3GPP TSG-RAN Meeting #17 ***Tdoc ⌘RP-020662***
Biarritz, France, 3-6 September 2002 **(update of R2-022337)**

CR-Form-v7

CHANGE REQUEST

⌘ **25.331** **CR** **1651** ⌘**rev** **2** ⌘ Current version: **5.1.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☒ Core Network ☐

Title:	⌘	Physical layer IEs for HSDPA
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	HSDPA-L23
Date:	⌘	5th Sep 2002
Category:	⌘	**F**
Release:	⌘	REL-5

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)
Rel-6 (Release 6)

Reason for change: ⌘ Alignment with physical layer, corrections for HSDPA

- Summary of change: ⌘
  - Clarification included that radio bearer control procedures are also used to reconfigure feedback configuration of HS-DSCH
  - reversion to HS-DSCH not to be done after physical channel failure
  - Description of HS-SICH specific open loop power control for LCR TDD
  - activation of new feedback configuration at activation time clarified
  - New IE DL capability with simultaneous HS-DSCH configuration included according to decisions at previous meeting (CR to 25.306 exists also)
  - IE “NAck-Ack Power Offset” is changed to the “Ack-Nack Power Offset” to align with physical layer IEs.
  - In order to align with physical layer IEs “delta CQI”, “delta ACK” and “delta NACK” as well as “CQI repetition factor” and “Ack-Nack repetition factor” included and IE “Feedback offset, off” removed
  - within the IE “HS-SCCH-TDD128List” in ASN.1 false element definition

    hs-sich-configuration HS-SICH-Configuration-TDD384

    has been corrected to suitable

    hs-sich-configuration HS-SICH-Configuration-TDD128
  - in ASN.1 the IE “Measurement-Feedback-Info” for FDD all the IEs were in

		comments. This CR correct that by moving them out of comments • Value ranges of Ies "Ack-Nack Power offset", "Δ_{ACK}"."Δ_{NACK}"."Δ_{COI}" are aligned with RAN1
Consequences if not approved:	⌘	Inconsistency with physical layer

Clauses affected:	⌘	8.2.2.1, 8.2.2.7, 8.3.7.5, 8.3.11.5, 8.5.7, 8.6.3.1, 10.3.3.42, 10.3.6.23a, 10.3.6.36a, 10.3.6.40a, 10.3.6.91, 10.3.6.119, 11.3				
		Y	**N**			
Other specs affected:	⌘	**X**		Other core specifications	⌘	TS 25.213 CR060
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

8.2.2.1 General

Reconfiguration procedures include the following procedures:

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

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

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

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

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

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

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

8.2.2.7 Physical channel failure

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

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

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

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

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

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

2> after the cell update procedure has completed successfully:

3> proceed as below.

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

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

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

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

3> after the cell update procedure has completed successfully:

4> proceed as below.

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

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

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

2> clear that entry;

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

1> set the variable ORDERED_RECONFIGURATION to FALSE;

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

The procedure ends.

8.3.7.5 UE fails to complete requested handover

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

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

1> otherwise revert back to the UTRA configuration;

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

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

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

2> when the cell update procedure has completed successfully:

3> proceed as below.

1> transmit the HANDOVER FROM UTRAN FAILURE message setting the information elements as specified below:

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

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

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

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

If:

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

the UE shall:

1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:

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

2> otherwise revert back to the UTRA configuration;

2> establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;

2> if the UE does not succeed in establishing the UTRA physical channel(s):

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

3> when the cell update procedure has completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

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

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

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.

1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state:

2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;

2> if the UE is unable to return to this cell:

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

3> initiate the cell update procedure according to subclause 8.3.1 using the cause "cell re-selection";

3> when the cell update procedure completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

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

3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

3> the procedure ends.

8.5.7 Open loop power control

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

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

1> measure the value for the CPICH_RSCP;

1> calculate the power for the first preamble as:

Preamble_Initial_Power = Primary CPICH TX power – CPICH_RSCP + UL interference + Constant Value

Where,

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

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

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

1> as long as the physical layer is configured for PRACH or PCPCH transmission:

2> continuously recalculate the Preamble_Initial_Power when any of the broadcast parameters used in the above formula changes; and

2> resubmit to the physical layer the new calculated Preamble_Initial_Power.

For 3.84 Mcps TDD the UE shall:

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

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

1> otherwise:

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

1> for PUSCH and PRACH power control:

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

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

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

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

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

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

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

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

Where, for all the above equations for 3.84 Mcps TDD the following apply:

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

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

For 1.28 Mcps TDD the UE shall:

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

$$P_{UpPCH} = L_{PCCPCH} + PRX_{UpPCHdes} + (i-1)* Pwr_{ramp}$$

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

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

$$P_{PRACH} = L_{PCCPCH} + PRX_{PRACHdes} + (i_{UpPCH}-1) * Pwr_{ramp}$$

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

$$P_{USCH} = PRX_{PUSCHdes} + L_{PCCPCH}$$

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

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

1> when transmitting a Negative Acknowledgement, and

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

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

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

$$P_{DPCH} = PRX_{PDPCHdes} + L_{PCCPCH}$$

Where:

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

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

- $PRX_{PUSCHdes}$: Desired PUSCH RX power at the cell's receiver in dBm signalled to the UE in IE "PUSCH Power Control Info".

- $PRX_{PDPCHdes}$: Desired PDPCH RX power at the cell's receiver in dBm signalled to the UE in IE "Uplink DPCH Power Control Info".

- Pwr_{ramp}: The UE shall increase its transmission power by the value of the IE "Power Ramp step" by every UpPCH transmission.

- $PRX_{HS\text{-}SICH}$: Desired HS-SICH RX power at the cell's receiver in dBm signalled to the UE in IE "Downlink HS-PDSCH Information".

- Ack-Nack Power Offset: Difference in the desired RX power between HS-SICH transmissions conveying an acknowledgement and transmissions conveying an negative acknowledgement signalled to the UE in IE "HS-SCCH Info".

8.6.3.1 Activation time

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

1> if the frame boundary immediately before the frame with the CFN (Connection Frame Number) value indicated by the IE "Activation Time" is at the TTI boundary common to all the transport channels that are multiplexed onto the same CCTrCh including any transport channel which is added, reconfigured or has been removed:

2> select that frame boundary as the activation time T.

1> else:

2> select the next TTI boundary, which is common to all the transport channels that are multiplexed onto the same CCTrCh including any transport channel which is added, reconfigured or has been removed, after the frame with the CFN (Connection Frame Number) value indicated by the IE "Activation Time", as the activation time T.

1> at the activation time T:

2> for a physical channel reconfiguration caused by the received message:

3> release the physical channel configuration, which was present before T;

3> initiate the establishment of the physical channel configuration as specified for the physical channel information elements in the received message as specified elsewhere.

2> for actions, other than a physical channel reconfiguration, caused by the received message:

3> perform the actions for the information elements in the received message as specified elsewhere.

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

1> choose an activation time T as soon as possible after the reception of the message, respecting the performance requirements in subclause 13.5;

1> at the activation time T:

2> perform the actions for the information elements in the received message as specified elsewhere.

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

1> start or stop monitoring the assigned HS-SCCH(s) according to the new configuration received in this message.

1> apply the new feedback configuration for measurements and acknowledgements

10.3.3.42 UE radio access capability

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
	CV-*not_rrc_connectionSetupComplete*		Enumerated(REL-4)	15 spare values are needed.	REL-4
DL capability with simultaneous HS-DSCH configuration	OP		Enumerated(32kbps, 64kbps, 128kbps, 384kbps)		REL-5
PDCP capability	MP		PDCP capability 10.3.3.24		
RLC capability	MP		RLC capability 10.3.3.34		
~~MAC-hs capability~~	~~OP~~		~~MAC_hs capability 10.3.3.19a~~		~~REL-5~~
Transport channel capability	MP		Transport channel capability 10.3.3.40		
RF capability FDD	OP		RF capability FDD 10.3.3.33		
RF capability TDD	OP		RF capability TDD 10.3.3.33b	One "TDD RF capability" entity shall be included for every Chip rate capability supported.	
		1 to 2			REL-4
Physical channel capability	MP		Physical channel capability 10.3.3.25		
UE multi-mode/multi-RAT capability	MP		UE multi-mode/multi-RAT capability 10.3.3.41		
Security capability	MP		Security capability 10.3.3.37		
UE positioning capability	MP		UE positioning capability 10.3.3.45		
Measurement capability	CH-*fdd_req_sup*		Measurement capability 10.3.3.21		

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

10.3.6.23a Downlink HS-PDSCH Information

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

10.3.6.36a HS-SCCH Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE mode	MP				REL-5
>FDD					REL-5
>>HS-SCCH Channelisation Code Information	MP	<1 to maxHSSCCHcodes>			REL-5
>>>HS-SCCH Channelisation Code	MP		Integer (0..127)		REL-5
>TDD					REL-5
>>CHOICE *TDD option*	MP				REL-5
>>>3.84 Mcps					REL-5
>>>>HS-SCCH Set Configuration	MP	1 to <maxHS-SCCHs>			REL-5
>>>>>Timeslot number	MP		Integer (0..14)		REL-5
>>>>>Channelisation code	MP		Enumerated ((16/1) ..(16/16))		REL-5
>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, Common midamble)	HS-SCCH always uses burst type 1.	REL-5
>>>>>Midamble configuration	MP		Integer (4, 8, 16)		REL-5
>>>>>BLER target	MP		Real (-3.15..0 by step of 0.05)	Signalled value is Log10(HS-SCCH BLER quality target)	REL-5
>>>>>HS-SICH configuration					REL-5
>>>>>>Timeslot number	MP		Integer (0..14)		REL-5
>>>>>>Channelisation code	MP		Enumerated ((16/1) ..(16/16))		REL-5
>>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, UE specific midamble)		REL-5
>>>>>>Midamble configuration	MP		Integer (4, 8, 16)		REL-5
>>>>>>Midamble Shift	CV-*UE*		Integer (0..15)		REL-5
>>>>>> Ack-Nack Power Offset~~NACK-Ack Power Offset~~	MP		Integer (-~~70~~..~~87~~ by step of 1)	dB	REL-5
>>>>>>UL target SIR	MP		Real (-11..20 by step of 0.5)	dB	REL-5
>>>1.28 Mcps					REL-5
>>>>HS-SCCH Set Configuration	MP	1 to <maxHS-SCCHs>			REL-5
>>>>>Timeslot number	MP		Integer (0..6)		REL-5
>>>>>First Channelisation code	MP		Enumerated ((16/1) ..(16/16))		REL-5
>>>>>Second Channelisation code	MP		Enumerated ((16/1) ..(16/16))		REL-5
>>>>>Midamble Allocation	MP		Enumerated		REL-5

mode			(Default midamble, Common midamble)		
>>>>>Midamble configuration	MP		Integer (2, 4, 6, 8, 10, 12, 14, 16)		REL-5
>>>>>BLER target	MP		Real (-3.15..0 by step of 0.05)	Signalled value is Log10(HS-SCCH BLER quality target)	REL-5
>>>>>HS-SICH configuration					REL-5
>>>>>>Timeslot number	MP		Integer (0..6)		REL-5
>>>>>>Channelisation code	MP		Enumerated ((16/1) ..(16/16))		REL-5
>>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, UE specific midamble)		REL-5
>>>>>>Midamble configuration	MP		Integer (2, 4, 6, 8, 10, 12, 14, 16)		REL-5
>>>>>>Midamble Shift	CV-*UE*		Integer (0..15)		REL-5
>>>>>> Ack-Nack Power Offset~~NAck-Ack Power Offset~~	MP		Integer (-7~~0~~..8~~7~~ by step of 1)	dB.	REL-5
>>>>>>$PRX_{HS-SICH}$	MP		Integer (-120..-58 by step of 1)	dBm. Desired power level for HS-SICH.	REL-5
>>>>>>TPC step size	MP		Integer (1, 2, 3)	dB.	REL-5

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

10.3.6.40a Measurement Feedback Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
BLER threshold	MP		FFS		REL-5
CHOICE *mode*	MP				REL-5
>FDD					REL-5
>>POhsdsch	MP		Integer (-x..0) FFS	Default Power offset between HS-PDSCH and P-CPICH/S-CPICH. In dB.	REL-5
>>Feedback cycle k	MP		Integer ([0, 1, 5, 10, 20, 40, 80])	Multiples of 2 ms intervals. Value 10 corresponds to 20 ms.	REL-5
~~>>Feedback offset, off~~	~~MP~~		~~Integer (1..5)~~	~~Exact definition is FFS~~	~~REL-5~~
>> CQI repetition factor	MP		Integer(1..4)		REL-5
>>Δ_{CQI}	OP		Integer (0..8)	refer to quantization of the power offset in [28]	REL-5
>TDD				(no data)	REL-5

10.3.6.91 Uplink DPCH power control info

Parameters used by UE to set DPCH initial output power and to use for closed-loop power control in FDD and 1.28 Mcps TDD and parameters for uplink open loop power control in 3.84 Mcps TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE *mode*	MP				
>FDD					
>>DPCCH Power offset	MP		Integer(-164,..-6 by step of 2)	In dB	
>>PC Preamble	MP		Integer (0..7)	In number of frames	
>>SRB delay	MP		Integer(0..7)	In number of frames	
>>Power Control Algorithm	MP		Enumerated (algorithm 1, algorithm 2)	Specifies algorithm to be used by UE to interpret TPC commands	
>>TPC step size	CV-*algo*		Integer (1, 2)	In dB	
~~>>DPCCH-2 Power offset~~	~~OP~~		~~Integer ([-164.. 6])~~	~~In dB.~~	~~REL-5~~
>>Δ_{ACK}	OP		Integer (0..8)	refer to quantization of the power offset in [28]	REL-5
>>Δ_{NACK}	OP		Integer (0..8)	refer to quantization of the power offset in [28]	REL-5
>>Ack-N~~AK~~ack repetition factor	OP		Integer(1..4)		REL-5
>TDD					
>>CHOICE *TDD option*					REL-4
>>>3.84 Mcps TDD					REL-4
>>>>UL target SIR	OP		Real (-11 .. 20 by step of	In dB	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			0.5dB)		
>>>1.28 Mcps TDD					REL-4
>>>> $PRX_{PDPCHdes}$	OP		Integer(-120…-58 by step of 1)	in dBm	REL-4
>>CHOICE *UL OL PC info*	MP				
>>>Broadcast UL OL PC info			Null	No data	
>>>Individually Signalled	OP				
>>>>CHOICE *TDD option*	MP				REL-4
>>>>>3.84 Mcps TDD					REL-4
>>>>>>Individual timeslot interference info	MP	1 to <maxTS>			
>>>>>>>Individual timeslot interference	MP		Individual timeslot interference 10.3.6.38		
>>>>>>DPCH Constant Value	OP		Constant Value TDD 10.3.6.11a	Quality Margin	
>>>>>1.28 Mcps TDD					REL-4
>>>>>>TPC step size	MP		Integer(1,2,3)		REL-4
>>>>Primary CCPCH Tx Power	OP		Primary CCPCH Tx Power 10.3.6.59	For Pathloss Calculation	

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

10.3.6.11a Constant value TDD

NOTE: Only for 3.84 Mcps TDD.

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TDD Constant value	MP		Integer (-35..+10)	In dB

11.1 General message structure

```
Class-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    ActiveSetUpdate,
```

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

-- User Equipment IEs :
    IntegrityCheckInfo
FROM InformationElements;

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

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

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

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

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

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

```
                                        SignallingConnectionReleaseIndication,
    transportChannelReconfigurationComplete
                                        TransportChannelReconfigurationComplete,
    transportChannelReconfigurationFailure
                                        TransportChannelReconfigurationFailure,
    transportFormatCombinationControlFailure
                                        TransportFormatCombinationControlFailure,
    ueCapabilityInformation             UECapabilityInformation,
    uplinkDirectTransfer                UplinkDirectTransfer,
    utranMobilityInformationConfirm     UTRANMobilityInformationConfirm,
    utranMobilityInformationFailure     UTRANMobilityInformationFailure,
    spare2                              NULL,
    spare1                              NULL
}

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

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

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

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

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

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

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

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

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

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

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

```
}

DL-SHCCH-MessageType ::= CHOICE {
    physicalSharedChannelAllocation     PhysicalSharedChannelAllocation,
    extension                           NULL
}

--**************************************************************
--
-- Uplink SHCCH messages
--
--**************************************************************

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

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


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

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

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

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

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

END
```

11.2 PDU definitions

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

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
```

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

```
    SRB-InformationSetupList2,
    UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
    CPCH-SetID,
    DL-AddReconfTransChInfo2List,
    DL-AddReconfTransChInfoList,
    DL-AddReconfTransChInfoList-r4,
    DL-AddReconfTransChInfoList-r5,
    DL-CommonTransChInfo,
    DL-CommonTransChInfo-r4,
    DL-DeletedTransChInfoList,
    DL-DeletedTransChInfoList-r5,
    DRAC-StaticInformationList,
    TFC-Subset,
    TFCS-Identity,
    UL-AddReconfTransChInfoList,
    UL-CommonTransChInfo,
    UL-CommonTransChInfo-r4,
    UL-DeletedTransChInfoList,
-- Physical Channel IEs :
    Alpha,
    CCTrCH-PowerControlInfo,
    CCTrCH-PowerControlInfo-r4,
    ConstantValue,
    ConstantValueTdd,
    CPCH-SetInfo,
    DL-CommonInformation,
    DL-CommonInformation-r4,
    DL-CommonInformationPost,
    DL-HSPDSCH-Information,
    DL-InformationPerRL,
    DL-InformationPerRL-List,
    DL-InformationPerRL-List-r4,
    DL-InformationPerRL-List-r5,
    DL-InformationPerRL-ListPostFDD,
    DL-InformationPerRL-PostTDD,
    DL-InformationPerRL-PostTDD-LCR-r4,
    DL-PDSCH-Information,
    DPCH-CompressedModeStatusInfo,
    FrequencyInfo,
    FrequencyInfoFDD,
    FrequencyInfoTDD,
    MaxAllowedUL-TX-Power,
    OpenLoopPowerControl-IPDL-TDD-r4,
    PDSCH-CapacityAllocationInfo,
    PDSCH-CapacityAllocationInfo-r4,
    PDSCH-Identity,
    PrimaryCCPCH-TX-Power,
    PUSCH-CapacityAllocationInfo,
    PUSCH-CapacityAllocationInfo-r4,
    PUSCH-Identity,
    RL-AdditionInformationList,
    RL-RemovalInformationList,
    SpecialBurstScheduling,
    SSDT-Information,
    TFC-ControlDuration,
    SSDT-UL-r4,
    TimeslotList,
    TimeslotList-r4,
    TX-DiversityMode,
    UL-ChannelRequirement,
    UL-ChannelRequirement-r4,
    UL-ChannelRequirement-r5,
    UL-ChannelRequirementWithCPCH-SetID,
    UL-ChannelRequirementWithCPCH-SetID-r4,
    UL-ChannelRequirementWithCPCH-SetID-r5,
    UL-DPCH-Info,
    UL-DPCH-Info-r4,
    UL-DPCH-InfoPostFDD,
    UL-DPCH-InfoPostTDD,
    UL-DPCH-InfoPostTDD-LCR-r4,
    UL-SynchronisationParameters-r4,
    UL-TimingAdvance,
    UL-TimingAdvanceControl,
    UL-TimingAdvanceControl-r4,
-- Measurement IEs :
    AdditionalMeasurementID-List,
    Frequency-Band,
```

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

    maxSIBperMsg
FROM Constant-definitions;

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

ActiveSetUpdate ::= CHOICE {
    r3                              SEQUENCE {
        activeSetUpdate-r3              ActiveSetUpdate-r3-IEs,
        v4xyNonCriticalExtensions       SEQUENCE {
            activeSetUpdate-v4xyext     ActiveSetUpdate-v4xyext-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-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- ssdt-UL extends SSDT-Information. FDD only.
        ssdt-UL                         SSDT-UL-r4                          OPTIONAL,
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE RL-AdditionInformationList included in this message
        cell-id-PerRL-List              CellIdentity-PerRL-List             OPTIONAL
}


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

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

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

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

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

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

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

```
}

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

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

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

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

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

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

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

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

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

CellUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        startList       STARTList,
        am-RLC-ErrorIndicationRb2-3or4      BOOLEAN,
```

```
        am-RLC-ErrorIndicationRb5orAbove    BOOLEAN,
        cellUpdateCause                 CellUpdateCause,
        -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
        failureCause                    FailureCauseWithProtErrTrId         OPTIONAL,
        rb-timer-indicator              Rb-timer-indicator,
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH               OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

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

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

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

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

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

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

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

```
}

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

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

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

```
            },
            criticalExtensions              SEQUENCE {}
        }
    }
}

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

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

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

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

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

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

DownlinkDirectTransfer ::= CHOICE {
    r3                              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
}

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


HandoverToUTRANCommand ::= CHOICE {
```

```
    r3                              SEQUENCE {
        handoverToUTRANCommand-r3       HandoverToUTRANCommand-r3-IEs,
        v4xyNonCriticalExtensions       SEQUENCE {
            handoverToUTRANCommand-v4xyext  HandoverToUTRANCommand-v4xyext-IEs,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }   OPTIONAL
    },
    criticalExtensions              CHOICE {
        r4                              SEQUENCE {
            handoverToUTRANCommand-r4       HandoverToUTRANCommand-r4-IEs,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        },
        criticalExtensions              SEQUENCE {}
    }
}

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

                }
            }
        },
    -- Physical channel IEs
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power
}
```

```
HandoverToUTRANCommand-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
        ssdt-UL                             SSDT-UL-r4                          OPTIONAL,
        cell-id                             CellIdentity                        OPTIONAL
}

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

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

HandoverToUTRANComplete ::= SEQUENCE {
    --TABULAR: Integrity protection shall not be performed on this message.
```

```
    -- User equipment IEs
    -- TABULAR: startList is conditional on history.
        startList                       STARTList                           OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                      OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- INITIAL DIRECT TRANSFER
--
-- **************************************************

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

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


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

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

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

HandoverFromUTRANCommand-CDMA2000 ::= CHOICE {
    r3                              SEQUENCE {
        handoverFromUTRANCommand-CDMA2000-r3
                                        HandoverFromUTRANCommand-CDMA2000-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
```

```
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MeasurementControl-r4-IEs ::= SEQUENCE {
    -- Measurement IEs
        measurementIdentity     MeasurementIdentity,
        -- TABULAR: The measurement type is included in measurementCommand.
        measurementCommand              MeasurementCommand-r4,
```

```
        measurementReportingMode        MeasurementReportingMode            OPTIONAL,
        additionalMeasurementList       AdditionalMeasurementID-List        OPTIONAL,
    -- Physical channel IEs
        dpch-CompressedModeStatusInfo   DPCH-CompressedModeStatusInfo       OPTIONAL
}

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

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

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

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

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

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

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

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

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

PagingType2 ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        pagingCause                     PagingCause,
```

```
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
        pagingRecordTypeID              PagingRecordTypeID,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

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

PhysicalChannelReconfiguration ::= CHOICE {
    r3                              SEQUENCE {
        physicalChannelReconfiguration-r3
                                        PhysicalChannelReconfiguration-r3-IEs,
        v3a0NonCriticalExtensions           SEQUENCE {
            physicalChannelReconfiguration-v3a0ext      PhysicalChannelReconfiguration-v3a0ext,
            v4xyNonCriticalExtenstions          SEQUENCE {
                physicalChannelReconfiguration-v4xyext
                                        PhysicalChannelReconfiguration-v4xyext-IEs,
                nonCriticalExtensions                   SEQUENCE {} OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
            criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                physicalChannelReconfiguration-r4
                                                PhysicalChannelReconfiguration-r4-IEs,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            },
            criticalExtensions              CHOICE {
                r5                              SEQUENCE {
                    physicalChannelReconfiguration-r5
                                                    PhysicalChannelReconfiguration-r5-IEs,
                    nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                },
                criticalExtensions              SEQUENCE {}
            }
        }
    }
}

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

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

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

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

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

```
}

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

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

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

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

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

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

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

```
}

PhysicalSharedChannelAllocation-r4-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- Physical channel IEs
        ul-TimingAdvance                UL-TimingAdvanceControl-r4          OPTIONAL,
        pusch-CapacityAllocationInfo    PUSCH-CapacityAllocationInfo-r4     OPTIONAL,
        pdsch-CapacityAllocationInfo    PDSCH-CapacityAllocationInfo-r4     OPTIONAL,
        -- TABULAR: If confirmRequest is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
        confirmRequest                  ENUMERATED {
                                            confirmPDSCH, confirmPUSCH }    OPTIONAL,
        iscpTimeslotList                TimeslotList-r4                     OPTIONAL,
        requestPCCPCHRSCP               BOOLEAN
}

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

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

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

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

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

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

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

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

RadioBearerReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        activationTime                  ActivationTime                      OPTIONAL,
        new-U-RNTI                      U-RNTI                              OPTIONAL,
        new-C-RNTI                      C-RNTI                              OPTIONAL,
        new-DSCH-RNTI                   DSCH-RNTI                           OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IEs
        cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
        rab-InformationReconfigList     RAB-InformationReconfigList         OPTIONAL,
        rb-InformationReconfigList      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
        }                                                                   OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4             OPTIONAL,
        dl-DeletedTransChInfoList       DL-DeletedTransChInfoList           OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfo2List        OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                       OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power               OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement-r4            OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information        OPTIONAL
            },
            tdd                             NULL
        },
        dl-CommonInformation            DL-CommonInformation-r4             OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r4         OPTIONAL
}

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

-- **************************************************
--
```

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

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

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

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

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

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

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

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

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

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

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

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

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


-- **************************************************
--
-- RADIO BEARER 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
        potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

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

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

RadioBearerSetup-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        activationTime                  ActivationTime                      OPTIONAL,
        new-U-RNTI                      U-RNTI                              OPTIONAL,
        new-C-RNTI                      C-RNTI                              OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- UTRAN mobility IEs
```

```
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Core network IEs
        cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
    -- Radio bearer IEs
        srb-InformationSetupList        SRB-InformationSetupList            OPTIONAL,
        rab-InformationSetupList        RAB-InformationSetupList            OPTIONAL,
        rb-InformationAffectedList      RB-InformationAffectedList          OPTIONAL,
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo       OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo                OPTIONAL,
        ul-deletedTransChInfoList       UL-DeletedTransChInfoList           OPTIONAL,
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList         OPTIONAL,
        modeSpecificTransChInfo         CHOICE {
            fdd                             SEQUENCE {
                cpch-SetID                      CPCH-SetID                  OPTIONAL,
                addReconfTransChDRAC-Info       DRAC-StaticInformationList  OPTIONAL
            },
            tdd                             NULL
        }                                                                   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-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI                   DSCH-RNTI                           OPTIONAL
}

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

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

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

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

-- **************************************************
--
-- RADIO BEARER 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
        potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- ************************************************
--
-- RRC CONNECTION REJECT
--
-- ************************************************

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

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

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

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

```
RRCConnectionRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        -- n-308 is conditional on the UE state
        n-308                           N-308                                   OPTIONAL,
        releaseCause                    ReleaseCause,
        rplmn-information               Rplmn-Information                       OPTIONAL
}

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

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

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

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

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

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

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

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

RRCConnectionRequest ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity              InitialUE-Identity,
        establishmentCause              EstablishmentCause,
```

```
        -- protocollErrorIndictator is MD, but for compactness reasons no default value
        -- has been assigned to it.
        protocolErrorIndicator          ProtocolErrorIndicator,
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH               OPTIONAL,
        v4xyNonCriticalExtensions           SEQUENCE {
            rrcConnectionRequest-v4xyext        RRCConnectionRequest-v4xyext-IEs,
            -- Reserved for future non critical extension
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

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

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

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

RRCConnectionSetup-v4xyext-IEs ::= SEQUENCE {
```

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

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

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

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

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

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

RRCConnectionSetupComplete-v3a0ext ::= SEQUENCE {
```

```
    -- User equipment IEs
        ue-RadioAccessCapability-v3a0ext    UE-RadioAccessCapability-v3a0ext    OPTIONAL
}

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

-- **************************************************
--
-- RRC FAILURE INFO
--
-- **************************************************

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

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

-- **************************************************
--
-- RRC STATUS
--
-- **************************************************

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

-- **************************************************
--
-- SECURITY MODE COMMAND
--
-- **************************************************

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

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

-- **************************************************
--
-- SECURITY MODE COMPLETE
--
-- **************************************************
```

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

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

-- ************************************************
--
-- SECURITY MODE FAILURE
--
-- ************************************************

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

-- ************************************************
--
-- SIGNALLING CONNECTION RELEASE
--
-- ************************************************

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

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

-- ************************************************
--
-- SIGNALLING CONNECTION RELEASE INDICATION
--
-- ************************************************

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

-- ************************************************
--
-- SYSTEM INFORMATION for BCH
--
-- ************************************************

SystemInformation-BCH ::= SEQUENCE {
    -- Other information elements
        sfn-Prime                       SFN-Prime,
        payload                         CHOICE {
            noSegment                       NULL,
            firstSegment                    FirstSegment,
            subsequentSegment               SubsequentSegment,
            lastSegmentShort                        LastSegmentShort,
```

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

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

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

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

FirstSegment ::=                    SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
```

```
        seg-Count                       SegCount,
        sib-Data-fixed                  SIB-Data-fixed
}

-- **************************************************
--
-- First segment (short)
--
-- **************************************************

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

-- **************************************************
--
-- Subsequent segment
--
-- **************************************************

SubsequentSegment ::=               SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        segmentIndex                    SegmentIndex,
        sib-Data-fixed                  SIB-Data-fixed
}

-- **************************************************
--
-- Last segment
--
-- **************************************************

LastSegment ::=                     SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        segmentIndex                    SegmentIndex,
        -- For sib-Data-fixed, in case the SIB data is less than 222 bits, padding
        -- shall be used. The same padding bits shall be used as defined in clause 12.1
        sib-Data-fixed                  SIB-Data-fixed
}

LastSegmentShort ::=                        SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        segmentIndex                    SegmentIndex,
        sib-Data-variable               SIB-Data-variable
}

-- **************************************************
--
-- Complete SIB
--
-- **************************************************

CompleteSIB-List ::=                SEQUENCE (SIZE (1..maxSIBperMsg)) OF
                                        CompleteSIBshort

CompleteSIB ::=                     SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        -- For sib-Data-fixed, in case the SIB data is less than 226 bits, padding
        -- shall be used. The same padding bits shall be used as defined in clause 12.1
        sib-Data-fixed                  BIT STRING (SIZE (226))
}

CompleteSIBshort ::=                        SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        sib-Data-variable               SIB-Data-variable
}

-- **************************************************
--
-- SYSTEM INFORMATION CHANGE INDICATION
```

```
--
-- ************************************************

SystemInformationChangeIndication ::=   SEQUENCE {
    -- Other IEs
        bcch-ModificationInfo               BCCH-ModificationInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

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

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

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

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

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

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

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

TransportChannelReconfiguration-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        activationTime                  ActivationTime                      OPTIONAL,
        new-U-RNTI                      U-RNTI                              OPTIONAL,
        new-C-RNTI                      C-RNTI                              OPTIONAL,
        new-DSCH-RNTI                   DSCH-RNTI                           OPTIONAL,
```

```
        new-H-RNTI                      H-RNTI                                  OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient        OPTIONAL,
    -- Core network IEs
        cn-InformationInfo              CN-InformationInfo                      OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                            OPTIONAL,
    -- Radio bearer IEs
        rb-WithPDCP-InfoList            RB-WithPDCP-InfoList                    OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo-r4                 OPTIONAL,
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList             OPTIONAL,
        modeSpecificTransChInfo         CHOICE {
            fdd                             SEQUENCE {
                cpch-SetID                      CPCH-SetID                      OPTIONAL,
                addReconfTransChDRAC-Info       DRAC-StaticInformationList      OPTIONAL
            },
            tdd                             NULL
        }                                                                       OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4                 OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5          OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                           OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power                   OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement-r5                OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information            OPTIONAL
            },
            tdd                             NULL
        },
        dl-HSPDSCH-Information          DL-HSPDSCH-Information                  OPTIONAL,
        dl-CommonInformation            DL-CommonInformation-r4                 OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r5             OPTIONAL
}

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

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

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

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

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

TransportFormatCombinationControl ::= SEQUENCE {
        -- rrc-TransactionIdentifier is always included in this message
```

```
        rrc-TransactionIdentifier       RRC-TransactionIdentifier           OPTIONAL,
        modeSpecificInfo                    CHOICE {
            fdd                                 NULL,
            tdd                                 SEQUENCE {
                tfcs-ID                             TFCS-Identity   OPTIONAL
            }
        },
        dpch-TFCS-InUplink                  TFC-Subset,
        activationTimeForTFCSubset          ActivationTime                      OPTIONAL,
        tfc-ControlDuration                 TFC-ControlDuration                 OPTIONAL,
        -- Extension mechanism for non- release99 information
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

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

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

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

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

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

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

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

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

```
                    v4xyNonCriticalExtensions           SEQUENCE {
                        ueCapabilityInformation-v4xyext     UECapabilityInformation-v4xyext,
                        v5xyNonCriticalExtensions           SEQUENCE {
                            ueCapabilityInformation-v5xyext UECapabilityInformation-v5xyext,
                            nonCriticalExtensions               SEQUENCE {}     OPTIONAL
                        }       OPTIONAL
                    }       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-v3a0ext::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v3a0ext        UE-RadioAccessCapability-v3a0ext        OPTIONAL
}

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

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

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

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

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

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

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

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

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

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

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

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

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

URAUpdateConfirm-CCCH ::= CHOICE {
    r3                              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 {}
    }
}

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

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

UTRANMobilityInformation ::= CHOICE {
    r3                              SEQUENCE {
        utranMobilityInformation-r3     UTRANMobilityInformation-r3-IEs,
        v3a0NonCriticalExtensions       SEQUENCE {
            utranMobilityInformation-v3a0ext    UTRANMobilityInformation-v3a0ext-IEs,
            nonCriticalExtensions               SEQUENCE {} OPTIONAL
        }       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
}

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

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

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

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

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

END
```

11.3 Information element definitions

```
InformationElements DEFINITIONS AUTOMATIC TAGS ::=

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

BEGIN

IMPORTS

    hiPDSCHidentities,
    hiPUSCHidentities,
    hiRM,
    maxAC,
    maxAdditionalMeas,
    maxASC,
```

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

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

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

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

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

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

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

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

Digit ::=                           INTEGER (0..9)

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

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

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

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

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

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

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

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

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

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

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

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

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


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

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

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

RAI ::=                             SEQUENCE {
```

```
    lai                                 LAI,
    rac                                 RoutingAreaCode
}

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

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

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

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

AccessClassBarred ::=               ENUMERATED {
                                        barred, notBarred }

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

AllowedIndicator ::=                ENUMERATED {
                                        allowed, notAllowed }

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

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

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

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

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

MapParameter ::=                    INTEGER (0..99)
```

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

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

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

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

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

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

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

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

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

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

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

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

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

ReservedIndicator ::=               ENUMERATED {
                                        reserved,
                                        notReserved }

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CipheringAlgorithm ::=              ENUMERATED {
                                        uea0, uea1 }

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

CipheringModeInfo ::=               SEQUENCE {
```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

DL-PhysChCapabilityFDD ::=          SEQUENCE {
```

```
    maxNoDPCH-PDSCH-Codes               INTEGER (1..8),
    maxNoPhysChBitsReceived             MaxNoPhysChBitsReceived,
    supportForSF-512                    BOOLEAN,
    supportOfPDSCH                      BOOLEAN,
    simultaneousSCCPCH-DPCH-Reception   SimultaneousSCCPCH-DPCH-Reception
}

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

SupportOfDedicatedPilotsForChEstimation ::=         ENUMERATED { true }

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

DL-PhysChCapabilityTDD-LCR-r4 ::=   SEQUENCE {
    maxTS-PerSubFrame                   MaxTS-PerSubFrame-r4,
    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                      MaxNumberOfTFC-DL,
    maxNumberOfTF                       MaxNumberOfTF
}

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

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

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

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

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

```
                                        spare8,
                                        spare7,
                                        spare6,
                                        spare5,
                                        spare4,
                                        spare3,
                                        spare2,
                                        spare1 }

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

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

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

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

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

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

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

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

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

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

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

IntegrityProtectionAlgorithm ::=    ENUMERATED {
                                        uia1 }
```

```
IntegrityProtectionModeCommand ::=  CHOICE {
    startIntegrityProtection            SEQUENCE {
        integrityProtInitNumber             IntegrityProtInitNumber
    },
    modify                              SEQUENCE {
        dl-IntegrityProtActivationInfo      IntegrityProtActivationInfo
    }
}

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

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

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

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


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

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

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

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

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

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

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

MaxNoSCCPCH-RL ::=                  ENUMERATED {
                                        rl1 }

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

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

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

MaxPhysChPerFrame ::=               INTEGER (1..224)

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

MaxPhysChPerTimeslot ::=            ENUMERATED {
                                        ts1, ts2 }
```

```
MaxPhysChPerTS ::=                  INTEGER (1..16)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

N-313 ::=                           ENUMERATED {
```

```
                                        s1, s2, s4, s10, s20,
                                         s50, s100, s200 }

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PDCP-Capability-r4-ext ::=              SEQUENCE {
    supportForRfc3095                   CHOICE {
        notSupported                        NULL,
        supported                           SEQUENCE {
            maxROHC-ContextSessions             MaxROHC-ContextSessions-r4  DEFAULT s16,
```

```
            reverseCompressionDepth             INTEGER (0..65535)          DEFAULT 0
        }
    }
}

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

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

-- PhysicalChannelCapability-hspdsch-r5 describes the HS-PDSCH physical channel capability
PhysicalChannelCapability-hspdsch-r5 ::=        SEQUENCE {
    modeSpecificInfo                            CHOICE {
        fdd                                         SEQUENCE {
            hspdsch-supported                           CHOICE {
                supported                                   HSDSCH-capability-class,
                notsupported                                NULL
            }
        },
        tdd384                                      SEQUENCE {
            hspdsch-supported                           CHOICE {
                supported                                   HSDSCH-capability-class,
                notsupported                                NULL
            }
        },
        tdd128                                      SEQUENCE {
            hspdsch-supported                           CHOICE {
                supported                                   HSDSCH-capability-class,
                notsupported                                NULL
            }
        }
    }                                           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,
                                        spare2, spare1 }

ProtocolErrorIndicator ::=          ENUMERATED {
                                        noError, errorOccurred }

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

ProtocolErrorMoreInformation ::=    SEQUENCE {
```

```
    diagnosticsType                     CHOICE {
        type1                               CHOICE {
            asn1-ViolationOrEncodingError       NULL,
            messageTypeNonexistent              NULL,
            messageNotCompatibleWithReceiverState
                                                IdentificationOfReceivedMessage,
            ie-ValueNotComprehended             IdentificationOfReceivedMessage,
            conditionalInformationElementError  IdentificationOfReceivedMessage,
            messageExtensionNotComprehended     IdentificationOfReceivedMessage,
            spare1                              NULL,
            spare2                              NULL
        },
        spare                               NULL
    }
}

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

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

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

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

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

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

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

RejectionCause ::=                  ENUMERATED {
                                        congestion,
                                        unspecified }

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

RF-Capability ::=                   SEQUENCE {
        fddRF-Capability                SEQUENCE {
            ue-PowerClass                   UE-PowerClass,
            txRxFrequencySeparation         TxRxFrequencySeparation
        }                                   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),
                                            uia1(14),
                                            spare0(15)
                                            }    (SIZE (16))
}

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

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

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

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

STARTSingle ::=                     SEQUENCE {
    cn-DomainIdentity                   CN-DomainIdentity,
    start-Value                         START-Value
}

SystemSpecificCapUpdateReq ::=      ENUMERATED {
                                        gsm }

SystemSpecificCapUpdateReqList ::= SEQUENCE (SIZE (1..maxSystemCapability)) OF
                                        SystemSpecificCapUpdateReq


T-300 ::=                           ENUMERATED {
                                        ms100, ms200, ms400, ms600, ms800,
                                        ms1000, ms1200, ms1400, ms1600,
                                        ms1800, ms2000, ms3000, ms4000,
                                        ms6000, ms8000 }

T-301 ::=                           ENUMERATED {
                                        ms100, ms200, ms400, ms600, ms800,
                                        ms1000, ms1200, ms1400, ms1600,
                                        ms1800, ms2000, ms3000, ms4000,
                                        ms6000, ms8000, spare }

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

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

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

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

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

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

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

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

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

T-313 ::=                           INTEGER (0..15)

T-314 ::=                           ENUMERATED {
                                        s0, s2, s4, s6, s8,
                                        s12, s16, s20 }

T-315 ::=                           ENUMERATED {
                                        s0, s10, s30, s60, s180,
                                        s600, s1200, s1800 }

T-316 ::=                           ENUMERATED {
                                        s0, s10, s20, s30, s40,
                                        s50, s-inf, spare }
```

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

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

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

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

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

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

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

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

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

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

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

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

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

```
    t-317                               T-317                               DEFAULT s180
}

UE-ConnTimersAndConstants-v3a0ext ::=       SEQUENCE {
    n-312                               N-312ext                                OPTIONAL,
    n-315                               N-315ext                                OPTIONAL
}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```
}

UE-RadioAccessCapability-r4-ext ::= SEQUENCE {
    pdcp-Capability-r4-ext              PDCP-Capability-r4-ext,
    rf-Capability                       RF-Capability-r4-ext,
    physicalChannelCapability-LCR       PhysicalChannelCapability-LCR-r4,
    measurementCapability-r4-ext        MeasurementCapability-r4-ext    OPTIONAL
}

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

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

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

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

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

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

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

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

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

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

WaitTime ::=                        INTEGER (0..15)

-- **************************************************
--
--     RADIO BEARER INFORMATION ELEMENTS (10.3.4)
--
-- **************************************************

AlgorithmSpecificInfo ::=           CHOICE {
    rfc2507-Info                        RFC2507-Info
}

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

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

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

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

DefaultConfigIdentity ::=           INTEGER (0..9)

DefaultConfigMode ::=               ENUMERATED {
                                        fdd,
                                        tdd }

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

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

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

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

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

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

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

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

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

```
}

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

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

ExpectReordering ::=                ENUMERATED {
                                        reorderingNotExpected,
                                        reorderingExpected }

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

HeaderCompressionInfo ::=           SEQUENCE {
    algorithmSpecificInfo               AlgorithmSpecificInfo
}

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

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

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

LogicalChannelIdentity ::=          INTEGER (1..15)

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

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

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

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

MaxMRW ::=                          ENUMERATED {
                                        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,
    -- TABULAR: pdcp-PDU-Header is MD in the tabular format and it can be encoded
    -- in one bit, so the OPTIONAL is removed for compactness.
    pdcp-PDU-Header                     PDCP-PDU-Header,
    headerCompressionInfoList           HeaderCompressionInfoList           OPTIONAL
}

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

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

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

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

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

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

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

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

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

PredefinedConfigIdentity ::=        INTEGER (0..15)

PredefinedConfigValueTag ::=        INTEGER (0..15)

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

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

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

PredefinedConfigStatusInfo::=       CHOICE {
    storedWithValueTagSameAsPrevius     NULL,
    other                               CHOICE {
```

```
        notStored                           NULL,
        storedWithDifferentValueTag         PredefinedConfigValueTag
    }
}

RAB-Info ::=                        SEQUENCE {
    rab-Identity                        RAB-Identity,
    cn-DomainIdentity                   CN-DomainIdentity,
    nas-Synchronisation-Indicator       NAS-Synchronisation-Indicator   OPTIONAL,
    re-EstablishmentTimer               Re-EstablishmentTimer
}
RAB-InformationList         ::=     SEQUENCE (SIZE (1..maxRABsetup)) OF
                                        RAB-Info

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```
    rb-MappingInfo                      RB-MappingInfo
}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

RB-MappingOption ::=                SEQUENCE {
```

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

RB-MappingOption-r5 ::=                 SEQUENCE {
    ul-LogicalChannelMappings           UL-LogicalChannelMappings           OPTIONAL,
    dl-LogicalChannelMappingList        DL-LogicalChannelMappingList-r5     OPTIONAL
}

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

RB-WithPDCP-Info ::=                SEQUENCE {
    rb-Identity                         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,
    -- TABULAR: expectReordering has only two possible values, so using Optional or Default
    -- would be wasteful
    expectReordering                    ExpectReordering
}

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

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

RLC-InfoChoice ::=                  CHOICE {
    rlc-Info                            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 {
    -- The default value for rb-Identity is the smallest value not used yet.
    rb-Identity                         RB-Identity                         OPTIONAL,
    rlc-InfoChoice                      RLC-InfoChoice,
```

```
    rb-MappingInfo                      RB-MappingInfo
}

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

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

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

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

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

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

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

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

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

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

TimerStatusProhibit ::=             ENUMERATED {
                                        tsp10,tsp20,tsp30,tsp40,tsp50,
                                        tsp60,tsp70,tsp80,tsp90,tsp100,
                                        tsp110,tsp120,tsp130,tsp140,tsp150,
                                        tsp160,tsp170,tsp180,tsp190,tsp200,
                                        tsp210,tsp220,tsp230,tsp240,tsp250,
                                        tsp260,tsp270,tsp280,tsp290,tsp300,
                                        tsp310,tsp320,tsp330,tsp340,tsp350,
                                        tsp360,tsp370,tsp380,tsp390,tsp400,
```

```
                                    tsp410,tsp420,tsp430,tsp440,tsp450,
                                    tsp460,tsp470,tsp480,tsp490,tsp500,
                                    tsp510,tsp520,tsp530,tsp540,tsp550,
                                    tsp600,tsp650,tsp700,tsp750,tsp800,
                                    tsp850,tsp900,tsp950,tsp1000 }

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

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

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

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

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

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

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

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

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

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

}

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

```
}

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

AllowedTFC-List ::=                 SEQUENCE (SIZE (1..maxTFC)) OF
                                        TFC-Value

AllowedTFI-List ::=                 SEQUENCE (SIZE (1..maxTF)) OF
                                        INTEGER (0..31)

BitModeRLC-SizeInfo ::=             CHOICE {
    sizeType1                           INTEGER (0..127),
    sizeType2                           SEQUENCE {
        -- Actual size = (part1 * 8) + 128 + part2
        part1                               INTEGER (0..15),
        part2                               INTEGER (1..7)                  OPTIONAL
    },
    sizeType3                           SEQUENCE {
        -- Actual size = (part1 * 16) + 256 + part2
        part1                               INTEGER (0..47),
        part2                               INTEGER (1..15)                 OPTIONAL
    },
    sizeType4                           SEQUENCE {
        -- Actual size = (part1 * 64) + 1024 + part2
        part1                               INTEGER (0..62),
        part2                               INTEGER (1..63)                 OPTIONAL
    }
}

-- Actual value BLER-QualityValue = IE value * 0.1
BLER-QualityValue ::=               INTEGER (-63..0)

ChannelCodingType ::=               CHOICE {
    -- noCoding is only used for TDD in this version of the specification,
    -- otherwise it should be ignored
    noCoding                            NULL,
    convolutional                       CodingRate,
    turbo                               NULL
}

CodingRate ::=                      ENUMERATED {
                                        half,
                                        third }

CommonDynamicTF-Info ::=            SEQUENCE {
    rlc-Size                            CHOICE {
        fdd                                 SEQUENCE {
            octetModeRLC-SizeInfoType2          OctetModeRLC-SizeInfoType2
        },
        tdd                                 SEQUENCE {
            commonTDD-Choice                    CHOICE {
                bitModeRLC-SizeInfo                 BitModeRLC-SizeInfo,
                octetModeRLC-SizeInfoType1          OctetModeRLC-SizeInfoType1
            }
        }
    },
    numberOfTbSizeList              SEQUENCE (SIZE (1..maxTF)) OF
                                            NumberOfTransportBlocks,
    logicalChannelList              LogicalChannelList
}

CommonDynamicTF-Info-DynamicTTI ::= SEQUENCE {
    commonTDD-Choice                    CHOICE {
        bitModeRLC-SizeInfo                 BitModeRLC-SizeInfo,
        octetModeRLC-SizeInfoType1          OctetModeRLC-SizeInfoType1
    },
    numberOfTbSizeAndTTIList            NumberOfTbSizeAndTTIList,
    logicalChannelList                  LogicalChannelList
}

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

CommonDynamicTF-InfoList-DynamicTTI ::= SEQUENCE (SIZE (1..maxTF)) OF
```

```
                                    CommonDynamicTF-Info-DynamicTTI

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

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

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

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

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

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

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

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

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

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

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

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

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


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

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

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

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

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

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

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

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

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

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

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

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

DL-TrCH-Type-r5 ::=                 CHOICE {
    dch                                 TransportChannelIdentity,
    dsch                                TransportChannelIdentity,
    hsdsch                              Mac-d-FlowIdentity
}

DRAC-ClassIdentity ::=              INTEGER (1..maxDRACclasses)

DRAC-StaticInformation ::=          SEQUENCE {
    transmissionTimeValidity            TransmissionTimeValidity,
    timeDurationBeforeRetry             TimeDurationBeforeRetry,
    drac-ClassIdentity                  DRAC-ClassIdentity
}

DRAC-StaticInformationList ::=      SEQUENCE (SIZE (1..maxTrCH)) OF
                                        DRAC-StaticInformation

ExplicitTFCS-Configuration ::=      CHOICE {
    complete                            TFCS-ReconfAdd,
    addition                            TFCS-ReconfAdd,
    removal                             TFCS-RemovalList,
    replacement                         SEQUENCE {
        tfcsRemoval                         TFCS-RemovalList,
        tfcsAdd                             TFCS-ReconfAdd
    }
}

GainFactor ::=                      INTEGER (0..15)

GainFactorInformation ::=           CHOICE {
    signalledGainFactors                SignalledGainFactors,
    computedGainFactors                 ReferenceTFC-ID
}

HSDSCH-Info ::=                     SEQUENCE {
    transportFormatSet-HSDSCH           TransportFormatSet-HSDSCH,
    harqInfo                            HARQ-Info,
    mac-hsResetIndicator                BOOLEAN
}

HARQ-Info ::=                       SEQUENCE {
    numberOfProcesses                   INTEGER (1..6),
    memoryPartitioning                  CHOICE {
        implicit                            NULL,
        explicit                            SEQUENCE (SIZE (1..maxHProcesses)) OF
                                                HARQMemorySize
    },
    reorderingReleaseTimer              SEQUENCE (SIZE (1..maxQueueIDs)) OF
                                            T1-ReleaseTimer
```

```
}

--memory size range is FFS.
HARQMemorySize ::=                  INTEGER (1..10000)

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

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

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

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

LogicalChannelByRB          ::=     SEQUENCE {
    rb-Identity                         RB-Identity,
    logChOfRb                           INTEGER (0..1)                      OPTIONAL
}

LogicalChannelList  ::=             CHOICE {
        allSizes                            NULL,
        configured                          NULL,
        explicitList                        SEQUENCE (SIZE (1..15)) OF
                                                LogicalChannelByRB
}

Mac-d-FlowIdentityDCHandHSDSCH ::=  SEQUENCE {
    dch-transport-ch-id             TransportChannelIdentity,
    hsdsch-transport-ch-id          Mac-d-FlowIdentity
}

Mac-d-FlowIdentity ::=              INTEGER (1..8)

--Mac-d-Pdu sizes need to be defined
MAC-d-PDUsizes ::=                  INTEGER (1..10000)

NumberOfTbSizeAndTTIList    ::=     SEQUENCE (SIZE (1..maxTF)) OF SEQUENCE {
        numberOfTransportBlocks             NumberOfTransportBlocks,
        transmissionTimeInterval            TransmissionTimeInterval
}

MessType ::=                        ENUMERATED {
                                        transportFormatCombinationControl }

Non-allowedTFC-List ::=             SEQUENCE (SIZE (1..maxTFC)) OF
                                        TFC-Value

NumberOfTransportBlocks::=          CHOICE {
    zero                                NULL,
    one                                 NULL,
    small                               INTEGER (2..17),
    large                               INTEGER (18..512)
}

OctetModeRLC-SizeInfoType1 ::=      CHOICE {
    -- Actual size = (8 * sizeType1) + 16
    sizeType1                           INTEGER (0..31),
    sizeType2                           SEQUENCE {
        -- Actual size = (32 * part1) + 272 + (part2 * 8)
        part1                               INTEGER (0..23),
        part2                               INTEGER (1..3)                  OPTIONAL
    },
    sizeType3                           SEQUENCE {
        -- Actual size = (64 * part1) + 1040 + (part2 * 8)
        part1                               INTEGER (0..61),
        part2                               INTEGER (1..7)                  OPTIONAL
    }
```

```
}

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

PowerOffsetInformation ::=          SEQUENCE {
    gainFactorInformation               GainFactorInformation,
    -- PowerOffsetPp-m is always absent in TDD
    powerOffsetPp-m                     PowerOffsetPp-m                     OPTIONAL
}

PowerOffsetPp-m ::=                 INTEGER (-5..10)

PreDefTransChConfiguration ::=      SEQUENCE {
    ul-CommonTransChInfo                UL-CommonTransChInfo,
    ul-AddReconfTrChInfoList            UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo                DL-CommonTransChInfo,
    dl-TrChInfoList                     DL-AddReconfTransChInfoList
}

QualityTarget ::=                   SEQUENCE {
    bler-QualityValue                   BLER-QualityValue
}

RateMatchingAttribute ::=           INTEGER (1..hiRM)


ReferenceTFC-ID ::=                 INTEGER (0..3)

RestrictedTrChInfo ::=              SEQUENCE {
    ul-TransportChannelType             UL-TrCH-Type,
    restrictedTrChIdentity              TransportChannelIdentity,
    allowedTFI-List                     AllowedTFI-List                     OPTIONAL
}

RestrictedTrChInfoList ::=          SEQUENCE (SIZE (1..maxTrCH)) OF
                                        RestrictedTrChInfo

SemistaticTF-Information ::=        SEQUENCE {
    -- TABULAR: Transmission time interval has been included in the IE CommonTransChTFS.
    channelCodingType                   ChannelCodingType,
    rateMatchingAttribute               RateMatchingAttribute,
    crc-Size                            CRC-Size
}

SignalledGainFactors ::=            SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            gainFactorBetaC                     GainFactor
        },
        tdd                                 NULL
    },
    gainFactorBetaD                     GainFactor,
    referenceTFC-ID                     ReferenceTFC-ID                     OPTIONAL
}

SplitTFCI-Signalling ::=            SEQUENCE {
    splitType                           SplitType                       OPTIONAL,
    tfci-Field2-Length                  INTEGER (1..10)                 OPTIONAL,
    tfci-Field1-Information             ExplicitTFCS-Configuration      OPTIONAL,
    tfci-Field2-Information             TFCI-Field2-Information         OPTIONAL
}

SplitType ::=                       ENUMERATED {
                                        hardSplit, logicalSplit }

--Range for releasetimer is FFS.
T1-ReleaseTimer ::=                 INTEGER (1..100)

TFC-Subset ::=                      CHOICE {
    minimumAllowedTFC-Number            TFC-Value,
    allowedTFC-List                     AllowedTFC-List,
```

```
    non-allowedTFC-List                 Non-allowedTFC-List,
    restrictedTrChInfoList              RestrictedTrChInfoList,
    fullTFCS                            NULL
}

TFC-Subset-ID-With3b ::=            INTEGER (0..7)

TFC-Subset-ID-With5b ::=            INTEGER (0..31)

TFC-Subset-ID-With10b ::=           INTEGER (0..1023)

TFC-SubsetList ::=                  SEQUENCE (SIZE (1.. maxTFCsub)) OF SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 NULL,
        tdd                                 SEQUENCE {
            tfcs-ID                             TFCS-Identity               OPTIONAL
        }
    },
    tfc-Subset                          TFC-Subset
}

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

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

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

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

TFCS ::=                            CHOICE {
    normalTFCI-Signalling               ExplicitTFCS-Configuration,
    splitTFCI-Signalling                SplitTFCI-Signalling
}

TFCS-Identity ::=                   SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain                  DEFAULT 1,
    sharedChannelIndicator              BOOLEAN
}

TFCS-IdentityPlain ::=              INTEGER (1..8)

TFCS-InfoForDSCH ::=                CHOICE {
    ctfc2bit                            INTEGER (0..3),
    ctfc4bit                            INTEGER (0..15),
    ctfc6bit                            INTEGER (0..63),
    ctfc8bit                            INTEGER (0..255),
    ctfc12bit                           INTEGER (0..4095),
    ctfc16bit                           INTEGER (0..65535),
    ctfc24bit                           INTEGER (0..16777215)
}

TFCS-ReconfAdd ::=                  SEQUENCE{
    ctfcSize                            CHOICE{
        ctfc2Bit                            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc2                               INTEGER (0..3),
            powerOffsetInformation              PowerOffsetInformation          OPTIONAL
        },
        ctfc4Bit                            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc4                               INTEGER (0..15),
            powerOffsetInformation              PowerOffsetInformation          OPTIONAL
        },
        ctfc6Bit                            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc6                               INTEGER (0..63),
            powerOffsetInformation              PowerOffsetInformation          OPTIONAL
        },
        ctfc8Bit                            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc8                               INTEGER (0..255),
            powerOffsetInformation              PowerOffsetInformation          OPTIONAL
        },
        ctfc12Bit                           SEQUENCE (SIZE(1..maxTFC)) OF SEQUENCE {
            ctfc12                              INTEGER (0..4095),
```

```
            powerOffsetInformation              PowerOffsetInformation          OPTIONAL
        },
        ctfc16Bit                           SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc16                              INTEGER(0..65535),
            powerOffsetInformation              PowerOffsetInformation          OPTIONAL
        },
        ctfc24Bit                           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 {
            -- in ul-controlledTrChList, TrCH-Type is always DCH
            ul-controlledTrChList               UL-ControlledTrChList
        }
    }
}

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

TransmissionTimeValidity ::=        INTEGER (1..256)

--Range of TB size for hsdsch is ffs.
TransportBlockSize-r5 ::=           INTEGER (1..64000)

TransportChannelIdentity ::=        INTEGER (1..32)

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


TransportFormatSet ::=              CHOICE {
    dedicatedTransChTFS                 DedicatedTransChTFS,
    commonTransChTFS                    CommonTransChTFS
}

TransportFormatSet-LCR ::=              CHOICE {
    dedicatedTransChTFS                 DedicatedTransChTFS,
    commonTransChTFS-LCR                CommonTransChTFS-LCR
}

TransportFormatSet-HSDSCH ::=           SEQUENCE {
    dynamicTransportFormatInfo-r5           CHOICE {
        fdd                                     SEQUENCE (SIZE (1..maxHSDSCHTBIndex)) OF
                                                    TransportBlockSize-r5,
        tdd                                     SEQUENCE (SIZE (1..maxHSDSCHTBIndex-tdd384)) OF
                                                    TransportBlockSize-r5
        },
    mac-d-PDU-Size-Info                     SEQUENCE (SIZE (1..maxMAC-d-PDUsizes)) OF
                                                    MAC-d-PDUsizes
}

-- The maximum allowed size of UL-AddReconfTransChInfoList 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: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
    -- CCTrCH Info.
    tfc-Subset                          TFC-Subset                          OPTIONAL,
    prach-TFCS                          TFCS                                OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            ul-TFCS                         TFCS
        },
        tdd                                 SEQUENCE {

            individualUL-CCTrCH-InfoList        IndividualUL-CCTrCH-InfoList
                                                                            OPTIONAL
        }
    }                                                                       OPTIONAL
}

UL-CommonTransChInfo-r4 ::=         SEQUENCE {
    -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
    -- CCTrCH Info.
    tfc-Subset                          TFC-Subset                          OPTIONAL,
    prach-TFCS                          TFCS                                OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            ul-TFCS                             TFCS
        },
        tdd                                 SEQUENCE {
            individualUL-CCTrCH-InfoList        IndividualUL-CCTrCH-InfoList        OPTIONAL
        }
    }                                                                       OPTIONAL,
    tfc-SubsetList                      TFC-SubsetList                      OPTIONAL
}

-- In UL-ControlledTrChList, TrCH-Type is always DCH
UL-ControlledTrChList ::=           SEQUENCE (SIZE (1..maxTrCH)) OF
                                        TransportChannelIdentity

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

UL-TransportChannelIdentity ::=     SEQUENCE {
    ul-TransportChannelType             UL-TrCH-Type,
    ul-TransportChannelIdentity         TransportChannelIdentity
}

UL-TrCH-Type ::= ENUMERATED {dch, usch}

-- **************************************************
--
--     PHYSICAL CHANNEL INFORMATION ELEMENTS (10.3.6)
--
-- **************************************************

ACK-NACK-repetitionFactor ::=       INTEGER(1..4)

AC-To-ASC-Mapping ::=               INTEGER (0..7)

AC-To-ASC-MappingTable ::=          SEQUENCE (SIZE (maxASCmap)) OF
                                        AC-To-ASC-Mapping

AccessServiceClass-FDD ::=          SEQUENCE {
    availableSignatureStartIndex        INTEGER (0..15),
    availableSignatureEndIndex          INTEGER (0..15),

    assignedSubChannelNumber            BIT STRING {
                                            b3(0),
                                            b2(1),
                                            b1(2),
                                            b0(3)
                                            }    (SIZE(4))
}

AccessServiceClass-TDD ::=          SEQUENCE {
    channelisationCodeIndices           BIT STRING  {
                                            chCodeIndex7(0),
                                            chCodeIndex6(1),
```

```
                                        chCodeIndex5(2),
                                        chCodeIndex4(3),
                                        chCodeIndex3(4),
                                        chCodeIndex2(5),
                                        chCodeIndex1(6),
                                        chCodeIndex0(7)
                                        } (SIZE(8))            OPTIONAL,
    subchannelSize                    CHOICE {
        size1                             NULL,
        size2                             SEQUENCE {
            -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'
            subchannels                       ENUMERATED  { subch0, subch1 }  OPTIONAL
        },
        size4                             SEQUENCE {
            subchannels                       BIT STRING  {
                                                  subCh3(0),
                                                  subCh2(1),
                                                  subCh1(2),
                                                  subCh0(3)
                                                  } (SIZE(4))     OPTIONAL
        },
        size8                             SEQUENCE {
            subchannels                       BIT STRING  {
                                                  subCh7(0),
                                                  subCh6(1),
                                                  subCh5(2),
                                                  subCh4(3),
                                                  subCh3(4),
                                                  subCh2(5),
                                                  subCh1(6),
                                                  subCh0(7)
                                                  } (SIZE(8))     OPTIONAL
        }
    }
}

AccessServiceClass-TDD-LCR-r4 ::=   SEQUENCE {
    availableSYNC-UlCodesIndics         BIT STRING {
                                        sulCodeIndex7(0),
                                        sulCodeIndex6(1),
                                        sulCodeIndex5(2),
                                        sulCodeIndex4(3),
                                        sulCodeIndex3(4),
                                        sulCodeIndex2(5),
                                        sulCodeIndex1(6),
                                        sulCodeIndex0(7)
                                        } (SIZE(8))              OPTIONAL,
    subchannelSize                    CHOICE {
        size1                             NULL,
        size2                             SEQUENCE {
            -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
            subchannels                       ENUMERATED  { subch0, subch1 }  OPTIONAL
        },
        size4                             SEQUENCE {
            subchannels                       BIT STRING  {
                                                  subCh3(0),
                                                  subCh2(1),
                                                  subCh1(2),
                                                  subCh0(3)
                                                  } (SIZE(4))         OPTIONAL
        },
        size8                             SEQUENCE {
            subchannels                       BIT STRING  {
                                                  subCh7(0),
                                                  subCh6(1),
                                                  subCh5(2),
                                                  subCh4(3),
                                                  subCh3(4),
                                                  subCh2(5),
                                                  subCh1(6),
                                                  subCh0(7)
                                                  } (SIZE(8))         OPTIONAL
        }
    }

}

AICH-Info ::=                       SEQUENCE {
```

```
    channelisationCode256               ChannelisationCode256,
    sttd-Indicator                      BOOLEAN,
    aich-TransmissionTiming             AICH-TransmissionTiming
}

AICH-PowerOffset ::=                INTEGER (-22..5)

AICH-TransmissionTiming ::=         ENUMERATED {
                                        e0, e1 }

AllocationPeriodInfo ::=            SEQUENCE {
    allocationActivationTime            INTEGER (0..255),
    allocationDuration                  INTEGER (1..256)
}

-- Actual value Alpha = IE value * 0.125
Alpha ::=                           INTEGER (0..8)

AP-AICH-ChannelisationCode ::=      INTEGER (0..255)

AP-PreambleScramblingCode ::=       INTEGER (0..79)

AP-Signature ::=                    INTEGER (0..15)

AP-Signature-VCAM ::=               SEQUENCE {
    ap-Signature                        AP-Signature,
    availableAP-SubchannelList          AvailableAP-SubchannelList OPTIONAL
}

AP-Subchannel ::=                   INTEGER (0..11)

ASCSetting-FDD ::=                      SEQUENCE {
    -- TABULAR: accessServiceClass-FDD is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available signature and sub-channels
    accessServiceClass-FDD                  AccessServiceClass-FDD  OPTIONAL
}

ASCSetting-TDD ::=                      SEQUENCE {
    -- TABULAR: accessServiceClass-TDD is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available channelisation codes and
    -- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD                  AccessServiceClass-TDD  OPTIONAL
}

ASCSetting-TDD-LCR-r4 ::=                       SEQUENCE {
    -- TABULAR: accessServiceClass-TDD-LCR is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available SYNC_UL codes and
    -- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD-LCR                  AccessServiceClass-TDD-LCR-r4   OPTIONAL
}

AvailableAP-Signature-VCAMList ::=  SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
                                        AP-Signature-VCAM

AvailableAP-SignatureList ::=       SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
                                        AP-Signature

AvailableAP-SubchannelList ::=      SEQUENCE (SIZE (1..maxPCPCH-APsubCh)) OF
                                        AP-Subchannel

AvailableMinimumSF-ListVCAM ::=     SEQUENCE (SIZE (1..maxPCPCH-SF)) OF
                                        AvailableMinimumSF-VCAM

AvailableMinimumSF-VCAM ::=         SEQUENCE {
    minimumSpreadingFactor              MinimumSpreadingFactor,
    nf-Max                              NF-Max,
    maxAvailablePCPCH-Number            MaxAvailablePCPCH-Number,
    availableAP-Signature-VCAMList      AvailableAP-Signature-VCAMList
}

AvailableSignatures ::=         BIT STRING {
                                    signature15(0),
                                    signature14(1),
                                    signature13(2),
                                    signature12(3),
```

```
                                    signature11(4),
                                    signature10(5),
                                    signature9(6),
                                    signature8(7),
                                    signature7(8),
                                    signature6(9),
                                    signature5(10),
                                    signature4(11),
                                    signature3(12),
                                    signature2(13),
                                    signature1(14),
                                    signature0(15)
                                    }    (SIZE(16))

AvailableSubChannelNumbers ::=      BIT STRING {
                                        subCh11(0),
                                        subCh10(1),
                                        subCh9(2),
                                        subCh8(3),
                                        subCh7(4),
                                        subCh6(5),
                                        subCh5(6),
                                        subCh4(7),
                                        subCh3(8),
                                        subCh2(9),
                                        subCh1(10),
                                        subCh0(11)
                                        }    (SIZE(12))

BurstType ::=                       ENUMERATED {
                                        short1, long2 }

-- Actual value Bler-Target = IE value * 0.05
Bler-Target ::=                     INTEGER (-63..0)

CCTrCH-PowerControlInfo ::=         SEQUENCE {
    tfcs-Identity                       TFCS-Identity                       OPTIONAL,
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfo
}

CCTrCH-PowerControlInfo-r4 ::=      SEQUENCE {
    tfcs-Identity                       TFCS-Identity                       OPTIONAL,
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfo-r4
}

CD-AccessSlotSubchannel ::=         INTEGER (0..11)

CD-AccessSlotSubchannelList ::=     SEQUENCE (SIZE (1..maxPCPCH-CDsubCh)) OF
                                        CD-AccessSlotSubchannel

CD-CA-ICH-ChannelisationCode ::=    INTEGER (0..255)

CD-PreambleScramblingCode ::=       INTEGER (0..79)

CD-SignatureCode ::=                INTEGER (0..15)

CD-SignatureCodeList ::=            SEQUENCE (SIZE (1..maxPCPCH-CDsig)) OF
                                        CD-SignatureCode

CellAndChannelIdentity ::=          SEQUENCE {
    burstType                           BurstType,
    midambleShift                       MidambleShiftLong,
    timeslot                            TimeslotNumber,
    cellParametersID                    CellParametersID
    }

CellParametersID ::=                INTEGER (0..127)

Cfntargetsfnframeoffset ::=             INTEGER(0..255)

ChannelAssignmentActive ::=         CHOICE {
    notActive                           NULL,
    isActive                            AvailableMinimumSF-ListVCAM
}

ChannelisationCode256 ::=           INTEGER (0..255)

ChannelReqParamsForUCSM ::=         SEQUENCE {
```

```
    availableAP-SignatureList           AvailableAP-SignatureList,
    availableAP-SubchannelList          AvailableAP-SubchannelList          OPTIONAL
}

ClosedLoopTimingAdjMode ::=         ENUMERATED {
                                        slot1, slot2 }

CodeNumberDSCH ::=                  INTEGER (0..255)

CodeRange ::=                       SEQUENCE {
    pdsch-CodeMapList                   PDSCH-CodeMapList
}

CodeWordSet ::=                     ENUMERATED {
                                        longCWS,
                                        mediumCWS,
                                        shortCWS,
                                        ssdtOff }

CommonTimeslotInfo ::=              SEQUENCE {
    -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
    -- bit it is not defined as OPTIONAL.
    secondInterleavingMode              SecondInterleavingMode,
    tfci-Coding                         TFCI-Coding                         OPTIONAL,
    puncturingLimit                     PuncturingLimit,
    repetitionPeriodAndLength           RepetitionPeriodAndLength           OPTIONAL
}

CommonTimeslotInfoSCCPCH ::=        SEQUENCE {
    -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
    -- bit it is not defined as OPTIONAL.
    secondInterleavingMode              SecondInterleavingMode,
    tfci-Coding                         TFCI-Coding                         OPTIONAL,
    puncturingLimit                     PuncturingLimit,
    repetitionPeriodLengthAndOffset     RepetitionPeriodLengthAndOffset     OPTIONAL
}

ConstantValue ::=                   INTEGER (-35..-10)

ConstantValueTdd ::=                INTEGER (-35..10)

CPCH-PersistenceLevels ::=          SEQUENCE {
    cpch-SetID                          CPCH-SetID,
    dynamicPersistenceLevelTF-List      DynamicPersistenceLevelTF-List
}

CPCH-PersistenceLevelsList ::=      SEQUENCE (SIZE (1..maxCPCHsets)) OF
                                        CPCH-PersistenceLevels

CPCH-SetInfo ::=                    SEQUENCE {
    cpch-SetID                          CPCH-SetID,
    transportFormatSet                  TransportFormatSet,
    tfcs                                TFCS,
    ap-PreambleScramblingCode           AP-PreambleScramblingCode,
    ap-AICH-ChannelisationCode          AP-AICH-ChannelisationCode,
    cd-PreambleScramblingCode           CD-PreambleScramblingCode,
    cd-CA-ICH-ChannelisationCode        CD-CA-ICH-ChannelisationCode,
    cd-AccessSlotSubchannelList         CD-AccessSlotSubchannelList         OPTIONAL,
    cd-SignatureCodeList                CD-SignatureCodeList                OPTIONAL,
    deltaPp-m                           DeltaPp-m,
    ul-DPCCH-SlotFormat                 UL-DPCCH-SlotFormat,
    n-StartMessage                      N-StartMessage,
    n-EOT                               N-EOT,
    -- TABULAR: VCAM info has been nested inside ChannelAssignmentActive,
    -- which in turn is mandatory since it's only a binary choice.
    channelAssignmentActive             ChannelAssignmentActive,
    cpch-StatusIndicationMode           CPCH-StatusIndicationMode,
    pcpch-ChannelInfoList               PCPCH-ChannelInfoList
}

CPCH-SetInfoList ::=                SEQUENCE (SIZE (1..maxCPCHsets)) OF
                                        CPCH-SetInfo

CPCH-StatusIndicationMode ::=       ENUMERATED {
                                        pa-mode,
                                        pamsf-mode }

--FFS
```

```
CQI-RepetitionFactor ::=            INTEGER(1..4)

CSICH-PowerOffset ::=               INTEGER (-10..5)

-- DefaultDPCH-OffsetValueFDD and DefaultDPCH-OffsetValueTDD corresponds to
-- IE "Default DPCH Offset Value" depending on the mode.
-- Actual value DefaultDPCH-OffsetValueFDD = IE value * 512
DefaultDPCH-OffsetValueFDD ::=      INTEGER (0..599)

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

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


DeltaCQI ::=                        INTEGER (0..8)


DeltaNACK ::=                       INTEGER (0..8)


DeltaACK ::=                        INTEGER (0..8)

-- Actual value DeltaSIR = IE value * 0.1
DeltaSIR ::=                        INTEGER (0..30)

DL-CCTrCh ::=                       SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain                  DEFAULT 1,
    timeInfo                            TimeInfo,
    commonTimeslotInfo                  CommonTimeslotInfo                  OPTIONAL,
    dl-CCTrCH-TimeslotsCodes            DownlinkTimeslotsCodes              OPTIONAL,
    ul-CCTrChTPCList                    UL-CCTrChTPCList                    OPTIONAL
}

DL-CCTrCh-r4 ::=                    SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain                  DEFAULT 1,
    timeInfo                            TimeInfo,
    commonTimeslotInfo                  CommonTimeslotInfo                  OPTIONAL,
    tddOption                           CHOICE {
        tdd384                              SEQUENCE {
            dl-CCTrCH-TimeslotsCodes            DownlinkTimeslotsCodes  OPTIONAL
        },
        tdd128                              SEQUENCE {
            dl-CCTrCH-TimeslotsCodes            DownlinkTimeslotsCodes-LCR-r4   OPTIONAL
        }
    },
    ul-CCTrChTPCList                    UL-CCTrChTPCList        OPTIONAL
}

DL-CCTrChList ::=                   SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        DL-CCTrCh

DL-CCTrChList-r4 ::=                SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        DL-CCTrCh-r4

DL-CCTrChTPCList ::=                SEQUENCE (SIZE (0..maxCCTrCH)) OF
                                            TFCS-Identity

DL-ChannelisationCode ::=           SEQUENCE {
    secondaryScramblingCode             SecondaryScramblingCode             OPTIONAL,
    sf-AndCodeNumber                    SF512-AndCodeNumber,
    scramblingCodeChange                ScramblingCodeChange                OPTIONAL
}

DL-ChannelisationCodeList ::=       SEQUENCE (SIZE (1..maxDPCH-DLchan)) OF
                                        DL-ChannelisationCode

DL-CommonInformation ::=            SEQUENCE {
    dl-DPCH-InfoCommon                  DL-DPCH-InfoCommon          OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            defaultDPCH-OffsetValue             DefaultDPCH-OffsetValueFDD  OPTIONAL,
            dpch-CompressedModeInfo             DPCH-CompressedModeInfo     OPTIONAL,
            tx-DiversityMode                    TX-DiversityMode            OPTIONAL,
            ssdt-Information                    SSDT-Information            OPTIONAL
        },
        tdd                                 SEQUENCE {
            defaultDPCH-OffsetValue             DefaultDPCH-OffsetValueTDD  OPTIONAL
        }
```

```
    }
}

DL-CommonInformation-r4 ::=         SEQUENCE {
    dl-DPCH-InfoCommon                  DL-DPCH-InfoCommon          OPTIONAL,
    modeSpecificInfo                    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,
            powerOffsetPilot-pdpdch             PowerOffsetPilot-pdpdch,
            dl-rate-matching-restriction        Dl-rate-matching-restriction        OPTIONAL,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot             SF512-AndPilot,
            positionFixedOrFlexible             PositionFixedOrFlexible,
            tfci-Existence                      BOOLEAN
        },
        tdd                                 SEQUENCE {
            dl-DPCH-PowerControlInfo            DL-DPCH-PowerControlInfo            OPTIONAL
        }
    }
}

DL-DPCH-InfoCommonPost ::=          SEQUENCE {
    dl-DPCH-PowerControlInfo            DL-DPCH-PowerControlInfo                OPTIONAL
}

DL-DPCH-InfoCommonPredef ::=        SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot             SF512-AndPilot,
            positionFixedOrFlexible             PositionFixedOrFlexible,
            tfci-Existence                      BOOLEAN
        },
        tdd                                 SEQUENCE {
            commonTimeslotInfo                  CommonTimeslotInfo
        }
    }
}

DL-DPCH-InfoPerRL ::=               CHOICE {
```

```
    fdd                                 SEQUENCE {
        pCPICH-UsageForChannelEst           PCPICH-UsageForChannelEst,
        dpch-FrameOffset                    DPCH-FrameOffset,
        secondaryCPICH-Info                 SecondaryCPICH-Info             OPTIONAL,
        dl-ChannelisationCodeList           DL-ChannelisationCodeList,
        tpc-CombinationIndex                TPC-CombinationIndex,
        ssdt-CellIdentity                   SSDT-CellIdentity               OPTIONAL,
        closedLoopTimingAdjMode             ClosedLoopTimingAdjMode         OPTIONAL
    },
    tdd                                 DL-CCTrChList
}

DL-DPCH-InfoPerRL-r4 ::=            CHOICE {
    fdd                                 SEQUENCE {
        pCPICH-UsageForChannelEst           PCPICH-UsageForChannelEst,
        dpch-FrameOffset                    DPCH-FrameOffset,
        secondaryCPICH-Info                 SecondaryCPICH-Info             OPTIONAL,
        dl-ChannelisationCodeList           DL-ChannelisationCodeList,
        tpc-CombinationIndex                TPC-CombinationIndex,
        ssdt-CellIdentity                   SSDT-CellIdentity               OPTIONAL,
        closedLoopTimingAdjMode             ClosedLoopTimingAdjMode         OPTIONAL
    },
    tdd                                 DL-CCTrChList-r4
}

DL-DPCH-InfoPerRL-PostFDD ::=                           SEQUENCE {
        pCPICH-UsageForChannelEst               PCPICH-UsageForChannelEst,
        dl-ChannelisationCode                   DL-ChannelisationCode,
        tpc-CombinationIndex                    TPC-CombinationIndex
}

DL-DPCH-InfoPerRL-PostTDD ::=               SEQUENCE {
    dl-DPCH-TimeslotsCodes                      DownlinkTimeslotsCodes
}

DL-DPCH-InfoPerRL-PostTDD-LCR-r4 ::=        SEQUENCE {
    dl-CCTrCH-TimeslotsCodes                    DownlinkTimeslotsCodes-LCR-r4
}

DL-DPCH-PowerControlInfo ::=            SEQUENCE {
    modeSpecificInfo                        CHOICE {
        fdd                                     SEQUENCE {
            dpc-Mode                                DPC-Mode
        },
        tdd                                     SEQUENCE {
            tpc-StepSizeTDD                         TPC-StepSizeTDD         OPTIONAL
        }
    }
}

DL-FrameType ::=                    ENUMERATED {
                                        dl-FrameTypeA, dl-FrameTypeB }

DL-HSPDSCH-Information ::=          SEQUENCE {
    hs-scch-Info                    HS-SCCH-Info,
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            measurement-feedback-Info       Measurement-Feedback-Info   OPTIONAL
        },
        tdd                             NULL
    }
}

DL-InformationPerRL ::=             SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info,
            pdsch-SHO-DCH-Info                  PDSCH-SHO-DCH-Info          OPTIONAL,
            pdsch-CodeMapping                   PDSCH-CodeMapping           OPTIONAL
        },
        tdd                                 PrimaryCCPCH-Info
    },
    dl-DPCH-InfoPerRL                   DL-DPCH-InfoPerRL                   OPTIONAL,
    sccpch-InfoforFACH                  SCCPCH-InfoForFACH                  OPTIONAL
}

DL-InformationPerRL-r4 ::=          SEQUENCE {
    modeSpecificInfo                    CHOICE {
```

```
        fdd                                 SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info,
            pdsch-SHO-DCH-Info                  PDSCH-SHO-DCH-Info          OPTIONAL,
            pdsch-CodeMapping                   PDSCH-CodeMapping           OPTIONAL
        },
        tdd                                 PrimaryCCPCH-Info-r4
    },
    dl-DPCH-InfoPerRL                   DL-DPCH-InfoPerRL-r4                OPTIONAL,
    sccpch-InfoforFACH                  SCCPCH-InfoForFACH-r4               OPTIONAL,
    cell-id                             CellIdentity                        OPTIONAL
}

DL-InformationPerRL-r5 ::=          SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info,
            pdsch-SHO-DCH-Info                  PDSCH-SHO-DCH-Info          OPTIONAL,
            pdsch-CodeMapping                   PDSCH-CodeMapping           OPTIONAL,
            servingHSDSCH-RL-indicator          BOOLEAN
        },
        tdd                                 PrimaryCCPCH-Info-r4
    },
    dl-DPCH-InfoPerRL                   DL-DPCH-InfoPerRL-r4                OPTIONAL,
    sccpch-InfoforFACH                  SCCPCH-InfoForFACH-r4               OPTIONAL,
    cell-id                             CellIdentity                        OPTIONAL
}

DL-InformationPerRL-List ::=        SEQUENCE (SIZE (1..maxRL)) OF
                                        DL-InformationPerRL

DL-InformationPerRL-List-r4 ::=     SEQUENCE (SIZE (1..maxRL)) OF
                                        DL-InformationPerRL-r4

DL-InformationPerRL-List-r5 ::=     SEQUENCE (SIZE (1..maxRL)) OF
                                        DL-InformationPerRL-r5

DL-InformationPerRL-ListPostFDD ::= SEQUENCE (SIZE (1..maxRL)) OF
                                        DL-InformationPerRL-PostFDD

DL-InformationPerRL-PostFDD ::=     SEQUENCE {
            primaryCPICH-Info               PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL                   DL-DPCH-InfoPerRL-PostFDD
}

DL-InformationPerRL-PostTDD ::=     SEQUENCE {
    primaryCCPCH-Info                   PrimaryCCPCH-InfoPost,
    dl-DPCH-InfoPerRL                   DL-DPCH-InfoPerRL-PostTDD
}

DL-InformationPerRL-PostTDD-LCR-r4 ::=  SEQUENCE {
    primaryCCPCH-Info                   PrimaryCCPCH-InfoPostTDD-LCR-r4,
    dl-DPCH-InfoPerRL                   DL-DPCH-InfoPerRL-PostTDD-LCR-r4
}

DL-PDSCH-Information ::=            SEQUENCE {
    pdsch-SHO-DCH-Info                  PDSCH-SHO-DCH-Info                  OPTIONAL,
    pdsch-CodeMapping                   PDSCH-CodeMapping                   OPTIONAL
}

Dl-rate-matching-restriction ::=    SEQUENCE {
    restrictedTrCH-InfoList             RestrictedTrCH-InfoList             OPTIONAL
}

DL-TS-ChannelisationCode ::=        ENUMERATED {
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }

DL-TS-ChannelisationCodesShort ::=  SEQUENCE {
    codesRepresentation                 CHOICE {
        consecutive                         SEQUENCE {
            firstChannelisationCode             DL-TS-ChannelisationCode,
            lastChannelisationCode              DL-TS-ChannelisationCode
        },
        bitmap                              BIT STRING {
                                                chCode16-SF16(0),
                                                chCode15-SF16(1),
```

```
                                            chCode14-SF16(2),
                                            chCode13-SF16(3),
                                            chCode12-SF16(4),
                                            chCode11-SF16(5),
                                            chCode10-SF16(6),
                                            chCode9-SF16(7),
                                            chCode8-SF16(8),
                                            chCode7-SF16(9),
                                            chCode6-SF16(10),
                                            chCode5-SF16(11),
                                            chCode4-SF16(12),
                                            chCode3-SF16(13),
                                            chCode2-SF16(14),
                                            chCode1-SF16(15)
                                            }   (SIZE (16))
    }
}

DownlinkAdditionalTimeslots ::=     SEQUENCE {
    parameters                          CHOICE {
        sameAsLast                          SEQUENCE {
            timeslotNumber                      TimeslotNumber
        },
        newParameters                       SEQUENCE {
            individualTimeslotInfo              IndividualTimeslotInfo,
            dl-TS-ChannelisationCodesShort      DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkAdditionalTimeslots-LCR-r4 ::=  SEQUENCE {
    parameters                          CHOICE {
        sameAsLast                          SEQUENCE {
            timeslotNumber                      TimeslotNumber-LCR-r4
        },
        newParameters                       SEQUENCE {
            individualTimeslotInfo              IndividualTimeslotInfo-LCR-r4,
            dl-TS-ChannelisationCodesShort      DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkTimeslotsCodes ::=      SEQUENCE {
    firstIndividualTimeslotInfo         IndividualTimeslotInfo,
    dl-TS-ChannelisationCodesShort      DL-TS-ChannelisationCodesShort,
    moreTimeslots                       CHOICE {
        noMore                              NULL,
        additionalTimeslots                 CHOICE {
            consecutive                         INTEGER (1..maxTS-1),
            timeslotList                        SEQUENCE (SIZE (1..maxTS-1)) OF
                                                    DownlinkAdditionalTimeslots

        }
    }
}

DownlinkTimeslotsCodes-LCR-r4 ::=   SEQUENCE {
    firstIndividualTimeslotInfo         IndividualTimeslotInfo-LCR-r4,
    dl-TS-ChannelisationCodesShort      DL-TS-ChannelisationCodesShort,
    moreTimeslots                       CHOICE {
        noMore                              NULL,
        additionalTimeslots                 CHOICE {
            consecutive                         INTEGER (1..maxTS-LCR-1),
            timeslotList                        SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                                                    DownlinkAdditionalTimeslots-LCR-r4

        }
    }
}

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

-- Actual value DPCCH-PowerOffset = IE value * 2
DPCCH-PowerOffset ::=               INTEGER (-82..-3)


-- Actual value DPCCH-PowerOffset = 2 + (IE value * 4)
DPCCH-PowerOffset2 ::=              INTEGER (-28..-13)
```

```
DPCH-CompressedModeInfo ::=         SEQUENCE {
    tgp-SequenceList                    TGP-SequenceList
}

DPCH-CompressedModeStatusInfo ::=   SEQUENCE {
    tgps-Reconfiguration-CFN            TGPS-Reconfiguration-CFN,
    tgp-SequenceShortList                   SEQUENCE (SIZE (1..maxTGPS)) OF
                                            TGP-SequenceShort
}

-- Actual value DPCH-FrameOffset = IE value * 256
DPCH-FrameOffset::=                 INTEGER (0..149)

DSCH-Mapping ::=                    SEQUENCE {
    maxTFCI-Field2Value                 MaxTFCI-Field2Value,
    spreadingFactor                     SF-PDSCH,
    codeNumber                          CodeNumberDSCH,
    multiCodeInfo                       MultiCodeInfo
}

DSCH-MappingList ::=                SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
                                        DSCH-Mapping

DSCH-RadioLinkIdentifier ::=        INTEGER (0..511)

DurationTimeInfo ::=                INTEGER (1..4096)

DynamicPersistenceLevel ::=         INTEGER (1..8)

DynamicPersistenceLevelList ::=     SEQUENCE (SIZE (1..maxPRACH)) OF
                                        DynamicPersistenceLevel

DynamicPersistenceLevelTF-List ::= SEQUENCE (SIZE (1..maxTF-CPCH)) OF
                                        DynamicPersistenceLevel

FACH-PCH-Information ::=            SEQUENCE {
    transportFormatSet                  TransportFormatSet,
    transportChannelIdentity            TransportChannelIdentity,
    ctch-Indicator                      BOOLEAN
}

FACH-PCH-InformationList ::=        SEQUENCE (SIZE (1..maxFACHPCH)) OF
                                        FACH-PCH-Information

--Range of Feedback-cycle is FFS.
Feedback-cycle ::=                  ENUMERATED {
                                        fc0, fc1, fc5, fc10, fc20, fc40, fc80 }

--Range of Feedback-offset is FFS.
Feedback-offset ::=                 INTEGER (1..5)

FPACH-Info-r4 ::=                       SEQUENCE {
    timeslot                            TimeslotNumber-LCR-r4,
    channelisationCode                  TDD-FPACH-CCode16-r4,
    midambleShiftAndBurstType           MidambleShiftAndBurstType-LCR-r4,
    wi                                  Wi-LCR
}

FrequencyInfo ::=                   SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 FrequencyInfoFDD,
        tdd                                 FrequencyInfoTDD    }
}

FrequencyInfoFDD ::=                SEQUENCE {
    uarfcn-UL                           UARFCN              OPTIONAL,
    uarfcn-DL                           UARFCN
}

FrequencyInfoTDD ::=                SEQUENCE {
    uarfcn-Nt                           UARFCN
}

HS-ChannelisationCode ::=           ENUMERATED {
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
```

```
                                        cc16-13, cc16-14, cc16-15, cc16-16 }

HS-ChannelisationCode-LCR ::=       ENUMERATED {
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }

HS-SCCH-Info ::=                    SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                HS-SCCH-Codes,
        tdd                                 CHOICE {
            tdd384                              SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                    HS-SCCH-TDD384,
            tdd128                              SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                    HS-SCCH-TDD128
        }
    }
}

HS-SCCH-Codes ::=                   INTEGER (0..127)

HS-SCCH-TDD128 ::=                  SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                HS-SCCH-TDD128List

HS-SCCH-TDD128List ::=              SEQUENCE {
    timeslotNumber                      TimeslotNumber-LCR-r4,
    firstChannelisationCode             HS-ChannelisationCode-LCR,
    secondChannelisationCode            HS-ChannelisationCode-LCR,
    midambleAllocationMode              CHOICE {
        defaultMidamble                     NULL,
        commonMidamble                      NULL
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration               INTEGER (1..8),
    bler-target                         Bler-Target,
    hs-sich-configuration               HS-SICH-Configuration-TDD128384
}

HS-SICH-Configuration-TDD128 ::=    SEQUENCE {
    timeslotNumber                      TimeslotNumber-LCR-r4,
    channelisationCode                  HS-ChannelisationCode-LCR,
    midambleAllocationMode              CHOICE {
        defaultMidamble                     NULL,
        ueSpecificMidamble                  SEQUENCE {
            midambleShift                       MidambleShiftLong
        }
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration               INTEGER (1..8),
    nack-ack-power-offset               INTEGER (0-7..87),
    power-level-HSSICH                  INTEGER (-120..-58),
    tpc-step-size                       ENUMERATED { s1, s2, s3 , spare1}
}

HS-SCCH-TDD384 ::=                  SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                HS-SCCH-TDD384List

HS-SCCH-TDD384List ::=              SEQUENCE {
    timeslotNumber                      TimeslotNumber,
    channelisationCode                  HS-ChannelisationCode,
    midambleAllocationMode              CHOICE {
        defaultMidamble                     NULL,
        commonMidamble                      NULL
    },
    midambleconfiguration               MidambleConfiguration,
    bler-target                         Bler-Target,
    hs-sich-configuration               HS-SICH-Configuration-TDD384
}

HS-SICH-Configuration-TDD384 ::=    SEQUENCE {
    timeslotNumber                      TimeslotNumber,
    channelisationCode                  HS-ChannelisationCode,
    midambleAllocationMode              CHOICE {
        defaultMidamble                     NULL,
        ueSpecificMidamble                  SEQUENCE {
            midambleShift                       MidambleShiftLong
```

```
        }
    },
    midambleconfiguration               MidambleConfiguration,
    nack-ack-power-offset               INTEGER (0-7..87),
    -- Actual value ul-target-SIR = IE value * 0.5
    ul-target-SIR                       INTEGER (-22..40)
}



IndividualTimeslotInfo ::=          SEQUENCE {
    timeslotNumber                      TimeslotNumber,
    tfci-Existence                      BOOLEAN,
    midambleShiftAndBurstType           MidambleShiftAndBurstType
}

IndividualTimeslotInfo-LCR-r4 ::=   SEQUENCE {
    timeslotNumber                      TimeslotNumber-LCR-r4,
    tfci-Existence                      BOOLEAN,
    midambleShiftAndBurstType           MidambleShiftAndBurstType-LCR-r4,
    modulation                          ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                      ENUMERATED { zero, one, sixteenOverSF }
}

IndividualTimeslotInfo-LCR-r4-ext ::=       SEQUENCE {
-- timeslotNumber and tfci-Existence is taken from IndividualTimeslotInfo.
-- midambleShiftAndBurstType in IndividualTimeslotInfo shall be ignored.
    midambleShiftAndBurstType           MidambleShiftAndBurstType-LCR-r4,
    modulation                          ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                      ENUMERATED { zero, one, sixteenOverSF }
}

IndividualTS-Interference ::=       SEQUENCE {
    timeslot                            TimeslotNumber,
    ul-TimeslotInterference             TDD-UL-Interference
}

IndividualTS-Interference-LCR-r4 ::=        SEQUENCE {
    timeslot                            TimeslotNumber-LCR-r4,
    ul-TimeslotInterference             UL-Interference
}

IndividualTS-InterferenceList ::=   SEQUENCE (SIZE (1..maxTS)) OF
                                        IndividualTS-Interference

IndividualTS-InterferenceList-r4 ::=    CHOICE {
    tdd384                                  SEQUENCE (SIZE (1..maxTS)) OF
                                                IndividualTS-Interference,
    tdd128                                  SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                                IndividualTS-Interference-LCR-r4
}

ITP ::=                             ENUMERATED {
                                        mode0, mode1 }

NidentifyAbort ::=  INTEGER (1..128)

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

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

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

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

Measurement-Feedback-Info ::=       SEQUENCE {
--  bler-threshold
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
--          pohsdsch                        Po-hsdsch
--          feedback-cycle                  Feedback-cycle
--          feedback-offset                 Feedback-offset,
            cqi-RepetitionFactor            CQI-RepetitionFactor,
            deltaCQI                        DeltaCQI
        },
        tdd                             NULL
    }
}
```

```
MidambleConfiguration ::=           ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstType1and3 ::= ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstType2 ::=     ENUMERATED {ms3, ms6}

MidambleShiftAndBurstType ::=       SEQUENCE {
    burstType                           CHOICE {
        type1                               SEQUENCE {
            midambleConfigurationBurstType1and3 MidambleConfigurationBurstType1and3,
            midambleAllocationMode              CHOICE {
                defaultMidamble                     NULL,
                commonMidamble                      NULL,
                ueSpecificMidamble                  SEQUENCE {
                    midambleShift                       MidambleShiftLong
                }
            }
        },
        type2                               SEQUENCE {
            midambleConfigurationBurstType2     MidambleConfigurationBurstType2,
            midambleAllocationMode              CHOICE {
                defaultMidamble                     NULL,
                commonMidamble                      NULL,
                ueSpecificMidamble                  SEQUENCE {
                    midambleShift                       MidambleShiftShort
                }
            }
        },
        type3                               SEQUENCE {
            midambleConfigurationBurstType1and3 MidambleConfigurationBurstType1and3,
            midambleAllocationMode              CHOICE {
                defaultMidamble                     NULL,
                ueSpecificMidamble                  SEQUENCE {
                    midambleShift                       MidambleShiftLong
                }
            }
        }
    }
}

MidambleShiftAndBurstType-LCR-r4 ::=    SEQUENCE {
    midambleAllocationMode              CHOICE {
        defaultMidamble                     NULL,
        commonMidamble                      NULL,
        ueSpecificMidamble                  SEQUENCE {
            midambleShift                       INTEGER (0..15)
        }
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration               INTEGER (1..8)
}

MidambleShiftLong ::=               INTEGER (0..15)


MidambleShiftShort ::=              INTEGER (0..5)

MinimumSpreadingFactor ::=          ENUMERATED {
                                        sf4, sf8, sf16, sf32,
                                        sf64, sf128, sf256 }

MultiCodeInfo ::=                   INTEGER (1..16)


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

N-GAP ::=                           ENUMERATED {
                                        f2, f4, f8 }

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

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

NB01 ::=                            INTEGER (0..50)

NF-Max ::=                          INTEGER (1..64)
```

```
NumberOfDPDCH ::=                   INTEGER (1..maxDPDCH-UL)

NumberOfFBI-Bits ::=                INTEGER (1..2)

OpenLoopPowerControl-TDD ::=        SEQUENCE {
    primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power,
    -- alpha, prach-ConstantValue, dpch-ConstantValue and pusch-ConstantValue
    -- shall be ignored in 1.28Mcps TDD mode.
    alpha                               Alpha                       OPTIONAL,
    prach-ConstantValue                 ConstantValueTdd,
    dpch-ConstantValue                  ConstantValueTdd,
    pusch-ConstantValue                 ConstantValueTdd            OPTIONAL
}

OpenLoopPowerControl-IPDL-TDD-r4 ::=    SEQUENCE {
    ipdl-alpha                          Alpha,
    maxPowerIncrease                    MaxPowerIncrease-r4
}

PagingIndicatorLength ::=           ENUMERATED {
                                        pi4, pi8, pi16 }

PC-Preamble ::=                     INTEGER (0..7)

PCP-Length ::=                      ENUMERATED {
                                        as0, as8 }

PCPCH-ChannelInfo ::=               SEQUENCE {
    pcpch-UL-ScramblingCode             INTEGER (0..79),
    pcpch-DL-ChannelisationCode         INTEGER (0..511),
    pcpch-DL-ScramblingCode             SecondaryScramblingCode             OPTIONAL,
    pcp-Length                          PCP-Length,
    ucsm-Info                           UCSM-Info                           OPTIONAL
}

PCPCH-ChannelInfoList ::=           SEQUENCE (SIZE (1..maxPCPCHs)) OF
                                        PCPCH-ChannelInfo

PCPICH-UsageForChannelEst ::=       ENUMERATED {
                                        mayBeUsed,
                                        shallNotBeUsed }

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

PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
    pdsch-AllocationPeriodInfo          AllocationPeriodInfo,
    configuration                       CHOICE {
        old-Configuration                   SEQUENCE {
            tfcs-ID                             TFCS-IdentityPlain                  DEFAULT 1,
            pdsch-Identity                      PDSCH-Identity
        },
        new-Configuration                   SEQUENCE {
            pdsch-Info                          PDSCH-Info-r4,
            pdsch-Identity                      PDSCH-Identity              OPTIONAL,
            pdsch-PowerControlInfo              PDSCH-PowerControlInfo      OPTIONAL
        }
    }
}

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

```
}

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

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

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

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

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


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

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

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

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

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

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

PDSCH-SysInfo-LCR-r4 ::=            SEQUENCE {
    pdsch-Identity                      PDSCH-Identity,
    pdsch-Info                          PDSCH-Info-LCR-r4,
    dsch-TFS                            TransportFormatSet                  OPTIONAL,
    dsch-TFCS                           TFCS                                OPTIONAL
}

PDSCH-SysInfoList ::=               SEQUENCE (SIZE (1..maxPDSCH)) OF
```

```
                                        PDSCH-SysInfo

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

PDSCH-SysInfoList-SFN ::=           SEQUENCE (SIZE (1..maxPDSCH)) OF
                                        SEQUENCE {
    pdsch-SysInfo                           PDSCH-SysInfo,
    sfn-TimeInfo                            SFN-TimeInfo                    OPTIONAL
}

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

PersistenceScalingFactor ::=        ENUMERATED {
                                        psf0-9, psf0-8, psf0-7, psf0-6,
                                        psf0-5, psf0-4, psf0-3, psf0-2 }

PersistenceScalingFactorList ::=    SEQUENCE (SIZE (1..maxASCpersist)) OF
                                        PersistenceScalingFactor

PI-CountPerFrame ::=                ENUMERATED {
                                        e18, e36, e72, e144 }

PichChannelisationCodeList-LCR-r4   ::=           SEQUENCE (SIZE (1..2)) OF
                                                     DL-TS-ChannelisationCode

PICH-Info ::=                       CHOICE {
    fdd                                 SEQUENCE {
        channelisationCode256               ChannelisationCode256,
        pi-CountPerFrame                    PI-CountPerFrame,
        sttd-Indicator                      BOOLEAN
    },
    tdd                                 SEQUENCE {
        channelisationCode                  TDD-PICH-CCode                  OPTIONAL,
        timeslot                            TimeslotNumber                  OPTIONAL,
        midambleShiftAndBurstType           MidambleShiftAndBurstType,
        repetitionPeriodLengthOffset        RepPerLengthOffset-PICH         OPTIONAL,
        pagingIndicatorLength               PagingIndicatorLength           DEFAULT pi4,
        n-GAP                               N-GAP                           DEFAULT f4,
        n-PCH                               N-PCH                           DEFAULT 2
    }
}

PICH-Info-LCR-r4 ::=                SEQUENCE {
    timeslot                            TimeslotNumber-LCR-r4               OPTIONAL,
    pichChannelisationCodeList-LCR-r4   PichChannelisationCodeList-LCR-r4,
    midambleShiftAndBurstType           MidambleShiftAndBurstType-LCR-r4,
    repetitionPeriodLengthOffset        RepPerLengthOffset-PICH             OPTIONAL,
    pagingIndicatorLength               PagingIndicatorLength           DEFAULT pi4,
    n-GAP                               N-GAP                           DEFAULT f4,
    n-PCH                               N-PCH                           DEFAULT 2
}

PICH-PowerOffset ::=                INTEGER (-10..5)

PilotBits128 ::=                    ENUMERATED {
                                        pb4, pb8 }

PilotBits256 ::=                    ENUMERATED {
                                        pb2, pb4, pb8 }

--Range of po-hsdsch is FFS.
Po-hsdsch ::=                       INTEGER (-10..0)

PositionFixedOrFlexible ::=         ENUMERATED {
                                        fixed,
                                        flexible }

PowerControlAlgorithm ::=           CHOICE {
    algorithm1                          TPC-StepSizeFDD,
    algorithm2                          NULL
}

PowerOffsetPilot-pdpdch ::=         INTEGER (0..24)
```

```
PowerRampStep ::=                   INTEGER (1..8)

PRACH-ChanCodes-LCR-r4 ::=          SEQUENCE (SIZE (1..4)) OF
                                        TDD-PRACH-CCode-LCR-r4

PRACH-Definition-LCR-r4 ::=         SEQUENCE {
    timeslot                            TimeslotNumber-PRACH-LCR-r4,
    prach-ChanCodes-LCR                 PRACH-ChanCodes-LCR-r4,
    midambleShiftAndBurstType           MidambleShiftAndBurstType-LCR-r4,
    fpach-Info                          FPACH-Info-r4
}

PRACH-Midamble ::=                  ENUMERATED {
                                        direct,
                                        direct-Inverted }

PRACH-Partitioning ::=              CHOICE {
    fdd                                 SEQUENCE (SIZE (1..maxASC)) OF
                                            ASCSetting-FDD,
    tdd                                 SEQUENCE (SIZE (1..maxASC)) OF
                                            ASCSetting-TDD
}

PRACH-Partitioning-LCR-r4 ::=       SEQUENCE (SIZE (1..maxASC)) OF
                                            ASCSetting-TDD-LCR-r4

PRACH-PowerOffset ::=               SEQUENCE {
    powerRampStep                       PowerRampStep,
    preambleRetransMax                  PreambleRetransMax
}

PRACH-RACH-Info ::=                 SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            availableSignatures                 AvailableSignatures,
            availableSF                         SF-PRACH,
            preambleScramblingCodeWordNumber    PreambleScramblingCodeWordNumber,
            puncturingLimit                     PuncturingLimit,
            availableSubChannelNumbers          AvailableSubChannelNumbers
        },
        tdd                                 SEQUENCE {
            timeslot                            TimeslotNumber,
            channelisationCodeList              TDD-PRACH-CCodeList,
            prach-Midamble                      PRACH-Midamble
        }
    }
}

PRACH-RACH-Info-LCR-r4 ::=          SEQUENCE {
    sync-UL-Info                        SYNC-UL-Info-r4,
    prach-DefinitionList                SEQUENCE (SIZE (1..maxPRACH-FPACH)) OF
                                            PRACH-Definition-LCR-r4
}

PRACH-SystemInformation ::=         SEQUENCE {
    prach-RACH-Info                     PRACH-RACH-Info,
    transportChannelIdentity            TransportChannelIdentity,
    rach-TransportFormatSet             TransportFormatSet                  OPTIONAL,
    rach-TFCS                           TFCS                                OPTIONAL,
    prach-Partitioning                  PRACH-Partitioning                  OPTIONAL,
    persistenceScalingFactorList        PersistenceScalingFactorList        OPTIONAL,
    ac-To-ASC-MappingTable              AC-To-ASC-MappingTable              OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-TX-Power               PrimaryCPICH-TX-Power       OPTIONAL,
            constantValue                       ConstantValue               OPTIONAL,
            prach-PowerOffset                   PRACH-PowerOffset           OPTIONAL,
            rach-TransmissionParameters         RACH-TransmissionParameters OPTIONAL,
            aich-Info                           AICH-Info                   OPTIONAL
        },
        tdd                                 NULL
    }
}

PRACH-SystemInformation-LCR-r4 ::=  SEQUENCE {
    prach-RACH-Info-LCR                 PRACH-RACH-Info-LCR-r4,
    rach-TransportFormatSet-LCR         TransportFormatSet-LCR          OPTIONAL,
```

```
    prach-Partitioning-LCR              PRACH-Partitioning-LCR-r4       OPTIONAL
}

PRACH-SystemInformationList ::=     SEQUENCE (SIZE (1..maxPRACH)) OF
                                        PRACH-SystemInformation

PRACH-SystemInformationList-LCR-r4 ::=  SEQUENCE (SIZE (1..maxPRACH)) OF
                                            PRACH-SystemInformation-LCR-r4

PreambleRetransMax ::=              INTEGER (1..64)

PreambleScramblingCodeWordNumber ::=    INTEGER (0..15)

PreDefPhyChConfiguration ::=        SEQUENCE {
    ul-DPCH-InfoPredef                  UL-DPCH-InfoPredef,
    dl-CommonInformationPredef          DL-CommonInformationPredef  OPTIONAL
}

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

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

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

-- For 1.28Mcps TDD, the following IE includes elements for the PCCPCH Info additional to those
-- in PrimaryCCPCH-Info
PrimaryCCPCH-Info-LCR-r4-ext ::=    SEQUENCE {
    tstd-Indicator                      BOOLEAN
}

PrimaryCCPCH-InfoPost ::=           SEQUENCE {
    syncCase                            CHOICE {
        syncCase1                           SEQUENCE {
            timeslot                            TimeslotNumber
```

```
        },
        syncCase2                       SEQUENCE {
            timeslotSync2                   TimeslotSync2
        }
    },
    cellParametersID                CellParametersID,
    sctd-Indicator                  BOOLEAN
}

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

PrimaryCCPCH-TX-Power ::=           INTEGER (6..43)

PrimaryCPICH-Info ::=               SEQUENCE {
    primaryScramblingCode               PrimaryScramblingCode
}

PrimaryCPICH-TX-Power ::=           INTEGER (-10..50)

PrimaryScramblingCode ::=           INTEGER (0..511)

PuncturingLimit ::=                 ENUMERATED {
                                        pl0-40, pl0-44, pl0-48, pl0-52, pl0-56,
                                        pl0-60, pl0-64, pl0-68, pl0-72, pl0-76,
                                        pl0-80, pl0-84, pl0-88, pl0-92, pl0-96, pl1 }

PUSCH-CapacityAllocationInfo ::=    SEQUENCE {
    pusch-Allocation                    CHOICE {
        pusch-AllocationPending             NULL,
        pusch-AllocationAssignment          SEQUENCE {
            pusch-AllocationPeriodInfo          AllocationPeriodInfo,
            pusch-PowerControlInfo              UL-TargetSIR                OPTIONAL,
            configuration                       CHOICE {
                old-Configuration                   SEQUENCE {
                    tfcs-ID                             TFCS-IdentityPlain          DEFAULT 1,
                    pusch-Identity                      PUSCH-Identity
                },
                new-Configuration                   SEQUENCE {
                    pusch-Info                          PUSCH-Info,
                    pusch-Identity                      PUSCH-Identity      OPTIONAL
                }
            }
        }
    }
}

PUSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
    pusch-Allocation                    CHOICE {
        pusch-AllocationPending             NULL,
        pusch-AllocationAssignment          SEQUENCE {
            pusch-AllocationPeriodInfo          AllocationPeriodInfo,
            pusch-PowerControlInfo              PUSCH-PowerControlInfo-r4   OPTIONAL,
            configuration                       CHOICE {
                old-Configuration                   SEQUENCE {
                    tfcs-ID                             TFCS-IdentityPlain          DEFAULT 1,
                    pusch-Identity                      PUSCH-Identity
                },
                new-Configuration                   SEQUENCE {
                    pusch-Info                          PUSCH-Info-r4,
                    pusch-Identity                      PUSCH-Identity      OPTIONAL
                }
            }
        }
    }
}

PUSCH-Identity ::=                  INTEGER (1..hiPUSCHidentities)

PUSCH-Info ::=                      SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain              DEFAULT 1,
    commonTimeslotInfo                  CommonTimeslotInfo              OPTIONAL,
    pusch-TimeslotsCodes                UplinkTimeslotsCodes            OPTIONAL
}
```

```
PUSCH-Info-r4 ::=                   SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain                  DEFAULT 1,
    commonTimeslotInfo                  CommonTimeslotInfo                  OPTIONAL,
    tddOption                           CHOICE {
        tdd384                              SEQUENCE {
            pusch-TimeslotsCodes                UplinkTimeslotsCodes        OPTIONAL
        },
        tdd128                              SEQUENCE {
            pusch-TimeslotsCodes                UplinkTimeslotsCodes-LCR-r4 OPTIONAL
        }
    }
}

PUSCH-Info-LCR-r4 ::=               SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain                  DEFAULT 1,

    commonTimeslotInfo                  CommonTimeslotInfo                  OPTIONAL,
    pusch-TimeslotsCodes                UplinkTimeslotsCodes-LCR-r4         OPTIONAL
}

PUSCH-PowerControlInfo-r4 ::=       SEQUENCE {
    -- The IE ul-TargetSIR corresponds to PRX-PUSCHdes for 1.28Mcps TDD
    -- Actual value PRX-PUSCHdes = (value of IE "ul-TargetSIR" – 120)
    ul-TargetSIR                        UL-TargetSIR,
    tddOption                           CHOICE {
        tdd384                              NULL,
        tdd128                              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 could just as well be NULL also.
    repetitionPeriod2                   INTEGER (1..1),
    repetitionPeriod4                   INTEGER (1..3),
```

```
    repetitionPeriod8                   INTEGER (1..7),
    repetitionPeriod16                  INTEGER (1..15),
    repetitionPeriod32                  INTEGER (1..31),
    repetitionPeriod64                  INTEGER (1..63)
}

RepetitionPeriodLengthAndOffset ::= CHOICE {
    repetitionPeriod1                   NULL,
    repetitionPeriod2                   SEQUENCE {
        length                              NULL,
        offset                              INTEGER (0..1)
    },
    repetitionPeriod4                   SEQUENCE {
        length                              INTEGER (1..3),
        offset                              INTEGER (0..3)
    },
    repetitionPeriod8                   SEQUENCE {
        length                              INTEGER (1..7),
        offset                              INTEGER (0..7)
    },
    repetitionPeriod16                  SEQUENCE {
        length                              INTEGER (1..15),
        offset                              INTEGER (0..15)
    },
    repetitionPeriod32                  SEQUENCE {
        length                              INTEGER (1..31),
        offset                              INTEGER (0..31)
    },
    repetitionPeriod64                  SEQUENCE {
        length                              INTEGER (1..63),
        offset                              INTEGER (0..63)
    }
}

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

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

RepPerLengthOffset-PICH ::=         CHOICE {
    rpp4-2                              INTEGER (0..3),
    rpp8-2                              INTEGER (0..7),
    rpp8-4                              INTEGER (0..7),
    rpp16-2                             INTEGER (0..15),
    rpp16-4                             INTEGER (0..15),
    rpp32-2                             INTEGER (0..31),
    rpp32-4                             INTEGER (0..31),
    rpp64-2                             INTEGER (0..63),
    rpp64-4                             INTEGER (0..63)
}

RestrictedTrCH ::=                  SEQUENCE {
    dl-restrictedTrCh-Type              DL-TrCH-Type,
    restrictedDL-TrCH-Identity          TransportChannelIdentity,
    allowedTFIList                      AllowedTFI-List
}

RestrictedTrCH-InfoList ::=         SEQUENCE (SIZE(1..maxTrCH)) OF
                                        RestrictedTrCH

RL-AdditionInformation ::=          SEQUENCE {
    primaryCPICH-Info                   PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL                   DL-DPCH-InfoPerRL,
    tfci-CombiningIndicator             BOOLEAN,
    sccpch-InfoforFACH                  SCCPCH-InfoForFACH                  OPTIONAL
}

RL-AdditionInformationList ::=      SEQUENCE (SIZE (1..maxRL-1)) OF
                                        RL-AdditionInformation

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

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

RPP ::=                             ENUMERATED {
                                        mode0, mode1 }

S-Field ::=                         ENUMERATED {
                                        e1bit, e2bits }

SCCPCH-ChannelisationCode ::=       ENUMERATED {
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }

SCCPCH-ChannelisationCodeList ::=   SEQUENCE (SIZE (1..16)) OF
                                        SCCPCH-ChannelisationCode

SCCPCH-InfoForFACH ::=              SEQUENCE {
    secondaryCCPCH-Info                 SecondaryCCPCH-Info,
    tfcs                                TFCS,
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            fach-PCH-InformationList            FACH-PCH-InformationList,
            sib-ReferenceListFACH               SIB-ReferenceListFACH
        },
        tdd                             SEQUENCE {
            fach-PCH-InformationList            FACH-PCH-InformationList
        }
    }
}

SCCPCH-InfoForFACH-r4 ::=               SEQUENCE {
    secondaryCCPCH-Info                 SecondaryCCPCH-Info-r4,
    tfcs                                TFCS,
    fach-PCH-InformationList            FACH-PCH-InformationList,
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            sib-ReferenceListFACH           SIB-ReferenceListFACH
        },
        tdd                             NULL
    }
}

SCCPCH-SystemInformation ::=        SEQUENCE {
    secondaryCCPCH-Info                 SecondaryCCPCH-Info,
    tfcs                                TFCS                                OPTIONAL,
    fach-PCH-InformationList            FACH-PCH-InformationList            OPTIONAL,
    pich-Info                           PICH-Info                           OPTIONAL
}

SCCPCH-SystemInformation-LCR-r4-ext ::= SEQUENCE {
    secondaryCCPCH-LCR-Extensions   SecondaryCCPCH-Info-LCR-r4-ext,
    -- pich-Info in the SCCPCH-SystemInformation IE shall be absent,
    -- and instead the following used.
    pich-Info                       PICH-Info-LCR-r4                        OPTIONAL
}

SCCPCH-SystemInformationList ::=    SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                        SCCPCH-SystemInformation

-- SCCPCH-SystemInformationList-LCR-r4-ext includes elements additional to those in
-- SCCPCH-SystemInformationList for the 1.28Mcps TDD. The order of the IEs
-- indicates which SCCPCH-SystemInformation-LCR-r4-ext IE extends which
-- SCCPCH-SystemInformation IE.
SCCPCH-SystemInformationList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                            SCCPCH-SystemInformation-LCR-r4-ext

ScramblingCodeChange ::=            ENUMERATED {
                                        codeChange, noCodeChange }

ScramblingCodeType ::=              ENUMERATED {
                                        shortSC,
                                        longSC }

SecondaryCCPCH-Info ::=             SEQUENCE {
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
```

```
            -- dummy1 is not used in this version of the specification and should be ignored.
            dummy1                          PCPICH-UsageForChannelEst,
            -- dummy2 is not used in this version of the specification.  It should not
            -- be sent and if received it should be ignored.
            dummy2                          SecondaryCPICH-Info             OPTIONAL,
            secondaryScramblingCode         SecondaryScramblingCode         OPTIONAL,
            sttd-Indicator                  BOOLEAN,
            sf-AndCodeNumber                SF256-AndCodeNumber,
            pilotSymbolExistence            BOOLEAN,
            tfci-Existence                  BOOLEAN,
            positionFixedOrFlexible         PositionFixedOrFlexible,
            timingOffset                    TimingOffset                    DEFAULT 0
        },
        tdd                             SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
            commonTimeslotInfo              CommonTimeslotInfoSCCPCH,
            individualTimeslotInfo          IndividualTimeslotInfo,
            channelisationCode              SCCPCH-ChannelisationCodeList
        }
    }
}

SecondaryCCPCH-Info-r4 ::=      SEQUENCE {
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            secondaryScramblingCode         SecondaryScramblingCode         OPTIONAL,
            sttd-Indicator                  BOOLEAN,
            sf-AndCodeNumber                SF256-AndCodeNumber,
            pilotSymbolExistence            BOOLEAN,
            tfci-Existence                  BOOLEAN,
            positionFixedOrFlexible         PositionFixedOrFlexible,
            timingOffset                    TimingOffset                    DEFAULT 0
        },
        tdd                             SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
            commonTimeslotInfo              CommonTimeslotInfoSCCPCH,
            tddOption                       CHOICE {
                tdd384                          SEQUENCE {
                    individualTimeslotInfo          IndividualTimeslotInfo
                },
                tdd128                          SEQUENCE {
                    individualTimeslotInfo          IndividualTimeslotInfo-LCR-r4
                }
            },
            channelisationCode              SCCPCH-ChannelisationCodeList
        }
    }
}

SecondaryCCPCH-Info-LCR-r4-ext ::=  SEQUENCE {
    individualTimeslotLCR-Ext           IndividualTimeslotInfo-LCR-r4-ext
}

SecondaryCPICH-Info ::=             SEQUENCE {
    secondaryDL-ScramblingCode          SecondaryScramblingCode             OPTIONAL,
    channelisationCode                  ChannelisationCode256
}

SecondaryScramblingCode ::=         INTEGER (1..15)

SecondInterleavingMode ::=          ENUMERATED {
                                        frameRelated, timeslotRelated }

-- SF256-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF256-AndCodeNumber ::=             CHOICE {
    sf4                                 INTEGER (0..3),
    sf8                                 INTEGER (0..7),
    sf16                                INTEGER (0..15),
    sf32                                INTEGER (0..31),
    sf64                                INTEGER (0..63),
    sf128                               INTEGER (0..127),
    sf256                               INTEGER (0..255)
}

-- SF512-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF512-AndCodeNumber ::=             CHOICE {
    sf4                                 INTEGER (0..3),
    sf8                                 INTEGER (0..7),
```

```
    sf16                                INTEGER (0..15),
    sf32                                INTEGER (0..31),
    sf64                                INTEGER (0..63),
    sf128                               INTEGER (0..127),
    sf256                               INTEGER (0..255),
    sf512                               INTEGER (0..511)
}

-- SF512-AndPilot encodes both "Spreading factor" and "Number of bits for Pilot bits"
SF512-AndPilot ::=                  CHOICE {
    sfd4                                NULL,
    sfd8                                NULL,
    sfd16                               NULL,
    sfd32                               NULL,
    sfd64                               NULL,
    sfd128                              PilotBits128,
    sfd256                              PilotBits256,
    sfd512                              NULL
}
SF-PDSCH ::=                        ENUMERATED {
                                        sfp4, sfp8, sfp16, sfp32,
                                        sfp64, sfp128, sfp256 }

SF-PRACH ::=                        ENUMERATED {
                                        sfpr32, sfpr64, sfpr128, sfpr256 }

SFN-TimeInfo ::=                    SEQUENCE {
    activationTimeSFN                   INTEGER (0..4095),
    physChDuration                  DurationTimeInfo
}

SpecialBurstScheduling ::=              INTEGER (0..7)

SpreadingFactor::=                  ENUMERATED {
                                        sf4, sf8, sf16, sf32,
                                        sf64, sf128, sf256 }

SRB-delay ::=                       INTEGER (0..7)

SSDT-CellIdentity ::=               ENUMERATED {
                                        ssdt-id-a, ssdt-id-b, ssdt-id-c,
                                        ssdt-id-d, ssdt-id-e, ssdt-id-f,
                                        ssdt-id-g, ssdt-id-h }

SSDT-Information ::=                SEQUENCE {
    s-Field                             S-Field,
    codeWordSet                         CodeWordSet
}

SSDT-Information-r4 ::=             SEQUENCE {
    s-Field                             S-Field,
    codeWordSet                         CodeWordSet,
    ssdt-UL                             SSDT-UL-r4                              OPTIONAL
}

-- SSDT-UL-r4 is used to extend the
-- SSDT-Information IE from Release 4 onwards.
SSDT-UL-r4 ::=                      ENUMERATED {
                                        ul, ul-AndDL }

SynchronisationParameters-r4 ::=    SEQUENCE {
    sync-UL-CodesBitmap                 BIT STRING {
                                            code7(0),
                                            code6(1),
                                            code5(2),
                                            code4(3),
                                            code3(4),
                                            code2(5),
                                            code1(6),
                                            code0(7)
                                            } (SIZE (8))                    OPTIONAL,
    fpach-Info                          FPACH-Info-r4,
    sync-UL-Procedure                   SYNC-UL-Procedure-r4                    OPTIONAL
}

SYNC-UL-Procedure-r4 ::=            SEQUENCE {
    max-SYNC-UL-Transmissions           ENUMERATED { tr1, tr2, tr4, tr8 },
    powerRampStep                       INTEGER (0..3)
```

```
}

SYNC-UL-Info-r4 ::=                 SEQUENCE {
    sync-UL-Codes-Bitmap                BIT STRING {
                                            code7(0),
                                            code6(1),
                                            code5(2),
                                            code4(3),
                                            code3(4),
                                            code2(5),
                                            code1(6),
                                            code0(7)
                                            } ( SIZE (8)),
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes                         INTEGER (0..62),
    powerRampStep                       INTEGER (0..3),
    max-SYNC-UL-Transmissions           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-UL-Interference ::=             INTEGER (-110..-52)

TDD-PICH-CCode ::=                  ENUMERATED {
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode8 ::=                ENUMERATED {
                                        cc8-1, cc8-2, cc8-3, cc8-4,
                                        cc8-5, cc8-6, cc8-7, cc8-8 }

TDD-PRACH-CCode16 ::=               ENUMERATED {
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode-LCR-r4 ::=          ENUMERATED {
                                        cc4-1, cc4-2, cc4-3, cc4-4,
                                        cc8-1, cc8-2, cc8-3, cc8-4,
                                        cc8-5, cc8-6, cc8-7, cc8-8,
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCodeList ::=             CHOICE {
    sf8                                 SEQUENCE (SIZE (1..8)) OF
                                            TDD-PRACH-CCode8,
    sf16                                SEQUENCE (SIZE (1..8)) OF
                                            TDD-PRACH-CCode16
}

TFC-ControlDuration ::=             ENUMERATED {
                                        tfc-cd1, tfc-cd2, tfc-cd4, tfc-cd8,
                                        tfc-cd16, tfc-cd24, tfc-cd32,
                                        tfc-cd48, tfc-cd64, tfc-cd128,
                                        tfc-cd192, tfc-cd256, tfc-cd512 }

TFCI-Coding ::=                     ENUMERATED {
                                        tfci-bits-4, tfci-bits-8,
                                        tfci-bits-16, tfci-bits-32 }

TGCFN ::=                           INTEGER (0..255)

-- In TGD, value 270 represents "undefined" in the tabular description.
TGD ::=                             INTEGER (15..270)

TGL ::=                             INTEGER (1..14)

TGMP ::=                            ENUMERATED {
```

```
                                        tdd-Measurement, fdd-Measurement,
                                        gsm-CarrierRSSIMeasurement,
                                        gsm-initialBSICIdentification, gsmBSICReconfirmation,
                                        multi-carrier }

TGP-Sequence ::=                    SEQUENCE {
    tgpsi                               TGPSI,
    tgps-Status                         CHOICE {
        activate                            SEQUENCE {
            tgcfn                               TGCFN
        },
        deactivate                          NULL
    },
    tgps-ConfigurationParams            TGPS-ConfigurationParams            OPTIONAL
}

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

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

TGP-SequenceShort ::=               SEQUENCE {
    tgpsi                               TGPSI,
    tgps-Status                         CHOICE {
        activate                            SEQUENCE {
            tgcfn                               TGCFN
        },
        deactivate                          NULL
    }
}

TGPL ::=                            INTEGER (1..144)

-- TABULAR: In TGPRC, value 0 represents "infinity" in the tabular description.
TGPRC ::=                           INTEGER (0..511)

TGPS-ConfigurationParams ::=        SEQUENCE {
    tgmp                                TGMP,
    tgprc                               TGPRC,
    tgsn                                TGSN,
    tgl1                                TGL,
    tgl2                                TGL                                 OPTIONAL,
    tgd                                 TGD,
    tgpl1                               TGPL,
    tgpl2                               TGPL                                OPTIONAL,
    rpp                                 RPP,
    itp                                 ITP,
    -- TABULAR: Compressed mode method is nested inside UL-DL-Mode
    ul-DL-Mode                          UL-DL-Mode,
    dl-FrameType                        DL-FrameType,
    deltaSIR1                           DeltaSIR,
    deltaSIRAfter1                      DeltaSIR,
    deltaSIR2                           DeltaSIR                            OPTIONAL,
    deltaSIRAfter2                      DeltaSIR                            OPTIONAL,
    nidentifyAbort                      NidentifyAbort                      OPTIONAL,
    treconfirmAbort                     TreconfirmAbort                     OPTIONAL
}

TGPSI ::=                           INTEGER (1..maxTGPS)

TGSN ::=                            INTEGER (0..14)

TimeInfo ::=                        SEQUENCE {
    activationTime                      ActivationTime                      OPTIONAL,
    durationTimeInfo                    DurationTimeInfo                    OPTIONAL
}

TimeslotList ::=                    SEQUENCE (SIZE (1..maxTS)) OF
                                        TimeslotNumber

TimeslotList-r4 ::=                 CHOICE {
    tdd384                              SEQUENCE (SIZE (1..maxTS)) OF
                                            TimeslotNumber,
    tdd128                              SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                            TimeslotNumber-LCR-r4
}

-- If TimeslotNumber is included for a 1.28Mcps TDD description, it shall take values from 0..6
```

```
TimeslotNumber ::=                      INTEGER (0..14)

TimeslotNumber-LCR-r4 ::=               INTEGER (0..6)

TimeslotNumber-PRACH-LCR-r4 ::=     INTEGER (1..6)

TimeslotSync2 ::=               INTEGER (0..6)

-- Actual value TimingOffset = IE value * 256
TimingOffset ::=                    INTEGER (0..149)

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

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

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

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

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

UARFCN ::=                          INTEGER (0..16383)

UCSM-Info ::=                           SEQUENCE {
    minimumSpreadingFactor              MinimumSpreadingFactor,
    nf-Max                              NF-Max,
    channelReqParamsForUCSM             ChannelReqParamsForUCSM
}

UL-CCTrCH ::=                           SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain                  DEFAULT 1,
    ul-TargetSIR                        UL-TargetSIR,
    timeInfo                            TimeInfo,
    commonTimeslotInfo                  CommonTimeslotInfo                  OPTIONAL,
    ul-CCTrCH-TimeslotsCodes            UplinkTimeslotsCodes                OPTIONAL
}

UL-CCTrCH-r4 ::=                        SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain                  DEFAULT 1,
    ul-TargetSIR                        UL-TargetSIR,
    timeInfo                            TimeInfo,
    commonTimeslotInfo                  CommonTimeslotInfo                  OPTIONAL,
    tddOption                           CHOICE {
        tdd384                              SEQUENCE {
            ul-CCTrCH-TimeslotsCodes            UplinkTimeslotsCodes        OPTIONAL
        },
        tdd128                              SEQUENCE {
            ul-CCTrCH-TimeslotsCodes            UplinkTimeslotsCodes-LCR-r4 OPTIONAL
        }
    }
}

UL-CCTrCHList ::=                       SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                            UL-CCTrCH

UL-CCTrCHList-r4 ::=                    SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                            UL-CCTrCH-r4

UL-CCTrChTPCList ::=                    SEQUENCE (SIZE (0..maxCCTrCH)) OF
                                                TFCS-Identity

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

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

UL-ChannelRequirement-r5 ::=        CHOICE {
```

```
    ul-DPCH-Info                        UL-DPCH-Info-r5,
    cpch-SetInfo                        CPCH-SetInfo
}

UL-ChannelRequirementWithCPCH-SetID ::= CHOICE {
    ul-DPCH-Info                        UL-DPCH-Info,
    cpch-SetInfo                        CPCH-SetInfo,
    cpch-SetID                          CPCH-SetID
}

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

UL-ChannelRequirementWithCPCH-SetID-r5 ::=  CHOICE {
    ul-DPCH-Info                        UL-DPCH-Info-r5,
    cpch-SetInfo                        CPCH-SetInfo,
    cpch-SetID                          CPCH-SetID
}

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

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

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

UL-DPCH-Info ::=                    SEQUENCE {
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfo            OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 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,
            puncturingLimit                     PuncturingLimit
        },
        tdd                                 SEQUENCE {
            ul-TimingAdvance                    UL-TimingAdvanceControl     OPTIONAL,
            ul-CCTrCHList                       UL-CCTrCHList
        }
    }
}

UL-DPCH-Info-r4 ::=                 SEQUENCE {
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfo-r4         OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 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,
            puncturingLimit                     PuncturingLimit
        },
        tdd                                 SEQUENCE {
            ul-TimingAdvance                    UL-TimingAdvanceControl-r4  OPTIONAL,
            ul-CCTrCHList                       UL-CCTrCHList-r4
        }
    }
}

UL-DPCH-Info-r5 ::=                 SEQUENCE {
```

```
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfo-r5         OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 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,
            puncturingLimit                     PuncturingLimit
        },
        tdd                                 SEQUENCE {
            ul-TimingAdvance                    UL-TimingAdvanceControl-r4  OPTIONAL,
            ul-CCTrCHList                       UL-CCTrCHList-r4
        }
    }
}

UL-DPCH-InfoPostFDD ::=             SEQUENCE {
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfoPostFDD,
            scramblingCodeType                  ScramblingCodeType,
            reducedScramblingCodeNumber         ReducedScramblingCodeNumber,
            spreadingFactor                     SpreadingFactor

}

UL-DPCH-InfoPostTDD ::=             SEQUENCE {
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfoPostTDD,
    ul-TimingAdvance                    UL-TimingAdvanceControl                 OPTIONAL,
    ul-CCTrCH-TimeslotsCodes            UplinkTimeslotsCodes
}

UL-DPCH-InfoPostTDD-LCR-r4 ::=      SEQUENCE {
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfoPostTDD-LCR-r4,
    ul-TimingAdvance                    UL-TimingAdvanceControl-LCR-r4              OPTIONAL,
    ul-CCTrCH-TimeslotsCodes            UplinkTimeslotsCodes-LCR-r4
}

UL-DPCH-InfoPredef ::=              SEQUENCE {
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfoPredef,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            tfci-Existence                      BOOLEAN,
            puncturingLimit                     PuncturingLimit
        },
        tdd                                 SEQUENCE {
            commonTimeslotInfo                  CommonTimeslotInfo
        }
    }
}

UL-DPCH-PowerControlInfo ::=        CHOICE {
    fdd                                 SEQUENCE {
        dpcch-PowerOffset                   DPCCH-PowerOffset,
        pc-Preamble                         PC-Preamble,
        sRB-delay                           SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm               PowerControlAlgorithm
    },
    tdd                                 SEQUENCE {
        ul-TargetSIR                        UL-TargetSIR                OPTIONAL,
        ul-OL-PC-Signalling                 CHOICE {
            broadcast-UL-OL-PC-info             NULL,
            handoverGroup                       SEQUENCE {
                individualTS-InterferenceList       IndividualTS-InterferenceList,
                dpch-ConstantValue                  ConstantValueTdd,
                primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power
            }
        }                                                               OPTIONAL
    }
}

UL-DPCH-PowerControlInfo-r4 ::=     CHOICE {
    fdd                                 SEQUENCE {
        dpcch-PowerOffset                   DPCCH-PowerOffset,
        pc-Preamble                         PC-Preamble,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
```

```
        powerControlAlgorithm               PowerControlAlgorithm
    },
    tdd                                 SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
        -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" – 120)
        ul-TargetSIR                        UL-TargetSIR                OPTIONAL,
        ul-OL-PC-Signalling                 CHOICE {
            broadcast-UL-OL-PC-info             NULL,
            handoverGroup                       SEQUENCE {
                tddOption                           CHOICE {
                    tdd384                              SEQUENCE {
                        individualTS-InterferenceList       IndividualTS-InterferenceList,
                        dpch-ConstantValue                  ConstantValue
                    },
                    tdd128                              SEQUENCE {
                        tpc-StepSize                        TPC-StepSizeTDD
                    }
                },
                primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power
            }
        }
    }
}

UL-DPCH-PowerControlInfo-r5 ::=     CHOICE {
    fdd                                 SEQUENCE {
        dpcch-PowerOffset                   DPCCH-PowerOffset,
        pc-Preamble                         PC-Preamble,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm               PowerControlAlgorithm,
        deltaACK                            DeltaACK    OPTIONAL,
        deltaNACK                           DeltaNACK   OPTIONAL,
        ack-NACK-repetition-factor          ACK-NACK-repetitionFactor   OPTIONAL
        dpcch-2-offset                      INTEGER (-164 ..-6)
    },
    tdd                                 SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
        -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" – 120)
        ul-TargetSIR                        UL-TargetSIR                OPTIONAL,
        ul-OL-PC-Signalling                 CHOICE {
            broadcast-UL-OL-PC-info             NULL,
            handoverGroup                       SEQUENCE {
                tddOption                           CHOICE {
                    tdd384                              SEQUENCE {
                        individualTS-InterferenceList       IndividualTS-InterferenceList,
                        dpch-ConstantValue                  ConstantValue
                    },
                    tdd128                              SEQUENCE {
                        tpc-StepSize                        TPC-StepSizeTDD
                    }
                },
                primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power
            }
        }
    }
}

UL-DPCH-PowerControlInfoPostFDD ::= SEQUENCE {
    -- DPCCH-PowerOffset2 has a smaller range to save bits
    dpcch-PowerOffset                   DPCCH-PowerOffset2,
    pc-Preamble                         PC-Preamble,
    sRB-delay                           SRB-delay
}

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

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

UL-DPCH-PowerControlInfoPredef ::=      CHOICE {
    fdd                                 SEQUENCE {
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm               PowerControlAlgorithm
    },
```

```
    tdd                                 SEQUENCE {
        -- dpch-ConstantValue shall be ignored if in 1.28Mcps TDD mode.
        dpch-ConstantValue                  ConstantValueTdd
    }
}

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

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


UL-SynchronisationParameters-r4 ::= SEQUENCE {
    stepSize                            INTEGER (1..8),
    frequency                           INTEGER (1..8)
}

-- Actual value UL-TargetSIR = (IE value * 0.5) - 11
UL-TargetSIR ::=                    INTEGER (0..62)

UL-TimingAdvance ::=                INTEGER (0..63)

UL-TimingAdvanceControl ::=         CHOICE {
    disabled                            NULL,
    enabled                             SEQUENCE {
        ul-TimingAdvance                    UL-TimingAdvance                OPTIONAL,
        activationTime                      ActivationTime                  OPTIONAL
    }
}

UL-TimingAdvanceControl-r4 ::=      CHOICE {
    disabled                            NULL,
    enabled                             SEQUENCE {
        tddOption                           CHOICE {
            tdd384                              SEQUENCE {
                ul-TimingAdvance                    UL-TimingAdvance                OPTIONAL,
                activationTime                      ActivationTime                  OPTIONAL
            },
            tdd128                              SEQUENCE {
                ul-SynchronisationParameters        UL-SynchronisationParameters-r4 OPTIONAL,
                synchronisationParameters           SynchronisationParameters-r4    OPTIONAL
            }
        }
    }
}

UL-TimingAdvanceControl-LCR-r4 ::=  CHOICE {
    disabled                            NULL,
    enabled                             SEQUENCE {
        ul-SynchronisationParameters        UL-SynchronisationParameters-r4 OPTIONAL,
        synchronisationParameters           SynchronisationParameters-r4    OPTIONAL
    }
}

UL-TS-ChannelisationCode ::=        ENUMERATED {
                                        cc1-1, cc2-1, cc2-2,
                                        cc4-1, cc4-2, cc4-3, cc4-4,
                                        cc8-1, cc8-2, cc8-3, cc8-4,
                                        cc8-5, cc8-6, cc8-7, cc8-8,
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc15-15, cc16-16 }

UL-TS-ChannelisationCodeList ::=    SEQUENCE (SIZE (1..2)) OF
                                        UL-TS-ChannelisationCode

UplinkAdditionalTimeslots ::=       SEQUENCE {
    parameters                          CHOICE {
        sameAsLast                          SEQUENCE {
            timeslotNumber                      TimeslotNumber
        },
        newParameters                       SEQUENCE {
            individualTimeslotInfo                  IndividualTimeslotInfo,
            ul-TS-ChannelisationCodeList            UL-TS-ChannelisationCodeList
        }
    }
}
```

```
UplinkAdditionalTimeslots-LCR-r4 ::=    SEQUENCE {
    parameters                          CHOICE {
        sameAsLast                          SEQUENCE {
            timeslotNumber                      TimeslotNumber
        },
        newParameters                       SEQUENCE {
            individualTimeslotInfo                  IndividualTimeslotInfo-LCR-r4,
            ul-TS-ChannelisationCodeList            UL-TS-ChannelisationCodeList
        }
    }
}

UplinkTimeslotsCodes ::=            SEQUENCE {
    dynamicSFusage                      BOOLEAN,
    firstIndividualTimeslotInfo         IndividualTimeslotInfo,
    ul-TS-ChannelisationCodeList        UL-TS-ChannelisationCodeList,
    moreTimeslots                       CHOICE {
        noMore                              NULL,
        additionalTimeslots                 CHOICE {
            consecutive                         SEQUENCE {
                numAdditionalTimeslots              INTEGER (1..maxTS-1)
            },
            timeslotList                        SEQUENCE (SIZE (1..maxTS-1)) OF
                                                    UplinkAdditionalTimeslots
        }
    }
}

UplinkTimeslotsCodes-LCR-r4 ::=     SEQUENCE {
    dynamicSFusage                      BOOLEAN,
    firstIndividualTimeslotInfo         IndividualTimeslotInfo-LCR-r4,
    ul-TS-ChannelisationCodeList        UL-TS-ChannelisationCodeList,
    moreTimeslots                       CHOICE {
        noMore                              NULL,
        additionalTimeslots                 CHOICE {
            consecutive                         SEQUENCE {
                numAdditionalTimeslots              INTEGER (1..maxTS-LCR-1)
            },
            timeslotList                        SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                                                    UplinkAdditionalTimeslots-LCR-r4
        }
    }
}

Wi-LCR ::=                                                          INTEGER(1..4)

-- **************************************************
--
--     MEASUREMENT INFORMATION ELEMENTS (10.3.7)
--
-- **************************************************

AcquisitionSatInfo ::=              SEQUENCE {
    satID                               SatID,
    -- Actual value dopplerOthOrder = IE value * 2.5
    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, spare12, spare11,
                                        spare10, spare9, spare8, spare7, spare6,
                                        spare5, spare4, spare3, spare2, spare1 }

AzimuthAndElevation ::=             SEQUENCE {
    -- Actual value azimuth = IE value * 11.25
    azimuth                             INTEGER (0..31),
    -- Actual value elevation = IE value * 11.25
    elevation                           INTEGER (0..7)
}

BadSatList ::=                      SEQUENCE (SIZE (1..maxSat)) OF
                                        INTEGER (0..63)

Frequency-Band ::=                  ENUMERATED {
                                        dcs1800BandUsed, pcs1900BandUsed }

BCCH-ARFCN ::=                      INTEGER (0..1023)

BLER-MeasurementResults ::=         SEQUENCE {
    transportChannelIdentity            TransportChannelIdentity,
    dl-TransportChannelBLER             DL-TransportChannelBLER             OPTIONAL
}

BLER-MeasurementResultsList ::=     SEQUENCE (SIZE (1..maxTrCH)) OF
                                        BLER-MeasurementResults

BLER-TransChIdList ::=              SEQUENCE (SIZE (1..maxTrCH)) OF
                                        TransportChannelIdentity

BSIC-VerificationRequired ::=       ENUMERATED {
                                        required, notRequired }

BSICReported ::=                    CHOICE {
    -- Value maxCellMeas is not allowed for verifiedBSIC
    verifiedBSIC                        INTEGER (0..maxCellMeas),
    nonVerifiedBSIC                     BCCH-ARFCN
}

BurstModeParameters ::=             SEQUENCE {
    burstStart                          INTEGER (0..15),
    burstLength                         INTEGER (10..25),
    burstFreq                           INTEGER (1..16)
}

CellDCH-ReportCriteria ::=          CHOICE {
    intraFreqReportingCriteria          IntraFreqReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria
}

CellDCH-ReportCriteria-LCR-r4 ::=   CHOICE {
    intraFreqReportingCriteria          IntraFreqReportingCriteria-LCR-r4,
    periodicalReportingCriteria         PeriodicalReportingCriteria
}

-- Actual value CellIndividualOffset = IE value * 0.5
CellIndividualOffset ::=            INTEGER (-20..20)


CellInfo ::=                        SEQUENCE {
    cellIndividualOffset                CellIndividualOffset               DEFAULT 0,
```

```
    referenceTimeDifferenceToCell       ReferenceTimeDifferenceToCell       OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info           OPTIONAL,
            primaryCPICH-TX-Power               PrimaryCPICH-TX-Power       OPTIONAL,
            readSFN-Indicator                   BOOLEAN,
            tx-DiversityIndicator               BOOLEAN
        },
        tdd                                 SEQUENCE {
            primaryCCPCH-Info                   PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power       OPTIONAL,
            timeslotInfoList                    TimeslotInfoList            OPTIONAL,
            readSFN-Indicator                   BOOLEAN
        }
    }
}

CellInfo-r4 ::=                     SEQUENCE {
    cellIndividualOffset                CellIndividualOffset                DEFAULT 0,
    referenceTimeDifferenceToCell       ReferenceTimeDifferenceToCell       OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info           OPTIONAL,
            primaryCPICH-TX-Power               PrimaryCPICH-TX-Power       OPTIONAL,
            readSFN-Indicator                   BOOLEAN,
            tx-DiversityIndicator               BOOLEAN
        },
        tdd                                 SEQUENCE {
            primaryCCPCH-Info                   PrimaryCCPCH-Info-r4,
            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 ::=             SEQUENCE {
    cellIndividualOffset                CellIndividualOffset                DEFAULT 0,
    referenceTimeDifferenceToCell       ReferenceTimeDifferenceToCell       OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info           OPTIONAL,
            primaryCPICH-TX-Power               PrimaryCPICH-TX-Power       OPTIONAL,
            readSFN-Indicator                   BOOLEAN,
            tx-DiversityIndicator               BOOLEAN
        },
        tdd                                 SEQUENCE {
            primaryCCPCH-Info                   PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power       OPTIONAL,
            timeslotInfoList                    TimeslotInfoList            OPTIONAL,
            readSFN-Indicator                   BOOLEAN
        }
    },
    cellSelectionReselectionInfo        CellSelectReselectInfoSIB-11-12-HCS-RSCP    OPTIONAL
}

CellInfoSI-HCS-RSCP-LCR-r4 ::=      SEQUENCE {
    cellIndividualOffset                CellIndividualOffset                DEFAULT 0,
    referenceTimeDifferenceToCell       ReferenceTimeDifferenceToCell       OPTIONAL,
    primaryCCPCH-Info                   PrimaryCCPCH-Info-LCR-r4,
    primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power               OPTIONAL,
    timeslotInfoList                    TimeslotInfoList-LCR-r4             OPTIONAL,
    readSFN-Indicator                   BOOLEAN,
    cellSelectionReselectionInfo        CellSelectReselectInfoSIB-11-12-HCS-RSCP    OPTIONAL
}

CellInfoSI-HCS-ECN0 ::=             SEQUENCE {
    cellIndividualOffset                CellIndividualOffset                DEFAULT 0,
    referenceTimeDifferenceToCell       ReferenceTimeDifferenceToCell       OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info           OPTIONAL,
            primaryCPICH-TX-Power               PrimaryCPICH-TX-Power       OPTIONAL,
            readSFN-Indicator                   BOOLEAN,
            tx-DiversityIndicator               BOOLEAN
        },
        tdd                                 SEQUENCE {
            primaryCCPCH-Info                   PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power       OPTIONAL,
            timeslotInfoList                    TimeslotInfoList            OPTIONAL,
            readSFN-Indicator                   BOOLEAN
        }
    },
    cellSelectionReselectionInfo        CellSelectReselectInfoSIB-11-12-HCS-ECN0    OPTIONAL
}

CellInfoSI-HCS-ECN0-LCR-r4 ::=      SEQUENCE {
    cellIndividualOffset                CellIndividualOffset                DEFAULT 0,
    referenceTimeDifferenceToCell       ReferenceTimeDifferenceToCell       OPTIONAL,
    primaryCCPCH-Info                   PrimaryCCPCH-Info-LCR-r4,
    primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power               OPTIONAL,
    timeslotInfoList                    TimeslotInfoList-LCR-r4             OPTIONAL,
    readSFN-Indicator                   BOOLEAN,
    cellSelectionReselectionInfo        CellSelectReselectInfoSIB-11-12-HCS-ECN0    OPTIONAL
}
```

```
CellMeasuredResults ::=             SEQUENCE {
    cellIdentity                        CellIdentity                        OPTIONAL,
    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
        },
        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,
    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
}

CellToReportList ::=                SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        CellToReport

CodePhaseSearchWindow ::=           ENUMERATED {
                                        w1023, w1, w2, w3, w4, w6, w8,
                                        w12, w16, w24, w32, w48, w64,
                                        w96, w128, w192 }

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

-- SPARE: CPICH-Ec-No, Max = 49
-- Values above Max are spare
CPICH-Ec-N0 ::=                     INTEGER (0..63)

-- SPARE: CPICH- RSCP, Max = 91
-- Values above Max are spare
CPICH-RSCP ::=                      INTEGER (0..127)


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

-- Actual value DeltaRRC = IE value * 0.032
DeltaRRC ::=                        INTEGER (-7..7)

DGPS-CorrectionSatInfo ::=          SEQUENCE {
    satID                               SatID,
    iode                                IODE,
    udre                                UDRE,
    prc                                 PRC,
    rrc                                 RRC,
    deltaPRC2                           DeltaPRC,
    deltaRRC2                           DeltaRRC,
    deltaPRC3                           DeltaPRC            OPTIONAL,
    deltaRRC3                           DeltaRRC            OPTIONAL
}

DGPS-CorrectionSatInfoList ::=      SEQUENCE (SIZE (1..maxSat)) OF
                                        DGPS-CorrectionSatInfo

DiffCorrectionStatus ::=            ENUMERATED {
                                        udre-1-0, udre-0-75, udre-0-5, udre-0-3,
                                        udre-0-2, udre-0-1, noData, invalidData }

DL-TransportChannelBLER ::=         INTEGER (0..63)

DopplerUncertainty ::=              ENUMERATED {
                                        hz12-5, hz25, hz50, hz100, hz200,
                                        spare3, spare2, spare1 }

EllipsoidPoint ::=                  SEQUENCE {
    latitudeSign        ENUMERATED { north, south },
    latitude            INTEGER (0..8388607),
    longitude           INTEGER (-8388608..8388607)
}


EllipsoidPointAltitude ::=          SEQUENCE {
    latitudeSign        ENUMERATED { north, south },
    latitude            INTEGER (0..8388607),
    longitude           INTEGER (-8388608..8388607),
    altitudeDirection   ENUMERATED {height, depth},
    altitude            INTEGER (0..32767)
```

```
}


EllipsoidPointAltitudeEllipsoide ::=    SEQUENCE {
    latitudeSign            ENUMERATED { north, south },
    latitude                INTEGER (0..8388607),
    longitude               INTEGER (-8388608..8388607),
    altitudeDirection       ENUMERATED {height, depth},
    altitude                INTEGER (0..32767),
    uncertaintySemiMajor    INTEGER (0..127),
    uncertaintySemiMinor    INTEGER (0..127),
    orientationMajorAxis    INTEGER (0..89),
    uncertaintyAltitude     INTEGER (0..127),
    confidence              INTEGER (0..100)
}


EllipsoidPointUncertCircle ::=      SEQUENCE {
    latitudeSign            ENUMERATED { north, south },
    latitude                INTEGER (0..8388607),
    longitude               INTEGER (-8388608..8388607),
    uncertaintyCode         INTEGER (0..127)
}


EllipsoidPointUncertEllipse ::=     SEQUENCE {
    latitudeSign            ENUMERATED { north, south },
    latitude                INTEGER (0..8388607),
    longitude               INTEGER (-8388608..8388607),
    uncertaintySemiMajor    INTEGER (0..127),
    uncertaintySemiMinor    INTEGER (0..127),
    orientationMajorAxis    INTEGER (0..89),
    confidence              INTEGER (0..100)
}


EnvironmentCharacterisation ::=     ENUMERATED {
                                        possibleHeavyMultipathNLOS,
                                        lightMultipathLOS,
                                        notDefined,
                                        spare }

Event1a ::=                         SEQUENCE {
    triggeringCondition                 TriggeringCondition2,
    reportingRange                      ReportingRange,
    forbiddenAffectCellList             ForbiddenAffectCellList             OPTIONAL,
    w                                   W,
    reportDeactivationThreshold         ReportDeactivationThreshold,
    reportingAmount                     ReportingAmount,
    reportingInterval                   ReportingInterval
}

Event1a-r4 ::=                      SEQUENCE {
    triggeringCondition                 TriggeringCondition2,
    reportingRange                      ReportingRange,
    forbiddenAffectCellList             ForbiddenAffectCellList-r4          OPTIONAL,
    w                                   W,
    reportDeactivationThreshold         ReportDeactivationThreshold,
    reportingAmount                     ReportingAmount,
    reportingInterval                   ReportingInterval
}

Event1a-LCR-r4 ::=                  SEQUENCE {
    triggeringCondition                 TriggeringCondition2,
    reportingRange                      ReportingRange,
    forbiddenAffectCellList             ForbiddenAffectCellList-LCR-r4          OPTIONAL,
    w                                   W,
    reportDeactivationThreshold         ReportDeactivationThreshold,
    reportingAmount                     ReportingAmount,
    reportingInterval                   ReportingInterval
}

Event1b ::=                         SEQUENCE {
    triggeringCondition                 TriggeringCondition1,
    reportingRange                      ReportingRange,
    forbiddenAffectCellList             ForbiddenAffectCellList             OPTIONAL,
    w                                   W
}
```

```
Event1b-r4 ::=                      SEQUENCE {
    triggeringCondition                 TriggeringCondition1,
    reportingRange                      ReportingRange,
    forbiddenAffectCellList             ForbiddenAffectCellList-r4          OPTIONAL,
    w                                   W
}

Event1b-LCR-r4 ::=                  SEQUENCE {
    triggeringCondition                 TriggeringCondition1,
    reportingRange                      ReportingRange,
    forbiddenAffectCellList             ForbiddenAffectCellList-LCR-r4          OPTIONAL,
    w                                   W
}

Event1c ::=                         SEQUENCE {
    replacementActivationThreshold      ReplacementActivationThreshold,
    reportingAmount                     ReportingAmount,
    reportingInterval                   ReportingInterval
}

Event1e ::=                     SEQUENCE {
    triggeringCondition                 TriggeringCondition2,
    thresholdUsedFrequency              ThresholdUsedFrequency
}

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

Event2a ::=                         SEQUENCE {
    -- dummy is not used in this version of the specification and should be ignored
    dummy                               Threshold,
    usedFreqW                           W,
    hysteresis                          HysteresisInterFreq,
    timeToTrigger                       TimeToTrigger,
    reportingCellStatus                 ReportingCellStatus                 OPTIONAL,
    nonUsedFreqParameterList            NonUsedFreqParameterList            OPTIONAL
}

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

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

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

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

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

```
}

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

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

}

Event3c ::=                         SEQUENCE {
    thresholdOtherSystem                Threshold,
    hysteresis                          Hysteresis,
    timeToTrigger                       TimeToTrigger,
    reportingCellStatus                 ReportingCellStatus                 OPTIONAL
}

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

EventIDInterFreq ::=                ENUMERATED {
                                        e2a, e2b, e2c, e2d, e2e, e2f, spare2, spare1 }

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

EventIDIntraFreq ::=                ENUMERATED {
                                        e1a, e1b, e1c, e1d, e1e,
                                        e1f, e1g, e1h, e1i, spare7,
                                        spare6, spare5, spare4, spare3, spare2,
                                        spare1 }

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

ExtraDopplerInfo ::=                SEQUENCE {
    -- Actual value doppler1stOrder = IE value * 0.023
    doppler1stOrder                     INTEGER (-42..21),
    dopplerUncertainty                  DopplerUncertainty
}

FACH-MeasurementOccasionInfo ::=    SEQUENCE {
    fACH-meas-occasion-coeff            INTEGER (1..12)                     OPTIONAL,
    inter-freq-FDD-meas-ind             BOOLEAN,
    -- inter-freq-TDD-meas-ind is for 3.84Mcps TDD. For 1.28Mcps TDD, the IE in
    -- FACH-MeasurementOccasionInfo-LCR-r4-ext is used.
    inter-freq-TDD-meas-ind             BOOLEAN,
    inter-RAT-meas-ind                  SEQUENCE (SIZE (1..maxOtherRAT)) OF
                                            RAT-Type                        OPTIONAL
}

FACH-MeasurementOccasionInfo-LCR-r4-ext ::= SEQUENCE {
    inter-freq-TDD128-meas-ind                  BOOLEAN
}

FilterCoefficient ::=               ENUMERATED {
                                        fc0, fc1, fc2, fc3, fc4, fc5,
                                        fc6, fc7, fc8, fc9, fc11, fc13,
```

```
                                        fc15, fc17, fc19, spare1 }

-- Actual value FineSFN-SFN = IE value * 0.0625
FineSFN-SFN ::=                     INTEGER (0..15)

ForbiddenAffectCell ::=             CHOICE {
    fdd                                 PrimaryCPICH-Info,
    tdd                                 PrimaryCCPCH-Info
}

ForbiddenAffectCell-r4 ::=          CHOICE {
    fdd                                 PrimaryCPICH-Info,
    tdd                                 PrimaryCCPCH-Info-r4
}

ForbiddenAffectCell-LCR-r4 ::=      SEQUENCE {
    tdd                                 PrimaryCCPCH-Info-LCR-r4
}

ForbiddenAffectCellList ::=         SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        ForbiddenAffectCell

ForbiddenAffectCellList-r4 ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        ForbiddenAffectCell-r4

ForbiddenAffectCellList-LCR-r4 ::=  SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        ForbiddenAffectCell-LCR-r4

FreqQualityEstimateQuantity-FDD ::= ENUMERATED {
                                        cpich-Ec-N0,
                                        cpich-RSCP }

FreqQualityEstimateQuantity-TDD ::= ENUMERATED {
                                        primaryCCPCH-RSCP }

GPS-MeasurementParam ::=            SEQUENCE {
    satelliteID                         INTEGER (0..63),
    c-N0                                INTEGER (0..63),
    doppler                             INTEGER (-32768..32768),
    wholeGPS-Chips                      INTEGER (0..1023),
    fractionalGPS-Chips                 INTEGER (0..1023),
    multipathIndicator                  MultipathIndicator,
    pseudorangeRMS-Error                INTEGER (0..63)
}

GPS-MeasurementParamList ::=        SEQUENCE (SIZE (1..maxSat)) OF
                                        GPS-MeasurementParam

GSM-CarrierRSSI ::=                 BIT STRING (SIZE (6))


GSM-MeasuredResults ::=             SEQUENCE {
    gsm-CarrierRSSI                     GSM-CarrierRSSI                     OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy                               INTEGER (46..173)                   OPTIONAL,
    bsicReported                        BSICReported,
    observedTimeDifferenceToGSM         ObservedTimeDifferenceToGSM         OPTIONAL
}

GSM-MeasuredResultsList ::=         SEQUENCE (SIZE (1..maxReportedGSMCells)) OF
                                        GSM-MeasuredResults

GPS-TOW-1msec ::=                   INTEGER (0..604799999)

GPS-TOW-Assist ::=                  SEQUENCE {
    satID                               SatID,
    tlm-Message                         BIT STRING (SIZE (14)),
    tlm-Reserved                        BIT STRING (SIZE (2)),
    alert                               BOOLEAN,
    antiSpoof                           BOOLEAN
}

GPS-TOW-AssistList ::=              SEQUENCE (SIZE (1..maxSat)) OF
                                        GPS-TOW-Assist

HCS-CellReselectInformation-RSCP ::=        SEQUENCE {
    -- TABULAR: The default value for penaltyTime is "notUsed"
```

```
    -- Temporary offset is nested inside PenaltyTime-RSCP
    penaltyTime                                 PenaltyTime-RSCP
}

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

HCS-NeighbouringCellInformation-RSCP ::= SEQUENCE {
    hcs-PRIO                            HCS-PRIO                                DEFAULT 0,
    q-HCS                               Q-HCS                                   DEFAULT 0,
    hcs-CellReselectInformation         HCS-CellReselectInformation-RSCP
}

HCS-NeighbouringCellInformation-ECN0 ::= SEQUENCE {
    hcs-PRIO                            HCS-PRIO                                DEFAULT 0,
    q-HCS                               Q-HCS                                   DEFAULT 0,
    hcs-CellReselectInformation         HCS-CellReselectInformation-ECN0
}

HCS-PRIO ::=                        INTEGER (0..7)

HCS-ServingCellInformation ::=      SEQUENCE {
    hcs-PRIO                            HCS-PRIO                                DEFAULT 0,
    q-HCS                               Q-HCS                                   DEFAULT 0,
    t-CR-Max                            T-CRMax                                 OPTIONAL
}

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

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

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

InterFreqCell-LCR-r4 ::=            SEQUENCE {
    frequencyInfo                       FrequencyInfo,
    nonFreqRelatedEventResults          CellMeasurementEventResults-LCR-r4
}

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

InterFreqCellInfoList ::=           SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellList                OPTIONAL,
    cellsForInterFreqMeasList           CellsForInterFreqMeasList           OPTIONAL
}

InterFreqCellInfoList-r4 ::=        SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellList-r4             OPTIONAL
}

InterFreqCellInfoSI-List-RSCP ::=       SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-RSCP        OPTIONAL
}

InterFreqCellInfoSI-List-ECN0 ::=       SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-ECN0        OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP ::=       SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-HCS-RSCP    OPTIONAL
}
InterFreqCellInfoSI-List-HCS-ECN0 ::=       SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-HCS-ECN0    OPTIONAL
}
```

```
InterFreqCellInfoSI-List-RSCP-LCR ::=       SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-RSCP-LCR-r4     OPTIONAL
}

InterFreqCellInfoSI-List-ECN0-LCR ::=       SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-ECN0-LCR-r4     OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP-LCR ::=       SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 OPTIONAL
}
InterFreqCellInfoSI-List-HCS-ECN0-LCR ::=       SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 OPTIONAL
}

InterFreqCellList ::=               SEQUENCE (SIZE (1..maxFreq)) OF
                                        InterFreqCell

InterFreqCellList-LCR-r4-ext ::=    SEQUENCE (SIZE (1..maxFreq)) OF
                                        InterFreqCell-LCR-r4

InterFreqCellMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        CellMeasuredResults

InterFreqEvent ::=                  CHOICE {
    event2a                             Event2a,
    event2b                             Event2b,
    event2c                             Event2c,
    event2d                             Event2d,
    event2e                             Event2e,
    event2f                             Event2f
}

InterFreqEventList ::=              SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                        InterFreqEvent


InterFreqEventResults ::=           SEQUENCE {
    eventID                             EventIDInterFreq,
    interFreqCellList                   InterFreqCellList                   OPTIONAL
}

InterFreqEventResults-LCR-r4-ext ::=    SEQUENCE {
    eventID                             EventIDInterFreq,
    interFreqCellList                   InterFreqCellList-LCR-r4-ext        OPTIONAL
}

InterFreqMeasQuantity ::=           SEQUENCE {
    reportingCriteria                   CHOICE {
        intraFreqReportingCriteria          SEQUENCE {
            intraFreqMeasQuantity               IntraFreqMeasQuantity
        },
        interFreqReportingCriteria          SEQUENCE {
            filterCoefficient                   FilterCoefficient           DEFAULT fc0,
            modeSpecificInfo                    CHOICE {
                fdd                                 SEQUENCE {
                    freqQualityEstimateQuantity-FDD     FreqQualityEstimateQuantity-FDD
                },
                tdd                                 SEQUENCE {
                    freqQualityEstimateQuantity-TDD     FreqQualityEstimateQuantity-TDD
                }
            }
        }
    }
}

InterFreqMeasuredResults ::=        SEQUENCE {
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    utra-CarrierRSSI                    UTRA-CarrierRSSI                    OPTIONAL,
    interFreqCellMeasuredResultsList    InterFreqCellMeasuredResultsList    OPTIONAL
}

InterFreqMeasuredResultsList ::=    SEQUENCE (SIZE (1..maxFreq)) OF
                                        InterFreqMeasuredResults
```

```
InterFreqMeasurementSysInfo-RSCP ::=    SEQUENCE {
    interFreqCellInfoSI-List                InterFreqCellInfoSI-List-RSCP       OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0 ::=        SEQUENCE {
    interFreqCellInfoSI-List            InterFreqCellInfoSI-List-ECN0       OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP ::=        SEQUENCE {
    interFreqCellInfoSI-List            InterFreqCellInfoSI-List-HCS-RSCP   OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0 ::=        SEQUENCE {
    interFreqCellInfoSI-List            InterFreqCellInfoSI-List-HCS-ECN0   OPTIONAL
}

InterFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List                InterFreqCellInfoSI-List-RSCP-LCR       OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0-LCR-r4 ::=     SEQUENCE {
    interFreqCellInfoSI-List            InterFreqCellInfoSI-List-ECN0-LCR       OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::=     SEQUENCE {
    interFreqCellInfoSI-List            InterFreqCellInfoSI-List-HCS-RSCP-LCR   OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 ::=     SEQUENCE {
    interFreqCellInfoSI-List            InterFreqCellInfoSI-List-HCS-ECN0-LCR   OPTIONAL
}

InterFreqReportCriteria ::=         CHOICE {
    intraFreqReportingCriteria          IntraFreqReportingCriteria,
    interFreqReportingCriteria          InterFreqReportingCriteria,
    periodicalReportingCriteria         PeriodicalWithReportingCellStatus,
    noReporting                         ReportingCellStatusOpt
}

InterFreqReportCriteria-r4 ::=      CHOICE {
    intraFreqReportingCriteria          IntraFreqReportingCriteria-r4,
    interFreqReportingCriteria          InterFreqReportingCriteria,
    periodicalReportingCriteria         PeriodicalWithReportingCellStatus,
    noReporting                         ReportingCellStatusOpt
}

InterFreqReportingCriteria ::=      SEQUENCE {
    interFreqEventList                  InterFreqEventList                  OPTIONAL
}

InterFreqReportingQuantity ::=      SEQUENCE {
    utra-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,
        spare2                              NULL,
        spare1                              NULL
    }
}

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

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

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

InterRATCellInfoList-r4 ::=         SEQUENCE {
    removedInterRATCellList                 RemovedInterRATCellList,
    newInterRATCellList                     NewInterRATCellList                 OPTIONAL,
    cellsForInterRATMeasList                CellsForInterRATMeasList            OPTIONAL
}

InterRATCellIndividualOffset ::=            INTEGER (-50..50)

InterRATEvent ::=               CHOICE {
    event3a                             Event3a,
    event3b                             Event3b,
    event3c                             Event3c,
    event3d                             Event3d
}

InterRATEventList ::=           SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                        InterRATEvent

InterRATEventResults ::=            SEQUENCE {
    eventID                             EventIDInterRAT,
    cellToReportList                    CellToReportList
}

InterRATInfo ::=                    ENUMERATED {
                                        gsm }

InterRATMeasQuantity ::=                SEQUENCE {
    measQuantityUTRAN-QualityEstimate       IntraFreqMeasQuantity           OPTIONAL,
    ratSpecificInfo                     CHOICE {
        gsm                                     SEQUENCE {
            measurementQuantity                     MeasurementQuantityGSM,
            filterCoefficient                       FilterCoefficient       DEFAULT fc0,
            bsic-VerificationRequired               BSIC-VerificationRequired
        },
        is-2000                                 SEQUENCE {
            tadd-EcIo                               INTEGER (0..63),
            tcomp-EcIo                              INTEGER (0..15),
            softSlope                               INTEGER (0..63)         OPTIONAL,
            addIntercept                            INTEGER (0..63)         OPTIONAL
        }
    }
}

InterRATMeasuredResults ::=     CHOICE {
    gsm                                 GSM-MeasuredResultsList,
    spare                               NULL
}

InterRATMeasuredResultsList ::= SEQUENCE (SIZE (1..maxOtherRAT-16)) OF
```

```
                                    InterRATMeasuredResults

InterRATMeasurement ::=         SEQUENCE {
    interRATCellInfoList                InterRATCellInfoList                OPTIONAL,
    interRATMeasQuantity                InterRATMeasQuantity                OPTIONAL,
    interRATReportingQuantity           InterRATReportingQuantity       OPTIONAL,
    reportCriteria                      InterRATReportCriteria
}

InterRATMeasurement-r4 ::=          SEQUENCE {
    interRATCellInfoList                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-ECN0 ::=       SEQUENCE {
    removedIntraFreqCellList            RemovedIntraFreqCellList            OPTIONAL,
    newIntraFreqCellList                NewIntraFreqCellSI-List-ECN0
}

IntraFreqCellInfoSI-List-HCS-RSCP ::=       SEQUENCE {
    removedIntraFreqCellList            RemovedIntraFreqCellList            OPTIONAL,
    newIntraFreqCellList                NewIntraFreqCellSI-List-HCS-RSCP
}

IntraFreqCellInfoSI-List-HCS-ECN0 ::=       SEQUENCE {
    removedIntraFreqCellList            RemovedIntraFreqCellList            OPTIONAL,
    newIntraFreqCellList                NewIntraFreqCellSI-List-HCS-ECN0
}
```

```
IntraFreqCellInfoSI-List-RSCP-LCR-r4 ::=    SEQUENCE {
    removedIntraFreqCellList            RemovedIntraFreqCellList            OPTIONAL,
    newIntraFreqCellList                NewIntraFreqCellSI-List-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-ECN0-LCR-r4 ::=        SEQUENCE {
    removedIntraFreqCellList            RemovedIntraFreqCellList            OPTIONAL,
    newIntraFreqCellList                NewIntraFreqCellSI-List-ECN0-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4 ::=        SEQUENCE {
    removedIntraFreqCellList            RemovedIntraFreqCellList            OPTIONAL,
    newIntraFreqCellList                NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-ECN0-LCR-r4 ::=        SEQUENCE {
    removedIntraFreqCellList            RemovedIntraFreqCellList            OPTIONAL,
    newIntraFreqCellList                NewIntraFreqCellSI-List-HCS-ECN0-LCR-r4
}

IntraFreqEvent ::=                  CHOICE {
    e1a                                 Event1a,
    e1b                                 Event1b,
    e1c                                 Event1c,
    e1d                                 NULL,
    e1e                                 Event1e,
    e1f                                 Event1f,
    e1g                                 NULL,
    e1h                                 ThresholdUsedFrequency,
    e1i                                 ThresholdUsedFrequency
}

IntraFreqEvent-r4 ::=               CHOICE {
    e1a                                 Event1a-r4,
    e1b                                 Event1b-r4,
    e1c                                 Event1c,
    e1d                                 NULL,
    e1e                                 Event1e,
    e1f                                 Event1f,
    e1g                                 NULL,
    e1h                                 ThresholdUsedFrequency,
    e1i                                 ThresholdUsedFrequency
}

IntraFreqEvent-LCR-r4 ::=           CHOICE {
    e1a                                 Event1a-LCR-r4,
    e1b                                 Event1b-LCR-r4,
    e1c                                 Event1c,
    e1d                                 NULL,
    e1e                                 Event1e,
    e1f                                 Event1f,
    e1g                                 NULL,
    e1h                                 ThresholdUsedFrequency,
    e1i                                 ThresholdUsedFrequency
}

IntraFreqEventCriteria ::=          SEQUENCE {
    event                               IntraFreqEvent,
    hysteresis                          Hysteresis,
    timeToTrigger                       TimeToTrigger,
    reportingCellStatus                 ReportingCellStatus                 OPTIONAL
}

IntraFreqEventCriteria-r4 ::=       SEQUENCE {
    event                               IntraFreqEvent-r4,
    hysteresis                          Hysteresis,
    timeToTrigger                       TimeToTrigger,
    reportingCellStatus                 ReportingCellStatus                 OPTIONAL
}

IntraFreqEventCriteria-LCR-r4 ::=   SEQUENCE {
    event                               IntraFreqEvent-LCR-r4,
    hysteresis                          Hysteresis,
    timeToTrigger                       TimeToTrigger,
    reportingCellStatus                 ReportingCellStatus                 OPTIONAL
}
```

```
IntraFreqEventCriteriaList ::=      SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                        IntraFreqEventCriteria

IntraFreqEventCriteriaList-r4 ::=   SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                        IntraFreqEventCriteria-r4

IntraFreqEventCriteriaList-LCR-r4 ::=   SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                        IntraFreqEventCriteria-LCR-r4

IntraFreqEventResults ::=           SEQUENCE {
    eventID                             EventIDIntraFreq,
    cellMeasurementEventResults         CellMeasurementEventResults
}

IntraFreqMeasQuantity ::=           SEQUENCE {
    filterCoefficient                   FilterCoefficient                   DEFAULT fc0,
    modeSpecificInfo                    CHOICE {
        fdd                             SEQUENCE {
            intraFreqMeasQuantity-FDD       IntraFreqMeasQuantity-FDD
        },
        tdd                             SEQUENCE {
            intraFreqMeasQuantity-TDDList   IntraFreqMeasQuantity-TDDList
        }
    }
}

-- If IntraFreqMeasQuantity-FDD is used in InterRATMeasQuantity, then only
-- cpich-Ec-N0 and cpich-RSCP are allowed.
-- If IntraFreqMeasQuantity-FDD is used in InterFreqMeasQuantity, then
-- utra-CarrierRSSI is not allowed.
IntraFreqMeasQuantity-FDD ::=       ENUMERATED {
                                        cpich-Ec-N0,
                                        cpich-RSCP,
                                        pathloss,
                                        utra-CarrierRSSI }

-- If IntraFreqMeasQuantity-TDD is used in InterFreqMeasQuantity, then
-- utra-CarrierRSSI is not allowed.
IntraFreqMeasQuantity-TDD ::=       ENUMERATED {
                                        primaryCCPCH-RSCP,
                                        pathloss,
                                        timeslotISCP,
                                        utra-CarrierRSSI }

IntraFreqMeasQuantity-TDDList ::=   SEQUENCE (SIZE (1..4)) OF
                                        IntraFreqMeasQuantity-TDD

IntraFreqMeasuredResultsList ::=    SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        CellMeasuredResults

IntraFreqMeasurementSysInfo-RSCP ::=    SEQUENCE {
    intraFreqMeasurementID              MeasurementIdentity         DEFAULT 1,
    intraFreqCellInfoSI-List            IntraFreqCellInfoSI-List-RSCP       OPTIONAL,
    intraFreqMeasQuantity               IntraFreqMeasQuantity               OPTIONAL,
    intraFreqReportingQuantityForRACH   IntraFreqReportingQuantityForRACH   OPTIONAL,
    maxReportedCellsOnRACH              MaxReportedCellsOnRACH              OPTIONAL,
    reportingInfoForCellDCH             ReportingInfoForCellDCH             OPTIONAL
}

IntraFreqMeasurementSysInfo-ECN0 ::=        SEQUENCE {
    intraFreqMeasurementID              MeasurementIdentity         DEFAULT 1,
    intraFreqCellInfoSI-List            IntraFreqCellInfoSI-List-ECN0       OPTIONAL,
    intraFreqMeasQuantity               IntraFreqMeasQuantity               OPTIONAL,
    intraFreqReportingQuantityForRACH   IntraFreqReportingQuantityForRACH   OPTIONAL,
    maxReportedCellsOnRACH              MaxReportedCellsOnRACH              OPTIONAL,
    reportingInfoForCellDCH             ReportingInfoForCellDCH             OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP ::=    SEQUENCE {
    intraFreqMeasurementID              MeasurementIdentity         DEFAULT 1,
    intraFreqCellInfoSI-List            IntraFreqCellInfoSI-List-HCS-RSCP   OPTIONAL,
    intraFreqMeasQuantity               IntraFreqMeasQuantity               OPTIONAL,
    intraFreqReportingQuantityForRACH   IntraFreqReportingQuantityForRACH   OPTIONAL,
    maxReportedCellsOnRACH              MaxReportedCellsOnRACH              OPTIONAL,
    reportingInfoForCellDCH             ReportingInfoForCellDCH             OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECN0 ::=    SEQUENCE {
```

```
    intraFreqMeasurementID              MeasurementIdentity         DEFAULT 1,
    intraFreqCellInfoSI-List            IntraFreqCellInfoSI-List-HCS-ECN0   OPTIONAL,
    intraFreqMeasQuantity               IntraFreqMeasQuantity               OPTIONAL,
    intraFreqReportingQuantityForRACH   IntraFreqReportingQuantityForRACH   OPTIONAL,
    maxReportedCellsOnRACH              MaxReportedCellsOnRACH              OPTIONAL,
    reportingInfoForCellDCH             ReportingInfoForCellDCH             OPTIONAL
}

IntraFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID              MeasurementIdentity         DEFAULT 1,
    intraFreqCellInfoSI-List            IntraFreqCellInfoSI-List-RSCP-LCR-r4    OPTIONAL,
    intraFreqMeasQuantity               IntraFreqMeasQuantity               OPTIONAL,
    intraFreqReportingQuantityForRACH   IntraFreqReportingQuantityForRACH   OPTIONAL,
    maxReportedCellsOnRACH              MaxReportedCellsOnRACH              OPTIONAL,
    reportingInfoForCellDCH             ReportingInfoForCellDCH-LCR-r4      OPTIONAL
}

IntraFreqMeasurementSysInfo-ECN0-LCR-r4 ::=     SEQUENCE {
    intraFreqMeasurementID              MeasurementIdentity         DEFAULT 1,
    intraFreqCellInfoSI-List            IntraFreqCellInfoSI-List-ECN0-LCR-r4    OPTIONAL,
    intraFreqMeasQuantity               IntraFreqMeasQuantity               OPTIONAL,
    intraFreqReportingQuantityForRACH   IntraFreqReportingQuantityForRACH   OPTIONAL,
    maxReportedCellsOnRACH              MaxReportedCellsOnRACH              OPTIONAL,
    reportingInfoForCellDCH             ReportingInfoForCellDCH-LCR-r4      OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID              MeasurementIdentity         DEFAULT 1,
    intraFreqCellInfoSI-List            IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4    OPTIONAL,
    intraFreqMeasQuantity               IntraFreqMeasQuantity               OPTIONAL,
    intraFreqReportingQuantityForRACH   IntraFreqReportingQuantityForRACH   OPTIONAL,
    maxReportedCellsOnRACH              MaxReportedCellsOnRACH              OPTIONAL,
    reportingInfoForCellDCH             ReportingInfoForCellDCH-LCR-r4      OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-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          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 {
                                        ipl5, ipl10 }

IP-PCCPCH-r4 ::=                    BOOLEAN

IP-Spacing ::=                      ENUMERATED {
                                        e5, e7, e10, e15, e20,
                                        e30, e40, e50 }

IP-Spacing-TDD ::=                      ENUMERATED {
                                        e30, e40, e50, e70, e100}

IS-2000SpecificMeasInfo ::=         ENUMERATED {
                                        frequency, timeslot, colourcode,
                                        outputpower, pn-Offset }

MaxNumberOfReportingCellsType1 ::=  ENUMERATED {
                                        e1, e2, e3, e4, e5, e6}

MaxNumberOfReportingCellsType2 ::=  ENUMERATED {
                                        e1, e2, e3, e4, e5, e6, e7, e8, e9, e10, e11, e12}

MaxNumberOfReportingCellsType3 ::=  ENUMERATED {
                                        viactCellsPlus1,
                                        viactCellsPlus2,
                                        viactCellsPlus3,
                                        viactCellsPlus4,
                                        viactCellsPlus5,
                                        viactCellsPlus6 }

MaxReportedCellsOnRACH ::=          ENUMERATED {
                                        noReport,
                                        currentCell,
                                        currentAnd-1-BestNeighbour,
                                        currentAnd-2-BestNeighbour,
                                        currentAnd-3-BestNeighbour,
                                        currentAnd-4-BestNeighbour,
                                        currentAnd-5-BestNeighbour,
                                        currentAnd-6-BestNeighbour }
```

```
MeasuredResults ::=                 CHOICE {
    intraFreqMeasuredResultsList        IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList        InterFreqMeasuredResultsList,
    interRATMeasuredResultsList     InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList    TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults              QualityMeasuredResults,
    ue-InternalMeasuredResults          UE-InternalMeasuredResults,
    ue-positioning-MeasuredResults      UE-Positioning-MeasuredResults,
    spare                               NULL
}

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

MeasuredResults-LCR-r4 ::=          CHOICE {
    intraFreqMeasuredResultsList        IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList        InterFreqMeasuredResultsList,
    interRATMeasuredResultsList     InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList    TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults              QualityMeasuredResults,
    ue-InternalMeasuredResults          UE-InternalMeasuredResults-LCR-r4,
    ue-positioniing-MeasuredResults     UE-Positioning-MeasuredResults,
    spare                               NULL
}

MeasuredResultsList ::=             SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                        MeasuredResults

MeasuredResultsList-LCR-r4-ext ::=  SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                        MeasuredResults-LCR-r4

MeasuredResultsOnRACH ::=           SEQUENCE {
    currentCell                         SEQUENCE {
        modeSpecificInfo                    CHOICE {
            fdd                                 SEQUENCE {
                measurementQuantity                 CHOICE {
                    cpich-Ec-N0                         CPICH-Ec-N0,
                    cpich-RSCP                          CPICH-RSCP,
                    pathloss                            Pathloss,
                    spare                               NULL
                }
            },
            tdd                                 SEQUENCE {
                timeslotISCP                        TimeslotISCP-List       OPTIONAL,
                primaryCCPCH-RSCP                   PrimaryCCPCH-RSCP       OPTIONAL
            }
        }
    },
    monitoredCells                      MonitoredCellRACH-List              OPTIONAL
}

MeasurementCommand ::=              CHOICE {
    setup                               MeasurementType,
    modify                              SEQUENCE {
        measurementType                     MeasurementType                 OPTIONAL
    },
    release                             NULL
}

MeasurementCommand-r4 ::=           CHOICE {
    setup                               MeasurementType-r4,
    modify                              SEQUENCE {
        measurementType                     MeasurementType-r4              OPTIONAL
    },
    release                             NULL
}

MeasurementControlSysInfo ::=       SEQUENCE {
    use-of-HCS                          CHOICE  {
        hcs-not-used                    SEQUENCE    {
            cellSelectQualityMeasure    CHOICE  {
                cpich-RSCP              SEQUENCE    {
                    intraFreqMeasurementSysInfo         IntraFreqMeasurementSysInfo-RSCP
    OPTIONAL,
                    interFreqMeasurementSysInfo         InterFreqMeasurementSysInfo-RSCP    OPTIONAL
                },
                cpich-Ec-N0             SEQUENCE    {
```

```
                    intraFreqMeasurementSysInfo         IntraFreqMeasurementSysInfo-ECN0
    OPTIONAL,
                    interFreqMeasurementSysInfo         InterFreqMeasurementSysInfo-ECN0    OPTIONAL
                }
            },
            interRATMeasurementSysInfo      InterRATMeasurementSysInfo-B        OPTIONAL
        },
        hcs-used                        SEQUENCE    {
            cellSelectQualityMeasure    CHOICE  {
                cpich-RSCP              SEQUENCE    {
                    intraFreqMeasurementSysInfo         IntraFreqMeasurementSysInfo-HCS-RSCP
    OPTIONAL,
                    interFreqMeasurementSysInfo         InterFreqMeasurementSysInfo-HCS-RSCP
    OPTIONAL
                },
                cpich-Ec-N0             SEQUENCE    {
                    intraFreqMeasurementSysInfo         IntraFreqMeasurementSysInfo-HCS-ECN0
    OPTIONAL,
                    interFreqMeasurementSysInfo         InterFreqMeasurementSysInfo-HCS-ECN0
    OPTIONAL                }
            },
            interRATMeasurementSysInfo      InterRATMeasurementSysInfo      OPTIONAL
        }
    },

    trafficVolumeMeasSysInfo            TrafficVolumeMeasSysInfo            OPTIONAL,
    ue-InternalMeasurementSysInfo       UE-InternalMeasurementSysInfo       OPTIONAL
}

MeasurementControlSysInfo-LCR-r4-ext ::=    SEQUENCE {
    -- CHOICE use-of-HCS shall have the same value as the use-of-HCS
    -- in MeasurementControlSysInfo
    use-of-HCS                          CHOICE  {
        hcs-not-used                    SEQUENCE    {
            -- CHOICE cellSelectQualityMeasure shall have the same value as the
            -- cellSelectQualityMeasure in MeasurementControlSysInfo
            cellSelectQualityMeasure    CHOICE  {
                cpich-RSCP              SEQUENCE    {
                    intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL,
                    interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL
                },
                cpich-Ec-N0             SEQUENCE    {
                    intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL,
                    interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL
                }
            }
        },
        hcs-used                        SEQUENCE    {
            -- CHOICE cellSelectQualityMeasure shall have the same value as the
            -- cellSelectQualityMeasure in MeasurementControlSysInfo
            cellSelectQualityMeasure    CHOICE  {
                cpich-RSCP              SEQUENCE    {
                    intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4
    OPTIONAL,
                    interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 OPTIONAL
                },
                cpich-Ec-N0             SEQUENCE    {
                    intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-ECN0-LCR-r4
    OPTIONAL,
                    interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 OPTIONAL
                }
            }
        }
    }
}

MeasurementIdentity ::=     INTEGER (1..16)

MeasurementQuantityGSM ::=          ENUMERATED {
                                        gsm-CarrierRSSI,
                                        dummy }

MeasurementReportingMode ::=        SEQUENCE {
    measurementReportTransferMode       TransferMode,
    periodicalOrEventTrigger            PeriodicalOrEventTrigger
}

MeasurementType ::=                 CHOICE {
```

```
    intraFrequencyMeasurement           IntraFrequencyMeasurement,
    interFrequencyMeasurement           InterFrequencyMeasurement,
    interRATMeasurement                 InterRATMeasurement,
    ue-positioning-Measurement          UE-Positioning-Measurement,
    trafficVolumeMeasurement            TrafficVolumeMeasurement,
    qualityMeasurement                  QualityMeasurement,
    ue-InternalMeasurement              UE-InternalMeasurement
}

MeasurementType-r4 ::=              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..8)) 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,
                spare                               NULL
            }                                                               OPTIONAL
        },
        tdd                                 SEQUENCE {
            cellParametersID                    CellParametersID,
            primaryCCPCH-RSCP                   PrimaryCCPCH-RSCP
        }
    }
}

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

N-CR-T-CRMaxHyst ::=                SEQUENCE {
    n-CR                                INTEGER (1..16)                     DEFAULT 8,
    t-CRMaxHyst                         T-CRMaxHyst
}

NavigationModelSatInfo ::=          SEQUENCE {
    satID                               SatID,
    satelliteStatus                     SatelliteStatus,
    ephemerisParameter                  EphemerisParameter      OPTIONAL
}

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

EphemerisParameter ::=                  SEQUENCE {
    codeOnL2                            BIT STRING (SIZE (2)),
    uraIndex                            BIT STRING (SIZE (4)),
    satHealth                           BIT STRING (SIZE (6)),
    iodc                                BIT STRING (SIZE (10)),
    l2Pflag                             BIT STRING (SIZE (1)),
    sf1Revd                             SubFrame1Reserved,
    t-GD                                BIT STRING (SIZE (8)),
    t-oc                                BIT STRING (SIZE (16)),
    af2                                 BIT STRING (SIZE (8)),
    af1                                 BIT STRING (SIZE (16)),
    af0                                 BIT STRING (SIZE (22)),
```

```
    c-rs                                BIT STRING (SIZE (16)),
    delta-n                             BIT STRING (SIZE (16)),
    m0                                  BIT STRING (SIZE (32)),
    c-uc                                BIT STRING (SIZE (16)),
    e                                   BIT STRING (SIZE (32)),
    c-us                                BIT STRING (SIZE (16)),
    a-Sqrt                              BIT STRING (SIZE (32)),
    t-oe                                BIT STRING (SIZE (16)),
    fitInterval                         BIT STRING (SIZE (1)),
    aodo                                BIT STRING (SIZE (5)),
    c-ic                                BIT STRING (SIZE (16)),
    omega0                              BIT STRING (SIZE (32)),
    c-is                                BIT STRING (SIZE (16)),
    i0                                  BIT STRING (SIZE (32)),
    c-rc                                BIT STRING (SIZE (16)),
    omega                               BIT STRING (SIZE (32)),
    omegaDot                            BIT STRING (SIZE (24)),
    iDot                                BIT STRING (SIZE (14))
}
NC-Mode::=                          BIT STRING (SIZE (3))

Neighbour ::=                       SEQUENCE {
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            neighbourIdentity                   PrimaryCPICH-Info                   OPTIONAL,
            uE-RX-TX-TimeDifferenceType2Info    UE-RX-TX-TimeDifferenceType2Info    OPTIONAL
        },
        tdd                             SEQUENCE {
            neighbourAndChannelIdentity     CellAndChannelIdentity              OPTIONAL
        }
    },
    neighbourQuality                    NeighbourQuality,
    sfn-SFN-ObsTimeDifference2          SFN-SFN-ObsTimeDifference2}

Neighbour-v390ext ::=                       SEQUENCE {
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            frequencyInfo                       FrequencyInfo
        },
        tdd                             NULL
    }
}

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

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

NeighbourQuality ::=                SEQUENCE {
    ue-Positioning-OTDOA-Quality        UE-Positioning-OTDOA-Quality
}

NewInterFreqCell ::=                SEQUENCE {
    interFreqCellID                     InterFreqCellID                     OPTIONAL,
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    cellInfo                            CellInfo
}

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

NewInterFreqCellSI-List-ECN0 ::=            SEQUENCE (SIZE (1..maxCellMeas)) OF
                                    NewInterFreqCellSI-ECN0

NewInterFreqCellSI-List-HCS-RSCP ::=            SEQUENCE (SIZE (1..maxCellMeas)) OF
                                    NewInterFreqCellSI-HCS-RSCP

NewInterFreqCellSI-List-HCS-ECN0 ::=            SEQUENCE (SIZE (1..maxCellMeas)) OF
                                    NewInterFreqCellSI-HCS-ECN0

NewInterFreqCellSI-List-RSCP ::=        SEQUENCE (SIZE (1..maxCellMeas)) OF
                                    NewInterFreqCellSI-RSCP

NewInterFreqCellSI-List-ECN0-LCR-r4 ::=     SEQUENCE (SIZE (1..maxCellMeas)) OF
                                    NewInterFreqCellSI-ECN0-LCR-r4

NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                    NewInterFreqCellSI-HCS-RSCP-LCR-r4

NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                    NewInterFreqCellSI-HCS-ECN0-LCR-r4

NewInterFreqCellSI-List-RSCP-LCR-r4 ::=     SEQUENCE (SIZE (1..maxCellMeas)) OF
                                    NewInterFreqCellSI-RSCP-LCR-r4

NewInterRATCell ::=             SEQUENCE {
    interRATCellID                      InterRATCellID          OPTIONAL,
    technologySpecificInfo              CHOICE {
        gsm                                 SEQUENCE {
            cellSelectionReselectionInfo        CellSelectReselectInfoSIB-11-12     OPTIONAL,
            interRATCellIndividualOffset        InterRATCellIndividualOffset,
            bsic                                BSIC,
            frequency-band                      Frequency-Band,
            bcch-ARFCN                          BCCH-ARFCN,
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
```

```
            dummy                               NULL                OPTIONAL
        },
        is-2000                             SEQUENCE {
            is-2000SpecificMeasInfo             IS-2000SpecificMeasInfo
        },
        -- ASN.1 inconsistency: NewInterRATCellList should be optional within
        -- InterRATCellInfoList. The UE shall consider IE NewInterRATCell with
        -- technologySpecificInfo set to "none" as valid and handle the
        -- message as if the IE NewInterRATCell was absent
        none                                NULL,
        spare1                              NULL
    }
}

NewInterRATCell-r4 ::=              SEQUENCE {
    interRATCellID                      InterRATCellID          OPTIONAL,
    technologySpecificInfo              CHOICE {
        gsm                                 SEQUENCE {
            cellSelectionReselectionInfo        CellSelectReselectInfoSIB-11-12     OPTIONAL,
            interRATCellIndividualOffset        InterRATCellIndividualOffset,
            bsic                                BSIC,
            frequency-band                      Frequency-Band,
            bcch-ARFCN                          BCCH-ARFCN
        },
        is-2000                             SEQUENCE {
            is-2000SpecificMeasInfo             IS-2000SpecificMeasInfo
        },
        spare1                              NULL
    }
}

NewInterRATCell-B ::=               SEQUENCE {
    interRATCellID                      InterRATCellID              OPTIONAL,
    technologySpecificInfo              CHOICE {
        gsm                                 SEQUENCE {
            cellSelectionReselectionInfo        CellSelectReselectInfoSIB-11-12     OPTIONAL,
            interRATCellIndividualOffset        InterRATCellIndividualOffset,
            bsic                                BSIC,
            frequency-band                      Frequency-Band,
            bcch-ARFCN                          BCCH-ARFCN,
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
            dummy                               NULL                OPTIONAL
        },
        is-2000                             SEQUENCE {
            is-2000SpecificMeasInfo             IS-2000SpecificMeasInfo
        },
        -- ASN.1 inconsistency: NewInterRATCellList-B should be optional within
        -- InterRATCellInfoList-B. The UE shall consider IE NewInterRATCell-B with
        -- technologySpecificInfo set to "none" as valid and handle the
        -- message as if the IE NewInterRATCell-B was absent
        none                                NULL,
        spare1                              NULL
    }
}

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

NewInterRATCellList-r4 ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                    NewInterRATCell-r4

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

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

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

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

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

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

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

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

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

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

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

NewIntraFreqCellSI-List-RSCP ::=        SEQUENCE (SIZE (1..maxCellMeas)) OF
                                            NewIntraFreqCellSI-RSCP

NewIntraFreqCellSI-List-ECN0 ::=        SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        NewIntraFreqCellSI-ECN0

NewIntraFreqCellSI-List-HCS-RSCP ::=    SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        NewIntraFreqCellSI-HCS-RSCP

NewIntraFreqCellSI-List-HCS-ECN0 ::=    SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        NewIntraFreqCellSI-HCS-ECN0

NewIntraFreqCellSI-List-RSCP-LCR-r4 ::=     SEQUENCE (SIZE (1..maxCellMeas)) OF
                                            NewIntraFreqCellSI-RSCP-LCR-r4

NewIntraFreqCellSI-List-ECN0-LCR-r4 ::=     SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        NewIntraFreqCellSI-ECN0-LCR-r4

NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        NewIntraFreqCellSI-HCS-RSCP-LCR-r4

NewIntraFreqCellSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        NewIntraFreqCellSI-HCS-ECN0-LCR-r4

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

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

```
ObservedTimeDifferenceToGSM ::=     INTEGER (0..4095)

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

-- SPARE: Pathloss, Max = 158
-- Values above Max are spare
Pathloss ::=                        INTEGER (46..173)

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

PenaltyTime-ECN0 ::=                CHOICE {
    notUsed                             NULL,
    pt10                                TemporaryOffsetList,
    pt20                                TemporaryOffsetList,
    pt30                                TemporaryOffsetList,
    pt40                                TemporaryOffsetList,
    pt50                                TemporaryOffsetList,
    pt60                                TemporaryOffsetList
}

PendingTimeAfterTrigger ::=         ENUMERATED {
                                        ptat0-25, ptat0-5, ptat1,
                                        ptat2, ptat4, ptat8, ptat16 }

PeriodicalOrEventTrigger ::=        ENUMERATED {
                                        periodical,
                                        eventTrigger }

PeriodicalReportingCriteria ::=     SEQUENCE {
    reportingAmount                     ReportingAmount                 DEFAULT ra-Infinity,
    reportingInterval                   ReportingIntervalLong
}

PeriodicalWithReportingCellStatus ::= SEQUENCE {
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    reportingCellStatus                 ReportingCellStatus                 OPTIONAL
}

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

-- SPARE: PrimaryCCPCH-RSCP, Max = 91
-- Values above Max are spare
PrimaryCCPCH-RSCP ::=               INTEGER (0..127)

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

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

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

-- Actual value Q-RxlevMin = (IE value * 2) + 1
Q-RxlevMin ::=                      INTEGER (-58..-13)

QualityEventResults ::=             SEQUENCE (SIZE (1..maxTrCH)) OF
                                        TransportChannelIdentity

QualityMeasuredResults ::=          SEQUENCE {
    blerMeasurementResultsList          BLER-MeasurementResultsList         OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 NULL,
        tdd                                 SEQUENCE {
            sir-MeasurementResults              SIR-MeasurementList         OPTIONAL
        }
    }
}

QualityMeasurement ::=              SEQUENCE {
    qualityReportingQuantity            QualityReportingQuantity            OPTIONAL,
    reportCriteria                      QualityReportCriteria
}

QualityReportCriteria ::=           CHOICE {
    qualityReportingCriteria            QualityReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

QualityReportingCriteria ::=        SEQUENCE (SIZE (1..maxTrCH)) OF
                                        QualityReportingCriteriaSingle

QualityReportingCriteriaSingle ::=  SEQUENCE {
    transportChannelIdentity            TransportChannelIdentity,
    totalCRC                            INTEGER (1..512),
    badCRC                              INTEGER (1..512),
    pendingAfterTrigger                 INTEGER (1..512)
}

QualityReportingQuantity ::=        SEQUENCE {
    dl-TransChBLER                      BOOLEAN,
    bler-dl-TransChIdList               BLER-TransChIdList                  OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 NULL,
        tdd                                 SEQUENCE {
            sir-TFCS-List                       SIR-TFCS-List               OPTIONAL
        }
    }
}

RAT-Type ::=                        ENUMERATED {
                                        gsm, is2000 }

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

-- ReferenceLocation, as defined in 23.032
ReferenceLocation ::=           SEQUENCE {
    ellipsoidPointAltitudeEllipsoide        EllipsoidPointAltitudeEllipsoide
}
```

```
ReferenceSFN ::=                    INTEGER (0..4095)

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

RemovedInterFreqCellList ::=        CHOICE {
    removeAllInterFreqCells             NULL,
    removeSomeInterFreqCells            SEQUENCE (SIZE (1..maxCellMeas)) OF
                                            InterFreqCellID,
    removeNoInterFreqCells              NULL
}

RemovedInterRATCellList ::=     CHOICE {
    removeAllInterRATCells          NULL,
    removeSomeInterRATCells         SEQUENCE (SIZE (1..maxCellMeas)) OF
                                            InterRATCellID,
    removeNoInterRATCells           NULL
}

RemovedIntraFreqCellList ::=        CHOICE {
    removeAllIntraFreqCells             NULL,
    removeSomeIntraFreqCells            SEQUENCE (SIZE (1..maxCellMeas)) OF
                                            IntraFreqCellID,
    removeNoIntraFreqCells              NULL
}

ReplacementActivationThreshold ::=  ENUMERATED {
                                        notApplicable, t1, t2,
                                        t3, t4, t5, t6, t7 }

ReportDeactivationThreshold ::=     ENUMERATED {
                                        notApplicable, t1, t2,
                                        t3, t4, t5, t6, t7 }

ReportingAmount ::=                 ENUMERATED {
                                        ra1, ra2, ra4, ra8, ra16, ra32,
                                        ra64, ra-Infinity }

ReportingCellStatus ::=             CHOICE{
    withinActiveSet                     MaxNumberOfReportingCellsType1,
    withinMonitoredSetUsedFreq          MaxNumberOfReportingCellsType1,
    withinActiveAndOrMonitoredUsedFreq  MaxNumberOfReportingCellsType1,
    withinDetectedSetUsedFreq           MaxNumberOfReportingCellsType1,
    withinMonitoredAndOrDetectedUsedFreq
                                        MaxNumberOfReportingCellsType1,
    allActiveplusMonitoredSet           MaxNumberOfReportingCellsType3,
    allActivePlusDetectedSet            MaxNumberOfReportingCellsType3,
    allActivePlusMonitoredAndOrDetectedSet
                                        MaxNumberOfReportingCellsType3,
    withinVirtualActSet             MaxNumberOfReportingCellsType1,
    withinMonitoredSetNonUsedFreq       MaxNumberOfReportingCellsType1,
    withinMonitoredAndOrVirtualActiveSetNonUsedFreq
                                        MaxNumberOfReportingCellsType1,
    allVirtualActSetplusMonitoredSetNonUsedFreq
                                        MaxNumberOfReportingCellsType3,
    withinActSetOrVirtualActSet-InterRATcells
                                        MaxNumberOfReportingCellsType2,
    withinActSetAndOrMonitoredUsedFreqOrVirtualActSetAndOrMonitoredNonUsedFreq
                                        MaxNumberOfReportingCellsType2
}

ReportingCellStatusOpt ::=          SEQUENCE {
    reportingCellStatus                 ReportingCellStatus                 OPTIONAL
}


ReportingInfoForCellDCH ::=         SEQUENCE {
    intraFreqReportingQuantity          IntraFreqReportingQuantity,
    measurementReportingMode            MeasurementReportingMode,
    reportCriteria                      CellDCH-ReportCriteria
}
```

```
ReportingInfoForCellDCH-LCR-r4 ::=  SEQUENCE {
    intraFreqReportingQuantity          IntraFreqReportingQuantity,
    measurementReportingMode            MeasurementReportingMode,
    reportCriteria                      CellDCH-ReportCriteria-LCR-r4
}

ReportingInterval ::=               ENUMERATED {
                                        noPeriodicalreporting, ri0-25,
                                        ri0-5, 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 ReportingRange = IE value * 0.5
ReportingRange ::=                  INTEGER (0..29)

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

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

RLC-BuffersPayload ::=              ENUMERATED {
                                        pl0, pl4, pl8, pl16, pl32,
                                        pl64, pl128, pl256, pl512, pl1024,
                                        pl2k, pl4k, pl8k, pl16k, pl32k,
                                        pl64k, pl128k, pl256k, pl512k, pl1024k,
                                        spare12, spare11, spare10, spare9, spare8,
                                        spare7, spare6, spare5, spare4, spare3,
                                        spare2, spare1 }

-- Actual value RRC = IE value * 0.032
RRC ::=                             INTEGER (-127..127)

SatData ::=                         SEQUENCE{
    satID                               SatID,
    iode                                IODE
}

SatDataList ::=                     SEQUENCE (SIZE (0..maxSat)) OF
                                        SatData

SatelliteStatus ::=                 ENUMERATED {
                                        ns-NN-U,
                                        es-SN,
                                        es-NN-U,
                                        rev2,
                                        rev }

SatID ::=                           INTEGER (0..63)

SFN-Offset-Validity ::=         ENUMERATED { false }

SFN-SFN-Drift ::=                   ENUMERATED {
                                        sfnsfndrift0, sfnsfndrift1, sfnsfndrift2,
                                        sfnsfndrift3, sfnsfndrift4, sfnsfndrift5,
                                        sfnsfndrift8, sfnsfndrift10, sfnsfndrift15,
                                        sfnsfndrift25, sfnsfndrift35, sfnsfndrift50,
                                        sfnsfndrift65, sfnsfndrift80, sfnsfndrift100,
                                        sfnsfndrift-1, sfnsfndrift-2, sfnsfndrift-3,
                                        sfnsfndrift-4, sfnsfndrift-5, sfnsfndrift-8,
                                        sfnsfndrift-10, sfnsfndrift-15, sfnsfndrift-25,
                                        sfnsfndrift-35, sfnsfndrift-50, sfnsfndrift-65,
                                        sfnsfndrift-80, sfnsfndrift-100}

SFN-SFN-ObsTimeDifference ::=       CHOICE {
    type1                               SFN-SFN-ObsTimeDifference1,
    type2                               SFN-SFN-ObsTimeDifference2
}

-- SPARE: SFN-SFN-ObsTimeDifference1, Max = 9830399
-- Values above Max are spare
```

```
SFN-SFN-ObsTimeDifference1 ::=      INTEGER (0..16777215)

-- SPARE: SFN-SFN-ObsTimeDifference2, Max = 40961
-- Values above Max are spare
SFN-SFN-ObsTimeDifference2 ::=      INTEGER (0..65535)

SFN-SFN-OTD-Type ::=                ENUMERATED {
                                        noReport,
                                        type1,
                                        type2 }

SFN-SFN-RelTimeDifference1 ::=      SEQUENCE {
    sfn-Offset                          INTEGER (0 .. 4095),
    sfn-sfn-Reltimedifference           INTEGER (0.. 38399)
}

SFN-TOW-Uncertainty ::=             ENUMERATED {
                                        lessThan10,
                                        moreThan10 }

SIR ::=                             INTEGER (0..63)


SIR-MeasurementList ::=             SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        SIR-MeasurementResults


SIR-MeasurementResults ::=          SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain,
    sir-TimeslotList                    SIR-TimeslotList
}

SIR-TFCS ::=                        TFCS-IdentityPlain


SIR-TFCS-List ::=                   SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        SIR-TFCS

SIR-TimeslotList ::=                SEQUENCE (SIZE (1..maxTS)) OF
                                        SIR

-- SubFrame1Reserved, reserved bits in subframe 1 of the GPS navigation message
SubFrame1Reserved ::=               SEQUENCE {
    reserved1                           BIT STRING (SIZE (23)),
    reserved2                           BIT STRING (SIZE (24)),
    reserved3                           BIT STRING (SIZE (24)),
    reserved4                           BIT STRING (SIZE (16))
}

T-ADVinfo ::=                       SEQUENCE {
                t-ADV                   INTEGER(0..2047),
                sfn                     INTEGER(0..4095)
}

T-CRMax ::=                         CHOICE {
    notUsed                             NULL,
    t30                                 N-CR-T-CRMaxHyst,
    t60                                 N-CR-T-CRMaxHyst,
    t120                                N-CR-T-CRMaxHyst,
    t180                                N-CR-T-CRMaxHyst,
    t240                                N-CR-T-CRMaxHyst
}

T-CRMaxHyst ::=                     ENUMERATED {
                                        notUsed, t10, t20, t30,
                                        t40, t50, t60, t70 }

TemporaryOffset1 ::=                ENUMERATED {
                                        to3, to6, to9, to12, to15,
                                        to18, to21, infinite }

TemporaryOffset2 ::=                ENUMERATED {
                                        to2, to3, to4, to6, to8,
                                        to10, to12, infinite }

TemporaryOffsetList ::=             SEQUENCE    {
        temporaryOffset1                TemporaryOffset1,
        temporaryOffset2                TemporaryOffset2
```

```
}

Threshold ::=                       INTEGER (-115..0)

ThresholdPositionChange ::=         ENUMERATED {
                                        pc10, pc20, pc30, pc40, pc50,
                                        pc100, pc200, pc300, pc500,
                                        pc1000, pc2000, pc5000, pc10000,
                                        pc20000, pc50000, pc100000 }

ThresholdSFN-GPS-TOW ::=            ENUMERATED {
                                        ms1, ms2, ms3, ms5, ms10,
                                        ms20, ms50, ms100 }

ThresholdSFN-SFN-Change ::=         ENUMERATED {
                                        c0-25, c0-5, c1, c2, c3, c4, c5,
                                        c10, c20, c50, c100, c200, c500,
                                        c1000, c2000, c5000 }

ThresholdUsedFrequency ::=          INTEGER (-115..165)


-- Actual value TimeInterval = IE value * 20.
TimeInterval ::=                    INTEGER (1..13)


TimeslotInfo ::=                    SEQUENCE {
    timeslotNumber                      TimeslotNumber,
    burstType                           BurstType
}

TimeslotInfo-LCR-r4 ::=             SEQUENCE {
    timeslotNumber                      TimeslotNumber-LCR-r4
}

TimeslotInfoList ::=                SEQUENCE (SIZE (1..maxTS)) OF
                                        TimeslotInfo

TimeslotInfoList-LCR-r4 ::=         SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                        TimeslotInfo-LCR-r4

TimeslotInfoList-r4 ::=             CHOICE {
    tdd384                              SEQUENCE (SIZE (1..maxTS)) OF
                                            TimeslotInfo,
    tdd128                              SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                            TimeslotInfo-LCR-r4
}

-- SPARE: TimeslotISCP, Max = 91
-- Values above Max are spare
TimeslotISCP ::=                    INTEGER (0..127)


-- TimeslotISCP-List shall not include more than 6 elements in 1.28Mcps TDD mode.
TimeslotISCP-List ::=               SEQUENCE (SIZE (1..maxTS)) OF
                                        TimeslotISCP

TimeslotListWithISCP ::=            SEQUENCE (SIZE (1..maxTS)) OF
                                        TimeslotWithISCP

TimeslotWithISCP ::=                SEQUENCE {
    timeslot                            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 is not used in this version of specification, it should
    -- not be sent and if received it should be ignored.
    dummy                               TrafficVolumeReportingCriteria      OPTIONAL,
    measurementValidity                 MeasurementValidity                 OPTIONAL,
    measurementReportingMode            MeasurementReportingMode,
    reportCriteriaSysInf                TrafficVolumeReportCriteriaSysInfo

}

TrafficVolumeMeasuredResults ::=    SEQUENCE {
    rb-Identity                         RB-Identity,
    rlc-BuffersPayload                  RLC-BuffersPayload                  OPTIONAL,
    averageRLC-BufferPayload            AverageRLC-BufferPayload            OPTIONAL,
    varianceOfRLC-BufferPayload         VarianceOfRLC-BufferPayload         OPTIONAL
}

TrafficVolumeMeasuredResultsList ::= SEQUENCE (SIZE (1..maxRB)) OF
                                        TrafficVolumeMeasuredResults

TrafficVolumeMeasurement ::=        SEQUENCE {
    trafficVolumeMeasurementObjectList  TrafficVolumeMeasurementObjectList  OPTIONAL,
    trafficVolumeMeasQuantity           TrafficVolumeMeasQuantity           OPTIONAL,
    trafficVolumeReportingQuantity      TrafficVolumeReportingQuantity      OPTIONAL,
    measurementValidity                 MeasurementValidity                 OPTIONAL,
    reportCriteria                      TrafficVolumeReportCriteria
}

TrafficVolumeMeasurementObjectList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
                                            UL-TrCH-Identity

TrafficVolumeReportCriteria ::=     CHOICE {
    trafficVolumeReportingCriteria      TrafficVolumeReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

TrafficVolumeReportCriteriaSysInfo ::=  CHOICE {
    trafficVolumeReportingCriteria      TrafficVolumeReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria
}

TrafficVolumeReportingCriteria ::= SEQUENCE {
    -- NOTE: transChCriteriaList should be mandatory in later versions of this message
    transChCriteriaList                 TransChCriteriaList                 OPTIONAL
}

TrafficVolumeReportingQuantity ::= SEQUENCE {
    rlc-RB-BufferPayload                BOOLEAN,
    rlc-RB-BufferPayloadAverage         BOOLEAN,
    rlc-RB-BufferPayloadVariance        BOOLEAN
}

TrafficVolumeThreshold ::=          ENUMERATED {
                                        th8, th16, th32, th64, th128,
                                        th256, th512, th1024, th2k, th3k,
                                        th4k, th6k, th8k, th12k, th16k,
                                        th24k, th32k, th48k, th64k, th96k,
```

```
                                    th128k, th192k, th256k, th384k,
                                    th512k, th768k }

TransChCriteria ::=                 SEQUENCE {
    ul-transportChannelID               UL-TrCH-Identity                    OPTIONAL,
    eventSpecificParameters             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 T_ADV Threshold
    ue-RX-TX-TimeDifferenceThreshold    UE-RX-TX-TimeDifferenceThreshold
}

UE-AutonomousUpdateMode ::=         CHOICE {
    on                                  NULL,
    onWithNoReporting                   NULL,
    off                                 RL-InformationLists
}

UE-InternalEventParam ::=           CHOICE {
    event6a                             UE-6AB-Event,
    event6b                             UE-6AB-Event,
    event6c                             TimeToTrigger,
    event6d                             TimeToTrigger,
    event6e                             TimeToTrigger,
    event6f                             UE-6FG-Event,
    event6g                             UE-6FG-Event
}

UE-InternalEventParamList ::=       SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                    UE-InternalEventParam

UE-InternalEventResults ::=         CHOICE {
    event6a                             NULL,
    event6b                             NULL,
    event6c                             NULL,
    event6d                             NULL,
    event6e                             NULL,
    event6f                             PrimaryCPICH-Info,
    event6g                             PrimaryCPICH-Info,
```

```
    spare                               NULL
}

UE-InternalMeasQuantity ::=         SEQUENCE {
    measurementQuantity                 UE-MeasurementQuantity,
    filterCoefficient                   FilterCoefficient                   DEFAULT fc0
}

UE-InternalMeasuredResults ::=      SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            ue-TransmittedPowerFDD              UE-TransmittedPower         OPTIONAL,
            ue-RX-TX-ReportEntryList            UE-RX-TX-ReportEntryList    OPTIONAL
        },
        tdd                                 SEQUENCE {
            ue-TransmittedPowerTDD-List         UE-TransmittedPowerTDD-List OPTIONAL,
            appliedTA                           UL-TimingAdvance            OPTIONAL
        }
    }
}

UE-InternalMeasuredResults-LCR-r4 ::=   SEQUENCE {
        ue-TransmittedPowerTDD-List         UE-TransmittedPowerTDD-List     OPTIONAL,
        t-ADVinfo                           T-ADVinfo                       OPTIONAL
}

UE-InternalMeasurement ::=          SEQUENCE {
    ue-InternalMeasQuantity             UE-InternalMeasQuantity             OPTIONAL,
    ue-InternalReportingQuantity        UE-InternalReportingQuantity        OPTIONAL,
    reportCriteria                      UE-InternalReportCriteria
}

UE-InternalMeasurement-r4 ::=       SEQUENCE {
    ue-InternalMeasQuantity             UE-InternalMeasQuantity             OPTIONAL,
    ue-InternalReportingQuantity        UE-InternalReportingQuantity-r4     OPTIONAL,
    reportCriteria                      UE-InternalReportCriteria
}

UE-InternalMeasurementSysInfo ::=   SEQUENCE {
    ue-InternalMeasurementID            MeasurementIdentity         DEFAULT 5,
    ue-InternalMeasQuantity             UE-InternalMeasQuantity
}

UE-InternalReportCriteria ::=       CHOICE {
    ue-InternalReportingCriteria        UE-InternalReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

UE-InternalReportingCriteria ::=    SEQUENCE {
    ue-InternalEventParamList           UE-InternalEventParamList           OPTIONAL
}

UE-InternalReportingQuantity ::=    SEQUENCE {
    ue-TransmittedPower                 BOOLEAN,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            ue-RX-TX-TimeDifference             BOOLEAN
        },
        tdd                                 SEQUENCE {
            appliedTA                           BOOLEAN
        }
    }
}

UE-InternalReportingQuantity-r4 ::= SEQUENCE {
    ue-TransmittedPower                 BOOLEAN,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            ue-RX-TX-TimeDifference             BOOLEAN
        },
        tdd                                 SEQUENCE {
            tddOption                           CHOICE {
                tdd384                              SEQUENCE {
                    appliedTA                           BOOLEAN
                },
                tdd128                              SEQUENCE {
                    t-ADVinfo                           BOOLEAN
```

```
                }
            }
        }
    }
}

-- TABULAR: UE-MeasurementQuantity, for 3.84 Mcps TDD only the first two values
-- ue-TransmittedPower and utra-Carrier-RSSI are used.
-- For 1.28 Mcps TDD ue-RX-TX-TimeDifference corresponds to T-ADV in the tabular
UE-MeasurementQuantity ::=          ENUMERATED {
                                        ue-TransmittedPower,
                                        utra-Carrier-RSSI,
                                        ue-RX-TX-TimeDifference }

UE-RX-TX-ReportEntry ::=            SEQUENCE {
    primaryCPICH-Info                   PrimaryCPICH-Info,
    ue-RX-TX-TimeDifferenceType1        UE-RX-TX-TimeDifferenceType1
}

UE-RX-TX-ReportEntryList ::=        SEQUENCE (SIZE (1..maxRL)) OF
                                        UE-RX-TX-ReportEntry

-- SPARE: UE-RX-TX-TimeDifferenceType1, Max = 1280
-- Values above Max are spare
UE-RX-TX-TimeDifferenceType1 ::=            INTEGER (768..1791)

-- Actual value UE-RX-TX-TimeDifferenceType2 = IE value * 0.0625 + 768
UE-RX-TX-TimeDifferenceType2 ::=    INTEGER (0..8191)

UE-RX-TX-TimeDifferenceType2Info ::=    SEQUENCE {
    ue-RX-TX-TimeDifferenceType2            UE-RX-TX-TimeDifferenceType2,
    neighbourQuality                        NeighbourQuality
}

-- In 1.28 Mcps TDD, actual value for
-- T-ADV Threshold = (UE-RX-TX-TimeDifferenceThreshold - 768) * 0.125
UE-RX-TX-TimeDifferenceThreshold ::= INTEGER (768..1280)

UE-TransmittedPower ::=             INTEGER (0..104)

UE-TransmittedPowerTDD-List ::=     SEQUENCE (SIZE (1..maxTS)) OF
                                        UE-TransmittedPower

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

UE-Positioning-Accuracy ::=                 BIT STRING (SIZE (7))


UE-Positioning-CipherParameters ::=         SEQUENCE {
    cipheringKeyFlag                    BIT STRING (SIZE (1)),
    cipheringSerialNumber               INTEGER (0..65535)
}

UE-Positioning-Error ::=                        SEQUENCE {
    errorReason                         UE-Positioning-ErrorCause,
    ue-positioning-GPS-additionalAssistanceDataRequest          UE-Positioning-GPS-
AdditionalAssistanceDataRequest OPTIONAL
}

UE-Positioning-ErrorCause ::=                   ENUMERATED {
                                        notEnoughOTDOA-Cells,
                                        notEnoughGPS-Satellites,
                                        assistanceDataMissing,
                                        methodNotSupported,
                                        undefinedError,
                                        requestDeniedByUser,
                                        notProcessedAndTimeout ,
                                        referenceCellNotServingCell }

UE-Positioning-EventParam ::=               SEQUENCE {
    reportingAmount                     ReportingAmount,
    reportFirstFix                      BOOLEAN,
    measurementInterval                 UE-Positioning-MeasurementInterval,
```

```
    eventSpecificInfo                   UE-Positioning-EventSpecificInfo
}

UE-Positioning-EventParamList ::=               SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                    UE-Positioning-EventParam

UE-Positioning-EventSpecificInfo ::=            CHOICE {
    e7a                                 ThresholdPositionChange,
    e7b                                 ThresholdSFN-SFN-Change,
    e7c                                 ThresholdSFN-GPS-TOW
}

UE-Positioning-GPS-AcquisitionAssistance ::=    SEQUENCE {
    gps-ReferenceTime                   INTEGER (0..604799999),
    utran-GPSReferenceTime              UTRAN-GPSReferenceTime          OPTIONAL,
    satelliteInformationList            AcquisitionSatInfoList
}

UE-Positioning-GPS-AdditionalAssistanceDataRequest ::=      SEQUENCE {
    almanacRequest                      BOOLEAN,
    utcModelRequest                     BOOLEAN,
    ionosphericModelRequest             BOOLEAN,
    navigationModelRequest              BOOLEAN,
    dgpsCorrectionsRequest              BOOLEAN,
    referenceLocationRequest            BOOLEAN,
    referenceTimeRequest                BOOLEAN,
    aquisitionAssistanceRequest         BOOLEAN,
    realTimeIntegrityRequest            BOOLEAN,
    navModelAddDataRequest              UE-Positioning-GPS-NavModelAddDataReq       OPTIONAL
}

UE-Positioning-GPS-Almanac ::=                  SEQUENCE {
    wn-a                                BIT STRING (SIZE (8)),
    almanacSatInfoList                  AlmanacSatInfoList,
    sv-GlobalHealth                     BIT STRING (SIZE (364))             OPTIONAL
}

UE-Positioning-GPS-AssistanceData ::=           SEQUENCE {
    ue-positioning-GPS-ReferenceTime                UE-Positioning-GPS-ReferenceTime
    OPTIONAL,
    ue-positioning-GPS-ReferenceLocation            ReferenceLocation               OPTIONAL,
    ue-positioning-GPS-DGPS-Corrections             UE-Positioning-GPS-DGPS-Corrections
    OPTIONAL,
    ue-positioning-GPS-NavigationModel              UE-Positioning-GPS-NavigationModel
    OPTIONAL,
    ue-positioning-GPS-IonosphericModel             UE-Positioning-GPS-IonosphericModel
    OPTIONAL,
    ue-positioning-GPS-UTC-Model                    UE-Positioning-GPS-UTC-Model
    OPTIONAL,
    ue-positioning-GPS-Almanac                      UE-Positioning-GPS-Almanac
    OPTIONAL,
    ue-positioning-GPS-AcquisitionAssistance        UE-Positioning-GPS-AcquisitionAssistance
    OPTIONAL,
    ue-positioning-GPS-Real-timeIntegrity           BadSatList                          OPTIONAL,
    ue-positioning-GPS-referenceCellInfo            UE-Positioning-GPS-ReferenceCellInfo
    OPTIONAL
}

UE-Positioning-GPS-DGPS-Corrections ::=     SEQUENCE {
    gps-TOW                             INTEGER (0..604799),
    statusHealth                        DiffCorrectionStatus,
    dgps-CorrectionSatInfoList          DGPS-CorrectionSatInfoList
}

UE-Positioning-GPS-IonosphericModel ::=     SEQUENCE {
    alfa0                               BIT STRING (SIZE (8)),
    alfa1                               BIT STRING (SIZE (8)),
    alfa2                               BIT STRING (SIZE (8)),
    alfa3                               BIT STRING (SIZE (8)),
    beta0                               BIT STRING (SIZE (8)),
    beta1                               BIT STRING (SIZE (8)),
    beta2                               BIT STRING (SIZE (8)),
    beta3                               BIT STRING (SIZE (8))
}

UE-Positioning-GPS-MeasurementResults ::=       SEQUENCE {
    referenceTime                       CHOICE {
        utran-GPSReferenceTimeResult        UTRAN-GPSReferenceTimeResult,
```

```
        gps-ReferenceTimeOnly               INTEGER (0..604799999)
    },
    gps-MeasurementParamList            GPS-MeasurementParamList
}

UE-Positioning-GPS-NavigationModel ::=          SEQUENCE {
    navigationModelSatInfoList          NavigationModelSatInfoList
}

UE-Positioning-GPS-NavModelAddDataReq ::=       SEQUENCE {
    gps-Week                            INTEGER (0..1023),
    -- SPARE: gps-Toe, Max = 167
    -- Values above Max are spare
    gps-Toe                             INTEGER (0..255),
    -- SPARE: tToeLimit, Max = 10
    -- Values above Max are spare
    tToeLimit                           INTEGER (0..15),
    satDataList                         SatDataList
}

UE-Positioning-GPS-ReferenceCellInfo ::=        SEQUENCE{
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            referenceIdentity               PrimaryCPICH-Info
        },
        tdd                             SEQUENCE {
            referenceIdentity               CellParametersID
        }
    }
}

UE-Positioning-GPS-ReferenceTime ::=            SEQUENCE {
    gps-Week                            INTEGER (0..1023),
    gps-tow-1msec                       GPS-TOW-1msec,  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,
    spare                               NULL
}

UE-Positioning-MeasurementInterval ::=          ENUMERATED {
                                        e5, e15, e60, e300,
                                        e900, e1800, e3600, e7200 }

UE-Positioning-MethodType ::=                   ENUMERATED {
                                        ue-Assisted,
                                        ue-Based,
                                        ue-BasedPreferred,
                                        ue-AssistedPreferred }

UE-Positioning-OTDOA-AssistanceData ::=     SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo          UE-Positioning-OTDOA-ReferenceCellInfo
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList              UE-Positioning-OTDOA-NeighbourCellList
        OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4 ::=  SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo          UE-Positioning-OTDOA-ReferenceCellInfo-r4
        OPTIONAL,
```

```
    ue-positioning-OTDOA-NeighbourCellList          UE-Positioning-OTDOA-NeighbourCellList-r4
        OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4ext ::= SEQUENCE {
    -- In case of TDD these IPDL parameters shall be used for the reference cell instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-ReferenceCellInfo
    ue-Positioning-IPDL-Parameters-TDD-r4-ext       UE-Positioning-IPDL-Parameters-TDD-r4-ext
    OPTIONAL,
    -- These IPDL parameters shall be used for the neighbour cells in case of TDD instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-NeighbourCellInfoList. The cells shall be
    -- listed in the same order as in IE UE-Positioning-OTDOA-NeighbourCellInfoList
    ue-Positioning-IPDL-Parameters-TDDList-r4-ext   UE-Positioning-IPDL-Parameters-TDDList-r4-ext
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-UEB ::=     SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo-UEB          UE-Positioning-OTDOA-ReferenceCellInfo-UEB
                OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList-UEB              UE-Positioning-OTDOA-NeighbourCellList-
UEB             OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDDList-r4-ext ::=   SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        UE-Positioning-IPDL-Parameters-TDD-r4-ext

UE-Positioning-OTDOA-Measurement ::=            SEQUENCE {
    sfn                                 INTEGER (0..4095),
    modeSpecificInfo                CHOICE {
        fdd                                 SEQUENCE {
            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-Paremeters                  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-Paremeters      UE-Positioning-IPDL-Parameters-r4   OPTIONAL,
    sfn-SFN-RelTimeDifference           SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift                       SFN-SFN-Drift                       OPTIONAL,
```

```
    searchWindowSize                    OTDOA-SearchWindowSize,
    positioningMode     CHOICE {
        ueBased                                 SEQUENCE {
            relativeNorth                       INTEGER (-20000..20000)             OPTIONAL,
            relativeEast                        INTEGER (-20000..20000)             OPTIONAL,
            relativeAltitude                    INTEGER (-4000..4000)               OPTIONAL,
            fineSFN-SFN                         FineSFN-SFN                         OPTIONAL,
            -- actual value roundTripTime = (IE value * 0.0625) + 876
            roundTripTime                       INTEGER (0.. 32766)                 OPTIONAL
        },
        ueAssisted                              SEQUENCE {}
    }
}

UE-Positioning-OTDOA-NeighbourCellInfo-UEB  ::= SEQUENCE {
    modeSpecificInfo    CHOICE  {
        fdd                             SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info
        },
        tdd                             SEQUENCE{
            cellAndChannelIdentity              CellAndChannelIdentity
        }
    },
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    ue-positioning-IPDL-Paremeters      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 roundTripTime = (IE value * 0.0625) + 876
    roundTripTime                       INTEGER (0..32766)                  OPTIONAL
}

UE-Positioning-OTDOA-NeighbourCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        UE-Positioning-OTDOA-NeighbourCellInfo

UE-Positioning-OTDOA-NeighbourCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        UE-Positioning-OTDOA-NeighbourCellInfo-r4

UE-Positioning-OTDOA-NeighbourCellList-UEB ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        UE-Positioning-OTDOA-NeighbourCellInfo-UEB

UE-Positioning-OTDOA-Quality ::=            SEQUENCE {
    stdResolution                       BIT STRING (SIZE (2)),
    numberOfOTDOA-Measurements          BIT STRING (SIZE (3)),
    stdOfOTDOA-Measurements             BIT STRING (SIZE (5))
}

UE-Positioning-OTDOA-ReferenceCellInfo ::=          SEQUENCE {
    sfn                                 INTEGER (0..4095)
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                                     SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info
        },
        tdd                                     SEQUENCE{
            cellAndChannelIdentity              CellAndChannelIdentity
        }
    },
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    positioningMode CHOICE {
        ueBased                                 SEQUENCE {},
        ueAssisted                              SEQUENCE {}
    },
    ue-positioning-IPDL-Paremeters              UE-Positioning-IPDL-Parameters  OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-r4 ::=   SEQUENCE {
    sfn                                 INTEGER (0..4095)
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                                     SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info
        },
        tdd                                     SEQUENCE{
```

```
            cellAndChannelIdentity              CellAndChannelIdentity
        }
    },
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    positioningMode CHOICE {
        ueBased                                 SEQUENCE {
            cellPosition                                ReferenceCellPosition   OPTIONAL,
            -- actual value roundTripTime = (IE value * 0.0625) + 876
            roundTripTime                       INTEGER (0..32766)              OPTIONAL
        },
        ueAssisted                              SEQUENCE {}
    },
    ue-positioning-IPDL-Paremeters              UE-Positioning-IPDL-Parameters-r4   OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-UEB ::=          SEQUENCE {
    sfn                                 INTEGER (0..4095)                   OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                                     SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info
        },
        tdd                                     SEQUENCE{
            cellAndChannelIdentity              CellAndChannelIdentity
        }
    },
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    cellPosition                        ReferenceCellPosition               OPTIONAL,
    -- actual value roundTripTime = (IE value * 0.0625) + 876
    roundTripTime                       INTEGER (0..32766)                  OPTIONAL,
    ue-positioning-IPDL-Paremeters      UE-Positioning-IPDL-Parameters      OPTIONAL
}

UE-Positioning-PositionEstimateInfo ::=                 SEQUENCE {
    referenceTime                   CHOICE {
        utran-GPSReferenceTimeResult        UTRAN-GPSReferenceTimeResult,
        gps-ReferenceTimeOnly               INTEGER (0..604799999),
        cell-Timing                         SEQUENCE {
            sfn                                     INTEGER (0..4095),
            modeSpecificInfo                CHOICE {
                fdd                                 SEQUENCE {
                    primaryCPICH-Info                   PrimaryCPICH-Info
                },
                tdd                                 SEQUENCE{
                    cellAndChannelIdentity              CellAndChannelIdentity
                }
            }
        }
    },
    positionEstimate                    PositionEstimate
}

UE-Positioning-ReportCriteria ::=               CHOICE {
    ue-positioning-ReportingCriteria                UE-Positioning-EventParamList,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

UE-Positioning-ReportingQuantity ::=            SEQUENCE {
    methodType                          UE-Positioning-MethodType,
    positioningMethod                   PositioningMethod,
    -- dummy1 is not used in this version of specification and it should
    -- be ignored.
    dummy1                              UE-Positioning-ResponseTime,
    accuracy                            UE-Positioning-Accuracy             OPTIONAL,
    gps-TimingOfCellWanted              BOOLEAN,
    -- dummy2 is not used in this version of specification and it should
    -- be ignored.
    dummy2                              BOOLEAN,
    additionalAssistanceDataReq         BOOLEAN,
    environmentCharacterisation         EnvironmentCharacterisation         OPTIONAL
}

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

UE-Positioning-ReportingQuantity-r4 ::=         SEQUENCE {
    methodType                          UE-Positioning-MethodType,
```

```
    positioningMethod                   PositioningMethod,
    horizontalAccuracy                  UE-Positioning-Accuracy             OPTIONAL,
    verticalAccuracy                    UE-Positioning-Accuracy             OPTIONAL,
    gps-TimingOfCellWanted              BOOLEAN,
    additionalAssistanceDataReq         BOOLEAN,
    environmentCharacterisation         EnvironmentCharacterisation         OPTIONAL
}

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

-- SPARE: UTRA-CarrierRSSI, Max = 76
-- Values above Max are spare
UTRA-CarrierRSSI ::=                INTEGER (0..127)

UTRAN-GPS-DriftRate ::=             ENUMERATED {
                                    utran-GPSDrift0, utran-GPSDrift1, utran-GPSDrift2,
                                    utran-GPSDrift5, utran-GPSDrift10, utran-GPSDrift15,
                                    utran-GPSDrift25, utran-GPSDrift50, utran-GPSDrift-1,
                                    utran-GPSDrift-2, utran-GPSDrift-5, utran-GPSDrift-10,
                                    utran-GPSDrift-15, utran-GPSDrift-25, utran-GPSDrift-50}

UTRAN-GPSReferenceTime ::=              SEQUENCE {
    -- For utran-GPSTimingOfCell values above 2322431999999 are not
    -- used in this version of the specification
    utran-GPSTimingOfCell           SEQUENCE {
        ms-part                         INTEGER (0..1023),
        ls-part                         INTEGER (0..4294967295)
    },
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            referenceIdentity               PrimaryCPICH-Info
        },
        tdd                             SEQUENCE {
            referenceIdentity               CellParametersID
        }
    }               OPTIONAL,
    sfn                                 INTEGER (0..4095)
}

UTRAN-GPSReferenceTimeResult ::=                SEQUENCE {
    -- For ue-GPSTimingOfCell values above 37158911999999 are not
    -- used in this version of the specification
    ue-GPSTimingOfCell          SEQUENCE {
        ms-part                         INTEGER (0.. 16383),
        ls-part                         INTEGER (0..4294967295)
    },
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            referenceIdentity               PrimaryCPICH-Info
        },
        tdd                             SEQUENCE {
            referenceIdentity               CellParametersID
        }
    },
    sfn                                 INTEGER (0..4095)
}

VarianceOfRLC-BufferPayload ::=     ENUMERATED {
                                        plv0, plv4, plv8, plv16, plv32, plv64,
                                        plv128, plv256, plv512, plv1024,
                                        plv2k, plv4k, plv8k, plv16k, spare2, spare1 }

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

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

BCC ::=                             INTEGER (0..7)

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

```
}

-- Actual value BCCH-ModificationTime = IE value * 8
BCCH-ModificationTime ::=           INTEGER (0..511)

BSIC ::=                            SEQUENCE {
    ncc                                 NCC,
    bcc                                 BCC
}

CBS-DRX-Level1Information ::=       SEQUENCE {
    ctch-AllocationPeriod               INTEGER (1..256),
    cbs-FrameOffset                     INTEGER (0..255)
}

CDMA2000-Message ::=                SEQUENCE {
    msg-Type                            BIT STRING (SIZE (8)),
    payload                             BIT STRING (SIZE (1..512))
}

CDMA2000-MessageList ::=                SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                            CDMA2000-Message

CDMA2000-UMTS-Frequency-List    ::=     SEQUENCE (SIZE (1..maxNumCDMA2000Freqs)) OF
                                            FrequencyInfoCDMA2000

CellValueTag ::=                        INTEGER (1..4)

--Actual value = 2^(IE value)
ExpirationTimeFactor            ::=     INTEGER (1..8)

FDD-UMTS-Frequency-List         ::=     SEQUENCE (SIZE (1..maxNumFDDFreqs)) OF
                                            FrequencyInfoFDD

FrequencyInfoCDMA2000           ::=     SEQUENCE {
                                            band-Class      BIT STRING (SIZE (5)),
                                            cdma-Freq       BIT STRING (SIZE(11))
}

GSM-BA-Range                    ::=     SEQUENCE {
                                            gsmLowRangeUARFCN       UARFCN,
                                            gsmUpRangeUARFCN        UARFCN
}

GSM-BA-Range-List               ::=     SEQUENCE (SIZE (1..maxNumGSMFreqRanges)) OF
                                            GSM-BA-Range

GSM-Classmark2::=                   OCTET STRING (SIZE (5))

GSM-Classmark3::=                   OCTET STRING (SIZE (1..32))

GSM-MessageList ::=                 SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                        BIT STRING (SIZE (1..512))

GsmSecurityCapability ::=           BIT STRING {
                                        a5-7(0),
                                        a5-6(1),
                                        a5-5(2),
                                        a5-4(3),
                                        a5-3(4),
                                        a5-2(5),
                                        a5-1(6)
                                        }   (SIZE (7))

IdentificationOfReceivedMessage::=  SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        receivedMessageType             ReceivedMessageType
}

InterRAT-ChangeFailureCause ::=     CHOICE {
    configurationUnacceptable           NULL,
    physicalChannelFailure              NULL,
    protocolError                       ProtocolErrorInformation,
    unspecified                         NULL,
    spare4                              NULL,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
```

```
}

InterRAT-UE-RadioAccessCapability ::= CHOICE {
    gsm                                 SEQUENCE {
        gsm-Classmark2                      GSM-Classmark2,
        gsm-Classmark3                      GSM-Classmark3
    },
    cdma2000                            SEQUENCE {
        cdma2000-MessageList                CDMA2000-MessageList
    }
}

InterRAT-UE-RadioAccessCapabilityList ::=   SEQUENCE (SIZE(1..maxInterSysMessages)) OF
                                            InterRAT-UE-RadioAccessCapability

InterRAT-UE-SecurityCapability ::= CHOICE {
    gsm                                 SEQUENCE {
        gsmSecurityCapability           GsmSecurityCapability
    }
}

InterRAT-UE-SecurityCapList ::=     SEQUENCE (SIZE(1..maxInterSysMessages)) OF
                                        InterRAT-UE-SecurityCapability

InterRAT-HO-FailureCause ::=        CHOICE {
    configurationUnacceptable           NULL,
    physicalChannelFailure              NULL,
    protocolError                       ProtocolErrorInformation,
    interRAT-ProtocolError              NULL,
    unspecified                         NULL,
    spare11                             NULL,
    spare10                             NULL,
    spare9                              NULL,
    spare8                              NULL,
    spare7                              NULL,
    spare6                              NULL,
    spare5                              NULL,
    spare4                              NULL,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
}

MasterInformationBlock ::=          SEQUENCE {
        mib-ValueTag                    MIB-ValueTag,
        -- TABULAR: The PLMN identity and ANSI-41 core network information
        -- are included in PLMN-Type.
        plmn-Type                       PLMN-Type,
        sibSb-ReferenceList             SIBSb-ReferenceList,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}

MIB-ValueTag ::=                    INTEGER (1..8)

NCC ::=                             INTEGER (0..7)

PLMN-ValueTag ::=                   INTEGER (1..256)


PredefinedConfigIdentityAndValueTag ::= SEQUENCE {
    predefinedConfigIdentity                PredefinedConfigIdentity,
    predefinedConfigValueTag                PredefinedConfigValueTag
}

ProtocolErrorInformation ::=        SEQUENCE {
    diagnosticsType                     CHOICE {
        type1                               SEQUENCE {
            protocolErrorCause                  ProtocolErrorCause
        },
        spare                               NULL
    }
}

ReceivedMessageType ::=             ENUMERATED {
                                        activeSetUpdate,
                                        cellChangeOrderFromUTRAN,
                                        cellUpdateConfirm,
```

```
                                        counterCheck,
                                        downlinkDirectTransfer,
                                        interRATHandoverCommand,
                                        measurementControl,
                                        pagingType2,
                                        physicalChannelReconfiguration,
                                        physicalSharedChannelAllocation,
                                        radioBearerReconfiguration,
                                        radioBearerRelease,
                                        radioBearerSetup,
                                        rrcConnectionRelease,
                                        rrcConnectionReject,
                                        rrcConnectionSetup,
                                        securityModeCommand,
                                        signallingConnectionRelease,
                                        transportChannelReconfiguration,
                                        transportFormatCombinationControl,
                                        ueCapabilityEnquiry,
                                        ueCapabilityInformationConfirm,
                                        uplinkPhysicalChannelControl,
                                        uraUpdateConfirm,
                                        utranMobilityInformation,
                                        assistanceDataDelivery,
                                        spare5, spare4, spare3, spare2,
                                        spare1
}

Rplmn-Information               ::=     SEQUENCE {
                                            gsm-BA-Range-List       GSM-BA-Range-List   OPTIONAL,
                                            fdd-UMTS-Frequency-List FDD-UMTS-Frequency-List
    OPTIONAL,
                                            tdd-UMTS-Frequency-List TDD-UMTS-Frequency-List
    OPTIONAL,
                                            cdma2000-UMTS-Frequency-List    CDMA2000-UMTS-Frequency-
List    OPTIONAL
}

Rplmn-Information-r4 ::=        SEQUENCE {
    gsm-BA-Range-List               GSM-BA-Range-List                       OPTIONAL,
    fdd-UMTS-Frequency-List         FDD-UMTS-Frequency-List                 OPTIONAL,
    tdd384-UMTS-Frequency-List      TDD-UMTS-Frequency-List                 OPTIONAL,
    tdd128-UMTS-Frequency-List      TDD-UMTS-Frequency-List                 OPTIONAL,
    cdma2000-UMTS-Frequency-List    CDMA2000-UMTS-Frequency-List            OPTIONAL
}

SchedulingInformation ::=           SEQUENCE {
    scheduling                          SEQUENCE {
        segCount                            SegCount                         DEFAULT 1,
        sib-Pos                             CHOICE {
            -- The element name indicates the repetition period and the value
            -- (multiplied by two) indicates the position of the first segment.
            rep4                                INTEGER (0..1),
            rep8                                INTEGER (0..3),
            rep16                               INTEGER (0..7),
            rep32                               INTEGER (0..15),
            rep64                               INTEGER (0..31),
            rep128                              INTEGER (0..63),
            rep256                              INTEGER (0..127),
            rep512                              INTEGER (0..255),
            rep1024                             INTEGER (0..511),
            rep2048                             INTEGER (0..1023),
            rep4096                             INTEGER (0..2047)
        },
        sib-PosOffsetInfo                   SibOFF-List                     OPTIONAL
    }
}

SchedulingInformationSIB ::=            SEQUENCE {
    sib-Type                            SIB-TypeAndTag,
    scheduling                          SchedulingInformation
}

SchedulingInformationSIBSb ::=          SEQUENCE {
    sibSb-Type                          SIBSb-TypeAndTag,
    scheduling                          SchedulingInformation
}

SegCount ::=                        INTEGER (1..16)
```

```
SegmentIndex ::=                    INTEGER (1..15)

-- Actual value SFN-Prime = 2 * IE value
SFN-Prime ::=                       INTEGER (0..2047)


SIB-Data-fixed ::=                  BIT STRING (SIZE (222))


SIB-Data-variable ::=               BIT STRING (SIZE (1..214))

SIBOccurIdentity ::=            INTEGER (0..15)

SIBOccurrenceIdentityAndValueTag ::=    SEQUENCE {
    sibOccurIdentity                SIBOccurIdentity,
    sibOccurValueTag                SIBOccurValueTag
}

SIBOccurValueTag ::=            INTEGER (0..15)

SIB-ReferenceList ::=               SEQUENCE (SIZE (1..maxSIB)) OF
                                        SchedulingInformationSIB

SIBSb-ReferenceList ::=             SEQUENCE (SIZE (1..maxSIB)) OF
                                        SchedulingInformationSIBSb

SIB-ReferenceListFACH ::=           SEQUENCE (SIZE (1..maxSIB-FACH)) OF
                                        SchedulingInformationSIB

SIB-Type ::=                        ENUMERATED {
                                        masterInformationBlock,
                                        systemInformationBlockType1,
                                        systemInformationBlockType2,
                                        systemInformationBlockType3,
                                        systemInformationBlockType4,
                                        systemInformationBlockType5,
                                        systemInformationBlockType6,
                                        systemInformationBlockType7,
                                        systemInformationBlockType8,
                                        systemInformationBlockType9,
                                        systemInformationBlockType10,
                                        systemInformationBlockType11,
                                        systemInformationBlockType12,
                                        systemInformationBlockType13,
                                        systemInformationBlockType13-1,
                                        systemInformationBlockType13-2,
                                        systemInformationBlockType13-3,
                                        systemInformationBlockType13-4,
                                        systemInformationBlockType14,
                                        systemInformationBlockType15,
                                        systemInformationBlockType15-1,
                                        systemInformationBlockType15-2,
                                        systemInformationBlockType15-3,
                                        systemInformationBlockType16,
                                        systemInformationBlockType17,
                                        systemInformationBlockType15-4,
                                        systemInformationBlockType18,
                                        schedulingBlock1,
                                        schedulingBlock2,
                                        systemInformationBlockType15-5,
                                        spare1, spare2 }

SIB-TypeAndTag ::=                  CHOICE {
    sysInfoType1                        PLMN-ValueTag,
    sysInfoType2                        CellValueTag,
    sysInfoType3                        CellValueTag,
    sysInfoType4                        CellValueTag,
    sysInfoType5                        CellValueTag,
    sysInfoType6                        CellValueTag,
    sysInfoType7                        NULL,
    sysInfoType8                        CellValueTag,
    sysInfoType9                        NULL,
    sysInfoType10                       NULL,
    sysInfoType11                       CellValueTag,
    sysInfoType12                       CellValueTag,
    sysInfoType13                       CellValueTag,
    sysInfoType13-1                     CellValueTag,
```

```
    sysInfoType13-2                     CellValueTag,
    sysInfoType13-3                     CellValueTag,
    sysInfoType13-4                     CellValueTag,
    sysInfoType14                       NULL,
    sysInfoType15                       CellValueTag,
    sysInfoType16                       PredefinedConfigIdentityAndValueTag,
    sysInfoType17                       NULL,
    sysInfoType15-1                     CellValueTag,
    sysInfoType15-2                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-3                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-4                     CellValueTag,
    sysInfoType18                       CellValueTag,
    sysInfoType15-5                     CellValueTag,
    spare5                              NULL,
    spare4                              NULL,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
}

SIBSb-TypeAndTag ::=                    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,
    sysInfoTypeSB1                      CellValueTag,
    sysInfoTypeSB2                      CellValueTag,
    sysInfoType15-1                     CellValueTag,
    sysInfoType15-2                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-3                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-4                     CellValueTag,
    sysInfoType18                       CellValueTag,
    sysInfoType15-5                     CellValueTag,
    spare2                              NULL,
    spare1                              NULL
}

SibOFF ::=                              ENUMERATED {
                                            so2, so4, so6, so8, so10,
                                            so12, so14, so16, so18,
                                            so20, so22, so24, so26,
                                            so28, so30, so32 }

SibOFF-List ::=                         SEQUENCE (SIZE (1..15)) OF
                                            SibOFF

SysInfoType1 ::=                        SEQUENCE {
    -- Core network IEs
        cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP,
        cn-DomainSysInfoList            CN-DomainSysInfoList,
    -- User equipment IEs
        ue-ConnTimersAndConstants       UE-ConnTimersAndConstants           OPTIONAL,
        ue-IdleTimersAndConstants       UE-IdleTimersAndConstants           OPTIONAL,
    -- Extension mechanism for non- release99 information
        v3a0NonCriticalExtensions       SEQUENCE {
            sysInfoType1-v3a0ext        SysInfoType1-v3a0ext-IEs,
            nonCriticalExtensions       SEQUENCE {} OPTIONAL
        }                               OPTIONAL
}

SysInfoType1-v3a0ext-IEs ::= SEQUENCE {
```

```
    ue-ConnTimersAndConstants-v3a0ext       UE-ConnTimersAndConstants-v3a0ext,
    ue-IdleTimersAndConstants-v3a0ext       UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType2 ::=                    SEQUENCE {
    -- UTRAN mobility IEs
        ura-IdentityList                URA-IdentityList,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}

SysInfoType3 ::=                    SEQUENCE {
        sib4indicator                   BOOLEAN,
    -- UTRAN mobility IEs
        cellIdentity                    CellIdentity,
        cellSelectReselectInfo          CellSelectReselectInfoSIB-3-4,
        cellAccessRestriction           CellAccessRestriction,
    -- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions       SEQUENCE {
            sysInfoType3-v4xyext            SysInfoType3-v4xyext-IEs,
            nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
        }                           OPTIONAL
}

SysInfoType3-v4xyext-IEs ::= SEQUENCE {
    mapping-LCR                     Mapping-LCR-r4                          OPTIONAL
}

SysInfoType4 ::=                    SEQUENCE {
    -- UTRAN mobility IEs
        cellIdentity                    CellIdentity,
        cellSelectReselectInfo          CellSelectReselectInfoSIB-3-4,
        cellAccessRestriction           CellAccessRestriction,
    -- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions       SEQUENCE {
            sysInfoType4-v4xyext            SysInfoType4-v4xyext-IEs,
            nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
        }   OPTIONAL
}

SysInfoType4-v4xyext-IEs ::= SEQUENCE {
    mapping-LCR                     Mapping-LCR-r4                          OPTIONAL
}

SysInfoType5 ::=                    SEQUENCE {
        sib6indicator                   BOOLEAN,
    -- Physical channel IEs
        pich-PowerOffset                PICH-PowerOffset,
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                aich-PowerOffset                AICH-PowerOffset
            },
            tdd                             SEQUENCE {
    -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
    --   and the info included in the tdd128SpecificInfo instead.
                pusch-SysInfoList-SFN           PUSCH-SysInfoList-SFN       OPTIONAL,
                pdsch-SysInfoList-SFN           PDSCH-SysInfoList-SFN       OPTIONAL,
                openLoopPowerControl-TDD        OpenLoopPowerControl-TDD
            }
        },
        primaryCCPCH-Info               PrimaryCCPCH-Info                   OPTIONAL,
        prach-SystemInformationList     PRACH-SystemInformationList,
        sCCPCH-SystemInformationList    SCCPCH-SystemInformationList,
        -- cbs-DRX-Level1Information is conditional on any of the CTCH indicator IEs in
        -- sCCPCH-SystemInformationList
        cbs-DRX-Level1Information       CBS-DRX-Level1Information           OPTIONAL,
    -- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions       SEQUENCE {
            sysInfoType5-v4xyext            SysInfoType5-v4xyext-IEs,
        -- Extension mechanism for non- rel-4 information
            nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
        }                           OPTIONAL
}

SysInfoType5-v4xyext-IEs ::= SEQUENCE {
    pNBSCH-Allocation-r4            PNBSCH-Allocation-r4            OPTIONAL,
    -- In case of TDD, the following IE is included instead of the
    -- IE up-IPDL-Parameter in up-OTDOA-AssistanceData.
```

```
    openLoopPowerControl-IPDL-TDD   OpenLoopPowerControl-IPDL-TDD-r4    OPTIONAL,
-- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
-- PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
-- IE rach-TransportFormatSet shall be absent and the corresponding IE in the following
-- PRACH-SystemInformationList-LCR-r4 shall be used
    prach-SystemInformationList-LCR-r4  PRACH-SystemInformationList-LCR-r4  OPTIONAL,
    tdd128SpecificInfo              SEQUENCE {
        pusch-SysInfoList-SFN           PUSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
        pdsch-SysInfoList-SFN           PDSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
        pCCPCH-LCR-Extensions           PrimaryCCPCH-Info-LCR-r4-ext    OPTIONAL,
        sCCPCH-LCR-ExtensionsList       SCCPCH-SystemInformationList-LCR-r4-ext
    }                                                                   OPTIONAL
}

SysInfoType6 ::=                    SEQUENCE {
    -- Physical channel IEs
        pich-PowerOffset                PICH-PowerOffset,
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                aich-PowerOffset                AICH-PowerOffset,
                -- dummy is not used in this version of specification, it should
                -- not be sent and if received it should be ignored.
                dummy                           CSICH-PowerOffset           OPTIONAL
            },
            tdd                             SEQUENCE {
                -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList-SFN,
                -- pdsch-SysInfoList-SFN and openLoopPowerControl-TDD should be absent
                -- and the info included in the tdd128SpecificInfo instead.
                pusch-SysInfoList-SFN           PUSCH-SysInfoList-SFN       OPTIONAL,
                pdsch-SysInfoList-SFN           PDSCH-SysInfoList-SFN       OPTIONAL,
                openLoopPowerControl-TDD        OpenLoopPowerControl-TDD
            }
        },
        primaryCCPCH-Info               PrimaryCCPCH-Info                   OPTIONAL,
        prach-SystemInformationList     PRACH-SystemInformationList         OPTIONAL,
        sCCPCH-SystemInformationList    SCCPCH-SystemInformationList        OPTIONAL,
        cbs-DRX-Level1Information       CBS-DRX-Level1Information           OPTIONAL,
        -- Conditional on any of the CTCH indicator IEs in
        -- sCCPCH-SystemInformationList
    -- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions       SEQUENCE {
            sysInfoType6-v4xyext            SysInfoType6-v4xyext-IEs,
        -- Extension mechanism for non- rel-4 information
            nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
        }                               OPTIONAL
}

SysInfoType6-v4xyext-IEs ::= SEQUENCE {
    -- openLoopPowerControl-IPDL-TDD is present only if IPDLs are applied for TDD
    openLoopPowerControl-IPDL-TDD   OpenLoopPowerControl-IPDL-TDD-r4    OPTIONAL,
    -- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included
    -- in PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
    -- IE rach-TransportFormatSet shall be absent and the corresponding IEs in the following
    -- PRACH-SystemInformationList-LCR-r4 shall be used
    prach-SystemInformationList-LCR-r4  PRACH-SystemInformationList-LCR-r4  OPTIONAL,
    tdd128SpecificInfo              SEQUENCE {
        pusch-SysInfoList-SFN           PUSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
        pdsch-SysInfoList-SFN           PDSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
        pCCPCH-LCR-Extensions           PrimaryCCPCH-Info-LCR-r4-ext    OPTIONAL,
        sCCPCH-LCR-ExtensionsList       SCCPCH-SystemInformationList-LCR-r4-ext OPTIONAL
    }                                                                   OPTIONAL
}

SysInfoType7 ::=                    SEQUENCE {
    -- Physical channel IEs
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                ul-Interference                 UL-Interference
            },
            tdd                             NULL
        },
        prach-Information-SIB5-List     DynamicPersistenceLevelList,
        prach-Information-SIB6-List     DynamicPersistenceLevelList         OPTIONAL,
        expirationTimeFactor            ExpirationTimeFactor                OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}
```

```
SysInfoType8 ::=                    SEQUENCE {
    -- User equipment IEs
        cpch-Parameters                 CPCH-Parameters,
    -- Physical channel IEs
        cpch-SetInfoList                CPCH-SetInfoList,
        csich-PowerOffset               CSICH-PowerOffset,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}

SysInfoType9 ::=                    SEQUENCE {
    -- Physical channel IEs
        cpch-PersistenceLevelsList      CPCH-PersistenceLevelsList,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}

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

SysInfoType11 ::=                   SEQUENCE {
        sib12indicator                  BOOLEAN,
    -- Measurement IEs
        fach-MeasurementOccasionInfo    FACH-MeasurementOccasionInfo        OPTIONAL,
        measurementControlSysInfo       MeasurementControlSysInfo,
    -- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions       SEQUENCE {
            sysInfoType11-v4xyext           SysInfoType11-v4xyext-IEs,
            nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
        }                               OPTIONAL
}

SysInfoType11-v4xyext-IEs ::= SEQUENCE {
    fach-MeasurementOccasionInfo-LCR-Ext    FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
    measurementControlSysInfo-LCR           MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType12 ::=                   SEQUENCE {
    -- Measurement IEs
        fach-MeasurementOccasionInfo    FACH-MeasurementOccasionInfo        OPTIONAL,
        measurementControlSysInfo       MeasurementControlSysInfo,
    -- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions       SEQUENCE {
            sysInfoType12-v4xyext           SysInfoType12-v4xyext-IEs,
            nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
        }                               OPTIONAL
}

SysInfoType12-v4xyext-IEs ::= SEQUENCE {
    fach-MeasurementOccasionInfo-LCR-Ext    FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
    measurementControlSysInfo-LCR           MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType13 ::=                   SEQUENCE {
    -- Core network IEs
        cn-DomainSysInfoList            CN-DomainSysInfoList,
    -- User equipment IEs
        ue-IdleTimersAndConstants       UE-IdleTimersAndConstants           OPTIONAL,
        capabilityUpdateRequirement     CapabilityUpdateRequirement         OPTIONAL,
    -- Extension mechanism for non- release99 information
        v3a0NonCriticalExtensions           SEQUENCE {
            sysInfoType13-v3a0ext           SysInfoType13-v3a0ext-IEs,
            v4xyNonCriticalExtensions       SEQUENCE {
                sysInfoType13-v4xyext           SysInfoType13-v4xyext-IEs,
            -- Extension mechanism for non- release99 information
                nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
            }                               OPTIONAL
        }                               OPTIONAL
}

SysInfoType13-v3a0ext-IEs ::= SEQUENCE {
    ue-IdleTimersAndConstants-v3a0ext       UE-IdleTimersAndConstants-v3a0ext
}
```

```
SysInfoType13-v4xyext-IEs ::= SEQUENCE {
    capabilityUpdateRequirement-r4Ext   CapabilityUpdateRequirement-r4-ext  OPTIONAL
}

SysInfoType13-1 ::=                 SEQUENCE {
    -- ANSI-41 IEs
        ansi-41-RAND-Information        ANSI-41-RAND-Information,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}

SysInfoType13-2 ::=                 SEQUENCE {
    -- ANSI-41 IEs
        ansi-41-UserZoneID-Information  ANSI-41-UserZoneID-Information,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}

SysInfoType13-3 ::=                 SEQUENCE {
    -- ANSI-41 IEs
        ansi-41-PrivateNeighbourListInfo ANSI-41-PrivateNeighbourListInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}

SysInfoType13-4 ::=                 SEQUENCE {
    -- ANSI-41 IEs
        ansi-41-GlobalServiceRedirectInfo
                                        ANSI-41-GlobalServiceRedirectInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}

SysInfoType14 ::=                   SEQUENCE {
    -- Physical channel IEs
        individualTS-InterferenceList   IndividualTS-InterferenceList,
        expirationTimeFactor            ExpirationTimeFactor                OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}

SysInfoType15 ::=                   SEQUENCE {
    -- Measurement IEs

        ue-positioning-GPS-CipherParameters     UE-Positioning-CipherParameters     OPTIONAL,
        ue-positioning-GPS-ReferenceLocation    ReferenceLocation,
        ue-positioning-GPS-ReferenceTime        UE-Positioning-GPS-ReferenceTime,

        ue-positioning-GPS-Real-timeIntegrity       BadSatList                          OPTIONAL,
    -- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions           SEQUENCE {
            sysInfoType15-v4xyext               SysInfoType15-v4xyext-IEs,
        -- Extension mechanism for non- release4 information
            nonCriticalExtensions               SEQUENCE {}             OPTIONAL
        }   OPTIONAL
}

SysInfoType15-v4xyext-IEs ::= SEQUENCE {
    up-Ipdl-Parameters-TDD          UE-Positioning-IPDL-Parameters-TDD-r4-ext   OPTIONAL
}

SysInfoType15-1 ::=                 SEQUENCE {
    -- DGPS corrections
        ue-positioning-GPS-DGPS-Corrections         UE-Positioning-GPS-DGPS-Corrections,

    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}             OPTIONAL
}

SysInfoType15-2 ::=                 SEQUENCE {
    -- Ephemeris and clock corrections
        transmissionTOW                 INTEGER (0..604799),
        satID                           SatID,
        ephemerisParameter              EphemerisParameter,

    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}         OPTIONAL
}
```

```
SysInfoType15-3 ::=                 SEQUENCE {
    -- Almanac and other data
        transmissionTOW                 INTEGER (0.. 604799),
        ue-positioning-GPS-Almanac                  UE-Positioning-GPS-Almanac
    OPTIONAL,
        ue-positioning-GPS-IonosphericModel         UE-Positioning-GPS-IonosphericModel
    OPTIONAL,
        ue-positioning-GPS-UTC-Model                UE-Positioning-GPS-UTC-Model
    OPTIONAL,
        satMask                         BIT STRING (SIZE (1..32))   OPTIONAL,
        lsbTOW                          BIT STRING (SIZE (8))       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                 OPTIONAL
}

SysInfoType15-4 ::=                 SEQUENCE {
    -- Measurement IEs
        ue-positioning-OTDOA-CipherParameters   UE-Positioning-CipherParameters         OPTIONAL,
        ue-positioning-OTDOA-AssistanceData     UE-Positioning-OTDOA-AssistanceData,
        v3a0NonCriticalExtensions           SEQUENCE {
            sysInfoType15-4-v3a0ext             SysInfoType15-4-v3a0ext,
        -- Extension mechanism for non- release99 information
            v4xyNonCriticalExtensions           SEQUENCE {
                sysInfoType15-4-v4xyext             SysInfoType15-4-v4xyext,
                nonCriticalExtensions               SEQUENCE {}     OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
}

SysInfoType15-4-v3a0ext ::= SEQUENCE {
    sfn-Offset-Validity             SFN-Offset-Validity     OPTIONAL
}

SysInfoType15-4-v4xyext ::= SEQUENCE {
    ue-Positioning-OTDOA-AssistanceData-r4ext   UE-Positioning-OTDOA-AssistanceData-r4ext   OPTIONAL
}

SysInfoType15-5 ::=                 SEQUENCE {
    -- Measurement IEs
        ue-positioning-OTDOA-AssistanceData-UEB     UE-Positioning-OTDOA-AssistanceData-UEB,
        v3a0NonCriticalExtensions           SEQUENCE {
            sysInfoType15-5-v3a0ext             SysInfoType15-5-v3a0ext,
        -- Extension mechanism for non- release99 information
            nonCriticalExtensions               SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

SysInfoType15-5-v3a0ext ::= SEQUENCE {
    sfn-Offset-Validity         SFN-Offset-Validity     OPTIONAL
}

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

SysInfoType17 ::=                   SEQUENCE {
    -- Physical channel IEs
        -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList and
        -- pdsch-SysInfoList should be absent and the info included in the
        -- tdd128SpecificInfo instead.
        pusch-SysInfoList               PUSCH-SysInfoList               OPTIONAL,
        pdsch-SysInfoList               PDSCH-SysInfoList               OPTIONAL,
    -- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions       SEQUENCE {
            sysInfoType17-v4xyext           SysInfoType17-v4xyext-IEs,
            nonCriticalExtensions           SEQUENCE {}             OPTIONAL
        }                               OPTIONAL
}

SysInfoType17-v4xyext-IEs ::= SEQUENCE {
    tdd128SpecificInfo              SEQUENCE {
        pusch-SysInfoList               PUSCH-SysInfoList-LCR-r4        OPTIONAL,
        pdsch-SysInfoList               PDSCH-SysInfoList-LCR-r4        OPTIONAL
    }                                                                   OPTIONAL
```

```
}

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

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

SysInfoTypeSB2 ::=                  SEQUENCE {
    -- Other IEs
        sib-ReferenceList               SIB-ReferenceList,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}

TDD-UMTS-Frequency-List ::=             SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF
                                            FrequencyInfoTDD

-- ************************************************
--
--     ANSI-41 INFORMATION ELEMENTS (10.3.9)
--
-- ************************************************

ANSI-41-GlobalServiceRedirectInfo ::=   ANSI-41-NAS-Parameter
ANSI-41-PrivateNeighbourListInfo ::=    ANSI-41-NAS-Parameter
ANSI-41-RAND-Information ::=            ANSI-41-NAS-Parameter
ANSI-41-UserZoneID-Information ::=      ANSI-41-NAS-Parameter
ANSI-41-NAS-Parameter ::=               BIT STRING (SIZE (1..2048))

Min-P-REV ::=                           BIT STRING (SIZE (8))

NAS-SystemInformationANSI-41 ::=        ANSI-41-NAS-Parameter
NID ::=                                 BIT STRING (SIZE (16))

P-REV ::=                               BIT STRING (SIZE (8))

SID ::=                                 BIT STRING (SIZE (15))

END
```

11.4 Constant definitions

```
Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

hiPDSCHidentities           INTEGER ::= 64
hiPUSCHidentities           INTEGER ::= 64
hiRM                        INTEGER ::= 256
maxAC                       INTEGER ::= 16
maxAdditionalMeas           INTEGER ::= 4
maxASC                      INTEGER ::= 8
maxASCmap                   INTEGER ::= 7
maxASCpersist               INTEGER ::= 6
maxCCTrCH                   INTEGER ::= 8
maxCellMeas                 INTEGER ::= 32
maxCellMeas-1               INTEGER ::= 31
maxCNdomains                INTEGER ::= 4
maxCPCHsets                 INTEGER ::= 16
maxDPCH-DLchan              INTEGER ::= 8
maxDPDCH-UL                 INTEGER ::= 6
maxDRACclasses              INTEGER ::= 8
maxFACHPCH                  INTEGER ::= 8
maxFreq                     INTEGER ::= 8
maxFreqBandsFDD             INTEGER ::= 8
maxFreqBandsTDD             INTEGER ::= 4
maxFreqBandsGSM             INTEGER ::= 16
maxHProcesses               INTEGER ::= 6
```

```
maxHSDSCHTBIndex            INTEGER ::= 64
maxHSDSCHTBIndex-tdd384     INTEGER ::= 512
maxHSSCCHs                  INTEGER ::= 4
maxInterSysMessages         INTEGER ::= 4
maxLoCHperRLC               INTEGER ::= 2
maxMAC-d-PDUsizes           INTEGER ::= 16
maxMeasEvent                INTEGER ::= 8
maxMeasIntervals            INTEGER ::= 3
maxMeasParEvent             INTEGER ::= 2
maxNumCDMA2000Freqs         INTEGER ::=  8
maxNumGSMFreqRanges         INTEGER ::= 32
maxNumFDDFreqs              INTEGER ::=  8
maxNumTDDFreqs              INTEGER ::=  8
maxNoOfMeas                 INTEGER ::= 16
maxOtherRAT                 INTEGER ::= 15
maxOtherRAT-16              INTEGER ::= 16
maxPage1                    INTEGER ::= 8
maxPCPCH-APsig              INTEGER ::= 16
maxPCPCH-APsubCh            INTEGER ::= 12
maxPCPCH-CDsig              INTEGER ::= 16
maxPCPCH-CDsubCh            INTEGER ::= 12
maxPCPCH-SF                 INTEGER ::= 7
maxPCPCHs                   INTEGER ::= 64
maxPDCPAlgoType             INTEGER ::= 8
maxPDSCH                    INTEGER ::= 8
maxPDSCH-TFCIgroups         INTEGER ::= 256
maxPRACH                    INTEGER ::= 16
maxPRACH-FPACH              INTEGER ::= 8
maxPredefConfig             INTEGER ::= 16
maxPUSCH                    INTEGER ::= 8
maxQueueIDs                 INTEGER ::= 8
maxRABsetup                 INTEGER ::= 16
maxRAT                      INTEGER ::= 16
maxRB                       INTEGER ::= 32
maxRBallRABs                INTEGER ::= 27
maxRBMuxOptions             INTEGER ::= 8
maxRBperRAB                 INTEGER ::= 8
maxReportedGSMCells         INTEGER ::= 6
maxRL                       INTEGER ::= 8
maxRL-1                     INTEGER ::= 7
maxROHC-PacketSizes-r4      INTEGER ::= 16
maxROHC-Profile-r4          INTEGER ::= 8
maxSat                      INTEGER ::= 16
maxSCCPCH                   INTEGER ::= 16
maxSIB                      INTEGER ::= 32
maxSIB-FACH                 INTEGER ::= 8
maxSIBperMsg                INTEGER ::= 16
maxSRBsetup                 INTEGER ::= 8
maxSystemCapability         INTEGER ::= 16
maxTF                       INTEGER ::= 32
maxTF-CPCH                  INTEGER ::= 16
maxTFC                      INTEGER ::= 1024
maxTFCsub                   INTEGER ::= 1024
maxTFCI-2-Combs             INTEGER ::= 512
maxTGPS                     INTEGER ::= 6
maxTrCH                     INTEGER ::= 32
-- maxTrCHpreconf should be 16 but has been set to 32 for compatibility
maxTrCHpreconf              INTEGER ::= 32
maxTS                       INTEGER ::= 14
maxTS-1                     INTEGER ::= 13
maxTS-LCR                   INTEGER ::= 6
maxTS-LCR-1                 INTEGER ::= 5
maxURA                      INTEGER ::= 8

END
```

11.5 RRC information between network nodes

```
Internode-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    HandoverToUTRANCommand,
    MeasurementReport,
    PhysicalChannelReconfiguration,
```

```
    RadioBearerReconfiguration,
    RadioBearerRelease,
    RadioBearerSetup,
    RRC-FailureInfo-r3-IEs,
    TransportChannelReconfiguration
FROM PDU-definitions

-- Core Network IEs :
    CN-DomainIdentity,
    CN-DomainInformationList,
    CN-DRX-CycleLengthCoefficient,
    NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
    CellIdentity,
    URA-Identity,
-- User Equipment IEs :
    C-RNTI,
    DL-PhysChCapabilityFDD-v380ext,
    FailureCauseWithProtErr,
    RRC-MessageSequenceNumber,
    STARTList,
    START-Value,
    U-RNTI,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
    UE-RadioAccessCapability-v3a0ext,
    UE-RadioAccessCapability-v4xyext,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    RAB-Identity,
    SRB-InformationSetupList,
-- Transport Channel IEs :
    CPCH-SetID,
    DL-CommonTransChInfo,
    DL-AddReconfTransChInfoList,
    DRAC-StaticInformationList,
    UL-CommonTransChInfo,
    UL-AddReconfTransChInfoList,
-- Measurement IEs :
    MeasurementIdentity,
    MeasurementReportingMode,
    MeasurementType,
    MeasurementType-r4,
    AdditionalMeasurementID-List,
    PositionEstimate,
    UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
InterRAT-UE-RadioAccessCapabilityList
FROM InformationElements

    maxCNdomains,
    maxNoOfMeas,

    maxRB,
    maxSRBsetup
FROM Constant-definitions
;

-- Part 1: Class definitions similar to what has been defined in 11.1 for RRC messages
-- Information that is 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 {
        -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
        -- includes non critical extensions
        interRATHandoverInfo-r3         InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
        v390NonCriticalExtensions           SEQUENCE {
            interRATHandoverInfoWithInterRATCapabilities-v390ext
    InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
            -- Reserved for future non critical extension
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }       OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

InterRATHandoverInfoWithInterRATCapabilities-r3-IEs::=      SEQUENCE {
        -- The order of the IEs may not reflect the tabular format
        --  but has been chosen to simplify the handling of the information in the BSC
    --  Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList   OPTIONAL,
        -- interRATHandoverInfo, Octet string is used to obtain 8 bit length field prior to
        -- actual information.  This makes it possible for BSS to transparently handle information
        -- received via GSM air interface even when it includes non critical extensions.
        -- The octet string shall include the InterRATHandoverInfo information
        -- The BSS can re-use the 04.18 length field received from the MS
        interRATHandoverInfo            OCTET STRING (SIZE (0..255))
}

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

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

SRNC-RelocationInfo-r3 ::= CHOICE {
    r3                              SEQUENCE {
        sRNC-RelocationInfo-r3          SRNC-RelocationInfo-r3-IEs,
            v380NonCriticalExtensions           SEQUENCE {
                sRNC-RelocationInfo-v380ext SRNC-RelocationInfo-v380ext-IEs,
                -- Reserved for future non critical extension
                v390NonCriticalExtensions           SEQUENCE {
                    sRNC-RelocationInfo-v390ext         SRNC-RelocationInfo-v390ext-IEs,
                    v3a0NonCriticalExtensions           SEQUENCE {
                        sRNC-RelocationInfo-v3a0ext         SRNC-RelocationInfo-v3a0ext-IEs,
                        v4xyNonCriticalExtensions           SEQUENCE {
                            sRNC-RelocationInfo-v4xyext         SRNC-RelocationInfo-v4xyext-IEs,
                            -- Reserved for future non critical extension
```

```
                            nonCriticalExtensions           SEQUENCE {} OPTIONAL
                        }       OPTIONAL
                    }       OPTIONAL
                }       OPTIONAL
            }       OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

SRNC-RelocationInfo-r3-IEs ::=      SEQUENCE {
    -- Non-RRC IEs
        stateOfRRC                      StateOfRRC,
        stateOfRRC-Procedure            StateOfRRC-Procedure,
    -- Ciphering related information IEs
    -- If the extension v380 is included use the extension for the ciphering status per CN domain
        cipheringStatus                 CipheringStatus,
        calculationTimeForCiphering     CalculationTimeForCiphering         OPTIONAL,
        cipheringInfoPerRB-List         CipheringInfoPerRB-List             OPTIONAL,
        count-C-List                    COUNT-C-List                        OPTIONAL,
        integrityProtectionStatus       IntegrityProtectionStatus,
        srb-SpecificIntegrityProtInfo   SRB-SpecificIntegrityProtInfoList,
        implementationSpecificParams    ImplementationSpecificParams        OPTIONAL,
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        c-RNTI                          C-RNTI                              OPTIONAL,
        ue-RadioAccessCapability        UE-RadioAccessCapability,
        ue-Positioning-LastKnownPos     UE-Positioning-LastKnownPos         OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList   OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Core network IEs
        cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP,
        cn-DomainInformationList        CN-DomainInformationList            OPTIONAL,
    -- Measurement IEs
        ongoingMeasRepList              OngoingMeasRepList                  OPTIONAL,
    -- Radio bearer IEs
        predefinedConfigStatusList      PredefinedConfigStatusList,
        srb-InformationList             SRB-InformationSetupList,
        rab-InformationList             RAB-InformationSetupList            OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo                OPTIONAL,
        ul-TransChInfoList              UL-AddReconfTransChInfoList         OPTIONAL,
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                cpch-SetID                      CPCH-SetID                  OPTIONAL,
                transChDRAC-Info                DRAC-StaticInformationList  OPTIONAL
            },
            tdd                             NULL
        },
        dl-CommonTransChInfo            DL-CommonTransChInfo                OPTIONAL,
        dl-TransChInfoList              DL-AddReconfTransChInfoList         OPTIONAL,
    -- Measurement report
        measurementReport               MeasurementReport                   OPTIONAL ,
        nonCriticalExtensions           SEQUENCE {
            -- In case of TDD only up-Ipdl-Parameters-TDD is present, otherwise
            -- this IE is absent
            up-Ipdl-Parameters-TDD          UE-Positioning-IPDL-Parameters-TDD-r4-ext   OPTIONAL,
        -- Extension mechanism for non- release4 information
            nonCriticalExtensions           SEQUENCE {}                                OPTIONAL
        }                                                                       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-v3a0ext-IEs ::= SEQUENCE {
```

```
        startValueForCIphering-v3a0ext      START-Value,
        cipheringInfoForSRB1-v3a0ext        CipheringInfoForSRB1-v3a0ext,
        ue-RadioAccessCapability-v3a0ext    UE-RadioAccessCapability-v3a0ext        OPTIONAL
}

SRNC-RelocationInfo-v4xyext-IEs ::= SEQUENCE {
        ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}

CipheringInfoForSRB1-v3a0ext ::= SEQUENCE {
        dl-UM-SN                            BIT STRING (SIZE (7))
}

CipheringStatusList ::=         SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        CipheringStatusCNdomain

CipheringStatusCNdomain ::=             SEQUENCE {
        cn-DomainIdentity               CN-DomainIdentity,
        cipheringStatus                 CipheringStatus
}

SRNC-RelocationInfo-r4 ::=          SEQUENCE {
    -- Non-RRC IEs
        stateOfRRC                      StateOfRRC,
        stateOfRRC-Procedure            StateOfRRC-Procedure,
        cipheringStatus                 CipheringStatus,
        calculationTimeForCiphering     CalculationTimeForCiphering         OPTIONAL,
        cipheringInfoPerRB-List         CipheringInfoPerRB-List             OPTIONAL,
        integrityProtectionStatus       IntegrityProtectionStatus,
        srb-SpecificIntegrityProtInfo   SRB-SpecificIntegrityProtInfoList,
        implementationSpecificParams    ImplementationSpecificParams        OPTIONAL,
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        c-RNTI                          C-RNTI                              OPTIONAL,
        ue-RadioAccessCapability        UE-RadioAccessCapability,
        ue-Positioning-LastKnownPos     UE-Positioning-LastKnownPos         OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList   OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Core network IEs
        cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP,
        cn-DomainInformationList        CN-DomainInformationList            OPTIONAL,
    -- Measurement IEs
        ongoingMeasRepList              OngoingMeasRepList-r4               OPTIONAL,
    -- Radio bearer IEs
        predefinedConfigStatusList      PredefinedConfigStatusList,
        srb-InformationList             SRB-InformationSetupList,
        rab-InformationList             RAB-InformationSetupList            OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo                OPTIONAL,
        ul-TransChInfoList              UL-AddReconfTransChInfoList         OPTIONAL,
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                cpch-SetID                      CPCH-SetID                  OPTIONAL,
                transChDRAC-Info                DRAC-StaticInformationList  OPTIONAL
            },
            tdd                             NULL
        },
        dl-CommonTransChInfo            DL-CommonTransChInfo                OPTIONAL,
        dl-TransChInfoList              DL-AddReconfTransChInfoList         OPTIONAL,
    -- Measurement report
        measurementReport               MeasurementReport                   OPTIONAL,
        nonCriticalExtensions           SEQUENCE {
            -- In case of TDD only up-Ipdl-Parameters-TDD is present, otherwise
            -- this IE is absent
            up-Ipdl-Parameters-TDD          UE-Positioning-IPDL-Parameters-TDD-r4-ext   OPTIONAL,
        -- Extension mechanism for non- release4 information
            nonCriticalExtensions           SEQUENCE {}                                OPTIONAL
        }                                                                   OPTIONAL
}

-- IE definitions

CalculationTimeForCiphering ::=     SEQUENCE {
    cell-Id                             CellIdentity,
    sfn                                 INTEGER (0..4095)
}
```

```
CipheringInfoPerRB ::=              SEQUENCE {
    dl-HFN                              BIT STRING (SIZE (20..25)),
    ul-HFN                              BIT STRING (SIZE (20..25))
}

-- TABULAR: CipheringInfoPerRB-List, multiplicity value numberOfRadioBearers
-- has been replaced with maxRB.
CipheringInfoPerRB-List ::=         SEQUENCE (SIZE (1..maxRB)) OF
                                        CipheringInfoPerRB

CipheringStatus ::=                 ENUMERATED {
                                        started, notStarted }

CN-DomainInformation-v390ext ::=        SEQUENCE {
    cn-DRX-CycleLengthCoeff             CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList-v390ext ::=    SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        CN-DomainInformation-v390ext

COUNT-C-List ::=                        SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        COUNT-CSingle

COUNT-CSingle ::=                       SEQUENCE {
    cn-DomainIdentity                   CN-DomainIdentity,
    count-C                             BIT STRING (SIZE (32))
}

ImplementationSpecificParams ::=    BIT STRING (SIZE (1..512))


IntegrityProtectionStatus ::=       ENUMERATED {
                                        started, notStarted }

MeasurementCommandWithType ::=      CHOICE {
    setup                               MeasurementType,
    modify                              NULL,
    release                             NULL
}

MeasurementCommandWithType-r4 ::=   CHOICE {
    setup                               MeasurementType-r4,
    modify                              NULL,
    release                             NULL
}

OngoingMeasRep ::=                  SEQUENCE {
    measurementIdentity         MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType
    measurementCommandWithType          MeasurementCommandWithType,
    measurementReportingMode            MeasurementReportingMode            OPTIONAL,
    additionalMeasurementID-List        AdditionalMeasurementID-List        OPTIONAL
}

OngoingMeasRep-r4 ::=               SEQUENCE {
    measurementIdentity         MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType-r4.
    measurementCommandWithType          MeasurementCommandWithType-r4,
    measurementReportingMode            MeasurementReportingMode            OPTIONAL,
    additionalMeasurementID-List        AdditionalMeasurementID-List        OPTIONAL
}

OngoingMeasRepList ::=              SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                        OngoingMeasRep

OngoingMeasRepList-r4 ::=           SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                        OngoingMeasRep-r4

SRB-SpecificIntegrityProtInfo ::=   SEQUENCE {
    ul-RRC-HFN                          BIT STRING (SIZE (28)),
    dl-RRC-HFN                          BIT STRING (SIZE (28)),
    ul-RRC-SequenceNumber               RRC-MessageSequenceNumber,
    dl-RRC-SequenceNumber               RRC-MessageSequenceNumber
}
```

```
SRB-SpecificIntegrityProtInfoList ::= SEQUENCE (SIZE (4..maxSRBsetup)) OF
                                        SRB-SpecificIntegrityProtInfo

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

StateOfRRC-Procedure ::=              ENUMERATED {
                                        awaitNoRRC-Message,
                                        awaitRRC-ConnectionRe-establishmentComplete,
                                        awaitRB-SetupComplete,
                                        awaitRB-ReconfigurationComplete,
                                        awaitTransportCH-ReconfigurationComplete,
                                        awaitPhysicalCH-ReconfigurationComplete,
                                        awaitActiveSetUpdateComplete,
                                        awaitHandoverComplete,
                                        sendCellUpdateConfirm,
                                        sendUraUpdateConfirm,
                                        sendRrcConnectionReestablishment,
                                        otherStates
}

UE-Positioning-LastKnownPos ::=       SEQUENCE {
        sfn                             INTEGER (0..4095),
        cell-id                         CellIdentity,
        positionEstimate                PositionEstimate
}

END
```