>>>>>ctfc	0	0	0	0
>>>>>>>>gainFactorInformation	Computed	Computed	Computed	Computed
>>>>>>>>referenceTFCSId	0	0	0	0
>>>>>>>TFCS 2	(TF1, TF0)	(TF1, TF0)	(TF1, TF0)	(TF1, TF0)
>>>>>>>>ctfc	1	1	1	1
>>>>>>>>>gainFactorInformation	Computed	Computed	Computed	Computed
>>>>>>>>>>βc (FDD only)	N/A	N/A	N/A	N/A
>>>>>>>>>>>βd	N/A	N/A	N/A	N/A
>>>>>>>>>>>referenceTFCSId	0	0	0	0
>>>>>>>>>>TFCS 3	(TF2, TF0)	(TF0, TF1)	(TF0, TF1)	(TF0, TF1)
>>>>>>>>>>>ctfc	2	2	2	2
>>>>>>>>>>>>gainFactorInformation	Computed	Computed	Computed	Computed
>>>>>>>>>>>>referenceTFCSId	0	0	0	0
>>>>>>>>>>>TFCS 4	(TF0, TF1)	(TF1, TF1)	(TF1, TF1)	(TF1, TF1)
>>>>>>>>>>>>ctfc	3	3	3	3
>>>>>>>>>>>>>gainFactorInformation	Computed	Signalled	Signalled	Signalled
>>>>>>>>>>>>>>βc (FDD only)	N/A	8	8	11
>>>>>>>>>>>>>>>βd	N/A	15	15	15
>>>>>>>>>>>>>>>referenceTFCSId	N/A	N/A	N/A	N/A
>>>>>>>>>>>TFCS 5	(TF1, TF1)	N/A	N/A	
>>>>>>>>>>>>>ctfc	4			
>>>>>>>>>>>>>>gainFactorInformation	Computed			
>>>>>>>>>>>>>>>referenceTFCSId	8			
>>>>>>>>>>>>TFCS 6	(TF2, TF1)	N/A	N/A	
>>>>>>>>>>>>>>ctfc	5			
>>>>>>>>>>>>>>>>gainFactorInformation	Signalled			
>>>>>>>>>>>>>>>>>βc (FDD only)	8			
>>>>>>>>>>>>>>>>>>βd	15			
>>>>>>>>>>>>>>>>>>>referenceTFCSId	N/A			
>>>>>>>>>>>>>TFCS 7				
>>>>>>>>>>>>>>>ctfc				

>>>>>>gainFactorInformation				
>>>>>>referenceTFCId				
>>>>>>TFCS 8				
>>>>>>ctfc				
>>>>>>gainFactorInformation				
>>>>>>referenceTFCId				
>>>>>>TFCS 9				
>>>>>>ctfc				
>>>>>>gainFactorInformation				
>>>>>>referenceTFCId				
>>>>>>TFCS 10				
>>>>>>ctfc				
>>>>>>gainFactorInformation				
>>>>>> β_c (FDD only)				
>>>>>> β_d				
>>>>>>referenceTFCId				
dl-CommonTransChInfo				
>tfc-SignallingMode	Same as UL	Same as UL	Same as UL	Same as UL
PhyCH INFORMATION FDD				
UL-DPCH-InfoPredef				
>ul-DPCH-PowerControlInfo				
>>powerControlAlgorithm	Algorithm 1	Algorithm 1	Algorithm 1	Algorithm 1
>>>tpcStepSize	1	1	1	1
>tfc-Existence	TRUE	TRUE	TRUE	TRUE
>puncturingLimit	0.92	0.8	0.92	1
DL-CommonInformationPredef				
>dl-DPCH-InfoCommon				
>>spreadingFactor	64	64	32	128
>>pilotBits	8	8	8	8
>>positionFixed	Flexible	Flexible	Flexible	Flexible
PhyCH INFORMATION 3.84 Mcps TDD				
UL-DPCH-InfoPredef				
>ul-DPCH-PowerControlInfo				
>>dpch-ConstantValue	-20	-20	-20	-20
>commonTimeslotInfo				
>>secondInterleavingMode	frameRelated	frameRelated	frameRelated	frameRelated
>>>tfc-Coding	16	8	8	8
>>>puncturingLimit	0.44	0.8	0.56	0.8
>>>repetitionPeriodAndLength	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1
DL-CommonInformationPredef				
>dl-DPCH-InfoCommon				
>>commonTimeslotInfo				
>>>secondInterleavingMode	frameRelated	frameRelated	frameRelated	frameRelated
>>>tfc-Coding	16	8	8	8
>>>puncturingLimit	0.44	0.64	0.56	0.8
>>>repetitionPeriodAndLength	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1
PhyCH INFORMATION 1.28 Mcps TDD				
UL-DPCH-InfoPredef				

>commonTimeslotInfo				
>>secondInterleavingMode	frameRelated	frameRelated	frameRelated	frameRelated
>>tfc-Coding	16	8	8	8
>>puncturingLimit	0.64	0.60	0.64	1
>>repetitionPeriodAndLength	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1
DL-CommonInformationPrefix				
>dl-DPCH-InfoCommon				
>>commonTimeslotInfo				
>>>secondInterleavingMode	frameRelated	frameRelated	frameRelated	frameRelated
>>>tfc-Coding	16	8	8	8
>>>puncturingLimit	0.64	0.60	0.64	0.88
>>>repetitionPeriodAndLength	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1	repetitionPeriod1

Configuration	28.8 kbps streaming CS- data + 3.4 kbps signalling	57.6 kbps streaming CS- data + 3.4 kbps signalling
Ref 34.108	16	17
Default configuration identity	8	9
RB INFORMATION		
rb-Identity	RB1: 1, RB2: 2, RB3: 3, RB5: 5	RB1: 1, RB2: 2, RB3: 3, RB5: 5
rlc-InfoChoice	Rlc-info	Rlc-info
>ul-RLC-Mode	RB1: UM RB2- RB3: AM RB5: TM	RB1: UM RB2- RB3: AM RB5: TM
>>transmissionRLC-DiscardMode	RB1: N/A RB2- RB3: NoDiscard RB5: N/A	RB1: N/A RB2- RB3: NoDiscard RB5: N/A
>>>maxDat	RB1: N/A RB2- RB3: 15 RB5: N/A	RB1: N/A RB2- RB3: 15 RB5: N/A
>>transmissionWindowSize	RB1: N/A RB2- RB3: 128 RB5: N/A	RB1: N/A RB2- RB3: 128 RB5: N/A
>>timerRST	RB1: N/A RB2- RB3: 300 RB5: N/A	RB1: N/A RB2- RB3: 300 RB5: N/A
>>max-RST	RB1: N/A RB2- RB3: 1 RB5: N/A	RB1: N/A RB2- RB3: 1 RB5: N/A
>>pollingInfo	RB1: N/A RB2- RB3: as below RB5: N/A	RB1: N/A RB2- RB3: as below RB5: N/A
>>>lastTransmissionPDU-Poll	RB2- RB3: FALSE	RB2- RB3: FALSE
>>>lastRetransmissionPDU-Poll	RB2- RB3: FALSE	RB2- RB3: FALSE
>>>timerPollPeriodic	RB2- RB3: 100	RB2- RB3: 100
>>segmentationIndication	RB1- RB3: N/A RB5: FALSE	RB1- RB3: N/A RB5: FALSE
>dl-RLC-Mode	RB1: UM RB2- RB3: AM RB5: TM	RB1: UM RB2- RB3: AM RB5: TM
>>inSequenceDelivery	RB1: N/A RB2- RB3: TRUE RB5: N/A	RB1: N/A RB2- RB3: TRUE RB5: N/A
>>receivingWindowSize	RB1: N/A RB2- RB3: 128 RB5: N/A	RB1: N/A RB2- RB3: 128 RB5: N/A
>>dl-RLC-StatusInfo	RB1: N/A RB2- RB3: as below RB5: N/A	RB1: N/A RB2- RB3: as below RB5: N/A
>>>timerStatusProhibit	RB2- RB3: 100	RB2- RB3: 100
>>>missingPDU-Indicator	RB2- RB3: FALSE	RB2- RB3: FALSE
>>>timerStatusPeriodic	RB2- RB3: 100	RB2- RB3: 100
>>segmentationIndication	RB1- RB3: N/A RB5: FALSE	RB1- RB3: N/A RB5: FALSE
rb-MappingInfo		
>UL-LogicalChannelMappings	OneLogicalChannel	OneLogicalChannel
>>ul-TransportChannelType	Dch	Dch
>>>transportChannelIdentity	RB1- RB3: 2 RB5: 1	RB1- RB3: 2 RB5: 1
>>logicalChannelIdentity	RB1: 1, RB2: 2, RB3: 3 RB5: N/A	RB1: 1, RB2: 2, RB3: 3 RB5: N/A

>>rlc-SizeList	RB1- RB3: all RB5: N/A	RB1- RB3: all RB5: N/A
>>mac-LogicalChannelPriority	RB1: 1, RB2: 2, RB3: 3 RB5: 5	RB1: 1, RB2: 2, RB3: 3 RB5: 5
>DL-logicalChannelMappingList		
>>Mapping option 1	One mapping option	One mapping option
>>>dl-TransportChannelType	Dch	Dch
>>>>transportChannelIdentity	RB1- RB3: 2 RB5: 1	RB1- RB3: 2 RB5: 1
>>>>logicalChannelIdentity	RB1: 1, RB2: 2, RB3: 3 RB5: N/A	RB1: 1, RB2: 2, RB3: 3 RB5: N/A
TrCH INFORMATION PER TrCH		
UL-AddReconfTransChInfoList		
>Uplink transport channel type	dch	dch
>transportChannelIdentity	TrCH1: 1, TrCH2: 2	TrCH1: 1, TrCH2: 2
>transportFormatSet	DedicatedTransChTFS	DedicatedTransChTFS
>>dynamicTF-information		
>>>>tf0/ tf0,1	TrCH1: (0x576, 1x576, 2x576) TrCH2: (0x144, 1x144)	TrCH1: (0x576, 1x576, 2x576, 3x576, 4x576) TrCH2: (0x144, 1x144)
>>>>>rlcSize	TrCH1: OctetMode TrCH2:BitMode	TrCH1: OctetMode TrCH2:BitMode
>>>>>>sizeType	TrCH1: type 2, part1= 9, part2= 2 (576) TrCH2: type 2, part1= 2, part2= 0 (144)	TrCH1: type 2, part1= 9, part2= 2 (576) TrCH2: type 2, part1= 2, part2= 0 (144)
>>>>>>numberOfTbSizeList	TrCH1: Zero, one, 2 TrCH2: Zero, one	TrCH1: Zero, one, 2, 3, 4 TrCH2: Zero, one
>>>>>>logicalChannelList	All	All
>>semiStaticTF-Information		
>>>tti	TrCH1: 40 TrCH2: 40	TrCH1: 40 TrCH2: 40
>>>>channelCodingType	TrCH1: Turbo TrCH2: Convolutional	TrCH1: Turbo TrCH2: Convolutional
>>>>>codingRate	TrCH1: N/A TrCH2: Third	TrCH1: N/A TrCH2: Third
>>>>>>rateMatchingAttribute	TrCH1: 155 TrCH2: 160	TrCH1: 145 TrCH2: 160
>>>>>>>crc-Size	TrCH1: 16 TrCH2: 16	TrCH1: 16 TrCH2: 16
DL-AddReconfTransChInfoList		
>Downlink transport channel type	dch	dch
>dl-TransportChannelIdentity (should be as for UL)	TrCH1: 1, TrCH2: 2	TrCH1: 1, TrCH2: 2
>tfs-SignallingMode	SameAsUL	SameAsUL

>>transportFormatSet		
>>>dynamicTF-information		
>>>>tf0/ tf0,1		
>>>>rlcSize		
>>>>sizeType		
>>>>numberOfTbSizeList		
>>>>logicalChannelList		
>>ULTrCH-Id	TrCH1: 1, TrCH2: 2	TrCH1: 1, TrCH2: 2
>dch-QualityTarget		
>>bler-QualityValue	TrCH1: 1×10^{-2} TrCH2: Absent	TrCH1: 1×10^{-2} TrCH2: Absent
TrCH INFORMATION, COMMON		
ul-CommonTransChInfo		
>tfcs-ID (TDD only)	1	1
>sharedChannelIndicator (TDD only)	FALSE	FALSE
>tfcs-Subset	Absent, not required	Absent, not required
>ul-TFCS	Normal TFCS signalling	Normal TFCS signalling
>>explicitTFCS-ConfigurationMode	Complete	Complete
>>>ctfcSize	Ctfc4Bit	Ctfc4Bit
>>>>TFCS representation	Addition	Addition
>>>>>TFCS list		
>>>>>>TFCS 1	(TF0, TF0)	(TF0, TF0)
>>>>>>>ctfc	0	0
>>>>>>>>gainFactorInformation	Computed	Computed
>>>>>>>>>referenceTFCSId	0	0
>>>>>>>>>>TFCS 2	(TF1, TF0)	(TF1, TF0)
>>>>>>>>>>>ctfc	1	1
>>>>>>>>>>>>gainFactorInformation	Computed	Computed
>>>>>>>>>>>>> β_c (FDD only)	N/A	N/A
>>>>>>>>>>>>> β_d	N/A	N/A
>>>>>>>>>>>>>>referenceTFCSId	0	0
>>>>>>>>>>>>>>>TFCS 3	(TF2, TF0)	(TF2, TF0)
>>>>>>>>>>>>>>>>ctfc	2	2
>>>>>>>>>>>>>>>>>gainFactorInformation	Computed	Computed
>>>>>>>>>>>>>>>>>>referenceTFCSId	0	0
>>>>>>>>>>>>>>>>>>>TFCS 4	(TF0, TF1)	(TF3, TF0)
>>>>>>>>>>>>>>>>>>>>>ctfc	3	3
>>>>>>>>>>>>>>>>>>>>>>gainFactorInformation	Computed	Computed
>>>>>>>>>>>>>>>>>>>>>>> β_c (FDD only)	N/A	N/A
>>>>>>>>>>>>>>>>>>>>>>> β_d	N/A	N/A
>>>>>>>>>>>>>>>>>>>>>>>>referenceTFCSId	0	0
>>>>>>>>>>>>>>>>>>>>>>>>>TFCS 5	(TF1, TF1)	(TF4, TF0)
>>>>>>>>>>>>>>>>>>>>>>>>>>>ctfc	4	4
>>>>>>>>>>>>>>>>>>>>>>>>>>>>gainFactorInformation	Computed	Computed
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>referenceTFCSId	0	0
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>TFCS 6	(TF2, TF1)	(TF0, TF1)
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>ctfc	5	5
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>gainFactorInformation	Signalled	Computed
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> β_c (FDD only)	8	N/A
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> β_d	15	N/A
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>referenceTFCSId	N/A	0
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>TFCS 7		(TF1, TF1)
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>ctfc		6

>>>>>>gainFactorInformation		Computed
>>>>>>referenceTFChId		0
>>>>>>TFCS 8		(TF2, TF1)
>>>>>>ctfc		7
>>>>>>gainFactorInformation		Computed
>>>>>>referenceTFChId		0
>>>>>>TFCS 9		(TF3, TF1)
>>>>>>ctfc		8
>>>>>>gainFactorInformation		Computed
>>>>>>referenceTFChId		0
>>>>>>TFCS 10		(TF4, TF1)
>>>>>>ctfc		9
>>>>>>gainFactorInformation		Signalled
>>>>>>βc (FDD only)		8
>>>>>>βd		15
>>>>>>referenceTFChId		0
dl-CommonTransChInfo		
>tfcs-SignallingMode	Same as UL	Same as UL
PhyCH INFORMATION FDD		
UL-DPCH-InfoPredef		
>ul-DPCH-PowerControlInfo		
>>powerControlAlgorithm	Algorithm 1	Algorithm 1
>>>tpcStepSize	1	1
>tfci-Existence	TRUE	TRUE
>puncturingLimit	1	1
DL-CommonInformationPredef		
>dl-DPCH-InfoCommon		
>>spreadingFactor	64	32
>>pilotBits	8	8
>>positionFixed	Flexible	Flexible
PhyCH INFORMATION 3.84 Mcps TDD		
UL-DPCH-InfoPredef		
>ul-DPCH-PowerControlInfo		
>>dpch-ConstantValue	-20	-20
>commonTimeslotInfo		
>>secondInterleavingMode	frameRelated	frameRelated
>>>tfci-Coding	16	16
>>>puncturingLimit	0.44	0.48
>>>repetitionPeriodAndLength	repetitionPeriod1	repetitionPeriod1
DL-CommonInformationPredef		
>dl-DPCH-InfoCommon		
>>commonTimeslotInfo		
>>>secondInterleavingMode	frameRelated	frameRelated
>>>tfci-Coding	16	16
>>>puncturingLimit	0.44	0.48
>>>repetitionPeriodAndLength	repetitionPeriod1	repetitionPeriod1
PhyCH INFORMATION 1.28 Mcps TDD		
UL-DPCH-InfoPredef		
>commonTimeslotInfo		

>>secondInterleavingMode	frameRelated	frameRelated
>>tfc-Coding	16	16
>>puncturingLimit	0.64	0.72
>>repetitionPeriodAndLength	repetitionPeriod1	repetitionPeriod1
DL-CommonInformationPredef		
>dl-DPCH-InfoCommon		
>>commonTimeslotInfo		
>>>secondInterleavingMode	frameRelated	frameRelated
>>>tfc-Coding	16	16
>>>puncturingLimit	0.64	0.72
>>>repetitionPeriodAndLength	repetitionPeriod1	repetitionPeriod1

CHANGE REQUEST

⌘ **25.331 CR 1187** ⌘ rev **r2** ⌘ Current version: **4.3.0** ⌘

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

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

Title:	⌘ Correction of Transparent mode signalling for UL rate control		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI4	Date:	⌘ 18-02-2002
Category:	⌘ F Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Release:	⌘ REL-4 Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change: ⌘ During the RAN2 meeting #23 it was decided that the correction the message TRANSPORT FORMAT COMBINATION CONTROL when this message is sent using TM RLC should be done in REL4. See Tdoc R2-011895 for discussion paper.

Summary of change: ⌘ The main changes are summarised in the following:

- addition in the IE "UL TrCH info common for all TrCH" of a list of possible TFC-subsets. This list is intended for AMR rate control. The list contains up to 8 TFC Subsets;
- definition of a new message format for TRANSPORT FORMAT COMBINATION CONTROL TM to be used in TM mode. This message contains only the identity of the TFCsubset to be used in the UL. This identity is the position of the TFCsubset in the previously defined TFC-subsets list. This mechanism is similar to the TFC-TFCI signalling;
- modified the description of the procedure TFC control to illustrate the different cases AM/UM or TM RLC;
- added description text for the handling of the TFC subset list in the section regarding the "UL TrCH info common for all TrCH";
- defined in ASN.1 a new PDU for DCCH on DL in TM mode;
- defined in ASN.1 a new message TransportFormatCombinationControlTM;
- update the structure of the variable TFC_SUBSET;

[The revision 1 update include the possibility to have a choice of the size of the list of TFCsubsets, i.e. list of 8 TFC subsets, list of 32 TFCsubsets, list of 1024 TFCsubsets.](#)

[Also the Transparent Mode Signalling Info is removed from REL4 also.](#)

[The revision 2 defines the encoding of the TFC Control message by means of a tabular description. Changes compared to rev1 are in "light blue"](#)

Consequences if not approved:	⌘	Transport Format Combination Control does not work properly in TM RLC mode.									
Clauses affected:	⌘	8.2.5.2, 8.2.5.3, 8.6.5.6, 8.6.5.9, 10.2.53, 10.3.5.1, 10.3.5.17, 10.3.5.24, 10.3.10, 11, 12.4 (new), 12.4.1 (new), 12.4.1.1 (new), 12.4.1.1.1 (new), 12.4.1.1.2 (new), 12.4.1.1.3 (new), 13.4.24									
Other specs affected:	⌘	<table border="1"> <tr> <td><input checked="" type="checkbox"/></td> <td>Other core specifications</td> <td>⌘</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Test specifications</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td>O&M Specifications</td> <td></td> </tr> </table>	<input checked="" type="checkbox"/>	Other core specifications	⌘	<input checked="" type="checkbox"/>	Test specifications		<input type="checkbox"/>	O&M Specifications	
<input checked="" type="checkbox"/>	Other core specifications	⌘									
<input checked="" type="checkbox"/>	Test specifications										
<input type="checkbox"/>	O&M Specifications										
Other comments:	⌘										

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.5 Transport format combination control

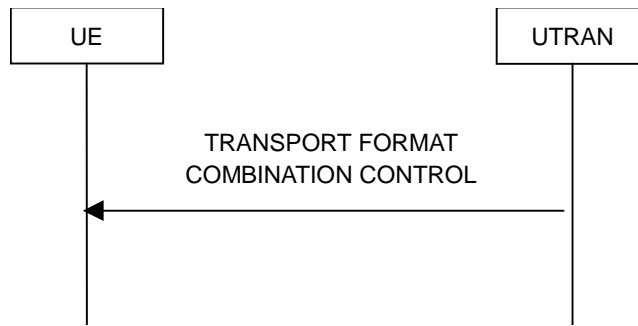


Figure 32: Transport format combination control, normal flow

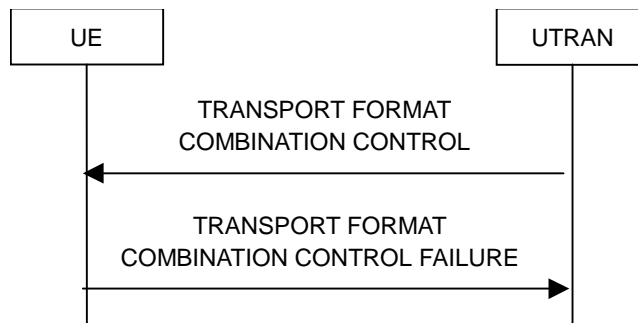


Figure 33: Transport format combination control, failure case

8.2.5.1 General

The transport format combination control procedure is used to control the allowed uplink transport format combinations within the transport format combination set.

8.2.5.2 Initiation

To initiate the transport format combination control procedure, the UTRAN transmits the TRANSPORT FORMAT COMBINATION CONTROL message on the downlink DCCH using AM, UM or TM RLC. When not stated otherwise elsewhere, the UE may initiate the transport format combination control procedure also when another procedure is ongoing, and in that case the state of the latter procedure shall not be affected.

To change the sub-set of allowed transport format combinations, the UTRAN ~~should~~shall:

- set the allowed TFCs in the IE "TFC subset". The ~~UTRAN may network can optionally~~specify the duration for which a new TFC sub-set applies by using the IE "TFC Control duration" and independently ~~can optionally~~may specify the time at which a new TFC sub-set shall be applied using the IE "Activation Time".

To remove completely the previous restrictions of allowed transport format combinations, the UTRAN ~~shall~~should:

- set the "full transport format combination" in the IE "TFC subset".

8.2.5.3 Reception of a TRANSPORT FORMAT COMBINATION CONTROL message by the UE

~~Upon reception of the TRANSPORT FORMAT COMBINATION CONTROL message~~If the TRANSPORT FORMAT COMBINATION CONTROL message was received on AM RLC or UM RLC, the UE shall:

- act upon all received information elements as specified in 8.6, unless specified otherwise in the following;
- perform the actions for the transport format combination subset specified in the IE "DPCH/PUSCH TFCS in uplink" according to subclause 8.6.5.3;

- if the variable INVALID_CONFIGURATION is set to FALSE:
 - if the IE "TFC Control duration" is included in the message:
 - store the value of the IE "TFC Control duration" in the IE "Duration" in the variable TFC_SUBSET
 - set the IE "Current TFC subset" (or IE "TFCS Id" in case of TDD) in the variable TFC_SUBSET to the value of the IE "Transport format combination subset";
 - apply the transport format combination subset in the IE "Current TFC subset" stored in the variable TFC_SUBSET for the number of (10 ms) frames specified in the IE "TFC Control duration";
 - at the end of the time period defined by the IE "TFC control duration":
 - if the variable TFC_SUBSET has not subsequently been reset by another message:
 - go back to any previous restriction of the transport format combination set defined by the content of the IE "Default TFC subset" in the variable TFC_SUBSET;
 - set the value of the IE "Current TFC subset" in the variable TFC_SUBSET to the value of the IE "Default TFC subset" in the variable TFC_SUBSET;
 - clear the IE "Duration" in the variable TFC_SUBSET;
 - if the IE "TFC Control duration" is not included in the message:
 - set both the IE "Current TFC subset" and the IE "Default TFC subset" (or IE "TFCS Id" in case of TDD) in the variable TFC_SUBSET to the value of the IE "Transport format combination subset";
 - if the UE is unable to comply with the reconfiguration due to an invalid activation time:
 - set the variable INVALID_CONFIGURATION to TRUE.

If the TRANSPORT FORMAT COMBINATION CONTROL message was received on TM RLC, the UE shall:

- consider the size of the transport block of the downlink transport channel where this message was received to select the format for the transparent format combination control mode as specified in section 12.4.1.1;
- if the IE "TFC subset identity" identifies one of the TFC subsets stored in the IE "TFC subset list" in the variable TFC_SUBSET:
 - perform the actions as specified in subclause 8.6.5.3;
 - if the variable INVALID_CONFIGURATION is set to FALSE:
 - in the variable TFC_SUBSET, set the IE "Current TFC subset" to the value of the IE "TFC subset" in "TFC subset list" which is identified by the IE "TFC subset identity";
- if the IE "TFC subset identity" is greater than the maximum number of TFC subsets stored in the IE "TFC subset list" in the variable TFC_SUBSET:
 - set the variable INVALID_CONFIGURATION to TRUE.

The UE shall:

- clear the entry for the TRANSPORT FORMAT COMBINATION CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;
- and the procedure ends.

8.2.5.4 Invalid configuration

If the variable INVALID_CONFIGURATION is set to TRUE due to the received TRANSPORT FORMAT COMBINATION CONTROL message the UE shall:

- if the TRANSPORT FORMAT COMBINATION CONTROL message was received on AM RLC:

- keep the TFC subset existing before the TRANSPORT FORMAT COMBINATION CONTROL message was received;
- transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC;
- set the IE "RRC transaction identifier" in the TRANSPORT FORMAT COMBINATION CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the TRANSPORT FORMAT COMBINATION CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- clear that entry;
- set the IE "failure cause" to "invalid configuration";
- when the TRANSPORT FORMAT COMBINATION CONTROL FAILURE message has been submitted to lower layers for transmission the procedure ends.
- if the TRANSPORT FORMAT COMBINATION CONTROL message was received on UM RLC or TM RLC:
 - ignore the TRANSPORT FORMAT COMBINATION CONTROL message.

8.2.5.5 Invalid TRANSPORT FORMAT COMBINATION CONTROL message

If the TRANSPORT FORMAT COMBINATION CONTROL message was received on AM RLC or UM RLC and contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the uplink DCCH using AM RLC setting the information elements as specified below;
- set the IE "RRC transaction identifier" in the TRANSPORT FORMAT COMBINATION CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the TRANSPORT FORMAT COMBINATION CONTROL message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- clear that entry;
- set the IE "failure cause" to the cause value "protocol error";
- include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION;
- when the TRANSPORT FORMAT COMBINATION CONTROL FAILURE message has been submitted to lower layers for transmission:
 - continue with any ongoing processes and procedures as if the invalid TRANSPORT FORMAT COMBINATION CONTROL message has not been received;
 - and the procedure ends.

If the TRANSPORT FORMAT COMBINATION CONTROL message was received on TM RLC and contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- ignore the invalid TRANSPORT FORMAT COMBINATION CONTROL message as if it has not been received;
- the procedure ends.

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:

- if the choice "DL parameters" is set to 'independent':
 - perform the actions for the IE "Transport Format Set" as specified in subclause 8.6.5.1.
- if the choice "DL parameters" is set to 'same as uplink':
 - if the IE "UL Transport Channel Identity" indicates an existing or a new UL Transport Channel:
 - store as transport format for this transport channel the transport format associated with the transport channel identified by the IE "UL Transport Channel Identity".
 - else:
 - set the variable INVALID_CONFIGURATION to TRUE.
- if the IE "DCH quality target" is included:
 - perform the actions specified in subclause 8.6.5.4.

~~— if the IE "Transparent mode signalling info" is included:~~

~~— consider the messages received on this transport channel to have the message type according to the value of the IE "Type of message";~~

~~— if the choice "Transparent signalling mode" is set to "Mode 1":~~

~~— consider the messages received on this transport channel affect all established DCHs.~~

~~— if the choice "Transparent signalling mode" is set to "Mode 2":~~

~~— consider the messages received on this transport channel affect the DCHs identified with the IE "UL controlled transport channels" in the IE "Controlled transport channels list";~~

~~— if any of the DCHs identified with the IE "UL controlled transport channels" in the IE "Controlled transport channels list" does not exist:~~

~~— set the variable INVALID_CONFIGURATION to TRUE.~~

8.6.5.9 UL Transport channel information common for all transport channels

If the IE "UL Transport channel information common for all transport channels" is included the UE shall:

- perform actions for the IE "TFC subset" as specified in subclause 8.6.5.3;
 - if the IE "PRACH TFCS" is included:
 - set the variable INVALID_CONFIGURATION to TRUE;
 - if the IE has the choice "mode" set to FDD:
 - perform actions for the IE "UL DCH TFCS" as specified in subclause 8.6.5.2;
 - if the IE has the choice "mode" set to TDD:
 - if the IE "Individual UL CCTrCH information" is included:
 - for each TFCS identified by IE "UL TFCS id":
 - perform actions for the IE "UL TFCS" as specified in subclause 8.6.5.2.
- if the IE "TFC subset list" is included:
- remove a previously stored TFC subset list if this exists in the variable TFC_SUBSET;
 - store the IE "TFC subset list" in the IE "TFC subset list" in the variable TFC_SUBSET;
 - consider the first instance of the IE "TFC subset" in the IE "TFC subset list" as Transport Format Combination Subset 0 (TFC subset identity = 0), the second instance as Transport Format Combination Subset 1 (TFC subset identity = 1) and so on.

10.2.53 TRANSPORT FORMAT COMBINATION CONTROL

This message is sent by UTRAN to control the uplink transport format combination within the allowed transport format combination set. [This message has different structures depending if the message is sent on transparent \(TM\) or non-transparent mode \(AM or UM\).](#)

RLC-SAP: ~~TM~~, AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MPCV notTM		Message Type	
UE information elements				
RRC transaction identifier	MPCV notTM		RRC transaction identifier 10.3.3.36	
Integrity check info	CHCV notTM		Integrity check info 10.3.3.16	
TrCH information elements				
CHOICE <i>mode</i>	MP			
>FDD				(no data)
>TDD				
>>TFCS Id	OP		Transport Format Combination Set Identity 10.3.5.21	
DPCH/PUSCH TFCS in uplink	MP		Transport Format Combination subset 10.3.5.22	
Activation time for TFC subset	MDCV notTMMD		Activation time 10.3.3.1	Default value is "now"
TFC Control duration	OPCV notTMopt		TFC Control duration 10.3.6.80	

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

[In case of transparent mode signalling the following message structure shall be used:](#)

RLC-SAP: TM

Logical channel: DCCH

Direction: UTRAN→UE

<u>Information Element/Group name</u>	<u>Need</u>	<u>Multi</u>	<u>Type and reference</u>	<u>Semantics description</u>
<u>CHOICE TFCsubsetListSize</u>	<u>MP</u>			
TFC subset identity	MP		INTEGER (0..7)	
<u>>Three bits list size</u>				
<u>>>TFC subset identity</u>	<u>MP</u>		<u>INTEGER (0..7)</u>	
<u>>Five bits list size</u>				
<u>>>TFC subset identity</u>	<u>MP</u>		<u>INTEGER (0..31)</u>	
<u>>Ten bits list size</u>				
<u>>>TFC subset identity</u>	<u>MP</u>		<u>INTEGER (0..1023)</u>	

The encoding of this message is specified in section 12.4.1.1.

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

10.3.5.1 Added or Reconfigured DL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink transport channel type	MP		Enumerated(DCH,DSCH)	
DL Transport channel identity	MP		Transport channel identity 10.3.5.18	
<i>CHOICE 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
DCH quality target	OP		Quality target 10.3.5.10	
Transparent mode signalling info	CV-Message Type		Transparent mode signalling info 10.3.5.17	This IE is not used in RB RELEASE message nor RB RECONFIGURATION message

Condition	Explanation
Message Type	This IE is not needed in Radio Bearer Release message and Radio Bearer Reconfiguration message. Otherwise it is optional.

10.3.5.17 ~~Transparent mode signalling info~~ void

Information Element	Need	Multi	Type and reference	Semantics description
Type of message	MP		Enumerated (TRANSPORT FORMAT COMBINATION CONTROL)	Indicates which type of message sent on the transparent mode signalling DCCH
CHOICE Transparent signalling mode				
>Mode 1				
>Mode 2				
>>Controlled transport channels list	MP	1 to <maxTrCH >		The transport channels that are effected by the rate control eommands sent on this transparent mode DCCH
>>>UL Controlled transport channels	MP		Transport channel identity, 10.3.5.18	transport channel type = DCH

10.3.5.24 UL Transport channel information common for all transport channels

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
PRACH TFCS	OP		Transport format combination set 10.3.5.20	This IE should not be included in this version of the protocol.	
CHOICE <i>mode</i>	OP				
>FDD					
>>TFC subset	MD		Transport Format Combination Subset 10.3.5.22	Default value is the complete existing set of transport format combinations	
>>>UL DCH TFCS	MP		Transport format combination set 10.3.5.20		
>TDD					
>>Individual UL CCTrCH information	OP	1 to <maxCC TrCH>			
>>>UL TFCS Identity	MP		Transport format combination set identity 10.3.5.21	Identifies a special CCTrCH for shared or dedicated channels.	
>>>UL TFCS	MP		Transport format combination set 10.3.5.20		
>>>TFC subset	MD		Transport Format Combination Subset 10.3.5.22	Default value is the complete existing set of transport format combinations	
TFC subset list	OP	1 to <maxTF Csub>			REL-4
>CHOICE mode	MP				
>>FDD				(no data)	
>>TDD					
>>>TFCS Id	OP		Transport Format Combination Set Identity 10.3.5.21		
>TFC subset	MP		Transport Format Combination Subset 10.3.5.22		

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

10.3.10 Multiplicity values and type constraint values

The following table includes constants that are either used as multi bounds (name starting with "max") or as high or low value in a type specification (name starting with "lo" or "hi"). Constants are specified only for values appearing more than once in the RRC specification. In case a constant is related to one or more other constants, an expression is included in the "value" column instead of the actual value.

Constant	Explanation	Value
CN information		
maxCNdomains	Maximum number of CN domains	4
UTRAN mobility information		
maxRAT	Maximum number of Radio Access Technologies	maxOtherRAT + 1
maxOtherRAT	Maximum number of other Radio Access Technologies	15
maxURA	Maximum number of URAs in a cell	8
maxInterSysMessages	Maximum number of Inter System Messages	4
maxRABsetup	Maximum number of RABs to be established	16
UE information		
maxtransactions	Maximum number of parallel RRC transactions in downlink	25
maxPDCPalgoType	Maximum number of PDCP algorithm types	8
maxDRACclasses	Maximum number of UE classes which would require different DRAC parameters	8
maxFreqBandsFDD	Maximum number of frequency bands supported by the UE as defined in [21]	8
maxFreqBandsTDD	Maximum number of frequency bands supported by the UE as defined in [22]	4
maxFreqBandsGSM	Maximum number of frequency bands supported by the UE as defined in [45]	16
maxPage1	Number of UEs paged in the Paging Type 1 message	8
maxSystemCapability	Maximum number of system specific capabilities that can be requested in one message.	16
RB information		
maxPredefConfig	Maximum number of predefined configurations	16
maxRB	Maximum number of RBs	32
maxSRBsetup	Maximum number of signalling RBs to be established	8
maxRBperRAB	Maximum number of RBs per RAB	8
maxRBallRABs	Maximum number of non signalling RBs	27
maxRBMuxOptions	Maximum number of RB multiplexing options	8
maxLoCHperRLC	Maximum number of logical channels per RLC entity	2
MaxROHC-PacketSizes	Maximum number of packet sizes that are allowed to be produced by ROHC.	16
MaxROHC-Profiles	Maximum number of profiles supported by ROHC on a given RB.	8
TrCH information		
maxTrCH	Maximum number of transport channels used in one direction (UL or DL)	32
maxTrCHpreconf	Maximum number of preconfigured Transport channels, per direction	16
maxCCTrCH	Maximum number of CCTrCHs	8
maxTF	Maximum number of different transport formats that can be included in the Transport format set for one transport channel	32
maxTF-CPCH	Maximum number of TFs in a CPCH set	16
maxTFC	Maximum number of Transport Format Combinations	1024
maxTFCsub	Maximum number of Transport Format Combinations Subset	1024
maxTFCI-1-Combs	Maximum number of TF CI (field 1) combinations	512
maxTFCI-2-Combs	Maximum number of TF CI (field 2) combinations	512
maxCPCHsets	Maximum number of CPCH sets per cell	16
maxSIBperMsg	Maximum number of complete system information blocks per SYSTEM INFORMATION message	16
maxSIB	Maximum number of references to other system information blocks.	32
maxSIB-FACH	Maximum number of references to system information blocks on the FACH	8
PhyCH information		
maxPCPCH-APsubCH	Maximum number of available sub-channels for AP signature on PCPCH	12
maxPCPCH-CDsubCH	Maximum number of available sub-channels for CD signature on PCPCH	12
maxPCPCH-APsig	Maximum number of available signatures for AP on PCPCH	16
maxPCPCH-CDsig	Maximum number of available signatures for CD on PCPCH	16
maxAC	Maximum number of access classes	16

maxASC	Maximum number of access service classes	8
maxASCmap	Maximum number of access class to access service classes mappings	7
maxASCpersist	Maximum number of access service classes for which persistence scaling factors are specified	6
maxPRACH	Maximum number of PRACHs in a cell	16
MaxPRACH_FPACH	Maximum number of PRACH / FPACH pairs in a cell (1.28 Mcps TDD)	8
maxFACHPCH	Maximum number of FACHs and PCHs mapped onto one secondary CCPCHs	8
maxRL	Maximum number of radio links	8
maxSCCPCH	Maximum number of secondary CCPCHs per cell	16
maxDPDCH-UL	Maximum number of DPDCHs per cell	6
maxDPCH-DLchan	Maximum number of channelisation codes used for DL DPCH	8
maxPUSCH	Maximum number of PUSCHs	(8)
maxPDSCH	Maximum number of PDSCHs	8
maxPDSCHcodes	Maximum number of codes for PDSCH	16
maxPDSCH-TFCIgroups	Maximum number of TFCI groups for PDSCH	256
maxPDSCHcodeGroups	Maximum number of code groups for PDSCH	256
maxPCPCHs	Maximum number of PCPCH channels in a CPCH Set	64
maxPCPCH-SF	Maximum number of available SFs on PCPCH	7
maxTS	Maximum number of timeslots used in one direction (UL or DL)	6 (1.28 Mcps TDD) 14 (3.84 Mcps TDD)
hiPUSCHidentities	Maximum number of PUSCH Identities	64
hiPDSCHidentities	Maximum number of PDSCH Identities	64
Measurement information		
maxTGPS	Maximum number of transmission gap pattern sequences	6
maxAdditionalMeas	Maximum number of additional measurements for a given measurement identity	4
maxMeasEvent	Maximum number of events that can be listed in measurement reporting criteria	8
maxMeasParEvent	Maximum number of measurement parameters (e.g. thresholds) per event	2
maxMeasIntervals	Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value	1
maxCellMeas	Maximum number of cells to measure	32
maxReportedGSMCells	Maximum number of GSM cells to be reported	6
maxFreq	Maximum number of frequencies to measure	8
maxSat	Maximum number of satellites to measure	16
HiRM	Maximum number that could be set as rate matching attribute for a transport channel	256
Frequency information		
maxFDDFreqList	Maximum number of FDD carrier frequencies to be stored in USIM	4
maxTDDFreqList	Maximum number of TDD carrier frequencies to be stored in USIM	4
maxFDDFreqCellList	Maximum number of neighbouring FDD cells to be stored in USIM	32
maxTDDFreqCellList	Maximum number of neighbouring TDD cells to be stored in USIM	32
maxGSMCellList	Maximum number of GSM cells to be stored in USIM	32
Other information		
maxNumGSMFreqRanges	Maximum number of GSM Frequency Ranges to store	32
maxNumFDDFreqs	Maximum number of FDD centre frequencies to store	8
maxNumTDDFreqs	Maximum number of TDD centre frequencies to store	8
maxNumCDMA200Freqs	Maximum number of CDMA2000 centre frequencies to store	8

11.1 General message structure

```

...
    SystemInformationChangeIndication,
    TransportChannelReconfiguration,
    TransportChannelReconfigurationComplete,
    TransportChannelReconfigurationFailure,
    TransportFormatCombinationControl,
TransportFormatCombinationControlTM,
    TransportFormatCombinationControlFailure,
...

--*****
--
-- 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,
    extension                       NULL
}

```

```

*****
Downlink DCCH messages using TM
*****

DL-DCCH-Message-TM ::= SEQUENCE {
message      TransportFormatCombinationControlTM
}

```

11.2 PDU definitions

```

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

```

```

CellUpdateConfirm ::= CHOICE {
  r3
    cellUpdateConfirm-r3
    nonCriticalExtensions
    cellUpdateConfirm-r3-r4-ext
    nonCriticalExtensions
  },
  later-than-r3
    rrc-TransactionIdentifier
    criticalExtensions
    r4
      cellUpdateConfirm-r4
      nonCriticalExtensions
    },
    criticalExtensions
  }
}
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
      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           DL-PDSCH-Information              OPTIONAL,
    },
    tdd
      NULL
  },
  dl-CommonInformation            DL-CommonInformation              OPTIONAL,
  dl-InformationPerRL-List         DL-InformationPerRL-List           OPTIONAL
}
CellUpdateConfirm-r3-r4-ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- The following IE extends SSDT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL                          SSDT-UL-r4                          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,
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
}
...
-- *****
-- RADIO BEARER RECONFIGURATION
-- *****

RadioBearerReconfiguration ::= CHOICE {
    r3 SEQUENCE {
        radioBearerReconfiguration-r3 RadioBearerReconfiguration-r3-IEs,
        nonCriticalExtensions SEQUENCE {
            radioBearerReconfiguration-r3-r4-ext
            RadioBearerReconfiguration-r3-r4-ext-IEs,
            SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3 SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions CHOICE {
            r4 SEQUENCE {
                radioBearerReconfiguration-r4 RadioBearerReconfiguration-r4-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            },
            criticalExtensions SEQUENCE {}
        }
    }
}

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

```

```

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

RadioBearerReconfiguration-r3-r4-ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- The following IE extends SSDT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL                    SSdt-UL-r4           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,
    rrc-StateIndicator         RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
    cn-InformationInfo         CN-InformationInfo   OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity               URA-Identity         OPTIONAL,
-- Radio bearer IEs
    rab-InformationReconfigList RAB-InformationReconfigList OPTIONAL,
    rb-InformationReconfigList RB-InformationReconfigList-r4 OPTIONAL,
    rb-InformationAffectedList RB-InformationAffectedList OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo      UL-CommonTransChInfo-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
}
...
-- *****
--
-- RADIO BEARER RELEASE
--
-- *****

RadioBearerRelease ::= CHOICE {
    r3                          SEQUENCE {
        radioBearerRelease-r3   RadioBearerRelease-r3-IEs,
        nonCriticalExtensions    SEQUENCE {
            radioBearerRelease-r3-r4-ext  RadioBearerRelease-r3-r4-ext-IEs,
            nonCriticalExtensions        SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3              SEQUENCE {
        rrc-TransactionIdentifier  RRC-TransactionIdentifier,
        criticalExtensions         CHOICE {
            r4                     SEQUENCE {
                radioBearerRelease-r4   RadioBearerRelease-r4-IEs,
                nonCriticalExtensions    SEQUENCE {} OPTIONAL
            },
            criticalExtensions        SEQUENCE {}
        }
    }
}

RadioBearerRelease-r3-IEs ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    integrityProtectionModeInfo IntegrityProtectionModeInfo     OPTIONAL,
    cipheringModeInfo         CipheringModeInfo                 OPTIONAL,
    activationTime            ActivationTime                 OPTIONAL,
    new-U-RNTI                U-RNTI                             OPTIONAL,
    new-C-RNTI                C-RNTI                             OPTIONAL,
    rrc-StateIndicator        RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
    cn-InformationInfo        CN-InformationInfo                 OPTIONAL,
    signallingConnectionRelIndication CN-DomainIdentity         OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity              URA-Identity                       OPTIONAL,
-- Radio bearer IEs
    rab-InformationReconfigList RAB-InformationReconfigList   OPTIONAL,
    rb-InformationReleaseList  RB-InformationReleaseList     OPTIONAL,
    rb-InformationAffectedList RB-InformationAffectedList    OPTIONAL,
    dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo  OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo      UL-CommonTransChInfo         OPTIONAL,
    ul-deletedTransChInfoList UL-DeletedTransChInfoList     OPTIONAL,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList   OPTIONAL,
    modeSpecificTransChInfo    CHOICE {
        fdd                       SEQUENCE {
            cpch-SetID             CPCH-SetID                     OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList  OPTIONAL
        },
        tdd                       NULL
    }
    dl-CommonTransChInfo      DL-CommonTransChInfo         OPTIONAL,
    dl-DeletedTransChInfoList DL-DeletedTransChInfoList     OPTIONAL
}

```

```

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

RadioBearerRelease-r3-r4-ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- The following IE extends SSDT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL                               SSDT-UL-r4                            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,
    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              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-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,
}
...
-- *****
--
-- RADIO BEARER SETUP
--
-- *****

RadioBearerSetup ::= CHOICE {
    r3                                       SEQUENCE {

```

```

    radioBearerSetup-r3          RadioBearerSetup-r3-IEs,
    nonCriticalExtensions        SEQUENCE {
        radioBearerSetup-r3-r4-ext  RadioBearerSetup-r3-r4-ext-IEs,
        nonCriticalExtensions        SEQUENCE {} OPTIONAL
    } OPTIONAL
},
later-than-r3                   SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions             CHOICE {
        r4                         SEQUENCE {
            radioBearerSetup-r4      RadioBearerSetup-r4-IEs,
            nonCriticalExtensions    SEQUENCE {} OPTIONAL
        },
        criticalExtensions          SEQUENCE {}
    }
}
}
}

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

RadioBearerSetup-r3-r4-ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- The following IE extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL                       SSdT-UL-r4                      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,
        rrc-StateIndicator         RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- UTRAN mobility IES
    ura-Identity                  URA-Identity                OPTIONAL,
-- Core network IES
    cn-InformationInfo           CN-InformationInfo            OPTIONAL,
-- Radio bearer IES
    srb-InformationSetupList     SRB-InformationSetupList     OPTIONAL,
    rab-InformationSetupList     RAB-InformationSetupList-r4  OPTIONAL,
    rb-InformationAffectedList   RB-InformationAffectedList   OPTIONAL,
-- Transport channel IES
    ul-CommonTransChInfo        UL-CommonTransChInfo-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
}
...
-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION
--
-- *****

TransportChannelReconfiguration ::= CHOICE {
    r3                      SEQUENCE {
        transportChannelReconfiguration-r3
        TransportChannelReconfiguration-r3-IES,
        nonCriticalExtensions SEQUENCE {
            transportChannelReconfiguration-r3-r4-ext
            TransportChannelReconfiguration-r3-r4-ext-IES,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        }
    },
    later-than-r3          SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions      CHOICE {
            r4                  SEQUENCE {
                transportChannelReconfiguration-r4
                TransportChannelReconfiguration-r4-IES,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            },
            criticalExtensions SEQUENCE {}
        }
    }
}

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

```

```

    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
  cn-InformationInfo                CN-InformationInfo                OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                       URA-Identity                       OPTIONAL,
-- Radio bearer IEs
  dl-CounterSynchronisationInfo     DL-CounterSynchronisationInfo     OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo              UL-CommonTransChInfo              OPTIONAL,
  ul-AddReconfTransChInfoList       UL-AddReconfTransChInfoList       OPTIONAL,
  modeSpecificTransChInfo           CHOICE {
    fdd                               SEQUENCE {
      cpch-SetID                     CPCH-SetID                        OPTIONAL,
      addReconfTransChDRAC-Info      DRAC-StaticInformationList        OPTIONAL
    },
    tdd                               NULL
  }
  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-r3-r4-ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- The following IE extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
  ssdt-UL                            SSdT-UL-r4                          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,
  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
  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-r4            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
    }
    ...

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

TransportFormatCombinationControl ::= SEQUENCE {

    -- TABULAR: Integrity protection shall not be performed on this message when transmitting this
    message
    -- on the transparent mode signalling DCCH-
    rrc-TransactionIdentifier            RRC-TransactionIdentifier            OPTIONAL,
    -- The information element is alwaysnot included in this messagewhen transmitting the message
    -- on the transparent mode signalling DCCH
    modeSpecificInfo                     CHOICE {
        fdd                               NULL,
        tdd                               SEQUENCE {
            tfcs-ID                       TFCS-Identity          OPTIONAL
        }
    },
    dpch-TFCS-InUplink                   TFC-Subset,
    activationTimeForTFCSsubset           ActivationTime           OPTIONAL,
    tfc-ControlDuration                   TFC-ControlDuration    OPTIONAL,

    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH and is optional otherwise
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions                 SEQUENCE {}            OPTIONAL

}

```

```

    ...

    *****
    TRANSPORT FORMAT COMBINATION CONTROL in TM RLC mode
    *****
    TransportFormatCombinationControlTM ::= CHOICE {
        r4                               SEQUENCE {
            transportFormatCombinationControlTM r4
            nonCriticalExtensions           SEQUENCE {}            OPTIONAL
        },
        later-than-r4                     SEQUENCE {
            rrc-TransactionIdentifier      RRC-TransactionIdentifier,
            criticalExtensions              SEQUENCE {}
        }
    }

    TransportFormatCombinationControlTM-r4-IEs ::= SEQUENCE {
        tfc-Subset-ID                      TFC-Subset-ID
    }


```


11.3 Information element definitions

```

...

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

..

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

...

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 {
            tfc-ID                    TFC-Identity                OPTIONAL
        }
    },
    tfc-Subset                       TFC-Subset
}

...

UL-CommonTransChInfo ::= SEQUENCE {
-- TABULAR: this tfc-subset IE 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
    }
}                                       OPTIONAL

```

```

UL-CommonTransChInfo-r4 ::= SEQUENCE {
-- TABULAR: this tfc-subset IE 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
}
=

```

...

11.4 Constant definitions

...

maxTFC	INTEGER ::= 1024
<u>maxTFCsub</u>	<u>INTEGER ::= 1024</u> 8
maxTFCI-2-Combs	INTEGER ::= 512

12.4 RRC messages encoded otherwise

NOTE The messages included in this section are not specified by means of ASN.1.

12.4.1 Messages using tabular encoding specification

The encoding of the message is specified by means of a table listing the information elements known in the message and their order of their appearance in the message.

When a field extends over more than one octet, the order of bit values progressively decreases as the octet number increases. The least significant bit of the field is represented by the lowest numbered bit of the highest numbered octet of the field.

12.4.1.1 TRANSPORT FORMAT COMBINATION CONTROL using transparent DCCH

There are three possible formats for the transparent format combination control mode used on a transparent mode DCCH. The mode to be used is configured during establishment of the transparent mode DCCH.

12.4.1.1.1 TRANSPORT FORMAT COMBINATION CONTROL, 3 bit format

The 3 bit format is as follows

3	2	1	Transport Format Combination Set Identity value
0	0	0	0
0	0	1	1
0	1	0	2
1	1	1	7

12.4.1.1.2 TRANSPORT FORMAT COMBINATION CONTROL, 5 bit format

The 5 bit format is as follows

5	4	3	2	1	Transport Format Combination Set Identity value
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	1	0	2
1	1	1	1	1	31

12.4.1.1.3 TRANSPORT FORMAT COMBINATION CONTROL, 10 bit format

The 10 bit format is as follows

Octet 1					Oct 2		Transport Format Combination Set Identity value			
10	9	8	7	6	5	4	3	2	1	
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	1	0	2
1	1	1	1	1	1	1	1	1	1	1023

13.4.24 TFC_SUBSET

This variable contains information about the TFC subset [\(s\) applicable to the UE](#) ~~currently applied~~.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE <i>mode</i>	MP			
>FDD				
>>Current TFC subset	MP		Transport Format Combination Subset 10.3.5.22	Set to "Full transport format set" when entering UTRA RRC connected mode when not stated otherwise in the procedure.
>>>Duration	OP		TFC Control duration 10.3.6.80	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>>>Default TFC subset	OP		Transport Format Combination Subset 10.3.5.22	The TFC subset to go back to when any temporary limitation is released. Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>>>TFC subset list	MP	1 to <maxTFCs ub>		
>>>>TFC subset	MP		Transport Format Combination Subset 10.3.5.22	
>TDD				
>>TFCS list	MP	1 to <maxCCTrC H >		One TFCS is created when entering UTRA RRC connected mode when not stated otherwise in the procedure.
>>>TFCS identity	MP		Transport Format Combination Set Identity 10.3.5.21	"TFCS ID" is set to 1 when entering UTRA RRC connected mode when not stated otherwise in the procedure. "Shared channel indicator" is set to FALSE when entering UTRA RRC connected mode when not stated otherwise in the procedure.
>>>>Current TFC subset	MP		Transport Format Combination Subset 10.3.5.22	Set to "Full transport format set" when entering UTRA RRC connected mode when not stated otherwise in the procedure.
>>>>>Duration	OP		TFC Control duration 10.3.6.80	Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>>>>>Default TFC subset	OP		Transport Format Combination Subset 10.3.5.22	The TFC subset to go back to when any temporary limitation is released. Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
>>>>>TFC subset list	MP	1 to <maxTFCs ub>		
>>>>>>TFCS identity	MP		Transport Format Combination Set Identity 10.3.5.21	

>>>TFC subset	MP		Transport Format Combination Subset 10.3.5.22	
--	--------------------	--	---	--